

IOP

The Industrial-Organizational Psychologist

A publication of the Society for Industrial and Organizational Psychology, Inc.

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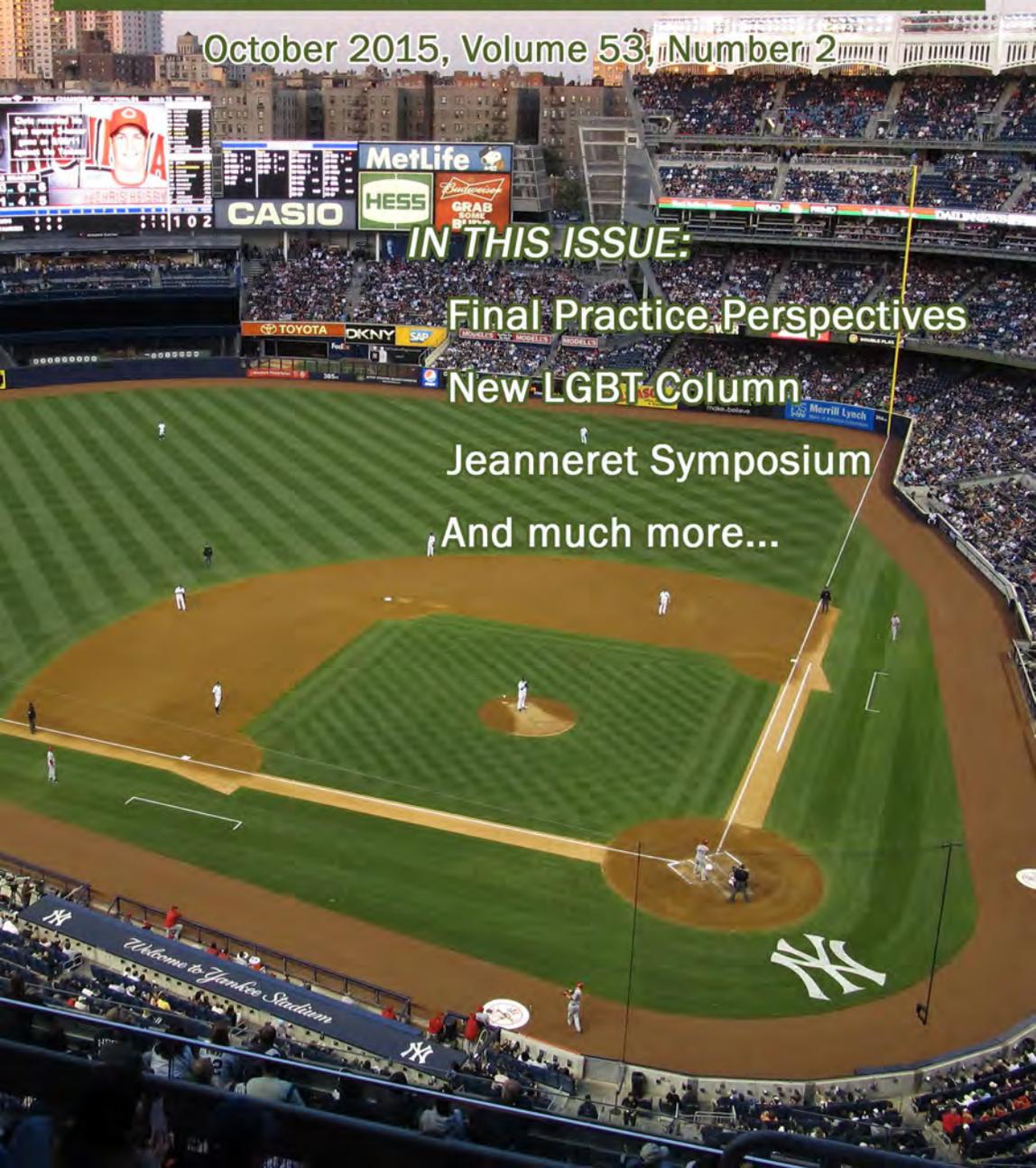
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Final Practice Perspectives

New LGBT Column

Jeanneret Symposium

And much more...



TIP

The Industrial-Organizational Psychologist

A publication of the Society for Industrial and Organizational Psychology, Inc.

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Cover: As a memorial to Dr. Paul Muchinsky, who passed away on September 8, 2015, we feature his beloved Yankee Stadium on our cover.



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President's Message



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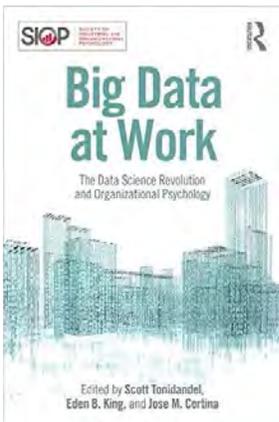
As I write this column in August, the SIOP Conference program submission portal is open and generating a lot of activity. I hope you took this opportunity to submit a conference proposal, as we are looking forward to a fantastic meeting next April. The SIOP Conference Committee (**Dave Nershi, Eden King, Daisy Chang, Scott Tonidandel, Tracey Rizzuto, Tracy McCausland, and Chris Cerasoli**) was at the meeting venue (Evan Sinar and Emily Solberg joined by phone; <http://www.siop.org/conferences/16con/default.aspx>) in July and I have heard from my colleague and Conference Chair in Training Daisy Chang that the facilities are really excellent.

By now, the Program Committee will be busy evaluating the many submissions and working to construct an exciting and informative program. I have also been in touch with **Zack Horn** (Theme Track Chair, SIOP Program Chair in Training) in his capacity of organizing the Theme Track program for the conference. Zack and the Theme Track Committee (**Tara Behrend, Stu Carr, Gloria Gonzalez-Morales, Ryan Johnson, and Emily Stehura**) are developing a set of innovative and exciting ideas to showcase my presidential theme of Enhancing Impact: A Multilevel Approach, which I highlighted in my prior column. Consistent with the impact and multilevel aspects of my theme, the Theme Track Committee will be targeting ideas that showcase having impact from the bottom-up within SIOP and at the local, organizational, and societal (national and international) levels.

Besides a great meeting venue and fantastic program, we will be meeting in sunny Southern California during April when the average daytime temperature is in the mid-70s. I don't know about your location, but after a long cold winter in Michigan, I'll be very happy to attend SIOP in sunny Southern California! I hope to see you there. You are no doubt aware of events surrounding APA that

have been stimulated by the release of the Hoffman Report back in July. It is fair to say that release of the report and its conclusions regarding conflicts of interest, collusion, and organizational deception within APA catalyzed a firestorm of comment. SIOP issued a statement, and we continue to monitor ongoing developments and actions. I want to acknowledge that there was a substantial amount of behind the scenes activity by the SIOP Administrative Office (Dave Nershi, Linda Lentz, and Stephany Below), APA Council Representatives (**Deirdre Knapp, Rodney Lowman, Lori Foster, and Deborah Whetzel**, and new reps **Georgia Chao** and **Gary Latham**), and SIOP senior leadership. I thank everyone for their professionalism while addressing these serious and challenging issues.

Finally, we are making good progress on several initiatives that undergird my presidential theme: (a) pushing the boundaries of our community to embrace more multidisciplinary, (b) doing a better job of translating science to practice and linking practical problems to scientific inquiry, and (c) developing mechanisms to support the advocacy and impact efforts of SIOP members. The SIOP Executive Board will meet in September, and so I expect to have more to report in my next column. Until then, think about all that you have done and are doing to have impact through the science and practice of I-O psychology! Make it a good quarter.

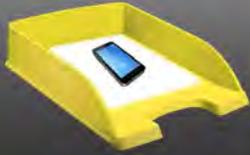
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The Editor's Out-Box



Morrie Mullins
Xavier University

On Credibility

A little over 2 years ago, I read a paper that had a profound effect on me. Kepes and McDaniel's (2013) IOP paper on the trustworthiness of the I-O literature, given issues relating to publication bias and questionable research practices, struck a nerve.

You see, I've felt for years that the way I was taught "proper research methods" during my undergraduate training did not match the reality of what I saw in the publication process. I took to thinking about the process as reflecting a number of "dirty little secrets" (I promise, I will not be overusing apologetic quotes throughout this piece) that papers like Kepes and McDaniel's finally called out in more detail.

I mean, yes. I read Norb Kerr's (1998) HARKing paper back in grad school and was suitably distressed, but more widespread discussions of problems within the publication process really didn't seem to start up in I-O (and really, psychology at large) circles until within the past 5 or so years. At this year's SIOP conference, then-President Jose Cortina really pushed us to think about the publication process and what it means for our science.

This is one of the most important conversations we can be having. It's a conversation we need to be having. But as I listened to sessions on the topic in Philadelphia, it seemed to me that they didn't spend enough time on the effects that our flawed publication process may have on our credibility—both with potential clients and with the next generation of practitioners.

With respect to the former, these conversations are not happening in a vacuum. A few days before this column was due, a team of scientists (the Open Science Collaboration) published a paper in *Science* in which they attempted to replicate 100 studies published in three major (non-I-O) psychology journals. What they found (you can view the article here: <http://www.sciencemag.org/content/349/6251/aac4716.full>) was that the "replication effects were half the magnitude of the original effects" and that a little over one-third of the replications were statistically significant, whereas 97% of the original results were significant.

Again, I encourage you to read the article and judge their methodology for yourself. Then I would encourage you to do what I did. Go to Google (or the search engine of your choice) and search, “psychology studies do not replicate.” Or frame it as a question (“Do psychology studies replicate?”). I went with the former, and given the temporal proximity to the publication of the Science paper, the results were plentiful.

“Many psychology findings not as strong as claimed.” *New York Times*

“Study delivers bleak verdict on validity of psychology experiment results.” *The Guardian*

“Many psychology experiments aren’t replicated, study shows.” *CNET*

“Scientists replicated 100 psychology studies, and fewer than half got the same results.” *The Smithsonian*

“Many scientific studies can’t be replicated. That’s a problem ...” *Washington Post*

“How reliable are psychology studies?” *The Atlantic*

Those are the first six results that came up in my search (three from Google News, three from the web) on the morning of August 30, 2015. So long as SIOP has “psychology” in its name, and so long as we are advertising ourselves as “Science for a Smarter Workplace,” our identity as a field is inextricably tied to the perceived quality of the research in domains like psychology and management. Those headlines, those eye-grabbing, attention-demanding headlines, are how the scientific foundation

of our field may be viewed by the people hiring us.

This isn’t the first time the popular press has run with information on the problems with the scientific publication process. The P-hacking articles (e.g., Simmons, Nelson, & Simonsohn, 2011) have generated commentaries in places like *Wired* magazine (I tried to find a weblink to the article, but afraid I will simply have to point you to their August 2013 issue) and *Cracked.com* about how to game/cheat the publication system.

I’m actually somewhat less concerned about how our clients view the research literature (which is, in most cases, pretty invisible to them in the work we do) and much more concerned about how these (very necessary) conversations will affect our graduate trainees.

I don’t believe in withholding information from my students. When I began to learn the “dirty little secrets” of the publication process, I felt as if I’d been betrayed by the people who taught me undergraduate research methods. So I talk to my students about the publication process and its flaws, about problems with an overreliance on the statistical unicorn that is “ $p < .05$,” about the criticality of replications that no one really wants to publish, and about how we as a field are working hard to do better science and to fix these systemic problems.

But when I share this information, I worry about what it will do to their willingness to reference and utilize the empirical litera-

ture, once they're done with school. It's hard enough to get access to the empirical literature once you're out of school, if you don't have a dot-edu account to give you access to all those databases. (SIOF Research Access being a notable and important exception!)

Does knowing about these problems make the already low-probability behavior of attempting to access empirical literature even lower probability? Does the trustworthiness of the literature as discussed by authors like Kepes and McDaniel (2013) have an impact on its future use? There is little enough motivation for busy I-O professionals to read the research literature—heck, it's hard for academics to read everything in the literature we want (see **Allie Gabriel's** article in this issue, where she describes assigning articles for her seminars so that she has an excuse to read things she's been wanting to read anyway!). So isn't it a bad idea to call that literature into question?

Except that we have to. We have to have this conversation, because if we believe the current publication process is broken, and if we believe that its brokenness will harm our credibility, the only way to fix it is to bring the broken bits into the light. We take a short-term credibility hit to create a field that is more credible in the long term. I really don't see where we have much other choice.

All right, then! You may have guessed that this is a topic I'm kind of passionate about, but it's certainly not the only thing we have going on, so let's move to the present

issue. One of the things we did, between last issue and this, was look at the click-throughs from the past couple of issues' announcement emails. When I say "we," I mean a team from Louisiana Tech (Jose Valadez, Frank Igou, and Olivia Reinecke), recruited and guided by *TIP* editorial board member Tiffany Poeppelman, mined the data and came up with a report showing which of the pdfs got accessed the most.

Far and away, the most-accessed pdf was the table of contents pdf. Which is why, starting with this issue, that table of contents pdf will be "live" – it will have links to all of the other pdfs in the issue. This way, you don't have to keep track of the announcement email. You can download a pdf of *TIP's* table of contents to your computer, tablet, or phone, call it up when you want, and click-through to any of the other articles in the issue.

The Content, Then!

If you're reading this issue in order (maybe you are, maybe you aren't), you've already read President **Steve Kozlowski's** update, in which he talks about SIOF's annual conference, the very important situation surrounding the Hoffman Report, and issues related to his presidential theme. We've then got a letter from **Paul Muchinsky** about the practice of "kilo authoring." Hearing from Paul has always been a gift, and I think the *Science* article would have tickled him, given his letter. Unfortunately, as you'll see from our table of contents, Paul has one other contribution to this issue: his own obituary. He passed away while this issue was being prepared, and with true Muchin-

sky style and grace, had an obituary ready to send when the time came.

I spoke well of Paul when he sent us his final installment of *The High Society*, and in some respects felt like I might have overdone it, like I might have come across as eulogizing him prematurely. I don't know that there are enough good things I could possibly say about him, though. I only knew him as something more personal than a name on a book for a little over 2 years, but even so, I count him as a mentor and a friend. I will miss him.

We then welcome two new sets of columnists and say good-bye to three authors who have contributed a great deal to *TIP*.

Following the call posted in the past couple of issues of *TIP*, we received a number of great applications for the TIP-TOPics graduate student column. I'm happy to announce that the team selected is from the University of Guelph and includes **Jessica Sorenson**, **Grace Ewles**, and **Thomas Sasso**. Their initial offering on the integration of science and practice in graduate education only confirmed for me that the selection committee had made the right choice.

Then we have a new column, which I am thrilled to be introducing. The LGBT Committee will be authoring a column entitled *LGBT Issues in Research and Practice*, and with their first column they provide an overview of the committee's history and goals. **Katina Sawyer**, **Craig Russell**, **Steve Discont**, **Christian Thoroughgood**, **Thomas Sasso**, **Kristen Jones**, **Kenneth Matos**, and **Daniel Gandara** are doing some great work!

In their Practice Perspectives column, **Rob Silzer** and **Chad Parson** provide a final wrap-up to years of work on their column. I don't think it's possible to overstate the importance of their advocacy for SIOp's practitioner community. SIOp needs strong voices for all its constituencies, and Rob in particular has consistently been such a voice. Although he and I have occasionally disagreed, I have tremendous respect for the work Rob has done. His commitment to the profession and to SIOp are laudable. Moreover, Rob has a strong sense of what *TIP* readers want; when he has given me advice about various aspects of *TIP*, he has been right much more often than not—even if I couldn't see it immediately! So thank you, Rob and Chad, for all that you've done.

I'd also like to thank **Marcus Dickson**, who will be ending his time as a *TIP* editorial board member with this issue and formally handing off *Classroom Capacity* to his coauthor, **Loren Naidoo**. As you'll see in his final column, Marcus has been involved in *TIP* for a long time and in multiple roles, and the time was right to move on. I've enjoyed working with Marcus, and having had a chance to work a little with Loren as the two coauthored the column in recent issues, I know that Marcus has chosen a worthy successor!

In *The Modern App*, **Nikki Blacksmith** and **Tiffany Poepelman** provide an update (with some interesting links to new tech) on what we know about Internet-based testing. **Steven Toaddy's** "I-Opener" this month focuses on statistics—but not in the way you might expect! Then **M. K. Ward** and **Bill Becker** return with another great interview,

this time with Dr. Vivienne Ming. Their interview with Dr. Ming is so information rich and covers so much ground (I love the title —“Work at the Intersection of Theoretical Neuroscience, Entrepreneurship, and Technology”) that it had to be split over two issues, so look for Part 2 in January!

Ashley Hoffman describes developments in Milan, Italy, as they relate to humanitarian work psychology. (By the way, for any of you interested in the UN Global Compact, the UN team has made the toolkit for I-O programs to join the compact available on the SIOP website!) I mentioned her article earlier, but to give more context, Allison Gabriel writes this issue about designing your first doctoral seminar. Personally, I think Allie may be ever-so-slightly under-selling the value of what she has to say, because some of the advice she gives in this column was advice I’ve not heard before, and I’ve been teaching graduate seminars for 15 years! This isn’t, in other words, just for first-time seminar instructors.

Seth Kaplan and Laura Uttley return with another SIOP in Washington update, focused on continuing to expand I-O’s impact across the federal government. Then we hear from north of the border, where **Lynda Zugec** welcomes **Silvia Bonaccio**, **Joshua Bourdage**, **Francois Chiochio**, **Gary Latham**, and **Winnie Shen** to celebrate the 40th anniversary of the Canadian Society for Industrial and Organizational Psychology! (I’d say something French at this point, but given that I’d be using Google Translate, I’d most likely get it wrong, and potentially insult most of Quebec—so instead, I’ll just move along...)

On the Legal Front, **Rich Tonowski** updates us on *Gulino v. Board of Education* [BOE] of the City School District of the City of New York, which has a number of potential implications related to testing/assessment. **Richard Vosburgh** shares a number of innovative staffing techniques, in his Practitioners’ Ponderings for this issue, and in the Foundation Spotlight, **Nancy Tippins** gives an update on the Jeanneret Symposium. Finally, **Jeff Cucina** welcomes **Nathan Bowling** to the History Corner, for a look at the work of Robert Hopppock.

Our Features this issue are a diverse set of four (or seven, depending on how you’d like to label them!) papers. First, **Alexandra Zelin**, **Joy Oliver**, **Samantha Chau**, **Bethany Bynum**, **Gary Carter**, **Mark Poteet**, and **Dennis Doverspike** return with the latest in their series of “competencies” articles, this time focusing on I-O psychologists who work in government. **Tara Behrend** offers a light-hearted way to deal with having a paper rejected, using “Peer Review Haiku.” I will concede that my practice of writing limericks based on reviewer rejections is much less elegant than her haiku work.

Although the SIOP UN team consistently provides high-quality updates, this month their offering is a Feature in which they describe the UN’s Sustainable Development Goals and how I-O can contribute to them. The team (here, **Alexander Gloss**, **John Scott**, **Deborah Rupp**, **Lori Foster**, **Mathian Osicki**, **Lise Saari**, **Drew Mallory**, **English Sall**, **Doug Maynard**, **Ishbel McWha-Hermann**, **Mary O’Neill Berry**, and **Walter Reichman**) continues to do and report on incredibly important work.

Speaking of important work, if you've ever wondered which top-tier I-O journals tend to publish research with various types of samples, wonder no more! **Joel Nadler, Lynn Bartels, Samantha Naumann, Rosey Morr, Janna Locke, Megan Beurskens, Daniel Wilson, and Melissa Ginder** provide data based on a review of multiple years of top-tier I-O journals with an eye toward the types of samples represented and whether any discussion of the external validity of those samples was undertaken.

Bill Farmer, Terri Shapiro, Donna Sylvan, Lynda Zugec, and Virginia Whelan offer a great look at local I-O groups, featuring data based on a survey of SIOP members.

Also providing insights based on SIOP member feedback are Stephanie Payne, **Whitney Botsford Morgan, and Joseph Allen**, who share the results of a graduate program director survey about SIOP's Guidelines for Education and Training. As someone who teaches in a master's program, I found their results fascinating on a number of levels.

Then, **Kristen Shockley, Rebecca Bryant, Richard Landers, Joel Nadler, and Jeremiah McMillan** share the results from SIOP's 2015 Daily Feedback Study. We're definitely living in a data-rich world, and it's clear to me that SIOP knows what to do with that data!

In terms of other reports, then, **Sarah Frick, Jaclyn Martin, Sean Potter, Kimberly French, Danielle King, and SIOP's Scientific Affairs Committee** provide a toolkit and Q&A for I-O grad students interested in potentially applying for an NSF Graduate

Research Fellowship. They link to a slightly longer version of the toolkit information as part of the article, along with other resources. They've done a great job pulling this together, and I would encourage grad students to take advantage of this—and fast, because the deadline is looming!

With the Philadelphia conference only a few months behind us, it's already time to look ahead to next year's conference in Anaheim. This is exactly what we do, starting with an overview from **Scott Tonidandel and Eden King**, then moving to a piece on the preconference workshops from Emily Solberg.

Mark Poteet offers a number of updates from SIOP's Professional Practice Committee (you will be seeing MUCH more from them over coming issues!), and **Cole Napper** lets us know how the practitioner "speed mentoring" event went at this year's conference.

Looking a little outside SIOP and the SIOP conference, **Silvia Bonaccio, Margaret Beier, Angela Grotto, and Christopher Wiese** encourage us to attend the APS convention in Chicago next year, and Tara Behrend puts in a plug for the APA convention in Denver.

Then we wrap up with IOTAs (thank you, Lauren!), SIOP Members in the News courtesy of Clif Boutelle, and **Marianna Horn's** update on other conferences and meetings.

Which would, I think, be about it. Enjoy!

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Updated Submission Policy for *TIP*

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Opinions expressed are those of the writers and do not necessarily reflect the official position of the Society for Industrial and Organizational Psychology, the American Psychological Association, or the Association for Psychological Science, unless so stated.

Mission Statement: *The Industrial-Organizational Psychologist (TIP)* is an official publication of the Society for Industrial and Psychology, Inc., Division 14 of the American Psychological Association and an Organizational Affiliate of the Association for Psychological Science. The purpose of *TIP* is to provide news, reports, and noncommercial information related to the fundamental practice, science, and teaching issues in industrial and organizational psychology. *TIP* serves as a chief venue for communication with SIOP members and a forum for collegial discussion of trends in science, practice, and education.

Information for TIP Contributors:

Please read carefully before sending a submission.

TIP encourages submissions of papers addressing issues related to the practice, science, and/or teaching of industrial and organizational psychology. Preference is given to submissions that have broad appeal to SIOP members and are written to be understood by a diverse range of readers.

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Authors may correspond with the editor via e-mail, at mullins@xavier.edu. All manuscripts, articles, and news items for publication consideration should be submitted in electronic form (Word compatible) to the editor at the above e-mail address. For manuscripts and articles, the title page must contain a word count (up to 3,000 words) and the mailing address, phone number, and e-mail address of the author to whom communications about the manuscript should be directed. Submissions should be written according to the *Publication Manual of the American Psychological Association*, 6th edition.

All graphics (including color or black and white photos) should be sized close to finish print size, at least 300 dpi resolution, and saved in a common graphic format (e.g., TIF, EPS, JPG, or PDF).

Included with the submission should be a statement that the material has not been published and is not under consideration for publication elsewhere. It will be assumed that the listed authors have approved the manuscript.

Preparation of News and Reports, IOTAS, SIOP Members in the News, Obituaries
Items for these sections should be succinct and brief. Obituaries (up to 500 words) should include information about the person's involvement with SIOP and I-O psychology. Digital photos are welcome.

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Authors may correspond with the editor via e-mail, at mullins@xavier.edu. All letters to the editor for publication consideration should be submitted in electronic form (Word compatible) to the editor at the above e-mail address. Letters to the editor must contain a word count (up to 500 words) and the mailing address, phone number, and e-mail address of the author to whom communications about the letter should be directed. Submissions should be written in a manner that is consistent in all ways with SIOP's Statement and Guidelines on Professional Behavior (http://www.siop.org/professional_behavior.aspx).

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Every submission is reviewed and evaluated by the editor for conformity to the overall guidelines and suitability for *TIP*. All Feature article submissions are subject to peer review. Submissions well in advance of issue deadlines are appreciated. However, the editor reserves the right to determine the appropriate issue to publish an accepted submission. Letters to the editor or any related submissions may be subject

to additional review by a minimum of two *TIP* Editorial Board members and the Communications Portfolio officer as part of the review and selection process. Submissions requiring a response from SIOP Administrative Office staff, the Executive Board, or SIOP Committees will be considered for publication with a companion response when appropriate. Extra lead/review time beyond the deadlines noted below should be allowed if authors wish their letter to be published in a specific issue. All items published in *TIP* are copyrighted by SIOP.

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- July issue--April 24 deadline
- Oct. issue--July 24 deadline
- Jan. issue--Oct. 24 deadline
- April issue--Jan. 24 deadline

Columnists' articles:

- July issue--May 24 deadline
- Oct. issue--Aug. 24 deadline
- Jan. issue--Nov. 24 deadline
- April issue--Feb. 24 deadline

The SIOP Administrative Office

The executive director of the SIOP Administrative Office is David Nershi. Office hours are 8 am to 5 pm, Eastern Time. Phone, mail, e-mail, and fax are available around the clock. Address changes, corrections for all Society members and *TIP* subscribers, suggestions and comments about the homepage, and other business items should be directed to the following:

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Letter to the Editor



Dear Morrie,

It seems my final column of *The High Society* was the catalyst for pulling back the veil of misattributed author credit in all areas of scientific research. Following my lead, the August 10, 2015 issue of *The Wall Street Journal* further laid bare the problem. The issue of having outrageous numbers of coauthors is far worse than I initially surmised. The world record for the most authors of one journal article currently stands at 5,154. In 2014 almost 200 journal articles had over 1,000 coauthors. The practice of including over 1,000 collaborators in bulk is now known as “kilo authoring.” The dilemma of determining the serial position of so many authors was resolved by agreeing to list authors in alphabetical order. As a result of this practice, an expert in particle physics named Georges Aad now finds himself lead author on 458 journal articles. He has attained legendary status, as the citations within the text are referenced as “Aad et al., 2014.” It was reported that some scholars believed Dr. Aad was a fictional character given his seemingly unlimited capacity for research productivity.

But it gets much worse. Michigan State University mathematics professor Jack Hetherington coauthored articles with F. D. C. Willard. When people would request a reprint, Dr. Hetherington would sign his name and include a paw print. F. D. C. Willard was his Siamese cat. Shalosh B. Ekhad of Rutgers coauthored 32 papers with Doron Zeilberger. In fact Shalosh B. Ekhad is Hebrew for the model number of a personal computer used by Dr. Zeilberger. “The computer helps so much and so often,” noted Dr. Zeilberger. Immunologist Polly Matzinger coauthored a paper with Galadriel Milkwood in the *Journal of Experimental Medicine*. The editor of said journal was displeased to subsequently learn that Galadriel Milkwood was an Afghan hound. The 2010 winner of the Nobel Prize in physics, Sir Andre Geim, coauthored a journal article with H. A. M. S. ter Tisha. The latter was the pet hamster of the former. Apparently being a Nobel Prize laureate cuts you some slack, as the editor of the journal in question dismissed the incident as “not a harmful joke.”

When *TIP* scoops *The Wall Street Journal*, you had better believe that I-O psychology is the leader of all scientific disciplines. If you want to know what is the latest, read *TIP* first.

Paul Muchinsky



What Do You Hope to Contribute to Society? Integrating Science and Practice in Graduate Education

Imagine three graduates of an I-O psychology program. One manages a team of external consultants, one works as part of a HR team, and the other is a professor. These former colleagues often discuss their shared work interests, discovering that their unique experiences/expertise leaves them with conflicting ideas about how to approach various situations within I-O and that their particular area provides them with only a part of the bigger picture. In their discussions, the three individuals come to realize that their narrow focus reflects the limitations associated with the research–practice gap in I-O psychology.



**Jessica
Sorenson**

Although this anecdote may be simplistic, it illustrates the wealth of dynamic and engaging opportunities offered by industrial-organizational psychology in the areas of research and practice. It is, in part, due to the diversity of career options that graduate students are often asked if we plan to pursue a career in academia or industry; however, this question lacks a simple answer. Futures in both academia and practice are appealing, and we can identify the value that each contributes. Unfortunately, there seems to be limited opportunity to establish a foot in both camps. It is in light of this dilemma that we propose some reflections on how I-O psychology programs can structure graduate education, such that it prioritizes the contributions of both research and practice to enhancing society rather than furthering the distinction.



**Grace
Ewles**



**Thomas
Sasso**

The foundation for this article stems from the ongoing discussion of the gap between science and practice in I-O psychology (e.g., Cascio, 2008; Garman, 2011). With academics struggling to distribute their efforts across teaching, research, and service, and practitioners being inundated with information, limited by time constraints and the inaccessibility of peer-reviewed content (Garman, 2011), it is no wonder the research–practitioner gap continues to trouble I-O psychology. Cascio (2008) described various economic and organizational forces, such as intensely competitive global markets and improved/increased reliance on

University of Guelph

technology, which should drive science and practice together. However, the continued discussion of the gap (e.g., Gibby, McCance, Pusilo, Ducey, & Biga, 2014; Woodwork & MacMillan, 2014) provides evidence that those forces may be insufficient.

We propose that a greater integration of research and practice can be fostered through the new generation of I-O graduate students. By focusing on graduate training and skill development, we can nurture a deeper understanding of how both areas work together in order to establish the foundation necessary to narrow the gap over the long-term. As highlighted in TIP's recent feature articles on I-O competencies (Zelin et al., 2015a, 2015b, 2015c), many skills (e.g., communication, critical thinking, ethical behavior) are transferable across all work domains. It is our hope that in reading this column you will consider the capabilities possessed by graduate students to integrate science and practice in I-O psychology and the implications of this for creating exceedingly well-rounded and skilled I-O professionals. Similarly, greater consideration given to skill development in graduate education may facilitate more intersections of research and practice in future work due to the overlap of required competencies. This is not a daunting transition; rather, by changing the lens through which we view research and practice, we can modify current training programs and strengthen the future our field.

Graduate School Experiences

Graduate education often requires several components for the fulfillment of

a degree (e.g., thesis or major research paper, coursework, a practicum, etc.). Although some tasks readily dichotomize I-O psychology into science or practice, other tasks are more readily adept at integrating both areas. The following are recommendations intended to empower everyone to think about typical graduate experiences in ways that support the integration of research with practice. This is not an exhaustive list nor tested interventions; instead, we use this discussion as an illustration of creative options that can maximize the graduate experience. We encourage faculty and graduate students to work together to develop institutionally appropriate practices and practitioners to reach out to institutions to provide their unique expertise. In addition, program alumni who have gone into practice may be useful to introduce greater diversity of perspectives into degree content.

Often seen as the pinnacle of the graduate experience, the thesis or dissertation is an opportunity for students to make a theoretical and empirical contribution to our field. Ideally, this research will also have practical implications, reflected in the topic itself or in the application of the findings; however, focus on addressing gaps in the literature often leaves practical application as an afterthought. In this situation, graduate students are challenged with two issues pertaining to the research–practice gap: (a) creating a thesis topic that holds direct practical implications, and (b) effectively disseminating research findings. Although literature reviews often provide the foundation for a research question, some of the most applicable thesis or

dissertation topics have stemmed from discussions with experienced practitioners around the difficulties currently faced by organizations. This unique insight provides the connection between theory and practice, creating a more targeted research question with a clear societal impact.

In terms of disseminating research, the traditional means of publishing can take years and, as a result, are often disregarded by those pursuing a career in practice for more short-term gains. Unfortunately, this means that important findings may fall victim to the file drawer dilemma. To combat this, students are opting for other more nontraditional methods to convey important information to practitioners, such as publishing findings in magazines, blogs, or newspapers. Recently, a graduate from our program had their findings highlighted in an article for *Men's Health Magazine* (<http://www.menshealth.com/best-life/job-interview-anxiety-tips>), which allowed for widespread impact outside of the field of I-O. This discussion highlights the importance of two-way communication in building the bridge between research and practice, particularly in the creation and dissemination of graduate research.

In addition to a thesis or dissertation, coursework is another fundamental component of graduate training, providing functional knowledge and a theoretical understanding of complex issues. Although this aspect of graduate training clearly emphasizes academic development, there is also an opportunity to integrate practice in both the analysis and application of course material. One of the easiest

and most important ways of bridging the research–practice gap using coursework is through the meaningful discussion of the application of research findings. By integrating the analysis of the theoretical and empirical impact of research with the practicality of findings, students acquire a deeper understanding and appreciation of the material. Rather than viewing research as a means to its own end, the goal of an integrated course design is to utilize research to answer practical questions, which further stimulates empirical questions and discussion.

In addition to this critical analysis of material, there is also an opportunity to apply empirical knowledge to practical issues using student assessment. For example, a professor recently required students to identify a hypothetical organizational problem related to the course material and address it using empirical research to make practical recommendations. This alternative form of assessment allowed for a deeper understanding of the material while effectively addressing the research–practice gap. Similarly, other faculty members have made concerted efforts for students to apply course knowledge through the creation of tangible projects, such as developing a training program. These options create a lasting impact on student understanding and appreciation of practical research.

Although not a formal part of every graduate program, a practicum or internship provides students with an opportunity for hands-on experience in a practical setting. For many students, the research–practice

gap becomes evident in these environments as many organizations have limited access to current empirical research, whereas others fall suspect to the mantra “we know best.” For I-O graduate students, this becomes the perfect opportunity to address the research–practice gap outside of academia. By sharing our skills, engaging in knowledge translation, and discussing the applicability of research findings, we can help inform practitioners while learning more about the constraints faced by organizations. This exposure provides a deeper understanding and appreciation of both research and practice and the limitations of each when acting in isolation.

If graduate programs lack a formal practicum or internship requirement, students may opt to engage in volunteerism or service with not-for-profits or nongovernmental organizations. Work may involve anything from pro-bono consulting to service on a board of directors; and much like a practicum or internship, this experience offers valuable opportunities to help bridge the research–practice gap. For example, these organizations often require volunteers to have personal contact with the work conducted, providing graduate students with first-hand experience with organizational operation and functioning. In return, graduate students are encouraged to bring their unique skills and knowledge, including critical and creative thinking, complex communication, and professional and ethical behaviour. Through these experiences, graduate students are able to apply their knowledge and skills while gaining an appreciation for diverse work contexts.

In conclusion, the new generation of I-O graduate students has the potential to narrow the research–practice gap. Through graduate training, there is the opportunity to further integrate research and practice, thus providing a more well-rounded graduate experience. By changing the lens through which we view this issue, and with the support of graduate professors, programs, and current practitioners, graduate students can and will integrate research and practice throughout their careers. With this, we turn to the typical question that graduate students are asked: Do you hope to pursue practice or academia? We propose a more engaging and meaningful question: What contribution do you hope to make to society integrating I-O psychology’s academic and practical components? How would the current columnists respond to this question?

I hope to have a measurable influence on employees’ interactions with organizations’ programs, policies, and processes, especially in the realms of selection, training, and succession management with quality research informing evidence-based practices. Jessica Sorenson

My goal as an I-O psychologist will be to help foster an ongoing dialogue between research and practice. Only then will we as a profession be able to use evidence-based best practices to support all aspects of organizational decision making and fulfill our obligations as research-oriented practitioners.

Grace Ewles

At the end of my career, I want to know that I meaningfully helped make the world better for those who face systemic inequity, institutionalized marginalization, and barriers of oppression and stigma. I want to have fostered greater interdisciplinary work and more community-based practices irrespective of being in academia or a more practical field. Thomas Sasso

Upcoming Column

As we embark on our new role as columnists we hope to present each TIP-TOPics with reflections, insights, and advice that come from our own experiences and empirical evidence. Our next column will be devoted to discussing how to make the most out of SIOP conference attendance. We will draw from our own experience, the experiences of our colleagues, and questions posed by our junior columnist. The column will cover a breadth of tips and tricks for making the most of your conference attendance and will uniquely address networking advice relevant to the SIOP conference.

To correspond with the authors about current or upcoming topics, please email jsorenso@uoguelph.ca. We would like to thank the selection committee for allowing us the opportunity to be writing TIP-TOPics, and we look forward to interacting with its readers!

TIP-TOPics Columnists

Jessica Sorenson is a master's student working with **Dr. Peter Hausdorf** on the influence of high potential identification

on employees' leadership behaviors. Her interests include organizations' selection processes, training, and succession management programs. Jessica has experience researching the influence of banding on selection outcomes, developing an organizational performance pipeline, and creating and facilitating employee training sessions.

Grace Ewles is a PhD student supervised by Dr. Peter Hausdorf. Her current research focuses on the role of social support in the adjustment to trauma experienced at work. In addition to her research, Grace has extensive consulting experience and recently completed an internship with an HR research and advisory firm based in Toronto. Grace is passionate about making a positive impact on the workplace through improved individual and organizational functioning.

Thomas Sasso is a PhD candidate working with Dr. Gloria Gonzalez-Morales on the experiences of LGBTQ employees. Co-founder of the Sexual and Gender Diversity Research Lab at the University of Guelph and co-chair of the research subcommittee of SIOP's LGBT committee, Thomas has dedicated his focus to community-based research, inclusive approaches to education and practice, and creating space for marginalized voices in research.

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The SIOP LGBT Committee: Our History and Current Goals

As one of our goals for the year, the SIOP LGBT committee will have a standing column in TIP in order to provide a space for discussing pressing LGBT employment issues and the implications of these issues for research and practice. However, for our first column, we thought that it might be best to provide some more information about the committee in general, as well as our goals for this year. We feel that it is important for us to spread awareness of LGBT issues within SIOP, but it is also important for the SIOP membership to be aware of our activities and to be able to engage with the committee personally if possible. For this reason, we will first provide the committee's history as a backdrop for this year's goals and activities. We will then outline what each subcommittee aims to do this year in order to align with our goals and objectives as a committee. Finally, we will provide information about exciting ways SIOP members can get involved with the committee so that those who share our passion for activism and equality can become further engaged with these principles.

History

The SIOP LGBT group first started as an ad hoc committee in 2003 with the purpose of encouraging research on LGBT issues and promoting an LGBT voice within SIOP and other organizations. Since then, the group's mission has evolved throughout the years in several ways.

First, within SIOP, the committee has made an impact at our annual conference. The group has submitted several papers and symposia to SIOP, increased connections with allies at events and meetings, and promoted a research award for LGBT workplace research. Each year, the LGBT Committee selects one LGBT-focused paper presented at the SIOP conference to receive the LGBT Research Award. Under the coordination of the Programs/Awards subcommittee chair, all eligible papers are sent out for blind review to experts in the field, systematically scored, and then tallied by the subcommittee chair to determine the winner. Further, each year, the SIOP LGBT

committee hosts several different types of events open to all members at the annual conference, from networking mixers and dinners to academic symposia and our annual meeting.

To some extent, all SIOOP subcommittees are dealing with the same underlying issues of how to measure and unify the diverse talents and abilities of employees with varying skill sets, perspectives, formative experiences, and identities. The LGBT committee works to not only pursue this goal within the LGBT community but to illustrate how research in this area can illuminate and enhance theory and practice in other areas as well. One of the more monumental accomplishments came for the group in 2012 when the committee drafted a policy statement—SIOOP’s first ever—to support the prohibition of discrimination in the workplace.

The SIOOP LGBT committee has also successfully worked with several organizations. Since 2011, different members of the committee have hosted well-received symposia at the Out & Equal conference, where the members share best practices with professionals and connect with organizations to help bridge professional practice with research contributions. Other ways that the group has reached out is through a commitment to community service. In 2011, at the 26th annual meeting in Chicago, IL, members of the committee worked together with the Night Ministry, a youth ministry that reaches out to the homeless LGBT youth in Chicago. Members of the committee gave career counseling on topics like resumé writing, interview

etiquette, social media best practices, and how to pursue college education. Each year the committee researches the surrounding area of the site of the next SIOOP conference to identify future service opportunities.

Subcommittee Goals

For this year, the committee hopes to continue to grow and expand on the successes of previous years. We have divided the committee into four subcommittees, each with its own chair. These subcommittees are: Programs/Awards, Practice, Research, and Communications. Below we will list the short-term and long-term goals of each subcommittee for this year. Katina Sawyer (Committee Chair) will oversee the efforts of each of these subcommittees to ensure that they work together to broadly achieve the goals of the committee as a whole.

Programs/Awards (Chair: Kristen Jones)



The Programs/Awards subcommittee hopes to continue strengthening SIOOP LGBT’s presence within the SIOOP conference program through collaborations with CEMA and other related committees, by scheduling social events and networking opportunities at the Annual Conference, and by encouraging new LGBT research through awards and scholarships. For the upcoming conference in Anaheim, the subcommittee is hoping to organize a SIOOP session in collaboration with CEMA focused on allyship in the public sphere and to organize an opportunity for LGBT researchers and

allies within SIOP to engage in community service for the local LGBT community. We will also be planning a dinner for those engaged in LGBT research and practice within SIOP, a business meeting to discuss important issues to be tackled by the SIOP LGBT Committee, and a reception at which the LGBT Research Award will be presented. Because most of this committee's efforts surround planning for SIOP, its goals primarily fall into the "short-term" category. However, we hope that these events will engage members of SIOP so that there is greater engagement with the committee in the long term.

Practice (Chair: Kenneth Matos)



In the long term, the practice subcommittee seeks to establish the relevance of LGBT issues and related theory and research to the general practice of I-O psychology. Another long-term goal of the practice subcommittee is to identify refinements to existing best practices, in order to be inclusive of all people, utilizing insights gained from working with LGBT populations. In the short term, the practice subcommittee is seeking to engage with organizations that sponsor or are interested in sponsoring LGBT employee resource groups (ERGs) to identify the needs and best practices of these groups around promoting, measuring, and providing value to their organizations. With this information, the committee will construct a literature review tailored for practitioners interested in sponsoring or leading such groups, describing how to (a) make the business case for an ERG's

formation, including existing research on the past achievements of such groups; (b) set up and organize such a group based on a multifaceted value proposition and long-term contributions to the organization; and (c) measure and present the value of existing LGBT ERGs. It is the hope of the committee that these efforts provide a greater impact for the LGBT research that is being conducted by SIOP members. We also hope that this provides an externally facing product, which is useful to organizations and encourages engagement with SIOP members as research partners.

Research (Co-Chairs: Thomas Sasso and Christian Thoroughgood)



In the long-term, the research committee is seeking to establish a community of I-O researchers who prioritize sexual orientation and gender identity within their work. This community will serve multiple purposes. For example, it will provide support to other researchers who engage in research inclusive of, or dedicated to, LGBT populations and create mentorship opportunities for graduate students and early career professionals. This is particularly important because many individuals have not otherwise been exposed to training with these populations in mind. Another goal is to create a standard of excellence for researchers and journals to adhere to in relation to LGBT research.

We must prioritize high quality and ethical research regarding the LGBT communities. Through this established community of researchers, we hope to improve the quality of LGBT research agendas in I-O, foster more collaboration within our discipline and beyond, and improve the abilities of individuals engaging in this work. We also seek to engage in capacity building of LGBT identified researchers and the inclusion of ally researchers participating in this work. The short-term goals of the research committee are taking specific steps to make progress on achieving our long-term goals. We are reaching out to other APA divisions that have LGBT related committees or special interest groups in order to collaborate on initiatives and support each other in our work. In particular, we hope to develop greater relations with Division 44 (the Society for the Psychological Study of Lesbian, Gay, Bisexual, and Transgender Issues) and Division 35 (Society for the Psychology of Women). More locally, our committee is seeking to directly engage with our researchers at the annual conference and find ways to bring researchers together to establish strategic directions and priorities for the I-O field in relation to LGBT issues. Specifically we want to encourage methods for greater knowledge translation of our I-O LGBT research to practitioners and our priority populations. The work of this subcommittee will contribute to creating a greater sense of community for LGBT researchers, which will foster greater likelihood for collaboration and a higher standard of quality in the research currently being conducted.

Communications (Co-Chairs: Craig Russell and Steve Discont)



The SIOP LGBT communications subcommittee has a number of ambitious goals for the next year and beyond. Most of these goals involve reaching out to develop ongoing relationships with other subcommittees, as well as to promote the sharing of information about I-O research and practice on queer issues with various constituencies and stakeholders. The primary target of these communications will be SIOP members with interests in queer I-O issues, with the goal of growing member interests in this emerging I-O arena. We have also identified APA's Division 44 (Society for the Psychological Study of Lesbian, Gay, Bisexual, and Transgender Issues) and the Academy of Management Gender & Diversity in Organizations Division as potential targets for collaborative outreach (with hopes of generating joint SIOP program contributions). We welcome any other suggestions SIOP members might have about other sexual orientation or gender identity constituencies to whom we can reach out. In addition to message content, a lot of the communications subcommittee's effort will focus on communication media including development of a digital newsletter, contributions to the ongoing *TIP* LGTBQ column, and the creation of a web site for regularly disseminating committee-relevant information. Finally,

the subcommittee hopes to significantly improve SIOP's LGBT committee's digital footprint through improving its social media presence through popular avenues such as Twitter and Facebook. Overall, we hope that this committee will work toward engaging members in our efforts by providing information about ongoing activities and the impact of those activities, as well as by promoting our committee outside of SIOP, in order to create greater ties with the community.

Conclusion

In all, we will strive for excellence within the coming year in order to add positively to our committee's wonderful and long-standing history. We hope that we have

provided a set of short and long-term goals that is amenable to the larger SIOP membership. Any suggestions for ways to add to these goals are welcome! Individuals interested in getting involved can join our committee through MySIOP or email Katina Sawyer (katina.sawyer@villanova.edu) to share your their thoughts. We hope to see many of you at our events in Anaheim, and we look forward to sharing more about the work of our committee as well as insights regarding important issues facing the LGBT community at this time through our standing column. We thank all of you for your continued support this year, and we will do all we can to serve the SIOP LGBT community, along with its allies, with pride this year.

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Key Practitioner Issues and Recommendations for Future SIOP Action

From 2008 to 2015, Rob Silzer, Chad Parson, **Rich Cober**, **Anna Erickson**, and others have written a series of articles in *TIP* covering a broad range of professional and practice issues in industrial-organizational psychology (see references 1-32). We have worked to collect data that are relevant to contemporary issues in I-O psychology and that reflect the views and interests of I-O psychology practitioners. We believe we have had some impact on how the profession and SIOP understand and address the needs and interests of practitioner members.

This is the final article in our series of 30 data-based articles and reports (2008–2015). In this article we summarize some remaining specific topics continuing from our last article (32):

- **Communication, publication and promotion issues**
- **Science practice gap issues**
- **Future directions for I-O psychology**

Then we conclude with

- **Ten critical issues** for I-O psychology practice and practitioners
- **Targeted recommendations** for action steps SIOP can take to address these issues

Communication, Publication, and Promotion Issues

Over the years there has been increasing interest by members and SIOP in communicating about our profession, our practice, and our research to both members and other outside groups. Although a number of communication initiatives have been started, we focus on the areas that were topics in our past articles. We briefly summarize conclusions from past articles related to SIOP books, I-O journals, the Leading Edge Consortium, and promoting I-O psychology.



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SIOP Books

- Since 1986 SIOP has supported the publication of over 70 books in the Professional Practice (PP) and the Organizational Frontiers (OF) Book Series published by five different book publishers (ref 29).
- Of the books still in print, the PP books are far outselling the OF books. Across all time the top selling titles are:
 - PP Series: *Strategy Driven Talent Management, Performance Management, Performance Appraisal, Organizational Surveys*
 - OF Series: *Diagnosis for Organization Change, Career Development in Organizations* (these as well as the other top selling OF books are all out of print and no longer available)
- Of the top 12 royalty producing books, 11 were in PP series. Three editors were responsible for 63% of royalties from this list of 12 most profitable books (Silzer 24%, Smither 23%, Kraut 16%). Eleven book editors were responsible for 57% of total SIOP books sales across both series. For example, Kraut, Smither, Silzer, and Howard all have multiple best-selling books. Given how much of the royalties produced by SIOP books came from the PP series, it is clear that practitioner authors bring substantial added value to SIOP's publications.
- On average PP books have sold more copies per book than OF books (2,303 vs. 1,762) and have greater total royalties and 70% higher average royalties per book than OF books.
- PP series book editors reflect a bal-

anced representation of practitioners (49%) and academics/researchers (48%), whereas the book editors for the OF series are 95% academics/researchers. This has also been true for editorial board members in both book series.

- The book series have been successful in communicating I-O psychology expertise and knowledge, in raising the visibility of the profession in organizations and universities, in supporting SIOP members in their publishing efforts, and in delivering royalty revenue to SIOP.

I-O Psychology Journal Issues

- For both *JAP* and *Personnel Psychology* there is almost no practitioner representation on the editorial boards (up to 98% academics /researchers) or among first authors (up to 94% academics/researchers) (18).
- For its first 4 years of publication the *IOP* journal (published by SIOP), the editorial board was 73% academics/researchers and 82% of the first authors for all focal articles were also academics/researchers.
- For the *IOP* journal the overwhelming majority of commentaries (73%) have been written by academics/researcher coauthors. However, there is a noticeably higher frequency of practitioner-only commentary coauthors (41%) when the first author of the focal article is a practitioner. The most practitioner commentaries were for focal articles on employee surveys, individual psychological assessment, proctored testing, executive selection, and high potential talent.

- There is a clear and consistent trend for the editorial boards and first authors on journal articles to be primarily, and sometimes overwhelmingly, academics/researchers (18). What responsibility do the journals, journal editors, and editorial boards have for representing the full field of I-O psychology?

Leading Edge Consortium

- The Leading Edge Consortium was initiated in 2005 to provide additional support and development for I-O psychology practitioners and to address leading issues in the field. For the last 10 years the LEC has had a mixed history. In some years it attracts 200 participants and delivers significant revenues to SIOP, but in other years the full-fee paid participant registration dropped to 34 and 56 participants, which resulted in significant financial losses for SIOP (27).
- The most well attended LEC topics were Executive Talent (2005), Talent Management (2006), Building Leaders (2013). The top rated LECs were Building Leaders (2013), Executive Talent (2005), Talent Management (2006). The least popular LECs and those with the greatest financial losses were Innovation (2007), High Performance Teams (2010), Virtual Workforce (2011), and Environmental Sustainability (2012).
- In the 4 years where LEC chairs were mostly practitioners (nonresearch consultants and professionals in organizations), there were an average of 169 full-fee registrants, and every

LEC had a revenue gain (total revenue of +\$86K). In the 4 years where the LEC chairs were mostly academics and researchers, there were on average 82 full fee registrants and every LEC had a revenue loss (for a total revenue loss of \$63K). A researcher has been appointed chair the last several years.

Promoting I-O Psychology (6)

I-O practitioners highly value efforts to support and promote I-O psychology, particularly among business leaders (6). They indicate that they place the most value on “positioning SIOP as the leading source of organizational psychology work and thinking to the business community.” The Practitioner Survey results (1) indicate they support SIOP’s branding of the profession, promoting our expertise within the business community, and increasing publicity for the work that we do. They also support:

- Defining the domain of I-O psychology
- Putting greater emphasis on practice and practical research applications
- Bridging the science–practice gap
- Clarifying standards for I-O practice and aggressively defending I-O areas
- Addressing licensure issues
- Educating the public on I-O topics
- Raising the profile of I-O psychology through marketing activities

Science–Practice Gap Issues

For many years the existence of a science–practice gap in the field of I-O psychology has been discussed and debated (7, 8, 11).

- The results of the Practitioner Needs Survey (1) suggest that survey respondents thought that I-O practice was ahead of research in 14 out of 26 I-O psychology content areas. These areas include consulting, coaching, strategic planning, organizational development, succession/workforce planning, talent management, employment branding, and employee relations. Research was seen as ahead of practice in only two areas: measurement and statistics, and job/work analysis.
- Interviews with 12 senior SIOP members suggest little surprise about the survey results and the existence of a science–practice gap. They note that the content domains and interests of academics/researchers and practitioners are very different, as are the reward systems. Several reasons were identified for why the gap exists. They include:
 - Different reward systems for scientists and practitioners
 - Normal evolution as I-O psychology evolves and innovates in practice; new areas will emerge for our science to investigate
 - Limited organizational resources to pursue solutions that require strict adherence to research principles.
 - Organizations may be unwilling to pay for research interventions and solutions
 - Lack of relevance of research findings to I-O practice
 - Science is too hard to apply
 - Insufficient time or motivation by researchers to focus on practice issues

- Insufficient time or motivation by practitioners to pursue relevant research

Future Directions for I-O Psychology

Over the years these articles have extensively discussed how I-O psychology is changing and the future direction of the field (12, 13, 14, 15, 22). For example, many academics worry about the migration of I-O psychology faculty to business schools, whereas practitioners worry about consulting competition from other fields outside of psychology.

A survey of 50 leading I-O psychologists found some common views on the evolving trends for I-O psychology (12, 13).

- Ongoing concern about the integration versus divergence of I-O research and I-O practice
- Potential irrelevance and splintering of the field
- Perceived threat and competition to our field from professionals in other fields
- Possible integration and incorporation into other fields
- Migration of faculty and graduate programs to business schools
- Increasing focus on individual psychology and talent management
- Diverging professional interests between a focus on individuals/talent and a focus on organizations
- Need to be more relevant and useful to business clients and organizations
- Increasing impact of technology, globalization, and economic conditions
- Opportunity to leverage a data-driven and research-based approach for the

benefit of individuals and organizations

- Evolving professional identity, roles, and careers of I-O psychologists
- Increasing demand for demonstrating the ROI of our contributions

A lengthy list of recommendations on what I-O psychologists can do and what SIOP can do to address these issues can be found in earlier articles (13, 14) and will not be repeated here. However, we have advocated that there has been a difference between our professional ambitions of what we should be doing and what SIOP has accomplished.

A core question is whether I-O psychologists and SIOP are prepared to address these emerging changes and proactively shape the future of our field, or whether we will just passively stand by as the world shapes us. *Our perspective is that we need to be proactive and actively shape the future of I-O Psychology and our impact on individuals and organizations.*

Critical Issues for I-O Practice and Practitioners; Recommendations for Next Steps

Our objective in writing these articles was to better understand and represent I-O psychology practice and practitioners. We have provided a wealth of data and ideas to address this objective. Every article has included significant insights and action recommendations. In looking back over the last 8 years we think a focused set of critical issues emerges that are important to I-O practitioners.

We do recognize that SIOP has made some progress in the last 8 years in taking steps to address practitioner issues. Examples of these initiatives include:

- Practitioner mentoring sessions at the SIOP conference
- Leading Edge Consortium, recently reset to refocus again on I-O practice
- *Industrial and Organizational Psychology: Perspectives on Science and Practice* journal
- The SIOP Science for SHRM series
- The SIOP Exchange, for online information sharing and dialogue
- Electronic EBSCO research access to the literature database
- Practitioner Careers Study (see recent *TIP* issues)
- Practitioner Needs Survey 2014 readministration
- Practitioner Reviewer database
- Webinars project
- Business acumen competency model

In an effort to provide an overall picture based on the data we have collected and discussed, we have outlined 10 critical issues that I-O psychology practitioners have identified:

1. Low practitioner satisfaction with SIOP
2. Fair treatment and representation in SIOP
3. Influence and engagement in SIOP
4. Recognition of practitioner contributions
5. Professional development
6. Practice support and career development

7. Communication publications for I-O practice
8. Research on practice issues to close science–practice gap
9. Networking with professional colleagues
10. Promoting I-O psychology

1. Low Practitioner Satisfaction With SIOP

The results of the 2008 Practitioner Needs Survey (1) were certainly eye opening, none more so than the low satisfaction with SIOP ratings by practitioners. Of 12 “Satisfaction with SIOP” questions, full-time practitioners gave average ratings below 3.0 (on a 1–5 satisfaction rating scale) on eight of the questions. The ratings for the remaining questions were barely over 3.0. Overall these satisfaction ratings are low, and frankly, had these organizational satisfaction ratings occurred in any business organization, someone would have had to answer for them.

The areas in which practitioners were the *most dissatisfied with SIOP in 2008* (average satisfaction ratings below 3.0) (1) were:

- Recognition of practitioners for Fellow status
- Recognition of practitioners for contributions to I-O practice
- Opportunity for practitioners to influence SIOP decisions and future direction
- SIOP leadership understanding of key practice issues
- SIOP support for advancing your I-O practice career
- SIOP support for practitioners who want to get licensed (test prep, etc.)

- SIOP support for practice-oriented research and projects
- Providing a clear vision of the future of I-O psychology and practice

In 2015 the Practitioner Needs Survey was readministered using the same satisfaction questions as the 2008 survey. Some of the survey results were recently published in *TIP* (33). We thought it would be useful to compare the 2008 and 2015 practitioner satisfaction ratings to see if there have been any changes in the satisfaction level of practitioners with SIOP. The 2008 ratings are from full-time practitioners ($n = 612$) who report spending 70% or more of their work time as a practitioner (1, 3). The 2015 ratings are from survey respondents who reported being associated with three practitioner work settings: private sector, independent, and consulting ($n = 299$) (33).

The results suggest that at best there has been very little change in practitioner satisfaction with SIOP (see Table 1). *However, in some key areas the satisfaction ratings actually went down.* Given that the 2008 ratings reflected a good deal of dissatisfaction, it is very troubling that Practitioners may be even more dissatisfied 7 years later. The 2015 satisfaction ratings were on average *below a 3.0 rating* for seven areas.

- Recognition of practitioners for Fellow status
- Recognition of practitioners for contributions to I-O practice
- Opportunity for practitioners to influence SIOP decisions and future direction
- SIOP leadership understanding of key practice issues

Table 1

Practitioner Satisfaction Ratings With SIOP, 2008 and 2015

	2008 Practitioner satisfaction rating (1-5)*	2015 Practitioner satisfaction rating (1-5)**	Change from 2008 to 2015***
Recognition of practitioners for Fellow status	2.93	2.77	↓
Recognition of practitioners for contributions to I-O practice	2.99	2.73	↓
Opportunity for practitioners to influence SIOP decisions and future	2.89	2.82	=
Opportunity to elect I-O practitioners to SIOP Executive Board positions	3.14	3.04	↓
SIOP leadership understanding of key practice issues	2.85	2.85	=
SIOP efforts in advancing and promoting I-O practice	3.01	3.04	=
Efforts to make SIOP the “first choice” organization for I-O practitioners	3.34	3.43	=
SIOP support for advancing your I-O practice career	2.77	2.76	=
SIOP support for practitioners who want to get licensed (test prep, etc.)	2.57	2.5	=
SIOP support for practice-oriented research and projects	2.85	2.85	=
SIOP opportunities for professional networking	3.04	3.4	↑
Providing a clear vision of the future of I-O psychology and practice	2.89	3.05	↑
Average satisfaction ratings across 12 areas	2.939	2.936	=

*From 2008 SIOP Practitioner Needs Survey. Based on satisfaction ratings for full-time practitioners who report spending 70% or more of work time as a practitioner (n = 612)

**From 2015 SIOP Practitioner Needs Survey. Based on an average of the satisfaction ratings from respondents in three practitioner work settings – private sector, independent and consulting (n = 299).

***Change between 2008 and 2015 practitioner satisfaction ratings on the same questions. All ratings changes of 0.1 or more were indicated as a change.

- SIOP support for advancing your I-O practice career
- SIOP support for practitioners who want to get licensed
- SIOP support for practice-oriented research and projects

It seems pretty clear that not much has changed in practitioners’ satisfaction with SIOP. Although the Professional Practice committee has launched various initiatives over the last 7 years, the satisfaction ratings have not changed. We think that may be

the result of a lack of any fundamental changes in how SIOP supports practitioners and I-O practice. When the 2008 survey results were published, the SIOP president at the time (an academic) refused to even review the results or share them with the Executive Board. Over the years the continued overrepresentation of academics/researchers on the SIOP Executive Board and in SIOP appointments has allowed SIOP to hold on to the biased status quo and the ongoing unequal treatment and support of practitioners. *These low satisfaction ratings confirm that little has changed.*

Recommendations

Nothing in SIOP will change until practitioners are given equal roles in organizational decision making. Their significant underrepresentation only serves to perpetuate the two class system of membership in SIOP. More programs are not the solution; there needs to be a fundamental change in the attitudes of the SIOP leadership. SIOP leaders need to take the widespread practitioner dissatisfaction seriously and fully commit to addressing it.

1. Develop and implement a major practitioner strategic plan that will describe and directly address areas of practitioner member dissatisfaction. A high level practitioner advisory group should be appointed (made up entirely of I-O practitioners who have not previously held any SIOP elected office). The group should be given the authority to look out for practitioner needs and concerns in SIOP and to make corrective action recommendations to address key issues.

2. Ensure that practitioner members are equitably represented on the Executive Board, Fellow designations, SIOP awards, and SIOP appointments. This means that **50% of all positions and opportunities, awards, appointments, and so forth** need to go to practitioners (with academics/researchers given the other 50%).
3. There needs to be a major attitude change in SIOP leadership whereby the high-quality contributions and work of I-O practitioners are given the same recognition as the work of the researchers/academics. This may require a major intervention at the leadership level to implement this attitude change.

2. Fair Treatment and Representation in SIOP

In many of our *TIP* articles we have thoroughly documented the lack of fair treatment and representation for practitioners in SIOP. As in any organization, significant changes rarely happen without the support of the leadership. In SIOP the leadership needs to take personal responsibility for serving the interests and needs of SIOP members who are I-O practitioners. This change is unlikely to happen until we change the mix of members who are in leadership positions.

Recommendations

1. Require that the president elect alternate between a practitioner and an academic/researcher every other year. That would mean that the role will be filled by a practitioner 50% of the time.

This should also be the rule for other key roles such as Foundation Board Chair, Conference Program Chair, and so on.

2. Require that 50% of all positions on the SIOP Executive Board be filled with practitioners.
3. Ensure that 50% of all key appointments, awards, Fellow designations, committee chairs, and so forth, be given to practitioners. For too many years various boards and committees have gotten away with little or no practitioner representation (such as the SIOP Foundation Board and the Organizational Frontiers Editorial Board)

3. Influence and Engagement in SIOP

Over the years many SIOP decisions seem to be made from an academic/researcher perspective. Frequently when asked about this SIOP leaders would say that they did not intentionally mean to ignore practitioners but they are just “not well informed about practice” or “do not know what to do.” In our view any SIOP leader has the responsibility to fully represent all SIOP members. We need organizational leaders in SIOP who have a true commitment to all members.

Recommendations

1. Require that all candidates for major leadership roles describe their leadership experience. Develop a list of leadership competencies that are critical to being an effective SIOP leader and expect all candidates to outline their relevant skills and experience. We expect this from our organizational cli-

ents, and we should expect the same of SIOP leadership candidates.

2. Develop and initiate a *SIOP Leadership Program* for a select and limited number of members. The purpose would be to develop leadership skills in our members and also to identify individuals who have leadership skills. At least half of the participants need to be practitioners. The leaders of the program should be qualified leadership trainers from the SIOP membership.
3. All SIOP leaders in decision-making roles need to embrace the idea of full and equitable inclusion of practitioners within SIOP and take responsibility for recognizing, engaging, rewarding, and appointing I-O practitioners. Leaders in SIOP should represent all members and not just their own personal network.

4. Recognition of Practitioner Contributions

Our profession has a long history of rewarding journal publications and citations by members, even when the research turns out to be of minor importance. SIOP has given little attention to the significant impact and results that practitioners are producing in organizations. They are changing the world one organization at a time. SIOP needs to identify, value, and reward major organizational accomplishments by practitioners.

Recommendations

1. Develop clear guidelines for identifying and valuing the professional contributions of I-O practitioners. Communicate the guidelines to SIOP membership and encourage SIOP leadership

- to better understand and support outstanding practitioner contribution in areas such as innovative program development and implementation, organizational initiatives, organizational impact, contributions to business, leadership on HR issues, and so on.
2. Require that *50% of all SIOP awards be given to practitioners*. This may require the establishment of at least two new awards focused on practitioner contributions to the field.
 3. Make the SIOP Fellow requirements and decisions more transparent to SIOP membership. Revisit and revise the set of professional contribution standards to make fully appropriate to practice. Require that at least 50% of new Fellow designations each year be awarded to practitioners.

5. Professional Development

Current graduate programs in I-O psychology have been very slow to educate I-O doctoral students on practice-related skills and knowledge despite the significant growth in practice career positions in our field. A small group of graduates might be fortunate to get some training on these skills and knowledge if they join a large consulting firm. However, most graduates interested in I-O practice careers are poorly prepared for them. Members in independent practice are often at a greatest disadvantage. Because most I-O psychology graduate programs do not accept this responsibility, SIOP needs to step in and provide the foundational education and development for members interested in practice careers.

Recommendations

1. SIOP should initiate a Practitioner Early Career Educational Program (PECEP). This would be a series of training modules or even courses that cover the skills and knowledge that practitioners need to be successful and that are not taught in graduate program. Topics could include coaching skills, individual psychological assessment, organizational surveys, consulting skills, organizational assessment, ethical challenges, organizational development, and so on. It would be limited to a set number of participants (and full SIOP members) in each cohort who pay program fees. It would be like an Executive MBA for early career I-O practitioners.
2. Further develop SIOP as *the central and well-organized portal* for the knowledge base on I-O practice. This would involve a members-only database of I-O practice topics and include key articles, key practices, key conference presentations, key reference lists, summaries and updates on relevant practice and research, and so forth, all organized around practice topics.
3. SIOP should conduct an annual professional development survey of practitioners on topics that are critical to their practice. The survey results should be used to inform and guide SIOP workshops, SIOP books, special conference sessions, and other training and development efforts and current interests and needs of I-O practitioner members.

6. Practice Support and Career Development

I-O practitioners often suggest that SIOP has little understanding of their professional needs and provides little support to I-O practice careers. The recent Career Study reported in the last four *TIP* issues is an important step toward better understanding I-O careers. But SIOP now needs to act on that data and propose some initiatives that are targeted to members at different career stages.

Recommendations

1. SIOP should organize two half-day consortia just prior to each annual conference that focus on the training and development needs of early- and mid-career I-O practitioners. The participants would be screened and limited, and the programs would include short talks on critical current practice issues, brief training on new skills of tools, and a networking exercise. SIOP needs to be central in providing these career development opportunities and exchanges
2. Senior I-O practitioners should be recruited to lead a 2-day practitioner development program (PDP) that involves assessing participants' practitioner skills and creating a practitioner development plan for each participant. It might have an assessment day and a feedback and planning day, and help participants become more self-aware of their own skills and development needs. This program could be portable and offered in various locations.

7. Communications and Publications for Practice

Over the years there has been a rising need for better communications among I-O practitioners. Numerous members have encouraged the SIOP leadership to initiate an I-O practitioner journal in SIOP. Even a quarterly practitioner newsletter would help practitioners stay up to date on practice issues and advances. This is particularly critical as practitioners are significantly underrepresented on journal editorial boards, and the practitioners who were on these boards were replaced by academics/researchers. Even the relatively new *IOP* journal by SIOP is starting to be dominated by the academics/researchers. It is welcome news that a practitioner has just been appointed the new *IOP* journal editor but a full journal for I-O practice is greatly needed.

Recommendations

1. SIOP should start a professional journal for I-O practice. This is a long overdue and highly needed publication.
2. Every effort needs to be made to ensure that the Professional Practice book series, the LEC conferences, and the SIOP workshops are closely aligned with the current interests and needs of I-O practitioners. In the past some of these SIOP efforts have been taken over by researchers/academics who do not know how to serve the professional needs and interests of I-O practitioner members. This may be where a SIOP Practice Advisory Group can be formed to oversee and screen these activities for relevance to practice.

3. SIOP should require that practitioners be fully represented (50%) for all SIOP editorial boards (i.e., Organizational Frontiers Board, Professional Practice Board, *IOP* journal board, *TIP* board, etc.)

8. Research on Practice to Close the Science–Practice Gap

Over the years the science–practice gap (or is it the practice–science gap?) had been frequently discussed and debated. Academics who have studied these gaps in other fields have indicated that almost always find that practice is lagging the science (although all those surveys were done by researchers). They were surprised to hear that in I-O psychology, often it is practice that is ahead of the research (1). However, some I-O psychologists are not surprised by this finding and suggest that, “if the science in our field is to matter, then the key questions should be dictated by problems encountered in practice, and practice should be driving science.” As one member stated, “SIOP needs to value the partnership between scientists and practitioners, and not value each separately. We are two halves to the same whole.”

Recommendations

1. SIOP should take steps to encourage practitioner–researcher interactions at the annual SIOP conference. This might mean requiring that a researcher be a discussant for all practice oriented conference sessions and that a practitioner be the discussant in all research/academic sessions. All conference submissions may need to include
2. All journal articles should be required to include both a research literature review and a practice relevance section. This should start with all current SIOP journals, publications and books. In addition SIOP should actively work to influence other I-O journals, such as *JAP* and *Personnel Psychology*, to take the same approach.
3. SIOP should create a task force that would develop ways of measuring the science–practice convergence for various content areas and topics. This would not only teach all the members how to measure and evaluate the convergence, but would make practice–science integration and convergence a shared value within SIOP.

9. Networking With Professional Colleagues

Based on the practitioner satisfaction ratings (see above), “opportunities for professional networking” is one area that receives an improved satisfaction ratings: 3.4 satisfaction rating in 2015 versus 3.0 rating in 2008 (not a barn burner rating but better than other areas). There have been increasing opportunities to network with other professional colleagues, such as at the annual LEC conference. However many members,

particularly independent consultants and sole practitioners in organizations, have expressed an interest in having more professional networking opportunities.

Recommendation

SIOP has taken steps to encourage some networking and mentoring groups. SIOP might consider taking this to the next level by more formally organizing and structuring special interest groups (SIGs) that could meet annually at the SIOP conference and perhaps even provide periodic updates and reviews on their shared interest area to other members.

10. Promoting I-O Psychology

Over the years there has been increasing interest and efforts related to marketing and branding I-O psychology. SIOP has taken important steps to define a professional brand and begin marketing it through various channels such as the annual I-O awareness effort. I-O practitioners in particular however want greater SIOP support in communicating I-O psychology to clients and organizations.

Recommendations

1. SIOP might take the branding efforts and marketing developments and convert them into materials that can be provided to every member, especially practitioners. We need to make sure that our members have clear, useful, and consistent materials that they can use when talking to clients, organizations, and local HR groups. Our mem-

bers need to be our front line marketing team, and they can also provide regular feedback on what works well and what needs to be modified.

2. It may be time for SIOP to have a more formal *Annual Marketing and Communication Plan* that provides an integrated approach to marketing the SIOP brand, SIOP books, SIOP journals, and other SIOP products and communications.

Conclusions

Over the last 8 years, we (Silzer, Parson, Cober, Erickson, and others) have worked hard to understand and communicate the needs and interests of I-O practitioners in our articles and presentations. We are hopeful that our data-based articles have fairly represented practitioner views and that we have had a positive impact on the profession and on SIOP.

It is disappointing that practitioner satisfaction with SIOP over those 8 years has not improved, and in some case has declined. It is unacceptable that 50% of the membership is widely dissatisfied and that SIOP has not addressed that dissatisfaction over the last 8 years. In our work we have described and documented practitioner needs and concerns, but SIOP has not done enough to understand or address those needs. Unfortunately many SIOP leaders still seem to be stuck in an outdated framework where I-O practice and practitioner contributions are not valued. We think this will change only when the SIOP leadership includes the full range of the SIOP members and is not dominated by members in one career track.

However, we are hopeful that positive change will come to our profession and to SIOP. We strongly encourage I-O practitioners to actively engage in SIOP and to insist on equitable representation, support, and recognition. SIOP needs to “lean forward” and proactively address the concerns of all SIOP members. The future of I-O psychology is bright, provided we are more proactive in shaping our own future and we are inclusive of all SIOP members. But the time to start the change process is now.

The future belongs to those who can see it!

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Max. Classroom Capacity



Marcus W. Dickson

Wayne State University



Loren Naidoo

Baruch College and The
Graduate Center, CUNY

For the past few Max. Classroom Capacity columns, my coauthor Loren Naidoo and I have worked together to generate the column. This time around, though, Loren is letting me take the lead.

My first column in *TIP* appeared in the April, 2006 issue. *TIP* Editor **Laura Koppes Bryan** had asked me to take on a new *TIP* column called “Good Science—Good Practice,” which was designed to summarize “research that is rigorous enough to meet high scientific standards and advance a given body of knowledge yet applicable and useful enough to be applied to the challenges most practitioners face every day.” I asked **Jamie Madigan** to join in the effort with me, and we ran with that column until July 2009, when my friend and former student Tom Giberson took over my role in that column. I moved over to create Max. Classroom Capacity, at the request of then-editor of *TIP*, **Wendy Becker**. This column first appeared in the October 2009 issue.

All that is a long way to say that I’ve been writing for *TIP* for quite a while now. It’s been a lot of fun, and I’ve had the chance to get to know a lot of people over the years because of writing these columns. It’s been great to receive emails about specific columns, to talk with people at the SIOP conference each year about teaching, and to realize that a few people actually do read this column.

But it’s time to let someone else take over the column. When I started Max. Classroom Capacity, I was often having a hard time deciding what I wanted to write about, because there were so many things I wanted to address. More recently, I’ve had to think a while to identify something that I haven’t already written about. Now, when I email with Loren, I can see all the ideas he has bubbling up and ready to go, and I am really excited to see what he’s going to do with this column in the future.

In the first column, I explained the name – I had seen a sign in a classroom that specified the maximum capacity of people allowed in the room at one time, but the sign had gotten me to thinking, “What is the most—the most content knowledge, enthusiasm, experience, pedagogical knowledge, developed

classroom philosophy—that I can bring into my classroom when I teach? What can I do to increase my maximum capacity in the classroom?” I still care about that, and one thing I’ve realized is that for me—as I know is true for many of you reading this—teaching can feel like coming home.

I had a sabbatical a while back, which was truly wonderful—I was able to travel a lot and work with colleagues in several different countries. When it was over, and I walked back into the classroom, it felt so good to be back. I spent some time in recent years as an administrator, overseeing the educational mission of my department, which was a great learning experience, but it meant that I was actually teaching less. When that job ended and I went back into the classroom on a regular basis, it made me happy to be there. I’ve taught Intro Psych for 22 semesters (maybe more—it’s easy to lose count), but it’s always good to walk back in to the Upper DeRoy lecture hall, hopefully with a larger Max. Classroom Capacity than I had when I finished the previous semester.

Back in 2005, I was asked to guest write a TIP column because I had received SIOP’s Distinguished Contributions in Teaching Award. It was a fun column to write (you can read it [here](#)), and I told some stories about students who had helped me learn some lessons about teaching. It’s fun for me to look back at that column from 10 years ago. I think I’d keep all of those lessons learned, which included:

- Try not to be mean. Try to have fun.
- Being the professor doesn’t mean

you’re important to the students.

- Sometimes students entrust themselves to you, whether or not you think they should. Try to live up to their trust.
- Sometimes it’s pretty cool to be a teacher.

I think I might have learned one or two more lessons since then. Some of that has come because I’ve had the opportunity to teach some courses overseas, mostly in Taiwan and in Singapore. In Taiwan especially, it’s common (at least in the executive master’s program I’ve taught with) for the students to give the professor a card and sometimes a class gift when the course is over. After my most recent class, a few months ago, I was reading the card from the students and was struck by a comment from a woman named Bernice. She said “You give me different thoughts and inspiration, and you always can understand my questions and explain it. That’s real help.” I knew immediately what she meant—Bernice’s English reading and listening skills were a good bit stronger than her English speaking skills, and sometimes she would use a wrong word or struggle to get out what she was trying to ask. All that I had really done was to pay attention when she talked, to look at her and not at the board, and to rephrase her questions to see if I had understood them correctly. For her, though, that was a big deal. It made me wonder about the classes at home where I hadn’t been as attentive because the students presumably spoke English more fluently and whether I had missed the chance to make a connection and help a student learn more because he

or she felt connected to the material. I try to listen more closely now, all the time. Lesson learned: It's amazing what you can learn—and what you can teach—by listening carefully.

A couple of years ago, someone called my attention to an article in a local newspaper, where a recent graduate named Michael Mohammadi was being celebrated for several accomplishments. The name didn't particularly ring any bells for me, so I wasn't quite sure why I had been told to read the article. About half way through, after describing all of Mr. Mohammadi's many accomplishments, the article said:

He vividly remembers having little drive toward education during his high school years and attended Wayne State University as an undergraduate only because he felt that's what everyone was supposed to do after high school. Not until a WSU introductory psychology class in 2001 did Mohammadi find his inner drive for a career. Dr. Marcus Dickson was his professor, someone Mohammadi credits with piquing his interest in the psychology field. That interest later led to Mohammadi gaining a bachelor's degree in psychology from Wayne State and a master's degree in physiology from the University of Maryland at Baltimore.

I looked at the picture of the student, and I sort of remembered him from Intro Psych, though with several hundred students each semester, I wasn't entirely sure. I didn't remember doing anything special with him as a student, but I thought I remembered him asking questions after class and talking

with him about how his performance improved as the semester went on. Reading the article of course made me feel good, and it reminded me of when Joe DiMaggio was asked why he always ran out every hit, even if it was a sure out. He said "There is always some kid who may be seeing me for the first or last time; I owe him my best." Now of course I don't think teachers are as important as baseball players (those who know my love of baseball will understand), but I do think that we never know which students we might affect on any given day—which student might find something worth pursuing in the topic of the day—and so we owe our students our best each day. I don't always live up to that, but I continue to aspire to it. I hope that my advisees see that, and if they learn anything from me about teaching, I hope that's it. Lesson learned: Prepare. Go in ready. Give it your best, each time.

I work a lot with the kids at my church. My wife teaches the children's Sunday school class, and so I get to know the kids really well. Several years ago, when we were just starting to work with the kids and getting to know them, we asked them to wear name tags. One boy, Trevar, refused. I told him "Well, if you won't wear a name tag, then I'll just call you whatever I want, so I think I'll call you Clifford." Like a typical 5-year-old, he said "I'm not Clifford – YOU'RE Clifford!" and I've been Clifford to the kids at church ever since. At this point, I have to introduce myself to the parents, and then tell them "Your children probably call me Clifford," at which point the light of recognition dawns for them. I am absolutely convinced that someday those

kids will be sitting down to write a history of the church, and they'll say "Remember Clifford?" and no one will be able to find a record of a Clifford in the membership rolls. But I am also absolutely convinced that those kids will remember Clifford, even if they don't remember Marcus, because they know that my wife and I are committed to them. Lesson learned: Students will remember that you cared about them long after they've forgotten what you taught them.

So I am hopeful that, if people who have read these columns over the years remember anything about them, they'll remember that I said repeatedly, in many different ways, that even in the midst of a profession

that often rewards research and tolerates teaching, teaching is still really important. It's worth spending time on, and worth fighting for resources for. It's worth working hard to get better at doing it.

Looking forward from here, Loren and maybe others will continue to write about building our Max. Classroom Capacity as I-O educators. I'm excited to see where he'll take the column. Write to him with ideas and questions. He's at Loren.Naidoo@baruch.cuny.edu. I'm not sure what directions he'll pursue, but I'm confident that one way or another, it will reflect one of the lessons I wrote about 10 years ago: Sometimes it's pretty cool to be a teacher.

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Some functions of the SIOP Website will be unavailable at times during October due to the implementation of new association management software.

A temporary inconvenience, this new tool will allow the SIOP Administrative Office to be even more effective in the future.

Thank you for your understanding.

The High Society



My Final Publication (Not Peer Reviewed)

Yes, I am writing my own obituary. You know what they say, "If you want it done right, ..."

I was born and raised in Connecticut. For some unfathomable reason, I elected chemistry as my major at Gettysburg College. After my freshman year, my cumulative grade point was 3.3: I had a 1.9 in the fall and a 1.4 in the spring. I told you it was cumulative. It was at that point I cleverly deduced the world of aldehydes and ketones was not for me.

In my sophomore year, I took an introductory psychology course. In truth, I did not know how to spell "psychology." I put the y before the s and it just didn't look right. The course was taught by an industrial psychologist (the "O" had yet to be born) who received his PhD from Purdue. He changed my life. His name was Sam Mudd. Sam became my life-long mentor, hero, and friend. I was determined to follow in his footsteps. That meant I had to get a PhD in industrial psychology from Purdue. I first got my master's degree from Kansas State in 1970, then received my PhD from Purdue 3 years later.

After grad school, I joined the faculty of the Department of Psychology at Iowa State University. I was 25 years old, book smart and life stupid. To make matters worse, I was the only I-O psychologist on the faculty. I inherited some doctoral students who were older than me. The family joke was, "I was the best I-O psychologist in the state of Iowa." True enough, as at that time I was the only one.

Without a doubt the highlight of my Iowa State years was my doctoral students. They were the brightest and the best. I came to regard them as much as colleagues as students. If my memory is correct, I turned out 24 doctoral students in my 20 years there. I was also director of an interdisciplinary program in industrial relations for 11 years that graduated about 18 students per year.

In 1993 I was offered an endowed chair position in the business school at The University of North Carolina Greensboro. It was the first such chaired professorship in the history of the



Paul M. Muchinsky

university, and I felt extremely honored to hold it. But my role became very different than before. Now I taught exclusively at the undergraduate level, and most of the students went on to become first generation college graduates. My goal was to inspire them to be successful in life, and I-O was my platform. Not only did my students enjoy I-O psychology, I must immodestly state that no professor my age in the history of academia has ever received so many red hot chili peppers on RateMyProfessors.com. I remained on the faculty for 22 years, retiring in 2015.

I probably will be remembered primarily for my humor column in *TIP* and my textbook. Writing *The High Society* was a stress reliever for me. I enjoyed making people laugh, and I usually found topics amenable to a satirical spin. When I first proposed the idea for my textbook, *Psychology Applied to Work*[®], I told the publisher that I wanted to write a high-quality undergraduate book. I was told that only graduate level books were deemed to be of high quality. I was determined to prove them wrong. Thirty years and 11 editions later, the book remains my best profes-

sional accomplishment. I wrote the first 10 editions, **Tori Culberson** and I coauthored the 11th edition, and I hope Tori writes 10 more. The most gratifying professional experiences I have ever had would occur at the annual SIOP Conference. Someone would see my name badge and say to me, “Dr. Muchinsky, you don’t know me, but after I read your book as an undergraduate, I decided to become an I-O psychologist.” The great baseball player, Jackie Robinson, wrote his own epitaph: “A life is not important except in the impact it has on other lives.” I agree.

Long ago I read an obituary where a man was described as, “Someone who gave back more to life than he took out.” I hope I will be so remembered as well.

Note: An obituary for Dr. Muchinsky written by two of his students appears on page 194 of this issue.

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The Modern App

The logo for 'mod app' features the words 'mod' and 'app' stacked vertically in a white, sans-serif font. The text is centered within a red square that has rounded corners and a slight 3D effect with a shadow.

Application of Modern Technology and Social Media in the Workplace



Nikki Blacksmith
The George
Washington University



Tiffany Poeppelman
LinkedIn

The Realities of Internet Testing: Security Considerations and Best Practices

An announcement in June about a large [data breach](#) showed us just how vulnerable online storage systems can be: confidential and sensitive data on over 21 million people were [hacked](#) from the [Office of Personnel Management \(OPM\)](#). This included various types of personnel data including employment history, training records, background checks, and social security numbers. These statistics emphasize the risk that surrounds the practice of gathering and storing personnel data online. Specifically, the breach comes at a time when almost all organizations that use preemployment testing are using the Internet to administer the tests. For example, according to [CEB's 2014 Global Assessment Trend's report](#), of the organizations that do use testing, 81% are using online testing (Kantrowitz, 2014).

Although testing applicants via the Internet allows organizations to reach a more diverse applicant pool, capture new forms of data (e.g., time spent on each item), reduce labor costs, save time, and improve efficiency, the reality is disadvantages do exist. Internet tests, especially when unproctored, are more vulnerable to cheating, piracy, and data hacks. Organizations are more concerned than ever (and rightly so) with maintaining security of not only data they receive from applicants but also securing the test materials that they store online. The severity and frequency of security threats could call into question the validity of Internet testing ([ITC](#), 2014). In this article, we will highlight common methods to prevent, detect, and handle test security. We will also discuss gaps in the research and propose future research directions.

Internet Testing

The type of cognitive and noncognitive tests that are used for selection and placement assessments include organizational personality tests, culture-fit assessments, and interest inventories. In addition, other technology enhancements have enabled the incorporation of adaptive logic, high-fidelity virtual environments and simulations, and gaming components in these assess-

ments as well. Check out our [past article](#) that includes a discussion of innovative interviewing video-based techniques conducted online today. These tests are now allowing companies to improve their hiring approach and ensure they capture the correct candidates for their organization.

Cheating and Piracy in Internet Test Settings

Administering tests online makes proctoring difficult, which increases the potential for cheating (e.g., using prohibited resources, obtaining help). The rise of technology has given test takers more sophisticated manners to cheat (i.e., any attempt to improve one's own score through fraudulent means). For example, test takers can use mobile phones, [docu-pens](#), audio, or video devices to cheat or obtain testing materials (Kantrowitz, 2015). Although cheating is well documented in educational settings, test developers are unaware of the extent to which candidates cheat on preemployment tests (Kantrowitz, 2015). Given that the outcome (i.e., getting hired) of cheating is desirable and the threat of getting caught is low in most cases, it is likely that some candidates are motivated to cheat (Kantrowitz, 2015). Despite the increased vulnerability and new, more sophisticated manners of cheating, research on the topic has been lagging.

These types of online environments also increase the likelihood of piracy such as stealing test materials from various sources and selling them elsewhere. Piracy is, unfortunately, becoming a large, money-making business. Illegal [braindump websites](#), which are defined as a website that profits by providing questions and an-

swers from tests for the purpose of cheating (Kantrowitz, 2015), have emerged. These types of websites can be relatively difficult to spot. Furthermore, many of the technologies used for stealing test material or illegally sharing it are almost undetectable (ITC, 2014). We will summarize some best practices for dealing with test fraud that various experts, test developers, and organizations have put together.

Best Practices

The technology used to support Internet testing must be secure in order to protect the test material along with the data it captures and stores (Burke, 2009). This is yet another case ([see our article about working with technology experts](#)) in which the industrial-organizational psychologists developing the tests must work with their IT counterparts. The architecture and infrastructure of the information technology and software must be secure (Burke, 2009).

Even with the most robust and secure technology in place, test materials are not secure. As soon as the test is delivered online, the test materials are accessible to outside parties. In order to maintain the integrity and validity of online tests, organizations and test administrators need to develop a strong security plan. This plan should outline how cheating and piracy can be prevented, policies and procedures for detecting cheating and piracy, and guidelines on how to implement punitive action should they encounter a security breach (ITC, 2104).

Prevention of Cheating and Piracy

As you can imagine, there are a number of approaches to cheating in an online test or company assessment given that anyone can have resources around them at home or virtually. However, universities and companies are now leveraging methods to prevent cheating and piracy, including warnings, proctoring, strict enforcement of copyright laws, and the development of multiple equivalent versions of the test. Below are examples of each of those and they are leveraged within organizations today.

Warnings. Test administrators can include warnings prior to test taking that inform candidates of measures being taken to detect cheating or disciplinary actions that will be taken if cheating or piracy occurs. Warnings that appeal to individuals' sense of morality can be effective (Kantrowitz, 2015). Companies who administer certification tests, such as Microsoft, have implemented [nondisclosure agreements](#) to protect their intellectual property. If an individual is found to violate the agreement, they may be banned from taking any future certification exams, may be decertified, or test scores may be revoked.

Proctoring. Organizations can also remotely proctor online assessments by using a video or other surveillance devices, such as [ProctorTrack](#). Proctoring software can build barriers such as ensuring the test web browser cannot be minimized, detect when users leave the test session, block unallowed applications (e.g., messaging systems), or detect when the test taker is looking for answers online. Though recent

research has shown remote proctoring can decrease cheating, it has also been linked to increased negative test taker attitudes including concerns of privacy (Karim, Kaminsky, & Behrend, 2014).

Test designs and characteristics. The way in which tests are designed can help to prevent test fraud. For example, development of multiple equivalent versions of tests can avoid the exposure of items (Burke, 2009). Different but equivalent tests can be developed using item response theory (Burke, 2009). Another way to limit item exposure is adaptive testing. In adaptive tests, items are presented to a test taker based on his or her previous answers. Consequently, the test is customized to each individual test taker. Therefore, the likelihood that two different test takers see the same items is reduced.

The type of item used can also be linked to increased or decreased cheating (Kantrowitz, 2015). Likert and multiple-choice items may be more susceptible to cheating because the appropriate answer is often obvious to the test taker. Performance items, on the other hand, may be more difficult to cheat given that the applicant must demonstrate a specific aptitude or ability level. In cases where answers may be more obvious, including a time limit on a single item or test may help decrease cheating. Limited time makes it more difficult for test takers to use outside resources, such as Internet search engines.

Detection of Cheating and Piracy

When administering tests, organizations have a responsibility to conduct thorough

investigations to detect any type of security breach. Several methods of detecting cheating and piracy exist. Below are a few examples of those.

Authentication processes. One form of cheating is having one individual take the test for another individual. Authenticating a person's identity can prevent proxy test takers. Technologies such as biometric fingerprinting, retina scans, or digital image capture can be used in unproctored Internet testing situations to verify the identity of the test taker. Another [new technology](#) that assesses blood veins in the palms is being used in GMAT testing centers to verify test takers. Another manner in which this can be done is by having the test taker complete a brief follow-up test in a proctored setting (Kantrowitz, 2015).

Web patrolling. In order to detect piracy, some testing organizations employ staff to investigate different websites (e.g., pirate or braindump sites, forums) where individuals may share or sell testing information (Burke, 2009). Patrolling can be done by conducting key word searches of the test's content or monitoring social network sites (Kantrowitz, 2015). On social networks, individuals can bid for proxy test takers on auction sites, fee-based test taking services, or gain content on file sharing sites.

Data analytics and forensics. Test developers can also develop complex algorithms to detect unusual response patterns that indicate cheating (Burke, 2009). For example, if an individual has an extremely fast completion time of the test with high correct answer rate, that may indicate the individual

had access to the correct answers (Burke, 2009). Organizations can also pay attention to changes in pass rates or response latency changes. However, unique patterns of response could be due to variations in health, practice, or high motivation.

Another unique method that has been suggested is to place multiple [Trojan horse items](#) on a test ([Caveon Test Security](#), 2008). Trojan horse items are easy items that are exposed with a specific (incorrect) key, and a similar version of the item is placed on the actual test. If the test taker gives the miskeyed answer (the one that they saw on an exposed version) instead of the very easy, correct answer, there is strong evidence that the test taker may have visited a braindump website. In other words, the test developers "booby trap" select items that have been compromised by changing the correct answer to be incorrect.

As mentioned previously, although these methods are helpful to prevent and identify potential cases of cheating or piracy, they are not perfect and organizations must respond carefully.

Punitive Actions in Test Security

If a test fraud is detected, an organization must have a plan in place that describes how to handle the situation. Accusing or raising questions about an individual's integrity can have serious consequences; detection needs to be extremely accurate before discussing with the applicant. The organization needs to make decisions about whether they will let the individual retest, if they will invalidate the results, or if they

will report or sue the individual for stealing materials. [The Association of Test Publishers](#) and the [International Test Commission](#) both provide best practices that organizations can follow for handling test security.

Future Research

Although researchers and practitioners alike attest to the fact that test security is an important issue that needs to be addressed in order to maintain the validity and utility of preemployment tests, little research has been done. Below are a few gaps for I-O psychologists to explore in future research:

- Determine the extent to which applicants cheat
- Understand how applicants react to various test fraud prevention and detection methods
- Determine which methods are most effective in preventing cheating and piracy
- Understand the monetary costs associated with investigating and handling security breach
- Identify techniques to prevent cheating and piracy
- Determine how various fraud detection methods influence test-taking behavior and performance

What other gaps or questions do you think we need to address? Tweet at us [@themodernapp](#) or email us at themodernapp@gmail.com.

We'd like to hear from you! Tell us about your experiences with online testing and test security.



Email us at themodernapp@gmail.com



Tweet at us [@themodernapp](#)



Contact the authors on LinkedIn: [Nikki Blacksmith](#) and [Tiffany Poeppelman](#)

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The I-Opener



Steven Toaddy

Louisiana Tech University

Let's Talk About Stats, Baby

What I am interested in discussing in this edition of the I-Opener—with a variety of practitioners—are the statistical approaches that are actually used in the world of applied I-O psychology. I think that such knowledge will be useful to those of us charged with educating the next generation of ourselves as well as to those students interested in selecting training and development opportunities: classes, internships, practica, late-night-procrastination-via-instructional-video sessions. “Sure,” they (we?) may say, “I can spend thousands of dollars and dozens of hours on this Statistic-X short course, but will it pay off in my professional life?” Let’s start trying to answer that question.

Sampling led to some problems, but I’m not shooting for gospel here. I’m shooting to start a conversation. Also, I acknowledge that as fields of psychology go, we’re a rather stat-heavy¹ bunch. I’m not interested at the moment in discussing how that plays out in manuscript acceptance, modeling complexity, having a hammer and viewing the world as a nail, or any other broader issues. I’m going to focus on the world of practice. Sue me.²

At the core of this discussion are a few simple questions:

- What statistical families/techniques do you use in your applied work? In what kinds of applied contexts do you work?
- What stats do others with whom you are familiar work? What about their work context makes them use these different tools?
- In your experience, is specialization in a specific tool/family most beneficial? Is the broadest-possible preparation advisable?
- Is it more important to know statistical procedures or to know how to learn statistical procedures?

Beyond those, I just asked my interviewees to opine away however they wished. Here’s what I learned:

Statistical Families/Techniques Used (and Not Used)

Because my interviewees provided a large amount of information about whether and when specific statistical procedures and software packages were used, I captured this information in Tables 1 and 2, to which I'll be referring periodically. The interested reader can use the information provided therein to play a game of probabilities when it comes to the statistics used in practice (see the next section for a caveat

on this, though), but one of the important messages I heard from my interviewees was about the role-dependent use of these tools. So here I'll try to capture how that plays out.

The message that came through most clearly was that practitioners spend a good deal of time and effort describing data (i.e., using descriptive analyses) and conveying that and other information to each other and to clients. Whether it be in the form of expectancy charts (as in the

Table 1
Statistical-Family Use

Stat name	Use often	Use rarely	Don't use	Neat to know	Other people use
Percentages, central tendency, dispersion, ratios	XXXXXXX				
Correlation	XXXXXXX				
Regression (including logistic, multiple)	XXXXXX		X		X
t (or other difference testing)	XXXXX				
ANOVA (including MANOVA, ANCOVA, MANCOVA)	XXXX				
Psychometrics (reliability, item analysis, &c.)	XXX	X	X		
Data manipulation/cleaning	XXX				
IRT	XX	X	XX	X	XX
EFA	XX	X			
CFA (including MGCFA)	X	X			
Data visualization	XX				
PCA		X			
Discriminant-function		X			
SEM			XXX		
HLM			X		
Decision trees				XX	
Cluster analysis				X	
Big Data				X	
Machine-learning Algorithms (such as neural networks, support vector machines)				X	
Natural-language processing				X	

Table 2

Statistical-Software-Application Use

Package	Use constantly	Use sometimes
SPSS	XXXX	X
R	XXXX	
Microsoft suite (Excel)	XXX	
SAS	X	X
Visualization tools (e.g., Spotfire, Tableau)	X	
IRT software		X

case of **Anthony S. Boyce**, Consultant and Leader of Research and Innovation for the Assessment and Leadership-Development Practice at Aon Hewitt), percent greater than (**Stephanie Murphy**, Talent Management Senior Advisor at Dell), driver analysis, or percent favorable (**Victoria Smoak**, Survey & Insights Consultant within Global OD at PepsiCo), many practitioners find themselves serving as translators between the worlds of data and of meaning.

In a related vein, **Eleni Lobene** (Associate Consultant at Aon Hewitt) answers questions about basic statistics on a frequent basis. She, **James De Leon** (Consultant at APTMetrics), and **Murphy** spoke to the importance of being able to convey in layperson's terms the core of basic statistics, as well as specifics of particular statistical approaches (such as the nuances of one reliability estimate as compared to others) to advanced audiences.

Boyce indicated that some successful junior consultants have little quantitative knowledge but are paired with strong-quant colleagues to assemble presentations and meetings in which statistical results will be conveyed, showing what the results actually mean and how to use

them. Thus the amount (not just the type) of statistical knowledge required of a practitioner may be heavily dependent upon the role the individual is expected to play.

That said, there are statistical procedures that are used less frequently than others (again, see Table 1). For instance, one interviewee specifically indicated that SEM is not used in the realm of applied I-O psychology at all; several respondents indicated that they themselves do not use SEM. **Cole Napper**, Senior HR Analytics Lead at CenturyLink, spoke to the value of SEM in the world of academic model building and publication contexts, but none of the individuals I interviewed reported using—even rarely—that family of statistics.

Other families were more polarizing—and clearly role dependent. **Adam Meade** (Managing Partner at Scientific Organizational Solutions), for instance, uses IRT heavily in his work, wherein he designs CATs and serves as a consultant to other consultants. Other interviewees, such as **Kyle Morgan** (Associate at Aon Hewitt), who focused in his dissertation on MIRT in intelligence testing, don't use IRT in their own applied work but do work in organizations where the statistical family is used. About half of respondents count psychometrics among their utilized families but others who are not involved in test development and cognate subjects simply don't find themselves needing to know how to conduct these statistics. Likewise even basic statistics like regression—most use it, some don't—but all acknowledge its relevance to applied I-O.

Like IRT, there are data–science and data–sciencesque approaches that Boyce, Lobene, and Napper indicated as being worth knowing, or at least having familiarity with, for fun and/or profit, including everything from decision trees to big data (see, again, Table 1). These approaches may not constitute the bread and butter of I-O practitioners but do help them both communicate with practitioners of computer science and other related, integrated fields and to differentiate themselves in a world of increasing complexity.³ Smoak points out that others within her organization conduct more complex statistical analyses as well, reminding us that though I spoke with practitioners in diverse realms of our field, I didn’t even nearly capture the diversity therein.

Speaking of diversity: Table 2 indicates interviewees’ reports of statistical-soft-ware use. Though my focus was not on the software that is used in applied I-O, respondents brought it up because, in many cases, they had learned how to conduct tests within one environment only to begin work somewhere in which that environment was not available. No clear leader emerged with regard to statistical soft-ware, though, which helps us transition into the next topic; no respondent advocated for and Morgan actively advocated against the point-and-click level of awareness of statistical procedures, and thus:

**Depth Versus Breadth;
Knowledge Versus Ability to Learn**

The second most clearly made point was one that renders much of the targeted on-

ly-learn-what-you-use-every-day thinking about learning statistics unhelpful, viz., that one simply cannot know one’s basic statistics too well (according to Lobene). This echoes a point made above about needing to explain even the nuances of statistical procedures, but it speaks to a broader issue as well; many interviewees indicated the importance of having been exposed to and thus being aware of and familiar with a wide variety of statistical approaches. Three major justifications for this conclusion emerged: knowing what approach to use given the data available and the question asked; having enough basic knowledge to quickly pick up niche statistical procedures (perhaps deep familiarity with logistic regression on top of basic knowledge in regression); and, as mentioned above, being able to translate the principles behind one statistical procedure from one series of operations in a statistical software to a discrete⁴ series of operations within a different application. Each of these three justifications is rather simple but to expand briefly, see next.

It is my opinion that we (i.e., those of us in this field) fail to apprehend just how much we know about the gathering, manipulation, summarization, and scrutinization of data as compared to those in most other walks of life.⁵ Perhaps liken it to a worker in heavy construction; in the very pursuit of that vocation, one is likely to increase in physical strength; one may not notice oneself doing so, however, because the focus is on the product of construction rather than the process by which it is completed. Likewise our field, we spend such an immense amount of time speaking to

others about and thinking about statistically complex phenomena that we often forget how much we need to understand to do so (and see Boyce’s earlier point, in turn, about the value of knowing this and being able to speak to those with no need for such knowledge; he further points out that we are likely not the most stats-heavy people in the room anymore because data scientists and computer scientists have been routinely added to our teams, and we to theirs).

All of this poetry aside, the upshot is that part of our value is being able to look at an abstract problem or question and to generate a concrete statistical test that will lend a solution or answer. Broad knowledge in statistical procedures is instrumental to this process and must not be undervalued. Remember, though, Boyce’s points about specialization: There are quant-heavy and quant-light individuals, and the former may include IRT specialists or visualization specialists or whatever else. Even within this small sample, some respondents are more into psychometrics or predictive families or descriptive families.

Though the amount of specific knowledge of statistical procedures varies by role—from Meade’s consultant-to-consultant perspective compared to more generalist, internal perspectives—there was general agreement that part of the value of basic, broad knowledge was the ability to quickly learn the ins and outs of a new procedure or how to execute a familiar procedure within an unfamiliar statistical software. De Leon spoke to being brought up to speed by colleagues, whereas Murphy and

Smoak indicated an autodidactic approach; regardless, without broad exposure to basic statistical procedures, such requisite, rapid learning is much more elusive. Being able to draw clear lines between “basic” and “advanced” and “arcane” procedures is challenging; my best shot based on these interviews is that “advanced” starts at IRT and “arcane” starts at SEM in Table 1.

This shouldn’t be taken as license to ignore the specifics of statistical procedures, however (see, for instance, the bit about moving from one statistical software to another). Lobene and Morgan point out that one doesn’t have adequate preparation to (re)learn statistical procedures unless one has at least learned and forgotten them previously; such an experience gives the consultant the knowledge of where to look—where to begin—when a specific statistical approach is needed.

Pithy Conclusions

- Study basic stats closely enough to understand the procedures (not just to be able to point and click your way to victory).
- Not everyone uses advanced stats in the applied world and this is okay; “I don’t know” is fine to say but should be replaced the next day/week with “today I learned.”
- Learn how to clearly convey statistical information to the uninitiated.
- Be prepared to teach yourself the ins and outs of particular stats quickly when you enter a new applied environment; learn how to learn.
- If you want to really set yourself

apart and have taken care of your basic knowledge, some data–science approaches would probably be a good place to spend your learnin’ time.

- Some jobs require intimate knowledge with particular approaches prior to entry so determine where you want to go and prepare accordingly.
- Be nice to your statistics professors; avoid “when will I use this?” in favor of “thank you for exposing me to this here, I’ll name my first child after you.”

Notes

¹ Did you read that as “heavy-set” like I do every time I look at it?

² Do not sue me.

³ Wait, there’s a second law of thermodynamics? Since when? Well, whatever. I said “world,” not “universe.”

⁴ As well as discreet because one doesn’t want to trouble the client with the behind-the-scenes work. See what I did there?

⁵ Is I-O a walk of life? I can feel a few O-side experts glaring at me right now. Hi there!

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Work at the Intersection of Theoretical Neuroscience, Entrepreneurship, and Technology: A TIP Interview With Dr. Vivienne Ming, Part 1

[Dr. Vivienne Ming](#) is a theoretical neuroscientist and entrepreneur who shows herself to be an incredibly forward thinking and highly skilled professional. Along with her colleagues, she is pushing the boundaries of what we can do by integrating ideas across disciplines. Her work is unprecedented and unconventional, and Dr. Ming's training and credentials are rigorous. She graduated from Carnegie Mellon with a PhD in theoretical neuroscience. She was named one of *Inc. Magazine's* 10 Women to Watch in Tech. She has been on the executive team for HR companies like [Gild](#) and [ShiftGig](#). She is a visiting scholar at the [Redwood Center for Theoretical Neuroscience](#). Dr. Ming engages in philanthropy, and supports diversity as trustee of [Bay Area Rainbow Day Camp](#) and director of [StartOut](#), a nonprofit that supports LGBT entrepreneurs. She cofounded [Socos](#), where along with her wife, she has developed ways to predict course outcomes and life outcomes for students. She has applied similar technology to the workplace to predict job performance.



M. K. Ward
North Carolina
State University



Bill Becker
Texas Christian
University

Our conversation with Vivienne Ming had so much content that we will present it in two parts. The second part of our conversation will appear in the January issue. In this first part we discuss a perspective on measuring work-related variables that leverages the power of algorithms, technology, and psychology.

How did you come to work at the intersection of theoretical neuroscience, technology, and entrepreneurship?

At Carnegie Mellon I studied a combination between psychology and computational neuroscience for my PhD. My dissertation research was a machine learning program that learned how to hear. We asked, what would happen if a cochlear implant learned how to hear instead of it being designed to hear? It turned out to work

substantially better than existing cochlear implants. So part of it was not just doing abstract research, which I personally value, but also seeing that something that started as a theoretical question (why do humans hear the way they do?) leads to very concrete and potentially life-changing tangible outcomes.

I also happened to meet my wife and cofounder at Carnegie Mellon. My wife's research is in cognitive psychology and education. In collaboration with her advisor in a company called [Carnegie Learning](#), she developed automated tutoring for learning geometry. I had felt that they were approaching it in kind of the wrong way, but I loved the spirit of what they were doing.

So when I moved to the Bay Area after graduate school, I very quickly confronted this question: Can we do more with a product than we ever could with a research project?

Can we also answer this other question that led to my very first start-up?: Can we build a cognitive tutor that solves the shortcomings that I saw in the Carnegie Learning tutor? So we built a startup and it was completely novel. I was a straight up academic at that time; I was jointly situated at Stanford and Berkeley. In the startup, we just wanted to see if we could have an impact on kids and adults. It was amazing! My experience in the ability to have an impact by being a scientist and using that to drive entrepreneurship was really persuasive. I've never gone back to being a full-time scientist, at least not a full-time academic.

Could you tell us more about SOCOS and its assessments?

A couple of years ago, my wife and I published a paper where we showed that by just "listening" to students' online discussions about course-related topics, spanning classes in biology and MBA students talking about economics, I could develop a set of algorithms that took those discussions and learn the domain from just those student discussions. So it learned biology and it learned economics without active engagement with the students, just passive listening. Then without referencing any of their homework, exams, or the final exam, we layered on top of that an additional algorithm that predicted their grades given that internal model of the way each student thought about course topic. Now, to be fair, it did not learn the elements of biology, rather it learned how student thought about biology and how MBA students thought about economics.

Then when about 22,000 new students took a class in those two courses with new instructors and new assessments, we could accurately predict their letter grade in Week 1. In the very first week we could predict what whole letter grade they would receive, whether A, B, C, or fail. Then as the course progressed we would know with greater accuracy what they would get on the final exam. By the end of the course, we knew within one or two points their final grade on a 100-point scale. Again, this was only from passively collecting data.

This is amazing to me—if we can predict with such accuracy what student grades will be on their final exam, then why have one? I'm not delusional about my ability to fundamentally change education that way. Yet, it is a strong indicator that we

can move away from standardized testing, which we know, both in education and in the workplace, to be highly biased and rife with all sorts of problems, not the least of which is that they just take time to do. Wouldn't it be great if we could do competency-based education where they learn as they go and then they stop once they figure it out based on some criteria?

That's where we began, and then this company called [Gild](#) wanted me to come work with them and run it. So then I got to run my two companies side by side. As chief scientist at Gild, my job was to lead the team that built models that predicted how good people were at jobs they had never held. Initially we started with software developers because they're a very lucrative, high impact talent market particularly here in the Bay Area. We would predict how good software developers were. If you were a company that was a customer of ours, and you were hiring a Java developer in Boston, you would say, "Show me the Java developers in Boston." We would show you an ordered list of Java developers, ordered by how good they were at Java regardless of whether they were working as a Java developer today and regardless of their alma maters. Schooling was one of numerous factors we took into account. We didn't just conduct this search on developers. We did this for salespeople and designers too.

I spent 2 years developing, analyzing, and researching these models. We looked at 55,000 variables. I can say that the three traditional HR no-nos of age, race, and gender were not predictive of anything. Actually we found older developers tended to be slightly better at certain types of

coding, which is counter to the somewhat perverse ageism in the workplace. So general demographic information was not very predictive at all. What also wasn't predictive? We looked at the traditional HR variables of where did you go to school and what was your last job. Standardized test scores were not predictive at all. Your skill sets and the schools you went to were slightly predictive but not in the ways that you would think. For example, a bachelors of computer science from Stanford turned out to be a very modest, but positive, predictor of your ability as an actual software developer. But the best computer science school in the world didn't add a lot of value in that respect. It might add different types of value in other ways—we don't know. Turns out a PhD in anything from anywhere was a stronger predictor than a bachelor in computer science from Stanford. In general, most of those school-related factors were very weakly related and were consumed by other things.

The same sorts of things were predictive across all jobs and pretty independent of age. We found this by doing analysis on unstructured data. What did they Tweet about? What did they write in the unstructured sections of LinkedIn? What sorts of things did they share on SlideShare? How did they answer questions on Stack Exchange? What sorts of online comments did they write? The predictors of job performance that we found from these massive amounts of data looked generally like the sorts of things that are predictive from decades and decades of education research. My wife and I have written [a white paper](#) where we tried to coin this umbrella term of meta-learning, which is similar to the

concepts people have put forth recently that are these sorts of noncognitive skills, although some of them are clearly cognitive. Some people have called them 21st century skills, although these skills were really valuable before the 21st century. These skills range from metacognitive ability to general cognition and problem solving, mindset and motivation, socioemotional intelligence, creativity, and perspective taking. These aren't new ideas, but it was really interesting to see how dominant these were in predicting the ability and performance of wildly differing classes of workers. It also turns out that these were the same things that were predictive of life outcomes for 5 year-olds.

Back in October, I stepped down from my role in Gild to get back to work and focus on some other projects, one of which was to come back and focus on education again. This has been a very long-winded answer to get back to here, which is to say, we have fancy technologies we've developed for taking that surreptitious natural assessment, but we're moving away from making proximal predictions like student grades and assessing understanding of course material (neither of which are very predictive of anything). Now we literally predict life outcomes of children in our system. How long will they live? How much money will they make across their lifetime? How happy will they be? What will their terminal education be? I'm working on a fifth dimension that predicts what their impact on the community will be.

Importantly, we don't share that information with anyone, ever. We don't share that with their schools, their parents, or with the kids. It's this cursed crystal ball. Turns out the only

thing you can do in sharing that information is to make the outcomes worse. Instead we share a single message every day, "Parents, here's the one thing you can do today that will have the biggest impact on your child's life." Then we do that the next day. This is much more of a consumer-oriented product.

We've been doing this sort of work in universities where we, by doing this unstructured data analysis, can identify profound predictors of student success in life after college and can work closely with the university to identify and foster them. This fall we're going to be releasing a product to both parents and teachers, which can essentially be described as: "Parents, here's the way to get the most out of your kids." "Teachers, here's the way to get the most out of your students." It's very simple. For example, you take a picture of your student's drawing. We've developed a deep neural network that can analyze that picture and contribute to our life outcome prediction. You can record conversations with your child or your students, and it contributes to the life outcomes predictions.

Then finally, I designed a new system that takes a massive survey, say a 10–15,000 item survey, and selects out the single question to ask each person in the survey that can reduce the global uncertainty. Which is to say, can we predict as much as we were with the actual final exam questions? Can we predict the answers to hundreds of different exams and surveys by asking essentially a single question a day and augmenting that with other pieces of information? Of course, learners change over time, and so the model returns to questions whose answers have become uncertain. All of this

is to service outcome predictions and that gives us our direct intervention recommendations to optimize those outcomes. We're going to be releasing an entirely free version of this via SMS texts where we have put a number of corporate sponsors together from around the world so we can release it for free. It will engage in English, Spanish, and we're working on a Chinese version. [We're set for a mid-October launch](#). We're unsure of the specifics, but it will be this fall.

This is all even more relevant to the particular domain of organizations because in the very near future, especially given my experience in HR tech, we will be looking at a version of this that helps managers to get the most out of their employees. Direct, personalized interventions meant to tap into the potential of the individual employees.

What milestones do you envision for your work that intersect neuroscience, technology, and entrepreneurship?

One major milestone would be to shift the focus in education and workplace incentive systems. This sounds trite, but a lot of the research reflects that we spend a lot of time trying to figure out how to align students and workers with our organizational goals. We should really be focusing on how to align organizations with workers. I'll be giving a [TED talk about this later this year](#). How can we tap into endogenous motivation? It's just one of many dimensions that I've found predictive of outcomes in children and adults, but it's a pretty strong predictor. We've seen again and again that the best workers within an organization and the highest performing students are incentive insensitive. Avoiding

punishment and seeking praise is clearly not the motivating factor or the driver of behavior. That is a big philosophical takeaway from both fields; I would love it if we could move away from making certain we're getting high test scores or creating and maintaining a highly motivating incentive system generically across an organization.

Then we could really think about the admittedly difficult but much more productive goal of what does this person need to be successful? Answering that question becomes very possible when mediated through technology, including the types of technologies that my company has developed. Note that we can deliver very fancy technology completely through texts; so it can be very lightweight. Imagine if you were a manager and every day and you got a message that said, "Hey! This is how to get the most out of this person today. And guess what, it's completely different from how to get the most out of this other person today." What we've seen empirically and in our models, that although there is an initial cost to implement these sorts of systems, over the long term of an organization, and certainly over the long-term of an individual's life, these produce profoundly better results.

Conclusions

Thank you to Vivienne Ming for this special two-part interview. We look forward to sharing the second part in which we discuss the power of cognitive neuroprosthetics on working memory capacity. Intelligence in the workplace may be on the brink of a revolution.

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HOGAN

**PREDICTS
PERFORMANCE**

THE **SCIENCE** OF PERSONALITY

*Spotlight
on
Humanitarian
Work
Psychology*



Ashley Hoffman
Elon University

“Nuovo” Developments in Milan, Italy!

Hello, *TIP* readers! As the chair of the Global Organisation for Humanitarian Work Psychology (GOHWP; gohwp.org), I find myself having many conversations with folks like you about what humanitarian work psychology really means. For example, many people want to know if what they are doing “counts” as humanitarian—and what I have realized is much of the time the answer is YES! In my tenure on the GOHWP board, it has become more and more clear that our goal is not to be exclusive in our approach to the work in which our membership engages but, rather, to map the breadth of work that I-O psychologists in particular are already doing that has human well-being at its core. Some pursuits, like those directly related to poverty reduction or volunteerism, are clearly “prosocial.” Others seem to be a bit less clear: those that are personcentric but perhaps conducted in a more mainstream or corporate setting. My encouragement to all I-O psychologists is this: If you are considering human beings more than the bottom line, the decency of the work those human beings are completing, the larger scale betterment of society, and the sustainability of the world we live in, then you, too, are a humanitarian work psychologist.

There are many psychologists engaging in great work around the globe, and I am pleased to present the work of a contingent of social scientists located in Milan, Italy. Cristian Caruso and Andrea De Giorgio have been working to form a research group devoted to the multidisciplinary study of humanitarian aid and development. I was lucky enough to get the opportunity to speak with Cristian and Andrea recently, and ask them for some additional details about themselves, their colleagues, and the program they are launching.

How did you become interested in humanitarian work psychology? What kinds of projects were you involved with early in your careers that lead to this path?

CC: I became interested in humanitarian work psychology reading some time ago an article on the “Psychologist” by **Stuart Carr** from New Zealand. I was so excited about the topic of humanitarian psychology and then called my colleague Giulia

Cavalli in Milan, professor of Educational and Developmental Psychology at eCampus University. She was enthusiastic, thus we started to think about projects, potential research groups, and the possibility to create something in Italy.

ADG: I studied intellectual disabilities and now am interested in mindfulness practices and, in particular, have studied the effect of these practices on the brain. In September, I will begin a collaboration with the Italian Air Force to investigate the effect of a particular mindfulness model on fighter pilots to reduce their stress. I am interested in the project because the mindfulness could improve the emotional regulation of people, inducing, for example, better mood in contexts such as a homeless shelter. I am interested also in sports and how this particular human activity could enhance integration among different people (culture, race, disabilities, and so on).

Tell me about your approach, and why it is suited for a program like HWP. What kinds of people are enrolled in the program?

We have created the first research unit in Italy at eCampus University in Milan, now we are a large and multidisciplinary group that includes psychologists, sociologists, anthropologists, historian, geographers. We are interested in topics such as the impact of climate change and migration, especially with regard to the situation in Sicily where refugees are fleeing from Africa; social exclusion (poor people, disable people, unemployed people and so on); empowerment; coping strategies; and psychological well-being.

Tell me about the main focus of the program and the volunteer opportunities provided to students.

The main focus of the first research project actually being developed by the research unit is to study the social and psychological features of local populations living in the areas of the country impacted by the arrival of large numbers of refugees and immigrants. This is linked with the improvement of integration among population groups originating from different areas of the world and different cultures (e.g., African populations that migrate in Europe via the Italian territories). For this project we would like to involve our students and volunteers, giving them the opportunity to work with a university institution with different cultures and populations and enhance their expertise in this interesting research field.

The research center works to achieves several purposes, which are:

- to promote, design, and implement research on specific topics in collaboration with foreign research institutions and create working partnerships nationwide with organizations that deal with humanitarian emergencies;
- to promote the master's degree in Risk and Disaster Management, designed to train experts in the management of risk and humanitarian emergency and promote national and international conferences on these issues;
- to collaborate with national and international agencies and organizations, public and private, for planning, training, science, and research.



The Milan eCampus University Humanitarian Psychology Research Centre's inaugural team.

What are some of the specific types of activities the center seeks to provide for students enrolled in the program?

Our regulatory document outlines our specific activities, both in relation to scientific research as well as training and development, and practical application.

In scientific research, the Centre proposes to:

- explore the phenomenon of the humanitarian emergency, read through interdisciplinary optics (psychosocial, neuroscience, educational, historical, economic, and geographical), with particular reference to the issues of immigration, youth problems, and emergency humanitarian aid situations (natural disasters, war, etc.);
- analyze the policies of prevention of social marginalization;
- psychological interventions aimed at promoting community well-being.

As part of the training and knowledge dissemination, the Centre aims to:

- promote the First Level Master in Risk and Disaster Management, aimed at training experts in risk management and disaster, in close collaboration with the Civil Defence;
- create dialogues and synergies between different disciplines that deal with natural and man-made hazards and emergencies, mainly through the organization and participation in national and international conferences;
- promote education programs in humanitarian psychology;
- promote the role of psychology in the system of humanitarian assistance and international cooperation for development;
- publish scientific articles and books on the topics under study.

Finally, the Centre will promote the practical application of their studies and research findings through:

- the implementation of psychosocial projects in the international arena by building virtuous partnerships with organizations and associations;
- consultancy to national and European bodies in the field of risk management and disaster, with particular attention to aspects of green thinking and cooperation;
- the creation of remote support programs on the issues under study.

Thank you so much for providing some information about your program. It is such a new and exciting development for HWP. Are there any additional comments or suggestions you'd like to provide?

We are excited to have the I-O psychology community hear about the work we are doing, and are eager to collaborate with interested parties and meet more like-minded individuals. For more information don't hesitate to contact:

Cristian Caruso, Clinical Psychologist, Office Manager of HUP, Humanitarian Psychology Research Centre, University E-Campus, Novedrate (Como) Italy;
Cristiancaruso83@yahoo.it

It was truly my pleasure to speak with Cristian and Andrea about the work they and their colleagues are conducting in Milan. The larger picture of their work is wholly applicable to a variety of contexts and settings—for example, studying the psychological well-being of immigrants is important from a social psychology perspective but also because of the far-reaching implications of job opportunities and subsequent performance when employees are undoubtedly under a great deal of stress. These topics are not inconsequential in our approach to I-O psychology, especially in an increasingly global workplace. I am excited to see the progress of the research center and am hopeful that the work being done will be replicated in a host of locations to provide us with many multidisciplinary research groups seeking to improve the human condition globally.

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Allison S. Gabriel
University of Arizona

Designing Your First Doctoral Seminar (When You Still Feel Like a Doctoral Student)

One of the scariest things I was asked to do when starting my job as an assistant professor was design my own doctoral seminar. As a newly minted PhD, this sounded incredibly daunting. Sure, I had taken my fair share of seminars as a doctoral student. I knew the structure (read a ton); I knew the objectives (learn a ton); and, I knew the importance of these seminars for a doctoral student's education, which is why I was so nervous to enter that doctoral seminar room for the first time in spring semester of 2014. I will never forget the first day I walked in to that seminar room and sat down at the head of the table for a change, with four first- and second-year doctoral students staring right back at me. To make the course as successful as possible, I channeled some past experiences from my own doctoral education and training that I think truly prepared me to teach a seminar at this level for the first time. Given that everyone completed the course and no major damage was done (at least, I don't think so), I thought I would engage in a bit of reflection on what worked for me for all those new assistant professors out there who may be facing a similar challenge.

Assist With Graduate-Level Coursework Early and Often

In my doctoral program at The University of Akron, I spent a semester as a teaching assistant for a graduate seminar in statistics with **Andee Snell**. The vast majority of my teaching training—and I'm sure this is similar for a lot of people out there in academia—was with undergraduate students. This meant that assisting with Andee's course was my only chance to see what a doctoral seminar was like before I transitioned into my role as a professor. Overall, this was a positive experience because it allowed me to have a behind-the-scenes look at how a graduate seminar gets designed, what the grading requirements are like, and how to take ownership of teaching doctoral students who were incredibly close to me peer wise. This was further reinforced when I got to Virginia Commonwealth University for my first academic position. Early on, I agreed to teach a day for the fall research methods seminar comprising the same PhD students I would be teaching the next semester. I assigned articles and prepared for class the same way

I planned on doing for my own seminar, and it allowed me to become more comfortable with owning the material (something that I found particularly challenging because I still felt like I should be the one taking the course not teaching it!) and fielding questions from students who were at a very different level than what I experienced in the undergraduate classroom. It also gave me a moment of clarity and calm as I realized that doctoral students weren't so scary after all; they were nervous (just like I was) and wanted to do the best job they could in the classroom (which I was trying to do as well).

Take a “Best Of Collection” Approach From Past Seminars

Because I had taken so many doctoral seminars, I had the chance to create a “best of collection” of the seminars I had taken when it came to designing my own graduate-level course. I cannot reiterate what a good life decision it was that I kept syllabi from each of my completed seminars (even though I can distinctly remember times that burning them seemed like a really good idea) as it gave me a variety of grading rubrics, articles, and schedules to revisit when I was trying to come up with my syllabus. Even though I had dreaded certain assignments when I was a graduate student, I had a different perspective as a new faculty member and found myself assigning readings with which I had struggled, assignments that had frustrated me, and even designing a comprehensive-style final exam because I knew from my own experience how valuable practice was in getting ready for my own comprehensive exams. Even though I assigned readings with which I was familiar, I was still surprised with how much time I spent rereading

articles and how my take on the articles had evolved so much since the time I read them as a student for class or my own research. It was also a fun trip down memory lane as I pulled many of my old notes on the articles to help me recall issues with each piece I had assigned so I could better formulate discussion points for the class. I wish I could go back in time and tell 2nd-year student Allie that no, taking notes on the exact sample size is probably not the most important piece of information to glean from an article. (Apparently, theory matters!)

Design Around Your Strengths...

I was lucky—really *lucky*—that I was given complete freedom with my doctoral seminar as long as it fit within a general topics course related to organizational behavior. In fact, I was advised to give the doctoral students a tour of my research in my seminar for two reasons. First, it would give me leeway to pull articles that were in my wheelhouse, which would create a sense of comfort for me in the classroom. Second, and perhaps more critically, it allowed the doctoral students an opportunity to get to know me and my interests for future collaborations. In essence, I created a seminar that walked through an entire stream of my work, which included integrating in couple of my own articles to discuss in class. Although it was incredibly awkward to talk about my own work (and accidentally talk in the third person—that's not a great thing to do in most cases), I was able to use it as an opportunity to share some insights into the “black box” that is the peer-review process by going through my very different review experiences with each article. In one case, one of my articles sparked a dissertation topic idea

for a doctoral student in my seminar. Seeing that come to life (she recently proposed and I was able to be there for it) has to be one of the coolest moments of my incredibly young academic career. There is such a fine line we walk between maintaining humility and being proud and confident in our intellectual contributions to the field. This is something I struggle with (and, to be honest, probably warrants a column in *TIP*) and was an issue I had to really deal with when it came time to assigning my own research for class. But, assigning such readings proved really important for me as it helped further ideas for my students and some ideas of my own.

...and Areas You Want to Grow

I found my seminar to be a fantastic playground for some new ideas I was hoping to pursue. A habit of mine since I was a graduate student was bookmarking articles to be read one day in the future. I don't know about many of you, but that "one day" seems to always get further away as new deadlines and commitments continuously pop up. Some sage advice I was given from many seasoned faculty members was to add in some readings that have been on my "to read list," and this worked great for me. I knew I would finally read them (Sunday afternoons were my reading time every week since I taught my seminar on Tuesday afternoons and prepped my notes on Monday mornings), and getting to go right into discussion with my students always helped me think of new ideas and applications to projects I had been mulling over when I pulled the reading in the first place. Plus, because the articles were new to me when

I assigned them, it was always a fun surprise to see points my students and I would enjoy, points we would disagree with, and points that would just plain confuse us. I was very up front with my students from day one that it was my first time teaching a doctoral seminar, and I wanted the environment to feel relaxed even though I had high expectations for their performance. Having articles that were a first-time read for everyone really allowed me to keep my word on that promise and created a great sense of authenticity in the classroom as we moved through the articles together.

My Big Takeaway? Graduate Students Aren't So Scary

In the end, I think I psyched myself out much more than I needed to when it came to designing and teaching my PhD seminar. It's easy to feel like you belong in the students' seats when you just finish your program (and when the students are older than you!), but it is true that completing a dissertation really forces the transition from graduate student to assistant professor. Also, given my closeness to the students in both academic age and literal age, I would like to think that helped enhance the level of trust in the classroom. No arguments emerged because I was too new to teach or didn't know what I was talking about. No one walked out saying they didn't learn anything or wanted a refund. Instead, we were all a little scared, and being honest and open with that helped in more ways than one. On the first day, I told everyone as I sat down that if we all held on together, we could make it out unscathed. I sure hope I kept my promise.

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SIOP in Washington



Expanding the Impact of I-O Across the Federal Government

We are excited to share with you information about SIOP's efforts to build its identity in Washington, DC to support federal funding for I-O research and use our research to help guide policy discussions. Each quarter we will report to you on new advocacy activities as well as our analysis of the role of I-O psychology in significant federal or congressional initiatives, such as the annual appropriations process and emerging national initiatives. We are excited about our progress and look forward to working with you as we pursue these important goals!

Introduction

Following a robust government relations strategy in the first half of the year, SIOP government relations has continued to foster momentum through the summer and fall to ensure SIOP's priorities are represented to federal and congressional policy makers as they consider the federal budget and new authorizing legislation. In addition to these efforts, SIOP leadership and Lewis-Burke have collaborated to launch a new government relations initiative on policing, specifically to encourage the application I-O research to federal policy and program decisions, as well as to inform federal and congressional policy makers about the benefits of evidence-based decision making in policy. Below is more information about recent and ongoing advocacy activities.



Seth Kaplan
George Mason
University

SIOP Weighs in on the Impact of Basic Research

On August 14, SIOP President **Steve Kozlowski** submitted a [letter](#) on behalf of SIOP to the Senate Commerce, Science, and Transportation Committee, urging the committee to reauthorize federal research and development programs under the America COMPETES Act at the highest possible funding levels. The Senate Commerce, Science, and Transportation Committee issued the call for comments on the America COMPETES Act to help inform decision making, as members of the Committee consider priorities for the National Science Foundation (NSF)



Laura Uttley
Lewis-Burke
Associates LLC

and the National Aeronautics and Space Administration (NASA), among others. Through the letter, SIOPI also advocated for continued federal investment in social and behavioral science research, which has been scrutinized, especially by Republicans in the House of Representatives, over the last few sessions of Congress.

Through continued engagement with congressional policy makers such as submitting this letter, SIOPI asserts itself as an active stakeholder in federal science and research conversations as well as an important resource to inform policy decisions. This recent government relations activity furthers SIOPI's ongoing NSF outreach initiative, building off the official written testimony that SIOPI submitted to House and Senate appropriators in March 2015 and the regular participation in the Coalition for National Science Funding (CNSF).

SIOPI Launches a Government Relations Initiative on Policing

During the April 2015 Annual Conference, SIOPI leadership and members engaged in a variety of conversations related to the ongoing challenges facing communities and policing. Lewis-Burke presented to SIOPI's Executive Board following the annual conference, and President-Elect **Jim Outtz** proposed developing a government relations initiative on policing as a way of bridging internal SIOPI conversations to federal policy debates. Given SIOPI members' research on and involvement in police selection, recruitment, and training, as well as organization culture and change, Lewis-Burke began working with

Dr. Outtz to create a working group to respond to this national need and provide evidence-based solutions to growing policy challenges.

On June 10, SIOPI and Lewis-Burke facilitated the first working group call, including SIOPI members **Frederick Oswald, Michelle Hebl, Kevin Ford, Daniel Newman, Leaelta Hough, Cindy McCauley, and Ann Marie Ryan**. Together, the working group discussed areas of opportunity for SIOPI to engage with federal policy makers, as well as goals for the SIOPI initiative. Lewis-Burke contributed by providing an overview of questions and areas of concern for federal stakeholders, including Congress, the Administration and federal agencies, and various associations and think tanks. Through this process the working group developed four main topic areas for engagement: training, organizational and cultural change, selection, and leadership.

The working group is currently divided by topic area to identify I-O research and models to include in written materials to share with and inform federal agency officials and members of Congress. There continues to be increased scrutiny over state and local policing policies at the White House, through congressional hearings, and at events hosted by think tanks. This long-term effort will include the development of white papers, communication with federal and congressional actors, and other government relations events to feature the application of I-O and evidence-based research when addressing policing and community challenges.

In addition to the relevance of this topic area, SIOP's development of a topical government relations working group facilitates strong member engagement in the overall government relations initiative and promotes a breadth of member expertise

and perspective. SIOP government relations looks forward to implementing new opportunities to bridge member interests with federal policies and building an active base for government relations activities.

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International Practice Forum



Lynda Zugec

The Workforce Consultants

Milestones are worth celebrating, and the 40th Anniversary of the Canadian Society for Industrial and Organizational Psychology (CSIOP) is no exception. In this column, we celebrate it by honoring and sharing the past. The CSIOP executive team also describes some of the specific challenges faced by industrial-organizational psychologists in Canada, such as the presence of two official languages and Canada's sheer size and geographical diversity. Read on to learn more about the landscape for I-O practitioners and academics in Canada.

Happy 40th Anniversary to the Canadian Society for Industrial and Organizational Psychology!



Silvia Bonaccio (Chair, CSIOP), **Joshua Bourdage** (Editor), **François Chiochio** (CSIOP Chair 2012-2013, current conference program coordinator and webmaster), **Gary Latham** (CSIOP first president), and **Winnie Shen** (Membership Coordinator)

I-O psychology is alive and well north of the U.S. border! With this column, we're pleased to introduce, or reintroduce, the Canadian Society for Industrial and Organizational Psychology (CSIOP) to SIOP members. The partnerships between SIOP and I-O psychology in Canada are strong. As with the music industry, many don't realize that some of our most famous and innovative individuals are indeed Canadian. For instance, several SIOP Fellows are Canadian, including **John Meyer**, **Natalie Allen**, **Gary Johns** and **Kevin Kelloway**, to name a few. Further, SIOP Fellow Gary Latham, who is a founder and was the first chair of CSIOP, served as the president of SIOP from 2008 to 2009.

Avid *TIP* readers may remember that CSIOP has been mentioned in these pages a few times before. In [January 1999](#), Lorne Sulsky wrote about I-O psychology in Canada; in [July 2005](#), **Sunjeev Prakash**, Greg Sears, and Sikander Majid wrote about the Ottawa I-O psychology group; in [April 2007](#), Jacques Forest wrote on I-O psychology in the French-speaking province of Québec; and in [April 2012](#), **Tom O'Neill**, then CSIOP's Communications coordinator, wrote about what Canadian scholars are doing to bridge the scientist-practitioner gap. So why write about CSIOP now? For

starters, 2015 marks the 40th anniversary of CSIOP. Most importantly, perusing these articles allowed us to realize that a substantive piece on the history and contributions of CSIOP had not been written for *TIP* readers.

Early Roots of I-O Psychology in Canada

Webster (1988) has traced the roots of I-O psychology in Canada to 1928, when a recently minted PhD graduate by the name of Gerald P. Cosgrave was appointed as “personnel supervisor” at the Sun Life Assurance Company. In this role, Dr. Cosgrave developed and administered standardized selection tests. Unfortunately, very little was written about the early history of I-O psychology in Canada, but what we know is recorded by Webster (1988), based on his and two colleagues’ (including Dr. Cosgrave) recollections. We know that the early years were marked by challenges of establishing our identity as psychologists, accessing specialized training, and acting in professional roles that reflected I-O principles (Webster, 1988). Interestingly, as compared to the U.S., World War I did not result in major growth for I-O psychology in Canada. Neither did World War II (Warr, 2007). However, World War II served as a catalyst for psychologists in general to coordinate among themselves to show the government the role psychology could play in the war effort. The Canadian Psychological Association (CPA) emerged in 1939 as a result (Wright, 1974). Psychology-based work during the war was carried out mostly by clinicians rather than I-O psychologists, despite the fact that the much of the work being done was well within the purview of I-O psychology (Webster, 1988).

By 1946, the CPA Directory listed 14 members who were identified as industrial psychologists; by 1956, this number had grown to 49, all of whom were men and most of whom resided in Ontario and Québec (Webster, 1988). After the war, only two universities in Canada had programs in industrial psychology. McGill University’s program, now defunct, began in 1949; the one at Université de Montréal began in 1958 (Bordeleau & Morin, 1988). Although clinical psychology students received government bursaries to help with their education, none were available to early industrial psychology students (Webster, 1988). Webster adds that for many years, organizations preferred to hire MBA graduates than those with I-O psychology training, owing to the greater mobility of MBAs within the employing organization.

Other doctoral programs began to form, such as the one at the University of Waterloo in 1964 and the now defunct program at the University of British Columbia in the 1960s (Lowman, Kantor & Perloff, 2007). Today, there are nine I-O psychology doctoral programs in Canada (i.e., Université de Montréal, Université du Québec à Montréal, Université de Sherbrooke, University of Calgary, University of Guelph, University of Waterloo, University of Windsor, Saint Mary’s University, and Western University) and over 20 business school programs offering doctoral education in OB, HR, or related fields. The first of these, the University of Toronto began its doctoral program in OB-HRM in 1963 (Lowman et al., 2007). As is the case in the U.S., many of these business schools house faculty members squarely trained in I-O psychology (e.g., Gary Latham).

The Birth of CSIOP

Despite the fact that the roots of I-O psychology in Canada go back to 1928, it wasn't until 1975 that CSIOP officially became a formal section within CPA. Therefore, 2015 is a particularly special year for CSIOP. The 2015 Convention marked the 40th anniversary of our presence as CSIOP at CPA. At our Convention in Ottawa this year, we assembled a panel of 12 CSIOP chairs spanning the full 40 years. Looking back on our history through the eyes of these individuals, it became clear that each decade was marked by unique challenges and opportunities.

Early on, the need for I-O psychologists to congregate and organize as a community was felt by many. In part, this was fuelled by the perception (and often fact) that CPA was largely overlooking I-O psychology in its initiatives, such as special review issues in its journal or "states of the discipline" reviews (Catano & Tivendell, 1988). Although early attempts to create a separate section failed, through "interest groups" initiatives, I-O psychology gained popularity and was able to have more autonomy at CPA annual conventions. Finally, in 1975, CSIOP was officially born, thanks to the efforts of a determined group of colleagues, which included Gary Latham, our first president, Robert Haccoun,



As a way to celebrate our 40th birthday and mark our achievements to date, we kicked off the I-O program at the 2015 CPA convention with a panel of historical significance. Hosted by then-chair elect Silvia Bonaccio, 12 past chairs (Latham, Rowe, Catano, Cronshaw, Hackett, Finegan, Meyer, Day, Allen, Harvey, Hausdorf, and Powell) discussed themes such as the defining moment of their year as chair, the challenges and opportunities they encountered, and their hopes for the future for I-O psychology in Canada. At the end of the session, we invited past chairs who were in the audience to pose for a picture. Together, they represent our CSIOP history, from 1975 to 2015.

Back Row: François Chiocchio (2012–2013), Victor M. Catano (1984–1986), E. Kevin Kelloway (2008–2009), Steven F. Cronshaw (1986–1988), Rick D. Hackett (1993–1994), John P. Meyer (2000–2001), Natalie J. Allen (2004–2005), Steve Harvey (2007–2008), Deborah M. Powell (2013–2014)

Front Row: Gary P. Latham (1975–1977), Patricia M. Rowe (1978–1980; 2003–2004), Joan E. Finegan (1996–1997), Arla Day (2002–2003), Lori Francis (2014–2015), Peter A. Hausdorf (2009–2010), Silvia Bonaccio (2015–2016)

John Tivendell, Lorne Kendall, and Ken Grant. We were fortunate that Robert Haccoun was working at Bell Canada (a major telephone company) at the time which allowed subsidizing telephone costs. So, one by one, we called dozens of people who published in journals and either identified themselves as Canadian or lived in Canada to invite them to join our section. The editor of the *Canadian Journal of Behavioural Sciences* was persuaded to appoint University of Toronto professor and the founder of the GLOBE Project, Robert J. House, to the editorial board. Gaining credibility and more autonomy within CPA was accomplished through securing program time at the CPA Annual Convention for I-O research and practice. Indeed, the CPA program committee was cajoled into giving us ample time slots for symposia, papers, and workshops. We were on our way!

Much of the decade following the inception of CSIOP was aimed at influencing CPA and at addressing the needs of a growing community of I-O psychologists. Cronshaw (1988) noted that the demand for I-O psychologists grew faster than the supply of graduates from I-O programs. This likely contributed to the fact that social and clinical psychologists sometimes “offered their services as ‘industrial’ psychologists” (p.40) despite lacking the required training to do so. Working with a united front as “CSIOP” allowed us to have greater influence on industry and add legitimacy to our profession. Efforts to become more visible in the Canadian psychology community also culminated in the 1988 publication of a special issue of *Canadian Psychology* on I-O psychology, edited by **Victor Catano** and John Tivendell. Our newsletter, initially *The Bulletin*, now

The Canadian Industrial and Organizational Psychologist, was first published in July 1984 (V. Catano, personal communication, July 10, 2015). The newsletter helped improve communication within the growing I-O community. With growth came the need for more structure and the first iteration of our bylaws was drafted in 1985. In 1986, the final version of the bylaws was presented to the membership in a mail ballot, and they were formally adopted for the 1986–1987 convention year (V. Catano, personal communication, July 10, 2015).

Students have always played an important role at CSIOP, and early records show students discussing their award-winning research at the convention. Although in existence for several years prior, the student award was officially named in 1985 to honor one of our early Canadian influences in I-O psychology, Lorne Kendall, who had recently and prematurely passed away. Kendall, a student of **Patricia C. Smith**, is most well-known for his work on behavioral expectation scales and the Job Description Inventory (Latham, 1988). The 1986 convention marked the first time the Kendall Award was given (V. Catano, personal communication, July 10, 2015). Today, the Kendall Award is known as the RHR-Kendall Award to recognize the generous financial support RHR International provides to the winning students.

Moving Forward

As we continue to grow, Canadian I-O psychology faces some challenges related to divides that need to be bridged. We wrote about these challenges in a second special

issue devoted to I-O psychology published in the *Canadian Psychologist* (Bonaccio, et al., 2013). Some of these challenges are rather unique to a large country such as ours, and others are shared by all I-O psychologists regardless of provenance. For instance, shared challenges arise from having our feet in different worlds (science and practice; psychology and business), and attempting to find an identity that can bridge these worlds. These have been discussed in the pages of *TIP*; as such, we will focus on our unique challenges instead.

One challenge that is perhaps shared with a handful of other countries (e.g., Belgium; South Africa; Switzerland) is the presence of two official languages: English and French. I-O psychologists can spend their entire education and career, whether research or applied, in the language of their choice. Take publishing in our journals as an illustration. Because Canadian journals are bilingual, one can choose to publish in English or in French. The reality is that there are more bilingual I-O psychologists who designate French as their main language than vice versa. As a result, Francophone (as French-speaking Canadians are known) I-O psychologists are more likely to read and cite the research published in English than are Anglophone I-O psychologists to read and cite the research published in French. French-speaking I-O psychologists often choose to write in English for visibility purposes. “Although for some scientists and practitioners, the issue of language is solely a practical one, others consider their language as a key feature of their cultural heritage. For them, publishing in a language other than their own can

be experienced as disheartening and demotivating” (Bonaccio et al., 2013, p. 217).

CSIOP has taken several steps to bridge the language divide within its society. First, our website is fully bilingual, which is not the case of many other CPA sections. Second, we have organized symposia and panels that include speakers in both languages and have paid for simultaneous translation to do so. These are literal cases of knowledge translation! Our annual speed-mentoring event for students takes place in both languages simultaneously. We have even taken the publication machine to task by lobbying (and when that didn’t work, begging) the editor and publisher to publish the aforementioned article in English *and* French (Bonaccio et al., 2013). Our vision had been for both linguistic versions published side by side so that whether one quoted the French or the English text, the page number would remain the same. We had to settle for the two versions published in sequence, but we are proud of this accomplishment nonetheless.

A second challenge particular to Canada is the sheer size and geographical diversity of our country. Central Canada—the south of Ontario and Quebec—is the hub of the population. As a result, most universities and businesses are located in this region. “While East-West challenges abound, North-South issues are even more acute. To our knowledge, there are no university programs, consultancies, or industrial and organizational psychology personnel of large public or private organisations that cater specifically to the challenges of the workforce in the Northern parts of Can-

ada. To some extent, the French-English cultural divide which occurs mostly in the East-West axis is simplistic as it leaves out all the Aboriginal peoples' cultural heritage that are an important part of the Canadian reality in both East-West and North-South axes" (Bonaccio et al., 2013, p. 219).

Some areas wherein Canadian I-O psychologists can have a geographical influence is the organization of the healthcare industry in the North. Recruitment challenges and high turnover of specialized personnel are two difficulties that are, at their very core, I-O psychology topics. To be sure, the cost to do research or consulting in remote locations is high. Yet, this cost can be divided among institutions, academic, consultancies, and government. Furthermore, it is worth noting that federal and provincial funding agencies view activities in remote locations favorably. As argued by Malone and Hardy (2013), in the context of clinical and counseling psychology, "the challenges of the rural and northern contexts are balanced with distinct rewards for this area of practice and great potential for social advocacy" (p. 11).

As CSIOP matures, we still have to work to sustain and increase membership. Part of this is because full CSIOP members must first be CPA members, which is not a small expense. Another reason is the competition for membership from international and national bodies that represent I-O psychologists (e.g., SIOP, EAWOP, Division 1 of IAAP, SQPTO in the French-speaking province of Québec) or those that meet many of the same needs (e.g., AOM). Thus, the pressure to assert the value of CSIOP to its members, as a section of CPA and as

a stronghold to the identity of Canadian I-O psychologists, is strong.

CSIOP by the Numbers

- 1975: the year CSIOP was founded
- 1: website www.csiop-scpio.ca
- 3: places to find us on social media (www.facebook.com/CSIOP.SCPIO, Twitter [@CSIOP_SCPIO](https://twitter.com/CSIOP_SCPIO), and a CSIOP group on [LinkedIn](https://www.linkedin.com/company/csiop-scpio))
- 40%: Past chairs of CSIOP are women
- 182 full members
- 114 student members
- 6 affiliate members
- 26: I-O psychologists who are CPA Fellows
- \$40: the cost to join CSIOP as an affiliate member, which given the current exchange rate between the US and Canadian currencies, is a bargain!
- 34: the number of sections at the Canadian Psychological Association (CPA). CSIOP is one of these sections.
- 35,750,000: the Statistics Canada estimate of the population of our country as of April 2015.
- 10: provinces, from West to East: British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec, New Brunswick, Nova Scotia, Prince Edward Island, and Newfoundland and Labrador
- 3: territories: Yukon, Northwest Territories, and Nunavut
- 2: the official languages of our country and of our society
- 1: yearly conference, held as part of the CPA annual convention
- 4: newsletters published every year
- 8: members of the CSIOP executive: Chair, Past Chair, Chair-Elect, Student

Representative, Editor, Membership Coordinator, Program Coordinator, Secretary/Treasurer

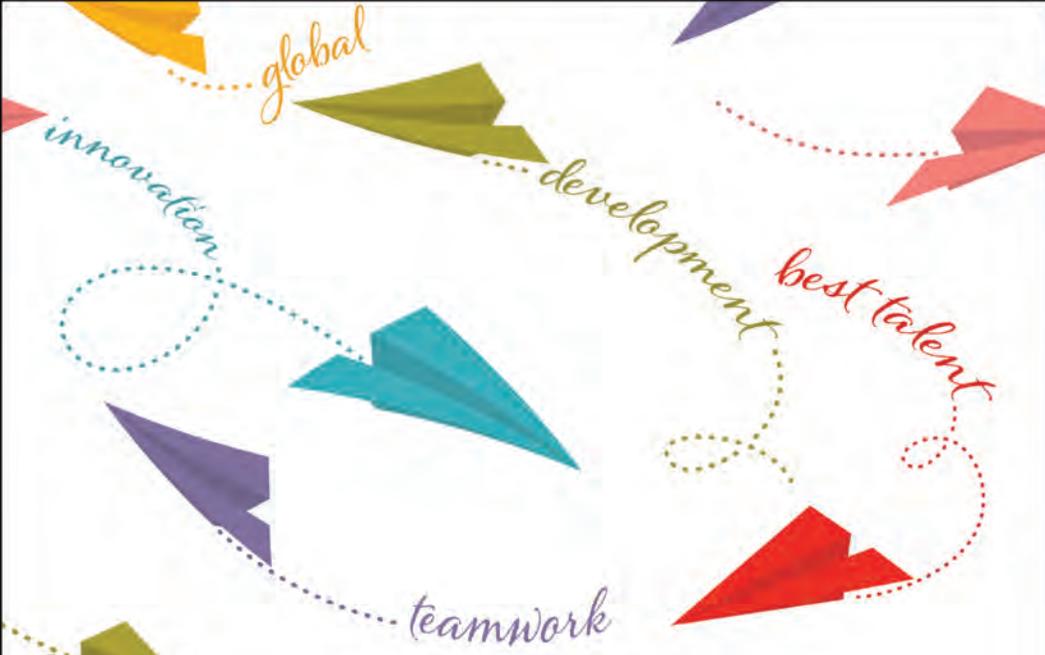
- 3: number of CPA presidents who are also I-O psychologists (J. S. A Bois, 1949, Gary Latham, 2000; **Kevin Kelloway**, 2015)

Thanks for reading about the history of Canadian I-O psychology! We continue to strive for cross-collaboration between Canadian and U.S. I-O psychologists. If you'd like to engage with your northern neighbors and keep up to date, there are several ways to become involved. First, visit our new website at www.csiop-scpio.ca. We have several blog postings for academics, practitioners, and students, and we hope this can be a forum for a dynamic exchange of ideas.

Second, be sure to follow us on Twitter (@[CSIOP_SCPPIO](https://twitter.com/CSIOP_SCPPIO)), [LinkedIn](https://www.linkedin.com/company/CSIOP_SCPPIO), and Facebook (www.facebook.com/CSIOP.SCPPIO). We regularly post exciting news, links to new work being published or featured in the media, and original content we generate. Finally, if you'd like to become more formally involved with CSIOP, we offer an Affiliate Membership for only \$40 and regularly welcome international attendees at our conference in June. We look forward to a continued dialogue and partnership to see I-O as a discipline, and its profile, continue to grow!

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On the Legal Front



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A Tale of Two Tests

A milestone was recently passed in the 19 year history of *Gulino v. Board of Education [BOE] of the City School District of the City of New York*: an old teacher certification test was found discriminatory and a new test was not. There are two main issues: (a) content validity in light of the classic analysis in another NYC case, *Guardians* (1980); and (b) responsibility for the allegedly discriminatory test. BOE is the employer, but the certification requirement and test come from the NY State Education Department (SED). Failure to follow SED's mandate could have cost the BOE billions of dollars in state funding. Note that a certification requirement implies recognition of some competence but is not necessarily a requirement to work. Licensure is a governmental function generally to protect the public by ensuring some minimal competence and is a requirement. The distinction has relevance for arguments on who should be a defendant in this case.

I based this article on the court decisions alone. Because some are recent, there may be appeals. I take no position on the merits.

From 1993 to 2012, BOE required the Liberal Arts and Sciences Test (LAST) as one of three assessments for certification. LAST-1 ran from 1993–2004; LAST-2 was used 2004–2012. LAST-1 action started in 1996. A partial set of *Gulino* decisions and what they determined is in the references. LAST is a test of general knowledge that might arise in a classroom situation. “LAST covered information that teachers would learn in college liberal arts and science classes” (*Gulino* 2012).

Gulino III and IV were covered in *TIP* by Gutman and Dunleavy (2008). *Gulino* III was an overall win for defendants (LAST-1 was job-related) but a setback for SED (state had potential liability). The Court of Appeals in *Gulino* IV remanded the test back to district court because law and fact did not support a job-relatedness finding, but dismissed SED as co-defendant. The final act for LAST-1 was *Gulino* V. LAST-2 was addressed by *Gulino* VI (June 5, 2015). A new test was evaluated in *Gulino* VII (August 7, 2015). The same district judge rendered the decisions in *Gulino* V and later.

Content Validity

Guardians proposed five content validity standards: (a) the test makers must have conducted a suitable job analysis; (b) the test makers must have used reasonable competence in constructing the test; (c) the content of the test must be related to the content of the job; (d) the content of the test must be representative of the content of the job; and (e) there must be a scoring system that usefully selects those applicants who can better perform the job.

Rather than a detailed accounting of what was decided when, here is a summary of lessons.

LAST-1

Do the validation. The initial defendants' win was based on *Gulino III's* reading of the *Watson* plurality opinion (1988): "Our cases make it clear that employers are not required, even when defending standardized or objective tests, to introduce formal 'validation studies' showing that particular criteria predict actual on-the-job performance." Defendants won because the test was "manifestly related to legitimate employment goals," although there was no "formal" validation. That was too vague for the Second Circuit; some situations may not require validation as envisioned in UGESP, but this was not one of them, and *Guardians* is precedent when content validation is appropriate. The Second Circuit required evidence. Even with the documentation missing, evidence in the form of "first-hand accounts of those involved in the test validation process, as well as the

studied opinions of certified experts, may be sufficient, in some circumstances, to establish the validity of an employment test."

There are five Guardians ways to go wrong. *Gulino V* noted that no tasks had been identified, much less evaluated for relative importance. Moreover, the specific areas of liberal arts and sciences that might arise in classroom situations had not been identified for any grade level or subject area, so the test could not be considered as job related. Subtopics for the test had apparently been chosen by the test developer "largely without the assistance of relevant materials or experts." The test's foundation in job analysis (a) was deficient. Reasonable competence in exam construction (b) was compromised through lack of documentation and unrepresentative pilot testing. Test content was not directly related to the job of teaching (c); again, the lack of tasks was mentioned. Test content is not representative of the job (d). There is no evidence of which KSAs are important and no determination of "minimum knowledge about the liberal arts and sciences teachers need in order to be competent." The scoring did not identify those who would be better teachers (e). "Modified Angoff" was used to set the passing score. Apparently only 80 of 350 items in the item bank were reviewed. There were issues on the definition of "minimally competent" and how "the cutoff score should measure the minimum level of knowledge teachers need to be competent."

The Standards is an authoritative source. *Gulino V* cited to the *Standards* regarding pilot testing and documentation. "All parties to this case agree that the APA Stan-

dards represent reliable expert opinion on the validation process.”

LAST-2

Content validity rules. “[T]he simplest, and most straightforward way of interpreting *Guardians* may be to acknowledge that almost every employment exam should be assessed based on a content-validation methodology” (*Gulino VI*). This is part of a revisiting of the content–construct discussion in *Guardians*. For this court, abilities that relate to a particular job can be validated by establishing a link between abilities and tasks. When abilities apply to most any job, construct validation must be used.

Learn from your mistakes. LAST-1 problems were not remediated. Again, no tasks are identified. Content specifications originate, as with LAST-1, in “undergraduate and graduate course requirements, syllabi, and course outlines.” Without the tasks, relative importance of KSAs cannot be determined. The court noted that materials claimed to define the teaching job were never produced in court. The lack of race and ethnic representation in the test development and review was heavily criticized.

The Standards is NOT an authoritative source. *Gulino VI*, with the same judge as above, declared that the *Standards* did not have the authority of UGESP because the *Standards* were formulated by the American Educational Research Association and not by “executive branch officials” (note 20). The court indicated that BOE’s expert’s “substantial reliance on the Standards further undermines his conclusions.”

ALST

BOE introduced the Academic Literacy Skills Test (ALST) in 2014. Although the court considered ALST as the LAST-2 replacement, the tests are different. This one covers Reading and Writing to Sources, that is, reading comprehension and written analysis. It is not general knowledge of liberal arts and sciences. Test validity was determined by the court in *Gulino VII*.

The state was participating in the federal “Race to the Top” educational reform initiative. This caused two documents to be written. “In essence, the Teaching standards defined *how* New York’s teachers were expected to teach, while the Common Core Standards defined *what* they were expected to teach” (emphasis in original).

Adverse impact was disputed. The court bypassed this by ruling that the test was valid.

How did ALST succeed where LAST failed?

1. The Teaching and Common Core Standards defined in sufficient detail the teaching job. Literacy skills make up more than a minor part of the skills required by the job. These skills were common across subject being taught. In addition, there was a job analysis that identified current tasks and KSAs.
2. The court was satisfied that the items were sufficiently pretested, and the developers were established testing firms, so there was competence in test construction.
3. Regarding the relationship of test content to job content, “An exam

that tests for the literacy skills that a teacher must instill in her students is inherently job related. “ Assessment specifications were linked to the *Standards* documents.

4. Test content is representative of the teaching job content, although only two cognitive KSAs are tested. Here the KSAs linked to 20 of 34 critical tasks.
5. For scoring, the Modified Angoff method, “an accepted method for determining a minimum passing score,” was used. The court did not find the problems it noted with Angoff concerning LAST-2.

However, without the teaching *Standards*, the outcome could have been different. The issue was the unrepresentative race/ethnic composition of participants in focus groups, survey samples, and review committees. Also, the two KSAs were too broad. The “true” KSAs were “performance indicators” that provided more detail. In UGESP language (not used by the court), “operational definitions” of KSAs, rather than conceptual definitions, should have been used in linking tasks to KSAs.

In addition, the court contrasted job analysis where changes to the job are speculative and where the employer can specify the work. A tightly defined new job does not need a “futures job analysis.”

Commentary

The courts are not comfortable with validation technical matters. Gulino IV acknowledged, “Because of the substantive difficulty of test validation, courts must take

into account the expertise of test validation professionals.” However, courts also need “clearly established guideposts against which the reliability of the expert testimony can be evaluated.” Consequently, “following the [Uniform] Guidelines promotes consistency in the enforcement of anti-discrimination law.” Thus, “thirty-five years of using these Guidelines makes them the primary yardstick.” The obvious problem is that professional practice guidelines based on evolving science cannot be interpreted the same way as judicial precedent. Freezing the application of science was not intended by UGESP (Q&As 55 and 57).

Courts that say they rely on UGESP, don't. The Second Circuit criticized *Gulino III* for using UGESP and *Guardians* interchangeably. By *Gulino VII* the evaluation is all on the five *Guardians* factors. This does not necessarily produce a bad result, but it provides opportunity for the courts to avoid dealing with the science and practice issues that are, as the Second Circuit said, not legal issues. Relying on a previous precedential decision may satisfy a legal need, but it limits review to the issues and interpretation made in that previous case. Some of that interpretation can be strange. There is the contradictory treatment of the *Standards*; the negative treatment is predicated on an alleged conflict between the *Standards* and UGESP mentioned in a footnote. The main text gives a well-explained issue regarding job analysis that should not cause conflict. UGESP itself states that it is intended to be consistent with the *Standards* (1974 edition) and current developments in the field (§ 5C). Presumably an apparent conflict would

need examination and resolution, if UGESP were actually being followed.

The courts' elaboration on professional issues is problematic. Discussions with broad implications for practice should not be based just on previous cases or expert testimony from the instant case. *Guardians* had to address a distinction between KSAs and constructs. *Gulino VI*'s distinction between competencies applied to one job versus those applied to many is not particularly helpful. Criterion validity, certainly mentioned in UGESP, plays no role in the discussion, presumably because it did not appear in *Guardians*. The *Gulino* decisions raise questions that, although not dictating the current case outcomes, pose questions for future cases. Is point allocation superior to ratings scales in determining job element importance? How demographically diverse need job analysis participants be, and might that depend on the job circumstances?

Maybe there is a solution. *Gulino VI* and *VII* involved a court-appointed neutral expert, acceptable to both parties. This did not end dispute or address the issues above. But it seems a good idea, in line with the original idea of "social framework" analysis to inform the court. The Second Circuit mentioned "studied opinions of certified experts" as possibly establishing validation. Apart from who certifies, this might be something courts undertake. Gutman and Dunleavy would implement review by a panel of experts to establish the soundness of the assessment procedure before there is a litigation issue. Somebody (or some professional society) should do something.

Whom to Sue: Title VII and State Regulations

Initially both BOE and SED were defendants. *Gulino III* (2003) found that the state went beyond its licensing authority in requiring nonmandatory certification, that is, the test was not a licensing requirement that applied to both public and private school teachers. In so doing, the state "interfered" with employment opportunity (AMEA, 2000; Sibley, 1973), and so was an employer for Title VII purposes. BOE argued unsuccessfully that it had effectively no choice in following the state mandate and, alternatively, it was part of the licensing system rather than an employer. The Second Circuit held that BOE was clearly an employer. *Gulino IV* was also clear that Title VII trumped state regulations and mandates, so the employer was liable for Title VII violations. SED dropped out of the case because, although it mandated the certification, it did not hire, direct, or pay the teachers; it was not an employer. Despite rejection of "interference" theory in *Gulino IV*, and an even stronger rejection in *Lopez* (2009), *Gulino VII* devotes a page to a foot note on why degree of state control might constitute Title VII interference in future cases.

BOE subsequently appealed to the U.S. Supreme Court, raising the question of whether it should be liable for following the SED mandate. The Court, in turn, asked the Solicitor General (SG; Brief, 2008) for the U.S. government's opinion. "States are not forbidden by the Constitution from enacting or enforcing licensing requirements that have unintentional disparate impacts, and Title VII does not intrude on that tra-

ditional state authority.” Employers have a business necessity defense. Nevertheless, the SG recommended that the Court not hear the case; the details were too muddy for a definitive ruling on the question presented. The Court did not take the case.

Commentary

Similar issues are pending. EEOC’s 2012 guidance on use of criminal history in personnel selection (also UGESP Q&A 7) follows case law: Title VII trumps state regulation on criminal background. The SG brief takes a different view, with its own legal theories. Case law indicates that the state in the role of licensor is not the employer. But “interference” theory may say otherwise. State licensing has recently come under fire (U.S. Department of the Treasury et al., 2015) for too often not being job related, being inconsistent across states, and limiting employment opportunity while increasing consumer costs. Limiting employment opportunity by protected class is a Title VII concern.

Gulino VII may apply to other certification matters. There has been an increase in testing for various skills certifications for employment, including basic skills. Such certification is “portable,” not specific to job or employer. Qualifications not linked to a particular job are suspect, so the issue is how to validate. *Gulino VII* suggests that if the employer has control over what work is done and how it is done, then the matching of test content with job specifications follows traditional content validity. This seems to follow from the content-construct discussion in *Gulino VI*. A competen-

cy used everywhere requiring construct validation becomes particularized in a given job and content validity applies. This is not particularly new; how the competency is defined, not its label, is what matters. Also, a single certified competency might be considered if it is critical to the job and measured at the minimum required for the job; the latter is line with UGESP Q&A 93.

The Supreme Court passed on the state licensing issue 7 years ago. The issue has not gone away.

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Practitioner Ponderings



First, my thanks to SIOOP President **Steve Kozlowski** for contributing to the HRPS sponsored HR Association Executive Roundtable interview article in the special edition of the October 2015 *People + Strategy* journal where **Dr. John Boudreau** and I are guest editors on the topic “Advancing the HR Profession: Contributing to the Future of HR.” This represents another great collaboration between SIOOP and HRPS, and is much appreciated. I encourage any SIOOP members interested in organizational HR practices to consider HRPS membership, which comes with a free SHRM membership (see <http://www.hrps.org/>).

Second, has anyone yet noticed the disturbing fact that the picture in this column of the “practitioner pondering” appears, like the emperor, to be a leader who has no clothes? Who will tell him?

This column will focus on I-O’s contribution to the practice of **staffing** within organizations. In this case the “having no clothes” claim could relate to the allegation that both scientists and practitioners “don’t know what they don’t know,” are the “victims of past success,” and better wake up to the fact that everything is changing and the next generation “ain’t gonna take it any more”! With this focus on staffing, I will argue that we have collectively become so enamored with perfecting the statistical and methodological soundness of well-validated selection systems (because that was our strength, claim to fame, and ticket to the show) that we have failed to significantly participate in or lead so many other staffing innovations. A few that I will describe in this article are:

- Creativity challenges,
- Talent contests,
- Undercover recruiting,
- Social recruiting,
- Innovative screening,
- Skype interviewing,
- Gamification, and
- Holocratic hiring (a nod to Zappos’ experiment)

—all of which (and much more) are happening whether we like it or not, or are participating in it or not. I believe I-O



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psychologists could contribute mightily to these types of innovations in staffing. It is not that we should run willy-nilly into every new staffing innovation (especially because many end up being harshly exposed as ill-conceived fads) but rather that we apply some of the “science” we have to ensuring that new staffing innovations are as robust, reliable, valid, nondiscriminatory, and impactful as possible.

As we use this column to explore how we can apply science to practice, we will explore the design and implementation of **staffing** systems within organizations and the role that an I-O Psychologist can play. We will address this in two parts: In the last section we will provide a summary of “How Can I-O Psychologists Help,” which addresses many important topics in today’s staffing environment. For that segment we will reference the SIOP website which provides a special section that specifically describes how an I-O Psychologist can contribute to the practice of Human Resources in organizations. On the SIOP website, see “Professionals” under the “[For Organizations](#)” column. Useful stuff; but I will suggest here that it is not what will drive us into the innovative future in which we should be participating, or better yet, be leading.

Let’s now explore the example staffing innovations previously listed.

Creativity Challenges

When specific skills are needed, innovative organizations have developed contest type approaches to attracting potential candi-

dates. Google got famous for putting up billboards with difficult mathematical puzzles, which if solved lead to a website URL with yet another puzzle, and if solved leads to the opportunity to apply. The jury is out on whether they hired anyone through this process (some say zero), but it definitely built their brand with a strong marketing message that mass media picked up on. SeatGeek actually invites engineers to hack into their website as the way to submit their resumé. The search engine start-up company Quixey created a coding contest called the Quixey Challenge to attract engineering talent. Participants were asked to solve a bug in a line of famous code in under a minute in order to win \$100 and get a T-shirt. Of the 38 winners, 5 became the serious candidates for three positions.

Talent Contests

Talent contests can help organizations solve real problems and at the same time identify and attract talent. The Department of Defense created a robotics race because they needed to significantly upgrade the outmoded unmanned vehicles that existed at the time. They invited engineers to create robots that would compete in a 250 mile race on difficult terrain requiring sophisticated computerized mapping and steering systems. Not only was a new excellent product created but a large set of engineering talent for the Department of Defense was identified.

MGM Resorts International has the Iron Chef competition to attract great chefs to their organization. Chefs create a menu from a specified list of ingredients in order

to compete for the top chef position in their MGM Grand property in Las Vegas. Having served as the SVP-HR for Mirage Resorts (half of the MGM Resorts International organization at the time), I can attest to the fact that this content attracts a lot of culinary talent to the organization.

MasterCard has their “InternsWanted” campaign, complete with a YouTube message asking people for a creative submission of any sort to give their ideas on how to promote some part of MasterCard’s vision for the world (e.g., a “cashless society”); and they can use any content, for example blogs, videos, essays, designs, and so forth. Candidates from many countries are invited, and winners receive summer internships in their home country.

Undercover Recruiting

Some organizations have figured out how to put themselves in the position of observing the skills of potential candidates in a “live” environment in order to then approach them about their own organization. This isn’t new, especially in service industries. Back in the mid-1980s when I was with PepsiCo at Taco Bell as an I-O psychologist, I designed a business-card size handout for our field managers that said on one side something like “I LIKE YOUR STYLE. You clearly have great customer service skills and we value that. Give me a call to discuss opportunities”; and the other side was a \$5 gift card for the restaurant. We encouraged field managers to “shop the competition” and to use the cards when they experienced great service. It worked well and has been copied by many since then!

First Merit Bank’s recruiting strategy includes buying and returning merchandise at retailers to observe how salespeople handle the process. They observe how well the person manages the interaction, upsells, communicates, and creates a positive situation from a negative one. Volkswagen goes so far as to put their job ad for mechanics underneath cars that they drop off for service at other dealerships; then the recruiter creates the opportunity to interact with the service person.

Social Recruiting

Social recruiting has evolved considerably over the last 2 decades, using social platforms and media sites such as LinkedIn, Facebook, Twitter, Viadeo, XING, Google+, and BranchOut for advertising and to create talent data bases. Social media profiles, blogs, and online communities create talent databases that can be used to search among passive candidates and give all participants a chance to share job opportunities within their own networks. Mobile devices are quickly increasing in utilization. Facebook used to be considered only for “friends and family,” but now top companies such as PepsiCo, Gap, AIG, and Oracle are using it for recruitment (<http://www.forbes.com/sites/jjico-lao/2013/07/02/who-would-recruit-on-facebook-try-pepsi-gap-aig-and-oracle/>). This trend will not be reversed; there are significant issues that will still need to be resolved, many of which relate to privacy issues and some of which will play out in other global locations such as the European Union before the U.S. addresses them.

It would be useful to have research on what use of social technology leads to the best hires, both for candidates and companies, for example, a guideline to candidates on what to put on their profile so their skills get noticed and information for recruiters on how to do more effective and valid searches on social media. Similarly, it would be interesting to study what uses of social media yield poor candidates for different types of jobs.

Innovative Screening

There are some great innovations in reference checking coming from Checkster. I think we've all become somewhat jaded with regard to the information we legitimately expect to receive from the traditional reference check. We've trained managers to officially state nothing more than dates of service and last job title to avoid liability issues. Along comes Checkster and takes all the work off the recruiter and manager, and enlists the applicant to send requests to people to help them by going to a site and doing a very quick assessment of them. This request is often sent to their personal email addresses rather than official company email addresses. The response rate is three times greater and the quality of the information much deeper because the candidate is asking for help rather than the employer looking for reasons to disqualify the person. In essence, they have successfully "outsourced to the applicant" the previous managerial duty of reference checking related to experience and skills. The organization benefits from the information because after the candidate has asked others for input then

the candidate has no way to then block information that they might not want others to see.

In addition, many organizations take the easy step of reviewing the endorsements and the recommendations that candidates have on LinkedIn. Accumulating a large number of endorsements on important skill and competency areas adds credibility to a person's professionalism, and recommendations are usually very specific to contributions while in a specific position. However, we all also know that nobody will ask for input from someone who thinks poorly of them or approve of a post or recommendation that is not strong enough; so most recruiters take this information with a good measure of skepticism. That is particularly true on LinkedIn where a person can delete reviews that they don't like.

A study from over 10 years ago explored how to conduct structured reference checks to increase validity (Taylor, Pajo, Cheung, and Stringfield, 2004). We need more of this sort of research that looks at common parts of the hiring process that impact selection but often aren't thought of as selection methods.

Skype Interviewing

When I started my post-PhD organizational career in 1980 the recruiting sequence was clear: review the resumé, do the phone screening, and then make the big decision of who you fly in. A lot has changed since then, but the desire early on to get a feel for the whole person without the cost of time and money for in-person interviews

led to the development of video interviewing, which has now gone through many iterations. Remember when the only people who had video interviewing facilities were the big search firms and you had to go to their offices and organizations would buy time? Then Kinko's established similar centers and lots of them. Then progressive organizations would send candidates a camera to add to their PC so they could do the interview from home. Now, as, we all know, the world is flat and every mobile device can Skype or FaceTime or video communicate, and the candidate who can't do that doesn't last long.

Just because the medium has evolved doesn't mean the content of the interview has improved any in the past 50 years. I-O psychologists could contribute to defining the best practice when doing long distance but face to face interviews.

Gamification

The U.S. military has clearly figured out where their recruits come from. The massively popular video game *Call of Duty* may have inspired the U.S. Air Force to create their own game simulation entitled the *Airman Challenge* as a way of interacting with prospective recruits by teaching them about the vast array of career opportunities in the Air Force, but in a fun way. Participants select a squadron, an emblem, a mission, and a team. They solve problems and earn promotions, and in the process learn a lot about the Air Force. The U.S. Army developed *America's Army: Proving Grounds* as a very elaborate video game that accomplishes the same thing—attracting young people

with keen minds to see how they can use their skills in strategy and warfare.

As more gaming applications find their way into our staffing world, it certainly calls into question what is fun and engaging versus what might also be valid and reliable. Not that gamification can't work, but my sense is that it is often more hype than substance when it comes to predictive validity. I'd like to see more research designed to disprove the value of different selection methods, like the study years ago on the validity (or lack thereof) of graphology (Klimoski, 1992). Maybe SIOP can sponsor a new TV program called *Myth Busters: Staffing Methods!*

Holocratic Hiring

The term holocracy was derived from the book *The Ghost in the Machine* (Koesler, 1967), where a "holarchy" is made up of "holons," Greek for "whole" where units are autonomous and self-reliant, as well as dependent on the greater whole of which they are a part. The founder of Ternary Software developed the theory of holocracy in practice and published it as the Holocracy Constitution in 2010 (www.holacracy.org/constitution). In 2013, the CEO and founder of Zappos, Tony Hsieh, became the most famous supporter of this management philosophy. In his words it is "a system that removes traditional managerial hierarchies allowing employees to self-organize to complete work in a way that increases productivity, fosters innovation, and empowers anyone in the company with the ability to make decisions that push the company forward" and "as

of April 30, 2015 in order to eliminate the legacy management hierarchy, there will be effectively no more people managers” (www.zapposinsights.com/blog/item/a-memo-from-tony-hsieh).

Clearly, not everyone is suited to perform effectively in this more nebulous, ill-defined management environment—and they provided a decent severance arrangement for anyone not wanting to continue as an employee. This also creates significant challenges for who and how to recruit, and Zappos is experimenting with some new approaches. You cannot actually “apply” to a specific position only to be “rejected,” you must sign up to become a “corporate insider” and part of the “talent community” that creates a social network that grows and develops over time. Recruiters look for individualized talent strengths and fit with the unique culture, and it is more about hiring for attitude rather than specific experience. There are certainly pros and cons to this approach, as John Sullivan pointed out in 2014 (www.ereMEDIA.com/ere/examining-zappos-no-job-postings-recruiting-approach-innovation-or-craziness/); but it is a unique recruiting system designed to meet their unique requirements and to find people who will fit into that style of an organization.

More examples of innovative recruiting methods can be found on Andrew Greenberg’s Recruiting Division site and blog (<http://www.recruitingdivision.com/innovative-recruiting-strategies-for-2014/>).

Now to move back to the more status quo description of how I-O psychologists can

help with staffing systems within organizations, I will summarize an important section of the SIOP website here (<http://www.siop.org/business/selection.aspx>):

1. *Design a process.* I-O psychologists can design a selection system that fits an organization’s culture and hiring needs by incorporating a variety of established, validated tools such as pre-screens, realistic job previews, tests, and interviews.
2. *Define key qualifications.* I-O psychologists can analyze jobs or job families to identify the critical competencies required.
3. *Develop prescreen assessments.* I-O psychologists can develop assessments to screen out applicants early in the process who do not meet minimum qualifications, saving valuable time and resources.
4. *Develop and validate selection tests.* I-O psychologists can develop tests to measure the critical competencies required on the job and conduct studies to provide statistical evidence for the linkage between test scores and on-the-job performance.
5. *Develop structured interviews and conduct interview training.* I-O psychologists can develop interview guides to assess the critical competencies required on the job and train interviewers to use a standardized process that is free from bias and will withstand legal challenges.
6. *Conduct executive assessments.* I-O psychologists can conduct in-depth assessments to identify and develop individuals for executive-level leadership positions.

7. *Conduct assessment centers.* I-O psychologists can conduct in-depth “day-in-the-life” assessments using a variety of instruments (e.g., interviews, group discussions, live role plays). The output from such assessments provides rich information on participants’ strengths and opportunities for improvement.
8. *Conduct legal audits and provide expert witness testimony.* I-O psychologists are uniquely qualified to audit an organization’s selection system and identify potential legal risks; they can also serve as expert witnesses defending an organization’s selection system.
9. *Identifying applicant pools.* I-O psychologists can identify sources of qualified applicants, assess those applicants against qualification standards, and help track applicants and selection decisions for reporting purposes.
10. *Help it all make sense.* I-O psychologists can link the selection process to the key elements of the talent management system within the organization so that job candidates and employees see consistency in language, expectations, and messaging.

All 10 of these suggestions are good ones and it proves that I-O psychology has contributed in the past, but I have to also

add my plea to get involved with the next generation of staffing innovations so that the science of I-O psychology informs and improves newly evolving organizational staffing practices.

Experts in staffing decision making study the entire process, whereas experts in interviewing or testing can spend an entire career studying a very narrow range of the actual things that go into the entire hiring process. Perhaps we should change our focus from being experts in processes like testing and interviewing to being experts who empirically study information that impacts work-related decisions wherever they might occur.

I invite feedback at rmvsolutionsllc@gmail.com.

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Jeanneret Symposium: The Assessment of Leaders of Leaders

In 2013, **Dick Jeanneret** gave the SIOP Foundation \$50,000 for the purpose of hosting a symposium that would be a prototype for a series of SIOP “Praxis Consortia” in which a topic of importance to industrial and organizational psychologists is explored in depth and a research agenda is established. (Praxis is one of Aristotle’s three types of knowledge: theoretical (theoria), for which the end goal is truth; poietical (poiesis), for which the end goal is production; and practical (praxis), for which the end goal is action.) The intent of the Praxis Consortium is to bring together a small group of leading scientist–practitioners to discuss what is known about a topic in terms of both research and best practices, and what needs to be researched.



*Foundation
Spotlight*



Nancy T. Tippins
Foundation Secretary

The SIOP Foundation established a Steering Committee for this first symposium: **Allan Church, Sandra Davis, Mark Schmitt, Bill Strickland**, and Nancy Tippins (Chair). In October 2013, the Steering Committee met and determined the focal topic, the assessment of leaders of leaders, and began developing the important questions that need to be addressed. In addition, the Steering Committee began thinking about the logistics of such a symposium and discussing how the funds could best be used. The Steering Committee appointed a Practice Panel, chaired by **Mort McPhail**, including **Alex Alonso, Eric Braverman, Deborah Rupp**, and Sharon Sackett. The panel was assigned six major tasks:

- Design the symposium
- Identify presenters
- Select participants
- Develop the symposium structure/format
- Refine focus questions
- Review plans with steering committee

For the last year, the Practice Panel has been hard at work

and organized a symposium, which will be held in February 2016. The assessment of leaders of leaders will focus on three topics:

- Assessment in the Succession Context: Understanding Leader (of Leaders) Potential and Readiness (**John Scott**)
- Expanding the Criterion Domain in the Evaluation of Leader (of Leaders) Assessment (Nancy Tippins)
- Integration of Talent Management and Development at High Levels (Allan Church)

The agenda includes three keynote presentations by **David Day**, **Bill Macey**, and **Morgan McCall**, as well as presentations on the key topics, facilitated discussions, and work groups. After the conclusion of the Jeanneret Symposium, **George Thornton** will evaluate the symposium and make recommendations for future symposia.

The Practice Panel is in the process of inviting participants from academia, industry, consulting, and government. Although participation in this symposium is limited to a small group of experts in a narrow topic, a publication of conclusions and recommendations is planned, and all SIOP members will be invited to comment and to participate in the dialog of an expert network.

The SIOP Foundation is hopeful that Dick's initial contribution stimulates interest in bringing experts in a wide variety of topics together for productive sessions that help refine research and practice in the area. If you have suggestions about the concept of a Praxis Consortium, topics for future symposia, or ideas for funding future symposia, the Board of Trustees would like to hear from you.

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Registration opens in late December!

www.SIOP.org/conference



Nathan Bowling
Wright State University



Jeffrey M. Cucina
U.S. Customs and Border
Protection

Note. The views expressed in this paper are those of the authors and do not necessarily reflect the views of U.S. Customs and Border Protection or the U.S. federal government.

Robert Hoppock: Early Job Satisfaction and Vocational Guidance Pioneer

Note. The authors would like to thank Ed Beck, Joan Bedell, Shannon Bedell, Shawn Comiskey, and Jeanne Scalise and for their valuable comments and suggestions on this paper.

Background

In this installment of the History Corner, we focus on an early pioneer of job satisfaction research and vocational guidance, Robert Hoppock (see Figure 1). Hoppock was born on December 24, 1901 in Lambertville, New Jersey (Ohles, Ohles, & Ramsay, 1997). After graduating from Lambertville High School, he spent 2 years at Lafayette College before transferring to Wesleyan University, where he earned an undergraduate degree in economics in 1923 (Ohles et al., 1997; Department of Economics, n.d.; Thomas, 1995). After graduating from college, Hoppock was unsure of which career path he should pursue. This was a recurring theme in his life. In his own words, Hoppock had a “painful” time finding his occupational calling (Hoppock, Conyne, & Cochran, 1976, p. 275). Having dabbled in a number of different jobs—accounting clerk, payroll clerk, express delivery person, camp counselor, passenger agent, kitchen helper, car service clerk, dishwasher—he eventually became a high school English teacher at his alma mater (Hoppock, 1967a; Hoppock, 1970a; Ohles et al., 1997). After 3 years as a teacher, he changed careers to become the first vocational counselor in the Rahway, New Jersey school district, eventually transitioning again to become the National Vocational Guidance Association’s first field secretary (Hoppock et al., 1976; Ohles et al., 1997; Pope, 2000). Later he became an assistant director at the National Occupational Conference within the Carnegie Corporation, where he studied employment trends¹ (Ohles et al., 1997; Thomas,



Figure 1.
Photograph of Robert Hoppock, courtesy of his daughter Margaret Joan Bedell. Additional photographs of Robert Hoppock can be viewed in Hoppock et al. (1976).

1995). He later entered graduate school at Columbia University, earning a master's degree in educational psychology and a PhD in educational research (in 1932 and 1935, respectively; Ohles et al., 1997). After serving on the faculties of Fordham University, the State University of Iowa,² and Columbia University, Hoppock became New York University's (NYU's) inaugural professor of counselor education (*New York Times*, 1939a; Thomas, 1995). He served as a professor at NYU from 1939 to 1972 (Ohles et al., 1997). In addition to teaching, Hoppock assumed a number of leadership and organizing roles. He was instrumental in creating NYU's Guidance and Personnel Administration Department and served as its first chair (beginning in 1939; *New York Times*). He also organized the New Jersey Vocational Guidance Association and served as the president of both the National Vocational Guidance Association and the Academy of Teachers of Occupations (Ohles et al., 1997). He was also elected a fellow of the American Psychological Association.

Contributions to the Study of Job Satisfaction

Throughout his career, Hoppock gave considerable attention to worker "adjustment." He suggested that adjustment was multidimensional—it was reflected in a worker's "health, earnings, percentage of time unemployed, satisfaction in human relations, [and] job satisfaction" (Hoppock, 1957, p. 232). Hoppock was particularly interested in job satisfaction and his early work in this area culminated with the publication of the book *Job Satisfaction* (Hop-

pock, 1935/1977). That book, which was published in an era when job satisfaction had yet to be the subject of much scientific research, describes three studies that Hoppock conducted as part of his dissertation research (for historical background on these studies, see Hoppock, 1975).

The first of these studies, which began in the summer of 1932, used semistructured interviews to examine job satisfaction among 40 employed and 40 unemployed adults (the unemployed participants were asked to reflect on their most recent job). Among other things, these participants were asked to note the things they liked and the things they disliked about their work. In addition, participants completed self-report measures of overall job satisfaction and satisfaction with specific aspects of their job, such as supervision, coworkers, and pay. The results of that study identified several potential causes of job satisfaction, including amount of social status conferred by one's work, job autonomy, and interpersonal relationships with one's supervisors and coworkers.

In a follow-up study conducted during the 1932–1933 school year, Hoppock collected job satisfaction questionnaire data from 500 teachers employed in 51 communities throughout the Northeastern United States. He identified the 100 most satisfied and the 100 least satisfied teachers within his sample and compared the two groups on several potential predictors. His results suggested that the most satisfied teachers, in comparison to the least satisfied teachers, were older, displayed higher levels of general emotional adjustment, and reported having higher social status, lower work

monotony, and better interpersonal relationships with supervisors and coworkers.

In a third study—which was conducted without the prior approval of his dissertation committee (see Hoppock, 1975)—Hoppock collected job satisfaction questionnaire data from residents of New Hope, Pennsylvania. He noted that such a sample would include participants from a variety of occupations and employers, thus increasing the generalizability of his findings. Hoppock selected New Hope as the site for his research because it “is about as typical of American small towns as one might expect to find” (Hoppock, 1935/1977, p. 238). So during the summer of 1933, Wallace P. Thornton—a retired insurance agent and Hoppock’s father-in-law—canvassed New Hope in search of research participants.

Hoppock’s objective was to recruit every employed New Hope resident age 18 and over; he excluded people who were not paid for their work (e.g., “housewives”) and people whose longest term of consecutive employment was less than 6 months. Of the 351 eligible New Hope residents, 309 provided data—a response rate of 88%! The New Hope study found that only 15% of participants were dissatisfied with their jobs; however, there were substantial differences in job satisfaction levels across occupations. “Professional men,” artists, and railroad workers, for example, were more satisfied than were teachers, laborers, and farmers. As a testament to its impact, *Job Satisfaction* was reviewed in the *New York Times* (1935) and is listed among the great books of I-O psychology (Highhouse, 2009).

After the publication of his 1935 book, Hoppock continued to pursue his interest in job satisfaction by conducting research, writing literature reviews, and speaking on the topic (see Figure 2). From 1938 to 1952, he published a series of 10 review articles in the journal *Occupations*³ (see Hand, Hoppock, & Zlatchin, 1948; Hoppock, & Hand, 1945; Hoppock, & Odom, 1940; Hoppock, & Robinson, 1949, 1950, 1951; Hoppock, Robinson, & Zlatchin, 1948; Hoppock, & Shaffer, 1943; Hoppock, & Spiegel, 1938; Robinson, & Hoppock, 1952). The last of those review articles (Robinson & Hoppock, 1952), which summarizes job satisfaction research published during 1951, is representative of the others. Robinson and Hoppock summarized several studies conducted by other researchers, including studies that examined job satisfaction’s relationships with turnover and productivity, as well as studies that examined environmental factors and personal characteristics as predictors of job satisfaction. They further concluded that approximately 18% of workers are dissatisfied. Estimating the prevalence of job dissatisfaction was a recurring objective of Hoppock’s research (see Hoppock, 1935/1977).

Other articles published by Hoppock examined the relationship between age and job satisfaction—he reported a correlation of .21 (Hoppock, 1936)—within-person changes in job satisfaction over one’s career (Hoppock, 1960), and the job satisfaction levels of psychologists (Hoppock, 1937). Regarding the latter, he found that psychologists scored in the 64th percentile on job satisfaction, which led him to conclude that “the vocational and industrial

Job Satisfaction
Speech by R.H.

4/24/51 CCNY Psych ~~Club~~; Room 521 at Sch. of Business & Civic Admin., 17 West St.
Angelo DiPasquini, Pres Represent 25 Reception B

Job Satisfaction
by R. Hoppock

Apr. 24, 1952 Psychology Club, CCNY. 23 st.

Intelligent people like you & me have always known they would be miserable doing repetitive factory work. Tried it: confirmed. Then we did what no intelligent person should ever do: assumed that what was true for us was true for all men, & did not inquire to verify. Hence not unusual to have sociologists, economists, even some psychologists talk about the dehumanizing routine of modern mass production & the impossibility of the average worker finding any happiness, or fulfillment, or satisfaction in his job.

Slugs (Mintzerberg) (70) 13,000 a day
Eels & Thunderbolts (92) "... activity of body or mind is not intrinsically objectionable to human beings... there is hardly a gainful occupation that is not used as a cherished pastime by some men & women
Kropke

Figure 2. Robert Hoppock's handwritten notes for a speech on job satisfaction that he gave to the Psychology Club in New York in 1952. Image courtesy of the Archives of the History of American Psychology, The Drs. Nicholas and Dorothy Cummings Center for the History of Psychology, The University of Akron (Collection: Hoppock Papers).

psychologists appear neither better nor worse than the average man of comparable position in other fields of work” (p. 300).

Contributions to Vocational Guidance

Hoppock was also one of the founders of vocational/career counseling/guidance.⁴ Realizing that there are many occupations that career seekers are unaware of and that have little readily available information, Hoppock decided to specialize in organizing and disseminating occupational information (Hoppock et al., 1976). He frequently provided practical advice on career guidance to both counselors and job seekers, including an early textbook for guidance counselors (*Group Guidance*; Hoppock, 1949) that was packed with “practical illustrations and materials” (Shaffer, 1950, p. 75). Hoppock’s (1957) textbook for vocational counseling, *Occupational Information*, received the “highest commendation” in a review (Baer, 1959, p. 75). This book provided guidance on obtaining occupational information, counseling individuals on their occupational choices, and teaching occupations to students. He also published checklists of questions to assist job seekers, students, and counselors (Hoppock, 1948). To this day, Joyce

Laine Kennedy, a newspaper reporter, frequently mentions his seven principles (paraphrased in Table 1) for selecting a career (Kennedy, 2001, 2002, 2006, 2012a, 2012b, 2013). Hoppock often mentioned that when choosing a career it is critical to consider the employment outlook and labor market for different jobs rather than focusing solely on one’s interests (Barnard, 1933; Hoppock, 1937a; Hoppock, 1970b). Some of his ideas seem ahead of the times—in 1937 he argued that “marriage no longer means permanent removal from the employment market” and that “there is no sound psychological reason why women should cook meals, wash dishes, launder clothes and clean houses” (Associated Press, 1937, p. 1).⁵

Hoppock was particularly known for his outreach efforts. He was referenced in 38 *New York Times* articles, edited a magazine (*Occupational Index*) covering occupational opportunities, and wrote a newspaper article (Hoppock, 1937b). Hoppock was known as “an excellent speaker” for outreach events such as parent–teacher association meetings (*Scarsdale Inquirer*, 1940, p. 3), and he made several radio appearances (*New York Times*, 1929, 1931, 1937, 1939b). A short segment of Hoppock

Table 1
Robert Hoppock’s Suggestions for Choosing a Career

#	Suggestion
1	Learn about all of the activities in a job you are considering and the time spent conducting each activity.
2	Consider not only the pay and prestige of a job, but also whether you will like the work itself.
3	Choose a job that is in demand.
4	Match your competencies to those of the job.
5	Remember that interest ≠ ability.
6	Admiring someone who chose a job does not mean that you should choose that job as well.
7	Nearly every job will include some activities that you dislike performing.

Note: Adapted from Kennedy (2012a).

(1967b) speaking has been uploaded to <https://www.youtube.com/watch?v=d2U-Vfh9ULFc&feature=youtu.be>.⁶

Hoppock also created traveling classes at NYU in which students (e.g., high school students and parents, guidance counselors, and counseling graduate students) would visit different academic institutions or guidance centers (*New York Times*, 1942, 1949). Similarly, he often took guidance counseling students on field trips to worksites (e.g., offices and factories) to give them a better idea of different jobs (Thomas, 1995).

Summary

Robert Hoppock made important contributions to our current understanding of job satisfaction and vocational guidance. In a time when job satisfaction research was in its infancy, Hoppock created an early job satisfaction survey and he authored an influential book on the topic, *Job Satisfaction*. Hoppock also wrote the book *Occupational Information*, which he regarded as the most important contribution of his career (Hoppock, et al., 1976). His legacy lives on today with citations in I-O psychology textbooks (e.g., Landy & Conte, 2010) and a memorial scholarship at the Virginia Polytechnic Institute and State University (2015).

Notes

¹This organization was created during the Great Depression to gather and distribute information about occupations to job applicants; it ceased activities in 1939, after the depression had ended (*New York Times*, 1939c). The work that Hoppock performed here is similar

to the type of work now conducted by the Bureau of Labor Statistics (Thomas, 1995).

²Now known as the University of Iowa.

³Currently titled the *Journal of Counseling & Development*

⁴When Hoppock first became involved in the field of school counseling, the field was more centered on assisting students' career choices; over the years it became more focused on psychotherapy (Hoppock et al., 1976). In its early history, vocational guidance was associated with I-O psychology as many early I-O psychologists conducted work in this area (see Koppes, 1997 for examples).

⁵In fact, Hoppock further suggested that husbands should perform these duties.

⁶Courtesy of the Archives of the History of American Psychology, The Drs. Nicholas and Dorothy Cummings Center for the History of Psychology, The University of Akron (Collection: Hoppock Papers).

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Identifying the Competencies, Critical Experiences, and Career Paths of I-O Psychologists: Government

Alexandra I. Zelin
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SRA International, Inc.

Samantha Chau
Novo Nordisk Inc.

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Gary Carter
PDRI a CEB Company

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Organizational Research & Solutions, Inc.

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University of Akron

The SIOP Professional Practice Committee presents its fifth career path article in the series, focused on I-O psychologists who work within the government sector. Working within the government sector was defined as working as a direct employee of the United States government or an individual state or city/county government agency (rather than working as a consultant to the government via an outside firm), or an employee in a noncombat position within the Armed Forces. With regard to the Armed Forces, we recognize that some I-O psychologists started out in combat roles. However, the current study

focused on their roles specifically related to I-O psychology *after* serving active duty in the military. The current article presents the results from both a qualitative subject matter expert (SME) interview and a quantitative SIOP Careers Study survey. Competencies (i.e., skills deemed necessary for success within a job) and critical experiences (i.e., experiences from working within one's career level that are requirements for success) for each level of the government career path are presented. More detailed information regarding the study's background can be found within previous Careers Study articles within *TIP*

(e.g., Zelin, Doverspike, Oliver, Kantrowitz, & Trusty, 2014; Zelin, et al., 2015a, 2015b) or through the project's Technical Report from the SIOP webpage.

Qualitative Data: SME Interviews

Participants

Interviewers spoke with 12 SIOP I-O professionals working within a wide range of government agencies. Seven of the 12 participants who provided their tenure had an average of 13.14 years of experience working within the government sector with a range from 2–31 years, with the remaining five participants having at least 8 years of experience. Job levels included those of expert individual contributors, managers, manager of managers, and executive. Specific job titles included personnel psychologist, senior psychologist, senior research psychologist, manager of staffing and compensation, and chief psychologist.

Methodology

Two graduate students from the University of Akron's Center for Organizational Research (COR) conducted 12 structured interviews. Appendix A includes sample questions used during the interview. The job-level structure developed for the interviews contained five levels: individual contributor, expert individual contributor, manager, manager of managers, and executive.

Results

According to the respondents, a unique feature of government work was that many

of the competencies remained the same throughout one's government career; employees were just expected to perform them at a higher level as they advanced up the career ladder. This was because government employees at every level were expected to provide technical delivery; supervisory competencies only became critical once one moved into a management position. Many government titles were different in that people retained the same general title (e.g., "test & validation specialist") and progressed through numerical band levels or government service levels as they progressed up the career ladder. For example, someone could hold the title Test & Validation Specialist I, II, III, IV, V, VI, or VII, where only Test & Validation Specialist VII would be considered executive level. Alternatively, others progressed up the career path by changing agencies because the higher-level positions in their current agency either did not exist or would not become open until the current incumbent vacated the position.

Within their roles, some I-O psychologists completed client-facing projects with government agencies, whereas others worked internally with their own department and conducted research on best practices. Within both tracks, some employees chose to take the management track career ladder, whereas others chose to remain individual contributors who did not take on management positions. They were considered "expert individual contributors," even if they had been in the position for many years. This makes it difficult for an outside person looking at a job title to determine whether an employee was a manager or

an expert individual contributor, as both had the same GS band titles.

Both individual contributor levels (individual contributor and expert individual contributor) were considered by SMEs to require the same competencies. The difference was in the expected level of performance and independence, such that an individual contributor would need more supervision for tasks, while an expert individual contributor should be able to complete that task without any supervision. As employees became more proficient, knowledgeable, and completed more complex tasks, they were promoted to higher levels of their job. In addition, as employees moved up the career path, their focus tended to expand to the larger organization as they were involved in projects that spanned multiple departments. As such, their focus included interaction with other parts of the organization rather than a project solely within their own department.

In order to be promoted to manager of managers or executive level jobs, an employee must have developed a broader understanding of how the different departments in the organization worked together. For instance, an employee would take on a project that spanned two or three departments in his/her organization rather than just his/her own department. Furthermore, many of the employees who worked within a manager of managers or executive-level position were responsible for projects that spanned outside the domain of I-O psychology. Thus, many of the interviewees noted that few I-O psychologists enter these levels.

Quantitative Data: Careers Study Survey

Methodology

Graduate students compiled a master list of all competencies and critical experiences relevant to the government sector after reviewing the SME interviews. Although the competencies and critical experiences were separated into their respective levels, all survey respondents were asked to rate the entire list of competencies and critical experiences to allow for comparisons across levels (e.g., a manager rated the same set of competencies as an individual contributor).

Participants

Ninety-four of the 1,444 participants (6.5%) who completed at least some portion of the SIOP Careers Study survey indicated working within the government sector. Participants had an average age of 43.34 years with a standard deviation of 13.0 years. Participants' gender was also roughly equal, with 50.5% of the respondents identifying as women. A majority of participants self-identified as White/Caucasian (81.3%), with the next highest participation group identifying as Black/African American (6.6%).

A large amount (23.3%) of government participants had top-secret government-issued security clearances. The majority of participants (75.3%) earned a PhD, and 24.7% indicated earning a master's degree. Only a few participants noted that they had received additional licensures or certifications, with the two most common

being through the Society for Human Resource Management. No respondents indicated that they had previously worked in academia, consulting, or industry, although this trend may be a function of our small sample size and should be examined in future research.

Results

Although the interviews noted that the job titles within many government positions differ from typical job titles, initial interview results indicated that the government career path model could be represented using the five job level structure. These levels also include two separate routes: expert individual contributor and managerial.

However, it was noted in the interviews that the levels of manager of managers and Executive contained similar types of work that involved more than traditional I-O content, and that consequently few I-Os were employed at these levels. This was

borne out in the survey data, where a small number of respondents who completed the entire survey were from one of these two levels ($N = 9$ for manager of managers; $N = 1$ for executive). For these reasons, as well as wanting to ensure anonymity and validity of data, we combined these two job levels for the survey analyses, resulting in four job levels (see Figure 1).

Competencies. Tables 1 and 2 provide a list of the top 10 competencies necessary for success within the government at the four levels (individual contributor, expert individual contributor, manager, manager of managers/executive), as well as the top five competencies aggregated across all participants. The project's technical report includes a table of all mean importance ratings, standard deviations, and career stage information.

Results indicated that most top-ranked competencies overlapped in importance for success at all job levels. The top five

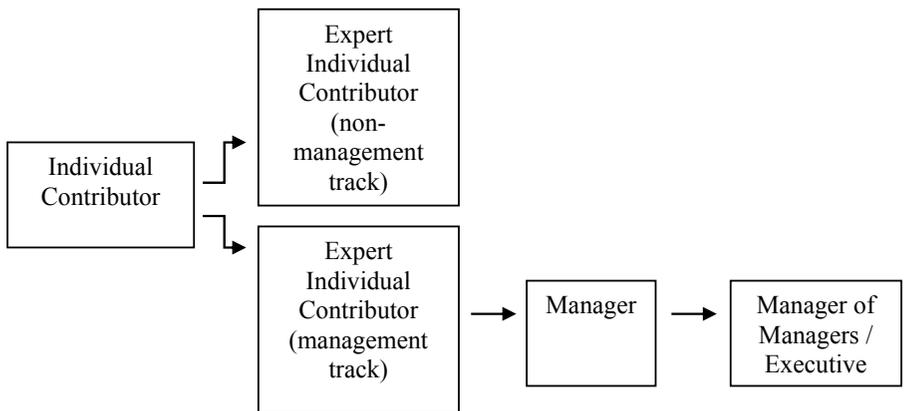


Figure 1. Government career path.

Table 1
Top Ten Competencies for Each Level Within Government

Top Competencies			
Individual Contributor	Expert Individual Contributor	Manager	Manager of Managers/Executive
1T. Communication: Verbal	1. Integrity	1. Integrity	1T. Communication: Verbal
1T. Communication: Written	2. Ethical behavior	2. Ethical behavior	1T. Communication: Written
1T. Critical thinking	3. Communication: Written	3. Problem solving	1T. Integrity
1T. Customer service	4. Communication: Verbal	4. Critical thinking	1T. Problem solving
1T. Ethical behavior	5. Critical thinking	5. Communication: Written	5T. Critical thinking
1T. Integrity	6. Problem solving	6. Decision making	5T. Decision making
1T. Interpersonal skills	7. Attention to detail	7T. Communication: Verbal	5T. Ethical behavior
1T. Listening skills	8. Interpersonal skills	7T. Results Driven	8T. Presentation skills
9T. Attention to detail	9. Presentation skills	9T. Customer Service	8T. Strategic thinking
9T. Data analysis	10T. Data analysis	9T. Interpersonal skills	10. Interpersonal skills
9T. Knowledge of internal workings of the state or federal government	10T. Listening skills	9T. Time management	
9T. Networking			
9T. Problem solving			

Note: T indicates same means within level.

Table 2
Top Five Government Competencies Across Levels

Overall Top Five Competencies		
Competency	M	SD
1. Integrity	4.73	0.53
2. Ethical behavior	4.69	0.54
3. Communication: Written	4.61	0.54
4. Critical thinking	4.52	0.67
5. Communication: Verbal	4.51	0.64

overall competencies (e.g., integrity, ethical behavior, critical thinking, and written and verbal communication) were seen within the top-10 competencies for each of the four levels. With the majority of participants being expert individual contributors, it is not surprising that the top five competencies overall almost directly map onto the top five competencies for the expert individual contributors. Other top-10 competencies that were shared across the four job levels included interpersonal skills and problem solving. The nonmanagerial levels (individual contributor and expert individual contributor) included listening skills, data analysis skills, and attention to detail within the top-10 most critical competencies to their success. Managerial levels (manager and manager of managers/executive), on the other hand, indicated that having decision making skills as necessary for success.

We found that both individual contributors and managers had customer service competencies within their top 10, suggesting that working with clients is not just limited to certain levels.

Furthermore, presentation skills were listed as important for expert individual contributors and manager of managers/executives, potentially indicating that these individuals may be required to present more often or to a larger range of groups. The four competencies of Managers that did not overlap across the levels included knowledge of internal workings of the state or federal government for individual contributors, being results driven and having time management skills as a manager, and having strategic thinking as a manager of managers/executive.

Government participants indicated that proficiency for almost all competencies measured in this study were learned on the job. The competencies that stood out as overwhelmingly or mostly developed in graduate school included written communication; critical thinking; data anal-

ysis; knowledge of federal guidelines on employee selection; knowledge of principles, procedures, and techniques for test validation; knowledge of test theory as it pertains to personnel testing; and, knowledge of various tests and measurements available for selection. That these competencies were developed primarily through formal education should not be surprising given several are knowledge based in nature or focused on core critical thinking and communication competencies. Structured training was considered important for developing competency within financial accountability and gaining knowledge of the internal workings of the state or federal governments. Managers and managers of managers/executives indicated structured training helped them to develop competency in mentoring, risk management, strategic leadership, and stress management.

Critical experiences. Table 3 displays the top-10 (or more) critical experiences for success in government at each level. Table 4 lists the top-five critical experiences for success across all job levels. As a result of the low sample sizes for several of the job levels, there were many critical experiences that shared the same mean importance levels within each job level. The technical report contains the full list of means and standard deviations for each rated competency.

As can be seen in Table 3, following timelines and budgets on project work and monitoring work to ensure it adheres to federal law, regulations, and policies were top-rated critical experiences across all job levels. A top-rated critical experience unique to both individual contributor

levels was creating and administering own projects from start to finish. Top-rated critical experiences unique to the managerial levels included “Manage performance of subordinates” and “Make decisions in a timely manner that will benefit the organization.” Manager of managers/executives’ top-rated critical experiences included “Engage employees or colleagues,” “Oversee work to ensure meeting federal law, regulations, and policies,” “Develop strategy for the organization,” and “Demonstrate political savvy in structuring and designing projects,” reflecting the strategic focus of this job level. Conversely, writing technical reports, leading subject matter meetings, becoming a part of a task force and/or committee, and working with nonlocal customers or stakeholders, most of which are more “hands on” or technical in nature, were top-rated critical experiences unique to individual contributors. As one moved beyond the individual contributor level, delivering effective briefings to senior management and/or customers became a top-rated critical experience.

Supplemental Analyses: Two Job Level Model

As noted earlier, we observed low numbers of participants within some job levels (e.g., $N = 3$ individual contributors; $N =$ manager of managers). In addition, there were a low number of participants for the government sector overall relative to other employment sectors we studied. For this reason, we conducted supplemental analyses examining the data from a 2 job-level model. Specifically, consistent with the Government General Schedules (GS)

Table 3

Top Ten Critical Experiences for Each Level Within Government

Top critical experiences			
Individual contributor	Expert individual contributor	Manager	Manager of managers/executive
1. Communicate with people outside of current branch, agency, or organization	1. Complete highly complex projects that include a wide range of skills necessary (e.g., analytical skills, knowledge of various methodologies)	1. Manage performance of subordinates	1T. Partner with others in the organization
2. Follow timelines and budgets on project work	2T. Deliver presentations to customers	2. Lead project teams	1T. Engage employees or colleagues
3T. Create and administer own projects from start to finish	2T. Create and administer own projects from start to finish	3. Provide developmental opportunities to subordinates	3T. Monitor work to ensure it adheres to federal law, regulations, and policies
3T. Lead project teams	4. Deliver effective briefings to senior management and/or customers	4. Demonstrate that project work adds value to the organization	3T. Oversee work to ensure meeting federal law, regulations, and policies
5T. Write technical reports	5. Follow timelines and budgets on project work	5. Lead multiple projects	3T. Make decisions in a timely manner that will benefit the organization
5T. Demonstrate that project work adds value to the organization	6. Demonstrate that project work adds value to the organization	6T. Deliver effective briefings to senior management and/or customers	6T. Demonstrate that project work adds value to the organization
5T. Become a part of a task force and/or committees	7. Complete high visibility assignments	6T. Make decisions in a timely manner that will benefit the organization	6T. Manage performance of subordinates
5T. Work with customers or stakeholders who are not local	8. Monitor work to ensure it adheres to federal law, regulations, and policies	8T. Follow timelines and budgets on project work	8. Lead project teams
5T. Monitor work to ensure it adheres to federal law, regulations, and policies	9. Communicate with people outside of current branch, agency, or organization	8T. Manage multiple projects and/or working with one specific, long-term client	9T. Follow timelines and budgets on project work
5T. Complete high visibility assignments	10T. Work on a breadth of projects with different types of customers and on multiple teams	8T. Monitor work to ensure it adheres to federal law, regulations, and policies	9T. Complete highly complex projects that include a wide range of skills necessary (e.g., analytical skills, knowledge of various methodologies)
5T. Manage available resources	10T. Manage multiple projects and/or working with one specific, long-term client	8T. Complete high visibility assignments	9T. Develop strategy for the organization
5T. Partner with others in the organization		8T. Manage available resources	9T. Manage available resources
5T. Develop knowledge and familiarity with multiple areas in the organization		8T. Develop knowledge and familiarity with multiple areas in the organization	9T. Communicate with people outside of current branch, agency, or organization
5T. Lead subject matter expert (SME) meetings			9T. Deliver effective briefings to senior management and/or customers

levels of nonmanagerial/managerial, we combined the individual contributor and expert individual levels into a single “individual contributor” level, and managers and manager of managers/executive into

a single “manager” level. This afforded us a larger combined sample size from which to conduct significance testing comparing competencies and critical experiences across the two levels.

Table 4

Top Five Industry Critical Experiences Across Levels

Overall top critical experiences		
Competency	<i>M</i>	<i>SD</i>
1. Execute and deliver on results	4.66	.62
2. Earn and maintain trust of leadership team	4.55	.68
3. Serve as a subject matter expert	4.49	.74
4. Work through ambiguity and uncertainty	4.48	.68
5. Collaborate with people from different teams on various projects	4.47	.70

Overall, results were similar to those reported for a four job-level model for both required competencies and critical experiences. Integrity, ethical behavior, written and verbal communication, problem solving, critical thinking, and interpersonal skills were top-10 competencies for both levels, as they were for all levels in the four job-level model. Among these competencies, only problem solving showed a significant difference in mean importance ratings between the two levels (4.35 for individual contributors vs. 4.73 for managers). Individual contributors noted that attention to detail and listening skills were critical competencies for success in their position, whereas managers noted that decision making, customer service, and strategic thinking were critical competencies.

Both job levels shared top rated critical experiences of completing high visibility assignments; monitoring work to ensure it adheres to federal law, regulations, and policies; delivering effective briefings to senior management and/or customers; and demonstrating that project work adds value to the organization, none of which differed significantly in their mean ratings of importance. The top-three critical experiences for individual contributors

(create and administer own projects from start to finish, complete highly complex projects, deliver presentations to customers) were not found on the top-10 critical experiences list for the managerial level. The top two critical experiences for the managerial level (manage performance of subordinates, lead project teams) were not found in the top-rated competencies for individual contributors. Managers are also required to make decisions in a timely manner, provide developmental opportunities to subordinates, and partner with others in the organization.

Final Career Path Models and Future Directions

Results from the current study indicated that government I-O careers can be described using four levels: individual contributor, expert individual contributor, manager, and manager of manager/executives (see Figure 1). Given that the SME interview results supported a larger job-level structure with some similarities in the top-two levels, that we had participants at each level in our survey results, that survey results when examining competencies and critical experiences using a two- versus four-level model were similar and that within the federal gov-

ernment there are also multiple levels to the nonsupervisory psychologist (which included non-I-O psychologists) grade schedule, we determined that a four job-level model should be used going forward.

A key finding from the current study was that the top-rated competencies for success were very similar across all of the job levels. As was noted in the interviews, this may reflect the finding that many I-O government jobs share similar elements of technical delivery. At the same time, the differences noted in required competencies from the survey matched what was found in the interview and what would logically be expected of managerial/leadership roles in general; that is, a higher focus on strategy, decision making, and performance management.

However, the nature of how the competencies were used differed somewhat between job levels. Although there were some shared critical experiences between levels, data indicated that top-rated individual contributor critical experiences focused slightly more on individual or technical tasks (e.g., write technical reports, lead subject matter expert meetings, create and administer own projects from start to finish), relative to critical experiences for managerial levels that reflected responsibilities such as decision making, strategy, performance management, and employee development.

Results regarding where the competencies were learned have implications for the education of individuals entering or within this career sector. Specifically, although formal education and structured

training were listed as important for some competencies, many competencies were learned on the job. The emphasis placed on on-the-job experience for development reinforces the importance for government organizations to identify and provide purposeful assignments and critical experiences that develop I-O employees' capabilities. Similarly, receiving structured training and gaining practical experiences while in their graduate education programs may help I-Os entering a government career path develop these critical competencies early in their career.

Another key finding from the current study was that, as one progresses up the government I-O career ladder, he or she is expected to still perform technical-oriented work (e.g., monitor work to ensure it adheres to federal law, regulations, and policies) but also a broader range of non-I-O work (e.g., demonstrate political savvy in structuring and designing projects, develop strategy for the organization). This finding has implications for the education of I-Os in government (e.g., need for on-the-job experience and training) but also for career planning purposes. Specifically, students and early career individuals can use this information to determine whether a government career path is a good fit for their interests, goals, motivations, and competencies, and once within government which path they will take. For example, results indicated that there are somewhat more opportunities compared to other sectors for those I-Os who want to remain mainly involved in technical work to remain in expert individual contributor roles, whereas those who are interested in

branching beyond traditional I-O work can have opportunities to fulfill these interests in higher-level management positions.

This study provides insight into the competencies necessary for success at various levels within the government sector. Our study offers direction to academic institutions, government agencies, and professional organizations on critical experiences and structured training programs to help prepare I-Os for careers in this sector. As with the other three sectors studied, we recognize that the current study only captures basic career path moves for government as a whole. Future research may want to expand on this study to examine if career paths and competencies required for success vary across different government organizations and to determine the types of experiences that help prepare one for movements between levels.

Notes

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Peer Review Haiku

Tara S. Behrend

The George Washington University¹

Like many of us, I have been reflecting on the state of our scientific review process, partly thanks to Past President **Jose Cortina's** presidential agenda, which has reminded us all of the many problems with the review system as it currently exists. It is all too common to receive a review of your work from someone who has apparently not read your paper, or who hates it, or who doesn't understand it—or all of these things simultaneously. Locke, Williams, and Masuda (2015) demonstrated this phenomenon brilliantly in recounting the saga of a recent publication experience. If it happens to them, it can happen to all of us, and this is bad for science and worse for our sanity.

Cortina and Locke et al. offer many good, substantive ideas for how to move our field forward. I like these ideas. Over the past 10 years, however, I have cultivated an alternative approach. You could think of it as a coping strategy to deal with these bad reviews. I call this strategy Review Haiku.

I can't remember where this habit got started—I'm sure I didn't invent it. But it has become a ritual. Some people make lemonade out of lemons. I make poetry out of nonsensical and mean reviews. For instance, *"I am not familiar with the analysis you used, or the statistical program you described, but it is not all that clear to me*

how your analysis added anything of value to the manuscript. Your conclusions thus became all the more befuddling" somehow feels less maddening when it is translated to

your analysis
isn't all that clear to me--
befuddling

And *"The monikers used in this paragraph are offensive and genderally biased. The male is assigned a positive name while the female is named with an inferior and unflattering label"* is easier to tackle when it reads

monikers used:
offensive, unflattering
gender bias!

The rules of Review Haiku are simple. The lines of the haiku should be actual quotes from the review. It is tempting to try and capture the essence of the review with a paraphrase but don't do it.

A traditional haiku captures something complicated and expresses it simply. Simplicity is important. You may have learned the "5, 7, 5" syllable structure at some point. It is not critical that you keep to this syllable limit, but do keep it short. Traditional haiku has many other rules that you should feel free to break as needed.

Share the haiku with others. This reminds your more junior colleagues that bad reviews happen to everyone, and gives us all something to look forward to.

A few recent (real) examples are below. Some people say I have taken this ritual too far; I now demand haiku from my co-authors and have them posted on the wall of my office. I say maybe I haven't taken this far enough.

Textbook perfection
Not a lot of problems but...
Not enough studies

Poorly organized
Conduct a better study
Is not strong enough

I don't understand
Unique and unrealistic
I don't understand

What can we learn from Review Haiku? Reviewers are human beings and are thus fallible. Reviewing is a skill like any other and reviewers can be good or bad at this skill.

Sometimes, as fallible humans, they can let ego, time pressure, bias, or lack of knowledge interfere with their job.

Reviewers can also be incredibly helpful and constructive. In fact, the bizarre and mean-spirited reviews of the past have been increasingly infrequent in my experience. It was a small struggle to find appropriately laughable comments for this article.

Most importantly, no matter how petty or wrongheaded a review may be, there is almost always a nugget of useful advice or insight to be taken away. A haiku can help you find it.

New researchers are often advised to develop a thick skin to deal with the stress and ego bruising that comes along with the peer review process. I have found my haiku to be more than stress therapy though; finding the essence of someone's objection to your work is a critical piece of addressing and improving it. At the same time, it does take the teeth out of the more biting remarks. Imagine if decision letters, instead of multipage takedowns of your hard work, were just three lines.

*seventh R&R
add some more analyses
and please cite me more*

Notes

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The World Sets New Goals: How Should I-O Psychology Respond?

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In September 2015, the United Nations adopted a new set of goals. The “Sustainable Development Goals” (SDGs) replaced the “Millennium Development Goals” (MDGs), which until 2015 were the world’s most prominent attempt to date to fight poverty and reduce human suffering. Even though the exact makeup of the SDGs was not resolved when this issue of *TIP* went to press, up-to-date details on the SDGs and how they relate to the field of industrial-organizational (I-O) psychology can be found by going to www.siop.org/Prosocial/UN.aspx. What was clear well in advance of the launch of the SDGs was that despite notable progress, the world had neglected to fully meet its previous set of goals. Although the United Nations (2015a)

reported that “unprecedented efforts have resulted in profound achievements” (p. 4), many of the world’s foremost goals and subsidiary targets set at the turn of the millennium have not been reached. For example, whereas Target A of MDG 1 was reached—namely to “halve, between 1990 and 2015, the proportion of people whose income is less than \$1 a day,” — Target A of MDG 3, namely to “eliminate gender disparity in primary and secondary education,” remains elusive with continuing disparities in primary, secondary, and tertiary education (United Nations, 2015a, p. 14, 28). As the United Nations (2015a) summarized, “despite many successes, the poorest and most vulnerable people are being left behind” (p. 8). Table 1 provides

Table 1

Overview of the Millennium Development Goals (MDGs).

Goal	Progress	Remaining challenges
1 Eradicate extreme poverty and hunger	The proportion of people living in extreme poverty (<\$1.25 a day) in lower-income countries fell from 50% in 1990 to 14% in 2015	The employment to population ratio in lower-income countries fell 3.3 percentage points from 1991 to 2015
2 Achieve universal primary education	Number of out-of-school children fell from 100 million in 2000 to 57 million in 2015	Children in the poorest households are 4x more likely to be out of school compared to children in the richest households
3 Promote gender equality and empower women	90% of countries have more women in parliament since 1995	Women earn 24% less than men globally
4 Reduce child mortality	Deaths of children under five sank from 12.7 million in 1990 to 6 million in 2015	Infant mortality rates are 2x as high for children in the poorest versus the richest households
5 Improve maternal health	% of births assisted by skilled health personnel rose from 59% in 1990 to 71% in 2014	In rural areas, only 56% of births are attended by skilled health personnel
6 Combat HIV/AIDS, malaria, and other diseases	Between 2000 and 2013, new HIV infections fell by 40%	Only 36% of people living with HIV in lower-income countries were receiving anti-retroviral therapy in 2013
7 Ensure environmental sustainability	Since 1990, 98% of ozone-depleting substances have been eliminated	Global emissions of carbon dioxide have increased by 50% since 1990
8 Develop a global partnership for development	Internet penetration grew from 6 to 43 percent of the world's population between 2000 and 2015	Only 33% of people in lower-income countries use the Internet - compared to 82% in higher-income countries

Note. All statistics are from UN (2015).

an overview of the MDGs and a short summary of progress made, and not made, toward each goal.

The historic transition from the MDGs to the SDGs provides an opportunity for reflection on many of the world's most pressing problems. To assist in seizing this opportunity, this article asks, and proposes answers to, three interrelated questions:

1. What role, if any, should I-O psychologists play in meeting global international development goals?
2. Are there any lessons to be learned from how I-O psychologists have engaged, or not engaged, with the MDGs?
3. How can I-O psychologists support the SDGs in the future?

1. What role, if any, should I-O psychology play in meeting global international development goals?

Historically, the international development agenda has revolved around the importance of reducing poverty across the globe. According to a recent report by the United Nations Development Programme (2014), "poverty has been defined and redefined to mean many things—from the deprivation of well-being or basic human needs, to a lack of fundamental freedoms of action and choice" (p. 2). Following the perspective most often taken by the United Nations (e.g., Alkire, 2010), we define poverty as a multidimensional form of deprivation of opportunity often measured by financial (e.g., income), educational (e.g., literacy rates), and health (e.g., life

expectancy) indicators. By defining poverty to include forms of educational and health deprivation, it becomes evident that poverty is brought about by more than just a lack of money; it is caused by everything from environmental degradation to a lack of education and training opportunities. Even though I-O psychology is intimately related to global development in a large number of ways, we argue that our discipline is particularly important to the global development agenda in three ways.

First, in its focus on improving both the welfare and performance of workers and organizations, I-O psychology can assist the world's largest engine for sustainable economic growth: productivity in the private sector. According to the World Bank (2012), "the private sector is the main engine of job creation and the source of almost 9 of every 10 jobs in the world" (p. 7). By supporting productivity in the private sector, I-O psychology interventions relating to issues from recruitment and selection to training and organizational development *can* have important individual and organizational benefits that aggregate to widespread societal benefits. As highlighted by Aguinis and Kraiger (2009), core I-O psychology topics like training and development can be understood to have benefits not only on individual, team, and organizational levels of analysis but also on national/societal levels of analysis. However, I-O psychology interventions have the potential to benefit society through greater private-sector productivity, they can also be used in ways that might (often unintentionally) harm individual and community well-being. For example, interven-

tions to reduce expected labor surpluses in organizations in impoverished regions can be carried out in ways that might mitigate human suffering within the community (e.g., transitioning more people to part-time work in lieu of layoffs). As we argue later in this article, whether or not I-O interventions have a positive social and/or environmental impact is likely to depend on I-O psychologists' adherence to the tripartite scientist–practitioner–humanist (S–P–H) model that requires researchers and practitioners to operate in full cognizance of and deference to the moral and societal implications of their work (see Lefkowitz, 2012).

Second, through its focus on improving worker welfare, I-O psychology explicitly focuses on the health and well-being of the world's workforce. As argued by international development scholars, the ability to "exert control over one's environment" and to engage in "meaningful relationships of mutual recognition" by gainful employment are fundamental human rights (see Nussbaum, 2003, p. 42). This insight tracks well with self-determination theory, which stresses that human beings, across cultural regions, have deep needs for competence, autonomy, and relatedness (Deci & Ryan, 2015). Whereas the role of work in people's broad quality of life is of central concern to research and applied work in I-O psychology, much of this work has focused on populations in relatively high-income settings where poverty is often a less prominent concern. Yet as summarized by the World Bank (2012), active employment and the characteristics of jobs are important determinants of happiness, health, and

overall life satisfaction both in high-income and low-income countries. Moreover, as discussed by De Neve, Diener, Tay, and Xuereb in the 2013 World Happiness Report, subjective well-being has a reciprocal benefit for productivity and performance at the individual and organizational levels.

Third, I-O psychology has an important role to play in assisting international development goals because work explicitly devoted to these global priorities, from reducing disease to promoting the empowerment of women, is carried out by individuals working together in organizations. I-O psychologists work with a broad array of organizations outside of the private sector that support global development priorities as their chief mission, from intergovernmental and multilateral organizations like the United Nations to nonprofit and civil society organizations like Médecins Sans Frontières (Doctors Without Borders). Moreover, as discussed by the United Nations Development Programme (2014), the private sector is increasingly engaging in poverty reduction through an array of hybrid business models that mix not-for-profit and for-profit concerns, including social enterprises and inclusive business. Prominent examples of such hybrid models include the Grameen Bank, founded in Bangladesh by the Nobel Laureate Muhammad Yunus, which provides microcredit loans and banking services to people affected by poverty (UNDP, 2014). This shift toward hybrid business models perhaps reflects a growing focus on organizational responsibility (Aguinis, 2011) and corporate social responsibility (Jones & Rupp, in press; Rupp & Mallory, 2015).

In summary, via its attention to public- and private-sector productivity, human well-being in and through work, and the social and environmental missions of not-for-profit and hybrid organizations, I-O psychology focuses on issues that are central to global poverty reduction. Thus, I-O psychology *does* play a part in global poverty reduction; yet, the question still remains: *Should* it? Put a different way, should I-O psychology attempt to frame and galvanize its efforts in light of salient global priorities or should it pursue research and practice largely independent of them? Even though debate is likely to continue on this question, we argue for the importance of both framing and motivating research and practice in light of broader global priorities—again for three principal reasons.

First, by engaging with developmental priorities, I-O psychology can help to ensure that it stays relevant to the concerns of the vast majority of the world's population that lives, and works, in lower-income societies. For example, a greater focus on poverty reduction is likely to lead to more research on forms of work in the informal economy that are prevalent within lower-income societies (see Saxena et al., 2015). Second, by addressing global goals for poverty reduction, I-O psychology can build stronger relationships with different disciplines and sectors that are looking for greater insight into human behavior in the workplace. Indeed, there have been moves to bring research-based insight into the design and pursuit of the SDGs (see www.unsdsn.org) and to develop better indicators and approaches for measuring global development progress. Third, and

perhaps most importantly, by framing and catalyzing its research and practice in light of global priorities for poverty reduction, I-Os can more directly address their charge as psychologists to support justice, fairness, human dignity, and self-determination (American Psychological Association, 2010). Supporting these ideals is perhaps most fully undertaken, and pursued, through the adoption of the S–P–H model mentioned earlier (Lefkowitz, 2012); indeed, it is difficult to see how adopting the S–P–H model could be effectively done without a good understanding of global development realities and priorities.

2. Are there any lessons to be learned from how I-O psychologists have engaged, or not engaged, with the MDGs?

For the past 15 years, the world’s efforts to reduce poverty have been guided by a set of eight Millennium Development Goals (see Table 1). Although not all of the targets associated with these goals were met, the experience of working toward them has benefitted a diverse set of international stakeholders, I-O psychologists included. A diverse array of efforts to combat poverty by I-O psychologists around the world was recently documented in an edited book by McWha-Hermann, Maynard, and O’Neill Berry (2015) entitled *Humanitarian Work Psychology and the Global Development Agenda: Case Studies and Interventions*. The book includes chapters by I-O researchers and practitioners that describe research and applied projects from Sierra Leone to South Asia. Collectively, these chapters deal with the entire set of goals,

from maternal and child health (MDGs 4 and 5) to supporting educational achievement (MDG 2).

McWha-Hermann and colleagues (2015) reflect on the 17 chapters in their book that focus on how I-O psychology has engaged with the MDGs. First and foremost, the book’s editors argue that an understanding and appreciation of work, though easy to overlook, is fundamental to furthering international development priorities. The connection between I-O psychology and the MDGs was perhaps most obvious when it came to the issue of “decent work,” a topic covered by Target B of MDG 1 that sets the goal to “Achieve full and productive employment and decent work for all, including women and young people” (United Nations, 2015b, p. 3). Yet, the connection between I-O psychology and other MDG targets, such as Target C of MDG 7, which calls to “halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation,” might be less obvious (United Nations, 2015b, p. 42). Many topics in international development and humanitarian work (including basic sanitation) might conjure up thoughts of complex, opaque, and distant phenomena to some, but it is important to remember that international development and humanitarian work is still carried through by the productivity and well-being of leaders, teams, organizations, and organizational alliances. Even in higher-income settings, global development priorities from women’s empowerment to environmental sustainability are keenly relevant to everyone and to all forms of work.

McWha-Hermann and colleagues (2015) also consider the nature of the work featured in their book's chapters and reflect on what this might say about the nature of I-O psychology's engagement with the global developmental agenda. Notably, I-O psychologists considered forms of work that cross not only cultural lines but socioeconomic gradients. For example, I-O psychologists have worked to support mentorship initiatives meant to reduce intergenerational poverty (see Ng, Lai, Lau, & Chan, 2015) and CSR efforts that send teams from high-income settings to low-income settings (see Osicki, 2015). I-O psychologists working to support global development goals have often had to prominently consider the importance of both outcomes and procedural justice (see Furnham, 2015). Moreover, much of international development work is just that, developmental in nature, and requires adherence to best practices in personal and organizational growth and development.

It is clear from the topics considered in the edited volume by McWha-Hermann and colleagues (2015) that global developmental goals have stretched I-O psychology to contemplate and incorporate nontraditional priorities, perspectives, and populations. As an example of nontraditional priorities, I-O psychologists interfacing with global development have often had to move beyond considerations of financial productivity to prioritize physical health and basic education as key outcomes. These outcomes closely mirror the tripartite components of the United Nations Human Development Index of income, health, and education. In terms of nontraditional per-

spectives, forms of work shaped by global development priorities often must admit to a broad diversity of cultural and situational factors (e.g., traditional community structures and high rates of poverty) that might often differ from the high-income and Western contexts that have featured prominently in I-O psychology research and practice. Moreover, I-O psychologists have had to utilize multiple research methods (e.g., ethnographic methods), have had to engage with multiple disciplinary perspectives (e.g., economics and public health), and have had to consider work phenomena on different levels of analysis (e.g., national and communal). As an example of nontraditional populations considered, unpaid volunteers are often a critically important part of humanitarian and international development work, and they present a range of challenges and considerations that differ from salaried employees (see Law & Hui, 2015).

McWha-Hermann and colleagues (2015) also note that I-O psychology has at least two unique strengths that are badly needed within the international development community. First, I-O psychologists have strong expertise in both for- and nonprofit organizational models and cultures—expertise that is critical in efforts, like the United Nations Global Compact, which endeavor to integrate the efforts of the private sector, public sector, and civil society in order to benefit global development priorities (see Cruse, 2015). Second, I-O psychologists have strong expertise in both the *human-level* of individual psychology and the *system-level* of teams, social groups, and organizations (see Yiu & Saner,

2015). Such bridging perspectives can be important contributions to those of the disciplines that often dominate research and practice in international development (e.g., economics).

3. How can I-O psychologists support the SDGs in the future?

With the rise of the Sustainable Development Goals, goals that supersede the Millennium Development Goals, I-O psychology has a unique opportunity to learn from past lessons and to engage more effectively in support of global development priorities. We have thus far presented a case for why I-O psychologists have an important role to play in supporting international development priorities and highlighted lessons learned in pursuit of the MDGs; we now turn to you, the broader I-O psychology community, to help us to answer the question of how I-O psychology can and should support the SDGs.

As part of its mission to organize action within the I-O psychology community, SIOP's team of representatives to the United Nations sponsored a roundtable discussion/conversation hour at the SIOP's Annual Conference in 2015 in Philadelphia entitled *Industrial-Organizational Psychology and the United Nations Sustainable Development Goals*. One of the purposes of this session was to kick-start a conversation within the discipline about how I-O psychologists can and should support the SDGs. For example, one of the themes that emerged from that session was the difficulty that many I-O psychologists have in navigating and practically engaging with the diversity

of actors in the international development system, including but not limited to various United Nations agencies, international nonprofits, and government agencies. To continue that conversation and to further support I-O psychology's engagement with the SDGs, SIOP's UN team has constructed a matrix that provides ideas, resources, and opportunities that synthesize I-O psychology topics with the SDGs. Examples of other ways in which the SIOP UN team is working to assist the integration of I-O psychology with the SDGs include sponsoring an initiative to have companies, departments, schools, and universities join the UN Global Compact. Moreover, the SIOP UN team continues to directly source the expertise and volunteered labor of I-O psychologists to assist the work of UN agencies (e.g., the United Nations Children's Fund or UNICEF). For further examples and explanation, and to begin or continue your engagement with the SDGs, visit: www.siop.org/Prosocial/UN.aspx.

Conclusion

In conclusion, we have argued that I-O psychology is closely linked to global development goals because (a) through the scientist-practitioner-humanist model, it can greatly assist the world's greatest engine for economic growth and prosperity—the productivity and well-being of workers in the private sector; (b) it overtly considers the health and well-being of the world's workforce; and (c) it has helped to assist the diversity of private-, public-, and civil-society organizations that explicitly support international developmental goals. We also argued that I-O psychology

should both galvanize and focus its efforts in light of the international developmental agenda because this will help to keep the discipline relevant to the vast majority of the world's population, it will build bridges to other disciplines and sectors that are looking for I-O psychology's expertise, and it will help I-O psychologists to effectively, collaboratively, and sustainably pursue their charge as I-O psychologists to support justice, fairness, human dignity, and self-determination.

The history of I-O psychology is replete with examples of how our research and practice has interfaced with the world's greatest problems. The recent book by McWha-Hermann and colleagues (2015) is an important addition to that history, and it provides a wealth of lessons learned from the 15-year history of the MDGs. Moving forward, SIOP's UN team remains devoted to assisting and accelerating I-O psychology's integration with the global development agenda. As the world evolves from the MDGs, we call on all I-O psychologists to seriously consider how their work could contribute to the SDGs.

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Sampling Strategies in the Top I-O Journals: What Gets Published?

FEATURE

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As an applied field, industrial-organizational (I-O) psychology has often viewed organizational samples as the “gold standard” and possessing high levels of external validity (specifically generalizability; Landers & Behrend, 2015; Landy, 2008). Student samples have been viewed as convenient but lacking external validity to organizations (Landy, 2008; Peterson & Merunka, 2014; Sears, 1986; Wintre, North, & Sugar, 2001). If we accept that I-O research has a bias towards one type of sample, this bias may have also resulted in a very limited consideration of the quality of data produced by various sampling strategies that could be used in I-O studies. For example, it may be assumed that organizational samples are superior to other types of samples without evidence supporting that claim. We test the assumption that there is a publication bias favoring organizational sampling methods by reviewing the last 5 years of published studies in the top I-O journals (as identified by Ruggs et al., 2013). We examined which sampling strategies were used most often, including organizational samples, student samples, crowdsourcing/Mechanical Turk samples, online panels, snowball and network samples, and probabilistic samples. We also examined the discussion of the strengths and limitations of the sampling strategy in each published article. Next, we briefly de-

scribe each of the six sampling strategies identified by Landers and Behrend (2015).

Organizational Samples

Organizational sampling is conducted by drawing a sample of participants from an organization with which the researcher likely has a preexisting relationship (Landy, 2008). In theory, organizational samples may include participants from multiple organizations (thus increasing external validity); however, more often organizational samples are drawn from a single organization (Landers & Behrend, 2015). Such samples may be perceived as having high external validity when compared to other convenience samples because organizational samples utilize employees from an actual work setting and employee behavior is the focus of our research.

Yet, there are disadvantages of using organizational samples. For instance, findings based on one organization may not extend to other organizations within that industry, organizations in different industries, or organizations of different sizes. In addition, asking employees within an organization to participate in a research study may be costly in terms of organizational productivity. This may result in unresponsiveness, incomplete data, or hurried, distracted responses.

If a publication bias exists, then organizational samples will be predominant in I-O published research. Accepting the superiority of organizational samples may limit consideration of external validity and publication of other types of samples. Other types of sampling strategies may have benefits that could be overlooked. We consider some of these other sampling strategies and their advantages and disadvantages next.

Student Samples

The main advantage of student samples is that they are conveniently obtained. Student samples include those composed of college or university students, often from an undergraduate psychology research participant pool. Other times, they may be comprised of graduate-level psychology or business students. The biggest concern with student samples is that they may not be representative of the larger population, thus lacking external validity (Landy, 2008; Peterson & Merunka, 2014; Sears, 1986; Wintre et al., 2001). Moreover, student samples tend to have higher education levels, intelligence, and critical thinking abilities compared to the population in general, which may result in biased research findings. Landy (2008) also pointed out that students may hold different stereotypes or make decisions differently from nonstudents. Different student samples may be more or less representative of working adults. For example, executive education for business leaders may provide very different and more representative responses than undergraduate students.

Crowdsourcing/Mechanical Turk Samples

A newer and increasingly popular source of data is crowdsourcing/mechanical Turk. Online freelancers, or crowdsource workers, are paid to complete research surveys as well as many other types of work for “requestors,” who may be organizations, researchers, or individuals. Mechanical Turk, also known as MTurk, is a service offered by Amazon.com, Inc., that provides researchers with easy access to crowdsourced participants. Some advantages of sampling using crowdsourcing/MTurk are that data can be collected quickly, it is inexpensive, and the demographic characteristics of MTurk workers are more representative and diverse than college students (Behrend, Sharek, Meade, & Wiebe, 2011; Berinsky, Lenz, & Huber, 2012). Furthermore, the diversity and wide geographical locations of crowdsource workers help to avoid oversampling from WEIRD (Western, educated, industrialized, rich, and democratic) populations (Henrich, Heine, & Norenzayan, 2010; Landers & Behrend, 2015). However, according to Landers and Behrend (2015), reviewers tend to question the validity or data quality of crowdsourced samples, likely out of unfamiliarity, raising concerns over repeat participants, selection bias, and motivation to participate, among other things.

Online Panels

Similar to crowdsourcing, online panels involve a registered pool of people who sign up to occasionally participate in research studies and complete questionnaires. Online panels can be found at websites

such as www.money4surveys.com, as well as through online survey software companies such as Qualtrics, SurveyMonkey, and StudyResponse (Goritz, 2007). Online panels can be categorized several ways. One way to categorize online panels is according to the type of people composing the panel. General panels may include a wide variety of panelists. More targeted panels may include panelists working in a particular industry or with a particular characteristic. Another way to categorize online panels is whether they are intended for scientific researchers or for market researchers (Goritz, 2007). Panelists have the option to participate in any study for which they qualify, and typically the researcher will pay both the participating panelists and the panel organizer a fee.

Online panels can be advantageous because of the reduction in time needed to obtain participants, the known demographics of panelists, and the ability to include panelists in longitudinal studies (Goritz, 2007). Because panelist demographics are provided to researchers, sometimes including data from previously conducted studies using the panel, a researcher can target particular samples without extensive screening (Goritz, 2007). Finally, information on panelists who dropped out or chose not to participate can be obtained and analyzed (Goritz, 2007). Despite these benefits of online panels, there is the concern about panelists' motivation and familiarity with surveys, as well as the possibility that panelists may provide inaccurate demographic information in order to complete more studies and earn more money (Goritz, 2007).

Snowball and Network Samples

Snowball and network samples, also known as chain-referral samples, involve obtaining participants via "referrals made among people who share or know of others who possess some characteristics that are of research interest" (Biernacki & Waldorf, 1981, p. 141). Often, these referrals may be personal contacts of the researcher, personal contacts of someone the researcher knows, members of certain groups, or contacts reached through social networks. Snowball and network samples may be suitable in research where the target population is hard to reach, such as if the research question involves a highly specific or rare characteristic or if the target population is socially stigmatized (Faugier & Sargeant, 1997). Some disadvantages of snowball and network samples include concerns over confirming eligibility of referred respondents, ensuring representativeness and avoiding repetition of data, and monitoring data quality (Biernacki & Waldorf, 1981). Given that these samples can now be obtained at an even quicker pace via the Internet, such concerns are likely heightened. Furthermore, there are likely concerns over generalizability, as it is easy for one to presume that a researcher's personal contacts, the contacts' contacts, and so on, tend to have many things in common and thus may not vary in terms of demographics, beliefs, and interests. However, additional methods have been developed in the hopes of combating these key issues with snowball and network samples, such as key informant sampling, targeted sampling, and respondent-driven sampling (Heckathorn, 1997).

Probabilistic Samples

Contrary to the convenience sampling strategies just described, probabilistic sampling attempts to draw a random sample from a known population, such that any individual of the targeted population has an equal chance of being sampled (Keppel & Wickens, 2004). Probabilistic sampling can be achieved using several methods, such as simple random, stratified, and cluster sampling methods. Probabilistic sampling is beneficial due to its high level of external validity and extremely low threats of bias. A researcher is more likely to obtain a very wide range of participants on any given characteristic when using probabilistic sampling.

Despite these advantages, it is very difficult to use a true probabilistic sampling strategy. For example, probabilistic sampling requires that the researcher have fairly detailed knowledge about the population characteristics in order to use some methods, such as stratified sampling. Due to the difficulty of these sampling strategies, most studies that utilize this type of strategy do not achieve a true probabilistic sample but rather attempt to obtain the closest probabilistic sample possible. Furthermore, probabilistic samples may not be necessary or desired if the research question pertains to a highly specific population.

Current Research Questions

With these considerations in mind, we reviewed the articles published during the last five years in the top tier I-O publications, asking the following questions: (a) How frequently are six of the most

common sampling strategies used in I-O research, and (b) is attention given to potential limitations of the samples used (e.g., discussion of sample external validity)?

Method

Journals reviewed. Based on previous reviews of high impact I-O journals, we chose to examine the last five years of empirical publications in six top-tier I-O journals (Ruggs et al., 2013; Zickar & Highhouse, 2001). The journals are considered widely read, prestigious, Tier 1 journals: *Academy of Management Journal (AMJ)*, *Journal of Applied Psychology (JAP)*, *Journal of Business and Psychology (JBP)*, *Organizational Behavior and Human Decision Processes (OBHDP)*, *Journal of Management (JOM)*, and *Personnel Psychology (PP)*.¹ We limited our examination to the last 5 full years of publications (2009–2013) to ensure all techniques, including relatively newer techniques for data collection such as online panels and crowdsourcing, were widely available across the years examined. For example, MTurk, one of the primary sources of crowdsourcing data, was launched in 2005 but was not widely discussed as a source of social science data until 2009–2010 (Paolacci, Chandler, & Ipeirotis, 2010).

The review of the six journals examined all published studies from 2009–2013, resulting in 2,391 published studies. Each individual study within a single manuscript was treated as a unique study. We specifically examined empirical studies with an individual level of analysis ($N = 1816$, 76%) and excluded all other studies such as meta-analyses, reviews, commentaries, and studies examining

Table 1.

Number and Type of Study by Journal and Year 2009-2013

	AMJ	JAP	JBP	JOM	OBHDP	PP
2009 Individual analysis	29	99	41	30	112	24
Other types of articles	30	23	2	25	12	8
Total	59	122	43	55	124	32
2010 Individual analysis	34	93	42	32	122	30
Other types of articles	29	10	15	37	1	13
Total	63	103	57	69	123	43
2011 Individual analysis	35	93	27	11	125	20
Other types of articles	27	16	22	53	1	13
Total	62	109	49	64	126	33
2012 Individual analysis	35	102	46	25	183	27
Other types of articles	15	24	5	36	5	9
Total	50	126	51	61	188	36
2013 Individual analysis	65	76	21	39	174	24
Other types of articles	29	16	17	41	13	13
Total	94	92	38	80	187	37
Grand total	334	555	239	353	749	161

teams or dyads ($N = 575$, 24%). See Table 1 for a full breakdown by journal and year.

Measures

A coding guide was created to assess the research questions based on the issues raised by Landers and Behrend (2015) and was used by a panel of graduate students who coded each study. Each sample was coded as 1 = *organizational*, 2 = *student* (and type of student), 3 = *online panel*, 4 = *crowdsourcing/MTurk*, 5 = *snowball and network samples*, 6 = *probabilistic*, or 7 = *other*.² In addition, each study was coded based on whether or not there was mention of issues of sample generalizability in the discussion section (sample's external validity).

Results

Our first question regarded how frequently each sampling method is seen in published articles in six high impact I-O journals. Combining all six journals and all 5 years, the following sampling techniques were used: organizational ($N = 565$, 31%), students ($N = 851$, 47%), online panels ($N = 105$, 6%), crowdsourcing ($N = 38$, 2%),

snowball ($N = 124$, 7%), probabilistic ($N = 56$, 3%), and other ($N = 77$, 4%). Looking across years by journal illustrates that certain journals have sampling preferences that differ from these overall trends (see Table 2). Five of the six journals' most published samples were organizational (38%–58%), with *OBHDP* breaking the trend with more frequent use of student samples (74%). The remaining five journals' next most published samples were student (20%–35%). Crowdsourcing samples only accounted for 0% to 4% of sampling, online panels 2%–8%, snowball sampling 4%–12%, and probabilistic 1%–10%. Thus, with the exception of *OBHDP*, organizational samples are the most frequently published.

When examining the type of student sample used, we found that the vast majority of students sampled were undergraduates (89%). In terms of graduate students (11%) sampled, 7% were MBA students, 3% were psychology graduate students, and 1% were executive education students. This is consistent with the general perception that, when student samples are used, the students are usually undergraduates. Our second question addressed the discus-

Table 2.

Sampling Techniques by Journal and Year

		<i>AMJ</i>	<i>JAP</i>	<i>JBP</i>	<i>OBHDP</i>	<i>JOM</i>	<i>PP</i>	Total
2009	Organizational	20	45	18	5	18	12	118 (35%)
	Student	4	34	15	94	9	6	162 (48%)
	Online panel	0	4	1	5	0	5	15 (5%)
	Crowdsourcing	0	0	0	0	0	0	0 (0%)
	Snowball	0	14	4	2	1	0	21 (6%)
	Probabilistic	5	0	3	0	2	0	10 (3%)
	Other	0	2	0	6	0	1	9 (3%)
2010	Organizational	15	38	23	12	22	7	117 (33%)
	Student	4	36	12	85	3	7	147 (42%)
	Online panel	1	7	1	8	0	2	19 (5%)
	Crowdsourcing	0	0	0	0	1	2	3 (1%)
	Snowball	9	8	3	1	2	2	25 (7%)
	Probabilistic	5	4	3	0	1	0	13 (4%)
	Other	0	0	0	16	3	10	29 (8%)
2011	Organizational	22	54	8	7	6	9	106 (34%)
	Student	8	25	11	95	2	4	145 (47%)
	Online panel	2	7	0	15	0	0	24 (8%)
	Crowdsourcing	0	0	0	0	0	1	1 (0%)
	Snowball	1	3	6	3	3	1	17 (6%)
	Probabilistic	1	3	2	4	0	0	10 (3%)
	Other	1	1	0	1	0	5	8 (3%)
2012	Organizational	25	38	20	9	8	8	108 (26%)
	Student	5	46	16	127	6	6	206 (49%)
	Online panel	0	8	2	12	4	1	27 (7%)
	Crowdsourcing	0	1	0	7	0	0	8 (2%)
	Snowball	2	3	6	17	4	5	37 (9%)
	Probabilistic	1	1	2	2	2	1	9 (2%)
	Other	2	5	0	9	1	6	23 (6%)
2013	Organizational	22	38	10	10	25	11	116 (29%)
	Student	18	23	7	128	8	7	191 (48%)
	Online panel	1	4	2	9	2	2	20 (5%)
	Crowdsourcing	5	3	0	18	0	0	26 (7%)
	Snowball	10	5	2	5	0	2	24 (6%)
	Probabilistic	7	0	0	3	4	0	14 (4%)
	Other	2	3	0	1	0	2	8 (2%)
Total	Organizational	104 (53%)	213 (46%)	79 (45%)	43 (6%)	79 (58%)	47 (38%)	565 (31%)
	Student	39 (20%)	164 (35%)	61 (35%)	529 (74%)	28 (20%)	30 (24%)	851 (47%)
	Online panel	4 (2%)	30 (6%)	6 (3%)	49 (7%)	6 (4%)	10 (8%)	105 (6%)
	Crowdsourcing	5 (3%)	4 (1%)	0 (0%)	25 (4%)	1 (1%)	3 (2%)	38 (2%)
	Snowball	22 (11%)	33 (7%)	21 (12%)	28 (4%)	10 (7%)	10 (8%)	124 (7%)
	Probabilistic	19 (10%)	8 (2%)	10 (6%)	9 (1%)	9 (7%)	1 (1%)	56 (3%)
	Other	5 (3%)	11 (2%)	0 (0%)	33 (5%)	4 (3%)	24 (19%)	77 (4%)

sion of potential limitations of the samples used (i.e., external validity). As such, we examined whether limitations associated with the study's sample were addressed in the discussion section (see Table 3). An example of a statement that focused on external validity was: "The study was conducted using a sample from (X country/type of worker/type of organization) and

therefore the results may not generalize to (other countries/workers/types of organizations)." If an article contained one discussion for multiple studies the presence of a discussion of sample external validity was entered for each study. Across all 1,816 studies, only 41% of studies explicitly discussed limitations of the sample ($N = 751$). When discussed, the average space

Table 3

Sample Generalization Discussed (Percent Yes) by Journal and Sampling Method

	<i>AMJ</i>	<i>JAP</i>	<i>JBP</i>	<i>OBHDP</i>	<i>JOM</i>	<i>PP</i>	<i>Total mean</i>
Student	82.10%	18.30%	60.70%	34.70%	71.40%	46.70%	37.20%
Online panel	75%	6.70%	33.30%	24.50%	50%	20%	22.90%
Crowdsourcing	80%	24%		40%		33.30%	42.10%
Organizational	78.80%	25.90%	64.60%	53.50%	54.40%	70.20%	50.70%
Snowball	54.50%	27.30%	52.40%	25%	40%	30%	37.10%
Probabilistic	73.70%	37.50%	70%	55.60%	77.80%		64.30%
Other	80%	18.20%		15.20%	50%	45.80%	31.20%
Total mean	76.30%	22.10%	61%	34.30%	57.50%	51.20%	41.20%

devoted to the limitations of the sample across all journals, years, and sampling techniques was 61.95 words with a range from 8 to 488 words. Studies from *AMJ* (76%), *JBP* (61%), and *JOM* (58%) were the most likely to discuss sample generalization. Generalizability of organizational (51%) and probabilistic (64%) were the sampling techniques most likely to generate discussion of external validity.

Discussion

Jose Cortina (2015), in his presidential address at the annual conference of the Society for Industrial and Organizational Psychology, focused on the publication review process and the resulting quality of the published data and analyses. His discussions focused on issues of data analysis transparency as a marker for the quality of publications and issues in the review process that may be failing in these aims. Cortina called for a systematic reexamination of our science's review and publication process as well as an examination of what is being published using the current system. Although we did not look at the analysis issues, our review did address issues of sampling methods resulting in successful publication.

Looking across all six journals, student samples were more common than organizational samples. However, these results were affected by a large number of student samples coming from one journal (*OBHDP*). Organizational samples were more common in each of the other journals. As a researcher, if you are wondering whether research using student samples gets published in top-tier I-O journals, the answer is "Yes." All of the top-tier I-O journals published data from student samples. However, for most top-tier I-O journals, organizational samples were published more frequently. In addition, most student samples were comprised of undergraduate students. If managerial experience is the distinguishing factor among student samples (Staw & Ross, 1980), the majority of student samples comprise undergraduates who have the least amount of managerial experience. All other types of samples beyond student and organizational samples were used much less frequently and may be potentially underutilized. For example, crowdsourcing/MTurk (2%) may be underutilized despite several advantages (Behrend et al., 2011). This is a fairly new sampling strategy, which appears to be increasingly used. In 2005, there were no crowdsourcing samples published. However, in 2013, there were

26 (7%). We also found that probabilistic sampling was rare: Only 3% of the published studies we reviewed used probabilistic sampling. Furthermore, we found that snowball samples were used for only about 7% of the published studies. Although the snowball sampling technique is considered to only be appropriate for quantitative data analysis in a limited number of situations (Biernacki & Waldorf, 1981), without examining the studies more closely, we cannot assess whether any of these sampling techniques were the most appropriate for the particular research questions posed in each study. This is an area for future study.

Another major finding of this study was that discussion of the pros and cons and external validity of sampling choices was limited. There are several factors that should be included when discussing a sample's strengths and weaknesses, such as appropriateness to the research question(s), potential for range restriction, and possible omitted variables, among others (Landers & Behrend, 2015). We encourage researchers to include a more thorough discussion of their sampling techniques strengths and weaknesses. Surprisingly, there was more discussion of sample generalizability when using probabilistic and organizational samples compared to when other samples were used. Perhaps authors are reluctant to discuss potential limitations of convenience or student samples and avoid discussing what may appear to be obvious limitations.

When discussing issues related to the trustworthiness of I-O research, Kepes and McDaniel (2013) suggested that a coordinated effort by I-O journal editors might improve

the review process and enhance the trustworthiness of I-O research. Similar efforts across journals might produce more careful consideration of sampling strategies and help us move beyond superficial consideration of organizational samples as good and student and other convenience samples as bad (Landers & Behrend 2015). I-O research may benefit from more thorough discussion and consideration of all sampling strategies.

Conclusion

By examining empirical articles published in high impact I-O journals over 5 years, we found that most journals publish more organizational samples than other types of samples, followed by student samples. In addition, more discussion of sample strengths and weaknesses in research publications is warranted. Researchers and reviewers should carefully consider, assess, and discuss the strengths and limitations of sampling strategies.

Notes

¹ *Academy of Management Review* was included in previous lists but was excluded from our study as it does not publish empirical research.

² The "other" sample code was used for samples that did not fit into any of the other sampling strategy categories.

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Contents	Features	Editorials	Reports	my.SIOP
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Have You Joined a Local Industrial-Organizational Psychology Group? If Not, You May Be Missing Out!

William L. Farmer
U. S. Bureau of Naval Personnel

Terri Shapiro
Hofstra University

Donna L. Sylvan
Sylvan & Associates

Lynda Zugec
The Workforce Consultants

Virginia B. Whelan
Whelan & Associates

Do you belong to a locally based I-O group? Most SIOP members don't and many aren't even aware that they exist. With the annual conference, communication vehicles such as *TIP* and *Industrial and Organizational Psychology: Perspectives on Science and Practice*, and multitudes of opportunities to become involved in various committees, many are not aware of the benefits that local I-O groups can provide to connect like-minded professionals.

Local I-O groups have emerged outside of SIOP and provide excellent opportunities for networking and professional development that complement and enhance those activities directly associated with national organizations. They also provide our profession with a vehicle for promoting and interfacing with businesses and organizations that need our services. Until recently, there has been little known about these groups, their needs, and the role they play in our growing profession.

In 2013, SIOP formed the Local I-O Groups Relations Committee with the express purpose of establishing stronger ties with these groups. The committee is composed of professionals who have been active in locally based groups as founders and/or officers and believe that both SIOP and these local groups can benefit mutually by working together. In addition to providing networking opportunities between local groups at the SIOP annual conference for a number of years, maintaining LinkedIn and my.SIOP groups, and developing a "Toolkit for Starting and Maintaining a Local I-O Group," the committee has been working on a number of initiatives that will be beneficial to SIOP and local groups going forward.

In order to establish a baseline for determining local group participation and provide the committee with useful information for moving forward, a survey was administered in 2014. The survey was sent to 4,570 active and retired SIOP Fellows,

Members, Associates, and Students located in the U.S. and parts of Canada. The survey inquired about membership involvement, professional development, and relations with SIOP. As the focus of interest was to learn about local I-O groups, the first question was designed to screen out those who were not members of a local group. Of the 1,334 who accessed the survey, 474 (35.5%) reported currently belonging to at least one local group and continued the survey. Of these, 455 completed the survey. Those who did not respond “Yes” to the screening question exited the survey. The following results are some highlights of the survey on local I-O groups.

What is the current participation in local industrial-organizational groups?

When asked to identify their primary local group, respondents identified 56 different

local groups. The two local groups most frequently selected were the Personnel Testing Council of Metropolitan Washington, DC (PTC/MW) and the Metropolitan New York Association for Applied Psychology (METRO). While 26% of the respondents belong to at least one of these two groups, currently active local groups are located in each region of the United States. In terms of local group participation, 56% report being very or somewhat active, compared to 44% who report occasionally or rarely attending meetings (see Figure 1.)

Why do local industrial-organizational psychology groups get together? When asked why their local I-O groups get together, survey results indicate that networking and professional development were the primary reasons (Figure 2). Respondents also reported meeting for fellowship and to develop the future gen-

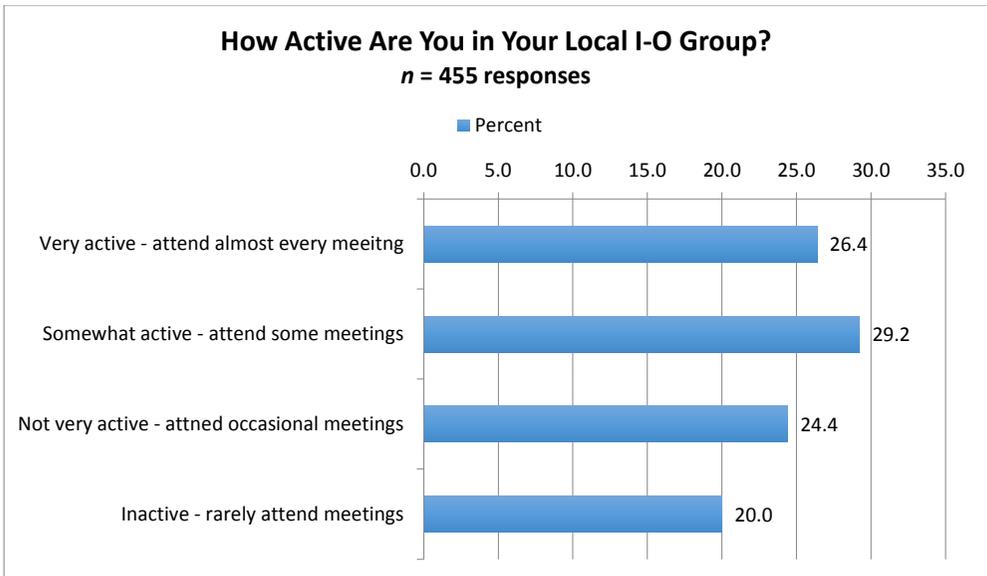


Figure 1.

What Are the Primary Reasons Your Group Gets Together?

(check all that apply)

n = 441 responses

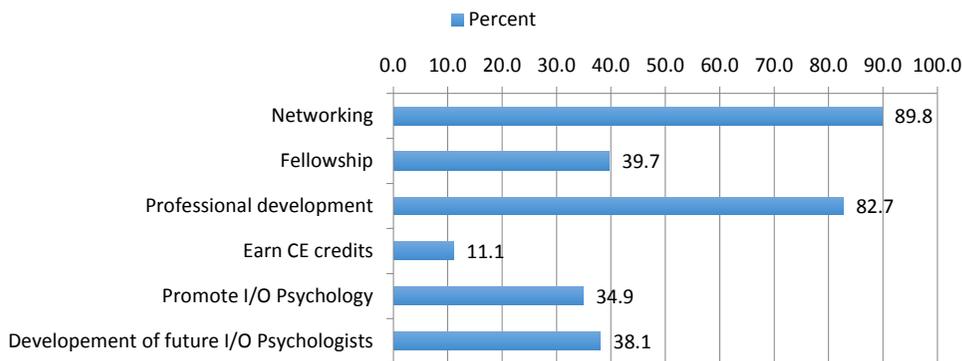


Figure 2.

eration of I-O psychologists. Relatively few respondents reported that obtaining continuing education (CE) credits was a primary reason for their local groups to meet, which is not surprising given that only 16% reported needing CE credits for licensure or certifications. Though not displayed on the figure, 5% reported that their local groups got together for a reason not listed in the response options provided.

How might SIOP support your local industrial-organizational psychology group?

Respondents also cited professional development and networking most often as ways in which SIOP might support the local I-O group. Over 70% of respondents indicated SIOP could help facilitate professional development opportunities followed by over 50% of respondents indicating SIOP could increase networking opportunities between local I-O groups (Figure 3). Thirty-six percent indicated

SIOP might offer an endorsement process for local groups, for example, to improve credibility and quality. Over 25% and 20% of the responses, respectively, suggested SIOP could facilitate CE credits and could provide structural support for local groups, such as sample bylaws and/or membership criteria. Almost 10% reported needing no support from SIOP at this time.

Respondents were also asked to indicate, qualitatively, specific ways SIOP could support local groups (Table 1). The largest number of responses, 27%, indicated SIOP could support their local groups by providing speakers. Written suggestions included creating a "speaker's bureau," "a compiled list of national speakers," and "an online database of willing and available speakers."

Other suggestions centered around five themes: (a) funding and sponsorship; (b) active involvement; (c) connecting local groups; (d) advertising, marketing, and

How Might SIOP Support Your Local I-O Group?

(check all that apply)

n = 423 responses

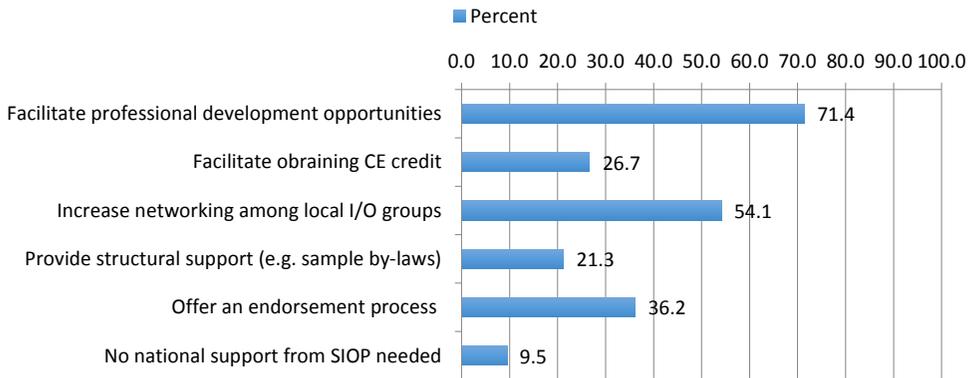


Figure 3.

Table 1

In What Specific Ways Could You Envision SIOP Supporting Your Local I-O Group?

Major themes	Responses	Percentage
Providing speakers	48	27%
Funding & sponsorship	23	13%
Active involvement	23	13%
Connecting local groups	23	13%
Advertising, marketing, & endorsing	23	13%
Online resource tool to share information	22	12%
Continuing education	13	7%
Prefer SIOP does not get involved	6	3%
Total responses: 181		

endorsement; and (e) an online resource tool to share information.

How would networking with other local industrial-organizational psychology groups be of benefit to you?

Survey respondents were asked how networking with other local groups could

be beneficial (Figure 4). Over 80% said that networking with other local groups would help them learn about possible guest speakers for local groups, echoing the interest in speakers seen in the previous question, and 70% said that networking with other local groups would help with ideas for their local meetings. Learning about job opportunities and ways

How Might Networking With Other Local I-O Groups Benefit You? (check all that apply)

n = 419 responses

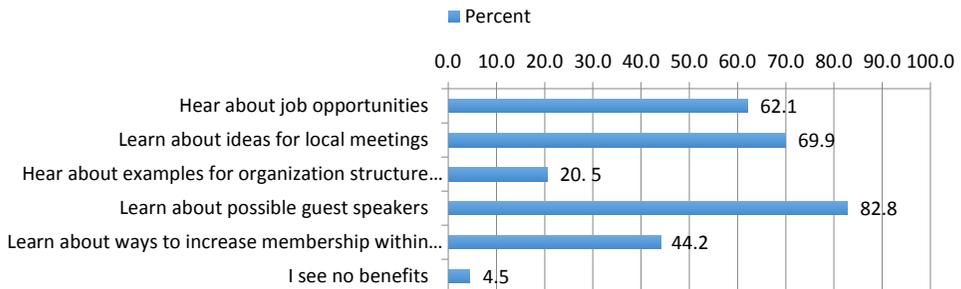


Figure 4.

to increase membership in local groups was also seen as a benefit of a stronger connection between local groups. Though not shown, 6.2% of respondents included “other” responses that were not included in the available options.

How can SIOP facilitate networking among local industrial-organizational psychology groups?

To follow up on how networking with other local groups might be beneficial, we asked respondents to suggest ways SIOP could facilitate networking among the local groups (Table 2). Many respondents suggested SIOP develop some sort of online mechanism to connect local groups and enable them to share information, such as “a my.SIOP group,” “setting up ‘communities of interest’ on the SIOP website or maybe coordinating with LinkedIn,” “creating a listserv among leaders of local I-O groups,” “having a SIOP web page listing the groups and contact info,” and “using the SIOP website to host subgroups.” Another common suggestion was to hold

meetings at the annual SIOP conference. Other suggestions about how SIOP could facilitate networking among local groups centered around matching speakers with local group meeting schedules, holding local events, helping with marketing, and providing best practices for local groups.

What kind of professional development does your local I-O group provide and how can SIOP help?

As indicated earlier, professional development was the second most frequently identified reason local groups meet (see Figure 2). When asked to identify the professional development opportunities provided, respondents selected guest speakers most often (92%). The next opportunities selected were workshops (45%), mentoring (28%), and web-based presentations (18%). E-learning (3%) was selected least frequently. See Figure 5.

When asked to identify other professional development opportunities provided by lo-

Table 2

How Might SIOP Help Facilitate Networking Among Local Groups?

Major themes	Responses	Percentage
Develop online mechanism/forum to connect everyone and share information	39	41%
Hold meetings at the annual conference (e. g. local group leadership)	15	16%
Hold regional/state-wide events and have local groups attend	6	6%
Facilitate matching speakers with meeting schedules/locations	6	6%
Hold local events, local conferences and networking opportunities	5	5%
Subsidize costs for local groups to get together	4	4%
Help with marketing (SIOP newsletter and other)	3	3%
Provide access to guest speakers from other groups via technology/webinar	3	3%
Have a dedicated person to reach out to on the phone and in other ways	3	3%
Provide "tips for attracting and maintaining I-O psychologists" and "best practices" to local groups	3	3%
Give people a reason to attend, with a benefit	2	2%
Have SIOP president/SIOP representative attend local functions	2	2%
Help introduce those who have relocated	1	1%
Showcase local groups at annual conference	1	1%
Develop a SIOP committee specifically for this purpose	1	1%
Total responses: 94		

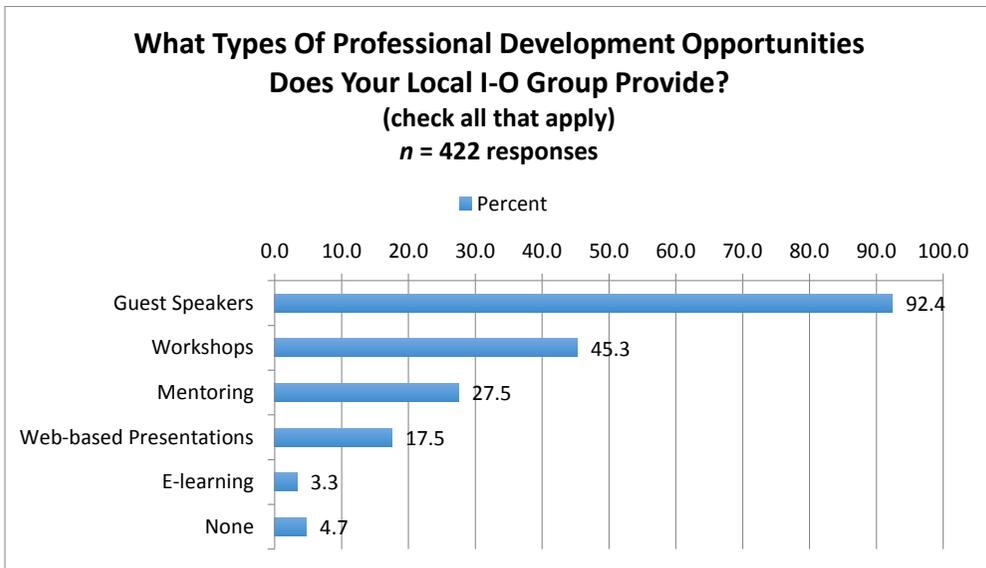


Figure 5.

Table 3

What *Other* Types of Professional Development Opportunities Does Your Local I-O Group Provide?

Major Themes	Responses	Percentage
Networking	14	38%
Research-related	6	16%
Student-focused	5	14%
CE credit/workshops	4	11%
Employment	4	11%
Other	4	11%
Total Responses: 37		

cal groups, networking was most frequently mentioned. Other types of professional development opportunities provided by local groups included research related, student focused, CE credit/workshops, employment, and other. See Table 3.

Both quantitative and qualitative data were collected to explore how SIOP might partner with local I-O groups to offer professional development. When asked if they would be interested in partnering with SIOP to provide professional development, responses were 44% yes, 41% unsure, and 16% no ($n = 418$ responses).

Respondents' open-ended suggestions for ways SIOP could support local groups with their professional development were categorized into 14 themes and summarized in Table 4. The most frequent theme was a request for **administrative support**. Many of these suggestions related to providing information online, such as, content or sample agendas, news briefs of recent events, lists of local SIOP members with contact informa-

tion, and a template for a needs assessment survey. Other examples of online administrative support included "interactive tools for local group use" and website hosting for a fee. Other suggestions included continuing to have meetings at the SIOP conference to promote local groups, providing information on how to conduct professional development events, and offering suggestions for professional development that did not rely on speakers. In addition, SIOP's relationship with local groups could enable SIOP to be better connected to its members and allow more two-way communication.

The next most common theme with included suggestions related to **speakers**. Typically these suggestions centered on SIOP providing lists of speakers with contact information. The emphasis seemed to be on local resources or information about individuals who might be traveling to the local group's area.

Suggestions related to **workshops** included the sharing of structured workshop mate-

Table 4

In What Ways Do You Think SIOP Could Provide Professional Development Support for You at the Local Level?

Major themes	Responses	Percentage
Administrative support	20	19%
Speakers	14	13%
Workshops	11	10%
SIOP sponsorship	10	10%
Training related (includes online)	10	10%
CE credit	8	8%
Funding	6	6%
Not needed	5	5%
Not sure	5	5%
Already answered	4	4%
Student related	4	4%
Employment	3	3%
Other	3	3%
Mentoring	2	2%
Total responses: 105		

rials, focused workshops for experienced practitioners, and providing workshops for students close to degree completion. Examples of **training-related** suggestions included web-based training, providing access to free or low-cost training opportunities, train the trainer, and e-learning opportunities.

Some suggestions in **SIOP sponsorship** included sponsor talks and CE events, co-sponsor events, cosponsor traveling workshops perhaps based on SIOP conference workshops, sponsoring a regional event, and providing a review or endorsement of workshops or presentations. Some comments indicated a connection to SIOP would provide recognition or legitimacy for the local group.

Suggestions included in the **CE credit theme** included centralized creation of CE credit, help to get speakers to put on workshops for CE credit, and certification of the local group to provide CE credit. Examples of responses in **funding** included providing free statistical training, partial funding for workshops, and more funding opportunities to attend SIOP.

How could SIOP support obtaining CE credit locally?

One area of interest was the demand and need for CE credits and what role the local I-O groups and SIOP play. When asked if CE credit was needed on a regular basis to maintain licensure or certifications, 84% of respondents reported “No” and 16%

reported “Yes” ($n = 432$ responses). Only those who responded “Yes” answered four questions related to CE credits and these are summarized below.

When asked to identify their credential(s), most reported state psychology licensure (80%) while 20% indicated they were credentialed as a professional or senior professional in human resources (PHR/SPHR). Eight percent were credentialed as members of the American Board of Professional Psychology.

Respondents were also asked to select where they usually obtained CE credit. The following received at least 20% of the responses: SIOP 74%, conference workshops 52%, local training 36%, APA 24%, state psychological association 23%, and Society of Consulting Psychology 20%. In addition, respondents were also asked to identify any other sources. Of these responses, online and other organizations were most often mentioned with 45% and 31% respectively.

Respondents were also asked to rate how easy it was for them to obtain relevant CE credit. The ratings were very accessible 23%, accessible 45%, somewhat accessible 30%, and inaccessible 1%. Six themes emerged when respondents were asked to describe the types of CE credit that were difficult to obtain. Ethics and I-O relevant were the top two themes. Each received 29% of the responses. The remaining themes were other 15%, diversity 10%, local 10%, and strategic HR (SPHR) 7%.

Have you accessed the Local I-O Group Toolkit?

One of the committee’s first initiatives was to create a toolkit to help promote local I-O groups. In 2014, the Local I-O Group Toolkit was formally introduced at the SIOP Conference in Honolulu, Hawaii. Of 437 individuals who responded to this question, slightly less than 4% had accessed the toolkit at the time of this survey. Although nearly 26% reported not having accessed the toolkit, more telling was the fact that almost 71% of respondents were not even aware that it existed. This last point can perhaps be explained by the write-in response that “I do not know where to go to get to the Toolkit. Can you include directions on how to access it?”

Though many of the write-in comments addressed other areas of the survey, those that directly contributed suggestions for improving the toolkit included advice on mentoring, suggestions for increasing the visibility of local I-O activities and events, recruitment tips for increasing membership, guidance on obtaining non-profit status for local groups, and a section on frequently asked questions (FAQs).

Summary of Results and Next Steps

In sum, there appear to be some consistent themes in the results of the Local I-O Group survey that we can potentially learn from. Overall, respondents found that belonging to a local I-O group was beneficial. As members of SIOP’s Local I-O Groups Relations Committee, we certainly encourage and support the formation of such groups.

Respondents to the survey were heavily focused on networking and professional development/ collaboration, suggesting that this might be our greatest areas of focus going forward. In response to the survey findings and meetings that we have conducted with representatives from locally based I-O groups in the U.S., we have initiated a number of tools and services that will help to strengthen the relationship with other locally based groups and with SIOP. We have also connected with those who aim to support the development of local work and organizational psychology groups worldwide. In fact, a survey similar to the one shared above was conducted with local work and organizational psychology communities outside the U.S. and a previous *TIP* article (<http://www.siop.org/tip/oct14/522/files/28.html>) highlights these findings.

Moving forward, we will publish the activities of the committee in future issues of *TIP*. Look for improvements to be made to the Local I-O Groups webpage and access to a professional network of speakers who will be available for meetings. We hope to increase interest in local groups, by highlighting benefits to members and the profession as a whole.

Many of the frequently asked questions regarding local work and organizational psychology groups can also be accessed either on the SIOP website at www.siop.org/IOGroups.aspx or on the Alliance for Organizational Psychology (AOP) website: <http://allianceorgpsych.org/Local-Groups>. For questions or comments regarding this article or the survey results reported, please contact Bill Farmer at farmerwl@flash.net.

Acknowledgements

The authors would like to thank **Peter Rutigliano** for invaluable creative/technical support in the development and administration of the survey and compilation of the results and **Alison Eyring** for insightful comments in the preparation of this article. In addition, the following individuals contributed creative input into the survey's development and/or in the preparation of the article: **Aaron Adams, Anna Erickson, Zack Horn, Jim Kurtessis, Therese Macan, Rose Mueller-Hanson, Peter Scontrino,** and Welyne Thomas.

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Revising SIOP's Guidelines for Education and Training: Graduate Program Director Survey Results

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SIOP commissioned the Education and Training Committee to revise the *Guidelines for Education and Training at the Master's and Doctoral Levels in Industrial-Organizational Psychology*. As a part of that effort, the committee sent a survey to all the directors of graduate programs in industrial and organizational psychology and related fields per SIOP records.

To identify who to send the survey to, the following three lists of e-mail addresses were compiled and cross-referenced resulting in 317 potential respondents: (a) points of contact within SIOP's Graduate Training Program database, (b) respondents to the 2011 SIOP program benchmarking survey (Tett, et al., 2012), and (c) the SIOP I-O Program Directors' discussion list.

The survey launched July 14 and closed August 2, 2015, and per SIOP guidelines on surveys, one reminder message was sent. A total of 107 individuals responded for a 34% response rate, but only 89 of those respondents provided usable and complete rating data.

Survey responders indicated that 36 of them were a part of a master's program, 20 a PhD program, 31 both master's and PhD programs, and 4 indicated "other." The majority of the respondents (66/86; 77%) indicated the label used to refer to their graduate program was "industrial-organizational psychology." The majority (71/85; 84%) of these programs were in psychology departments. On average, respondents indicated they had completed their degree 19.72 years ago ($SD = 11.48$).

Respondents were asked to rate the importance of each competency listed in the current PhD guidelines for a master's and a PhD degree on a five-point scale (1 = *optional/not necessary*, 5 = *essential*). A summary of the paired *t*-test results appear in Table 1, rank ordered by PhD ratings. Generally competencies were rated as more important to the PhD degree than master's degree, but the overall rank ordering of the importance of the competencies to the two degrees was quite similar. Nevertheless, a significant difference emerged between the ratings for master's versus PhD degrees for 15 competencies (as

Table 1

Importance Ratings Rank Ordered Within the PhD Degree Column

	N	PhD M (SD)	Master's M (SD)	Master's rank order
1 *Research methods	78	5.00 (0.00)	4.58 (0.68)	5
2 *Statistical methods/data analysis	78	4.97 (0.16)	4.72 (0.53)	2
3 Personnel recruitment, selection, & placement	78	4.72 (0.60)	4.76 (0.56)	1
4 Ethical, legal, & professional contexts of I-O psychology	77	4.60 (0.78)	4.60 (0.73)	3
5 *Work motivation	76	4.53 (0.72)	4.13 (0.81)	8
6 *Criterion theory & development	77	4.48 (0.84)	4.12 (1.05)	9
7 *Individual differences	78	4.47 (0.70)	4.10 (0.92)	10
8 Performance appraisal & feedback	75	4.53 (0.72)	4.56 (0.66)	6
9 *Job/task analysis & classifications	78	4.38 (0.96)	4.59 (0.65)	4
10 Training: theory, program design, & evaluation	78	4.27 (0.92)	4.38 (0.81)	7
11 *Leadership & management	78	4.23 (0.87)	3.88 (0.95)	12
12 *Attitude theory, measurement, & change	78	4.17 (0.97)	3.74 (1.03)	14
13 *Small group theory & team processes	78	4.05 (0.91)	3.63 (0.93)	15
14 Organizational development	78	3.81 (1.05)	3.81 (1.03)	13
15 Consulting & business skills	79	3.76 (1.04)	3.96 (1.13)	11
16 *Health & stress in organizations	79	3.70 (1.01)	3.23 (1.03)	17
17 *Organizational theory	78	3.68 (1.09)	3.23 (1.12)	17
18 Individual assessment	78	3.59 (1.17)	3.38 (1.15)	16
19 *Judgment & decision making	77	3.30 (1.08)	2.58 (1.01)	20
20 *Fields of psychology	77	2.90 (1.19)	2.34 (1.05)	22
21 *History & systems of psychology	77	2.62 (1.18)	2.05 (0.92)	24
22 Career development	77	2.51 (1.14)	2.42 (1.17)	21
23 *Job evaluation & compensation	78	2.54 (1.14)	2.82 (1.25)	19
24 Human performance/human factors	78	2.33 (1.21)	2.22 (1.12)	23
25 Consumer behavior	77	1.65 (1.00)	1.64 (0.95)	25

Note. Respondents rated each competency on a five-point scale (1 = *optional/not necessary*, 5 = *essential*).

* $p < .05$

marked by an asterisk). Among these, 13 of the 15 were rated as significantly more important to the PhD degree. *Job/task analysis & classification* and *job evaluation & compensation* were rated as significantly more important to the master's degree. Overall, there appears to be strong support for including all of the competencies except *consumer behavior* in both sets of guidelines. Interestingly, in the current set of master's guidelines, *consulting and busi-*

ness skills, health & stress in organizations, individual assessment, judgement and decision making, and leadership & management are excluded, and *compensation and benefits* (granted not exactly the same as *job evaluation & compensation*) is deemed "desirable but not essential."

In some ways, the 10 competencies for which there were not significant differences in the ratings is just as interesting.

Table 2

Ratings of Importance of Committee Proposed Competencies

	N	PhD M (SD)	Master's M (SD)
*Grant writing/proposal development	72	3.69 (1.15)	2.01 (1.08)
Diversity-related interpersonal skills	76	3.63 (1.24)	3.64 (1.23)
*Course development & delivery/teaching	76	3.49 (1.17)	1.72 (0.89)
Technology-oriented/related skills (e.g., computer programming)	74	2.70 (1.30)	2.59 (1.29)

Note. Respondents rated each competency on a five-point scale (1 = *optional/not necessary*, 5 = *essential*).

* $p < .05$

Some of these included *personnel recruitment, selection, and placement, ethical, legal, and professional context of I-O psychology, performance appraisal and feedback, and training theory, program design, and evaluation*. Given how highly 24 of the 25 competencies were rated to both degrees, it is unclear if two different sets of guidelines are necessary. Related to this, respondents were asked if they think there should be a separate set of competencies (and therefore guidelines) for each level of education (master's and PhD).

Sixty-two respondents indicated "yes," and 16 checked "no." Fourteen respondents checked "it depends" and were given the opportunity to elaborate. In their elaboration, respondents noted program differences (e.g., "*differences in practice vs. research focus of the programs*") and commented on breadth and depth of the competencies.

Respondents who checked "yes" they thought there should be a separate set of competencies were prompted to describe

in what ways the master's guidelines should be different from the doctoral guidelines. Across the board, respondents mentioned breadth and depth of the competencies (e.g., "*For MS, breadth is important and skill development. For PhD, depth is important and when possible breadth.*"). particularly with regard to statistics (e.g., "*This [difference] may need to be amplified for specific methods (e.g., SEM, HLM, etc.) that may be essential for PhDs but not master's level practitioners.*"). Similarly, many respondents noted differences in proficiency levels across the two degrees (e.g., "*I think the competency list should be the same for both MAs & PhDs but define each competency, into different proficiency levels.*"). Respondents also commented about preparing for applied versus research-oriented or academic careers (e.g., "*Master's guidelines should focus on marketable applied skills. PhD guidelines should focus on academic research skills*").

Respondents were also asked to rate the importance of four additional competencies proposed by the committee that ap-

pear in Table 2. Again, these topics tended to be rated as more important to the PhD degree than the master's degree, especially and not surprisingly, "Grant writing/proposal development" and "Course-development & delivery/teaching."

Respondents were also given the opportunity to review slightly revised descriptions of each of the current competencies and provide comments and suggestions for changes. This information is now being incorporated into the revised guidelines, and the survey data are being presented to the Executive Board for review and feed-

back at the September meeting. We thank **Laura Koppes Bryan, Anne Herman**, Larry Nader, Yimin He, and the committee members for their assistance with the survey and all respondents to the survey.

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White Papers

The SIOP White Paper series organizes and summarizes important and timely topics in I-O psychology for business and HR professionals, members of the press, and interested individuals.

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SIOP 2015 Conference Daily Feedback Study Results

Kristen Shockley, Rebecca Bryant, Richard Landers, Joel Nadler, and Jeremiah McMillan

I-O psychologists love the insights that data provide, and data about our cherished annual conference are no exception! Each year after the conference since 2008, the conference committee has sent evaluation surveys to all attendees, with the goal of improving future conferences. This year, we (the Within-Conference Evaluation committee: Kristen Shockley, Rebecca Bryant, Richard Landers, and Joel Nadler) decided to go a step further by introducing the “Daily Feedback Study” to gather even more insightful, actionable information. This study utilized an experience sampling design whereby participants received text messages on their mobile phones at random times during the conference, asking them to report on their recent conference activities. Thanks to the 515 conference attendees who participated!

The goal of the study was to capture SIOP attendees’ real-time reactions to specific sessions as a supplement to the general reactions that are captured in the end of conference evaluation survey. Our intent was to better understand what makes a particular session great (or not so great) and to use this information to improve future conferences. In this *TIP* article, we present some of the basic findings from the study.

About the Study

Study Design

Participants opted in to the study during conference registration. Those that indi-

cated willingness to participate completed a short demographics survey before the conference and then received two text messages per day during the 3 conference days with a link to the online survey. The messages were sent at random times, with the specification that one would be sent in the morning and one in the late afternoon/evening. Links timed out after 3 hours.

Participant Information

Six hundred and forty eight SIOP attendees registered to participate, and 515 responded to at least one text during the conference. The average participant responded to 3.2 texts. The overall response rate was 48.82%, with the highest response on Thursday (60.63%) and a declining rate throughout the conference (47.10% on Friday and 38.71% on Saturday).

Participant information is presented in Table 1. For comparison purposes, we also present the same information regarding conference attendees. Conference attendee data is based on 3,584 people who registered for the conference in advance. Some questions were optional, and response rate is indicated. In general, the study participants were representative of the SIOP conference population, though they were slightly younger, had a larger proportion of women, and included fewer nonmembers.

Table 1

Participant and SIOP Attendee Information

	Participants	Conference attendees	Response rate for question for conference attendees
Affiliation	41% academic; 59% practitioner	42% academic; 58% practitioner	51%
Average number of SIOP conferences attended previously	M = 4.46, SD = 6.08	M = 4.08, SD = 3.93	100%
Gender	61.8% Female	53.4% Female	72%
Age	M = 33.26, SD = 11.12	M = 36.30, SD = 11.72	38%
Membership status			100%
Student Affiliate	47.20%	43.50%	
Member	37.80%	36.80%	
Associate	6.80%	10.40%	
Nonmember	5.50%	0.50%	
Fellow	2%	5%	
Intl Affiliate	0.70%	2.90%	
Retired	0%	0.90%	

What Are Attendees Doing During the Conference?

Across all surveys responses, 77% of participants indicated that they had attended a session in the past 3 hours of receiving the text message (see Figure 1). In addition, session attendance varied by day, $\chi^2(2, N = 1653) = 58.53, p < .001$, with participation peaking on Thursday (84%) and steadily dropping for the duration of the conference, with a low of 64% on Saturday. This trend mirrors the observed trend described above around response rate. In terms of time, participants were more likely to attend a session in the first half of the day (before 2:30pm) compared to the second half of the day (82% versus 71%, respectively; $\chi^2(1, N = 1653) = 26.17, p < .001$).

Among the 33% of respondents that did not recently attend a session, the most common alternate activities were socializing with other SIOP attendees (31%), eating (23%), and resting (22%), followed by exploring Philadelphia and meeting with other SIOP attendees for work-related purposes (both 16%). When asked why he/she chose not to attend a session, 37% indicated having an alternate event that was already planned, and 16% identified hunger as the cause. Reasons tying to session quality/content were also cited, with 16% indicating that no sessions were of interest during that time; 9% indicating that they had already gotten what they wanted from the conference; and 4% indicating that they were underwhelmed by earlier sessions. Figures 2 and 3 provide detailed breakdowns of alternate activities and reason for nonattendance, respec-

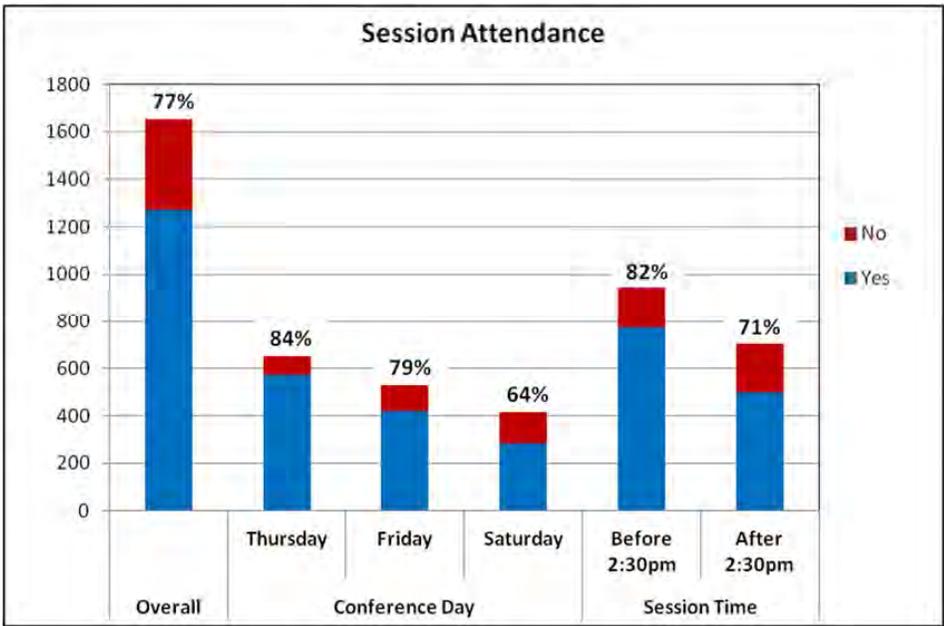


Figure 1. Session Attendance: Overall and by Conference Day/Session Time.

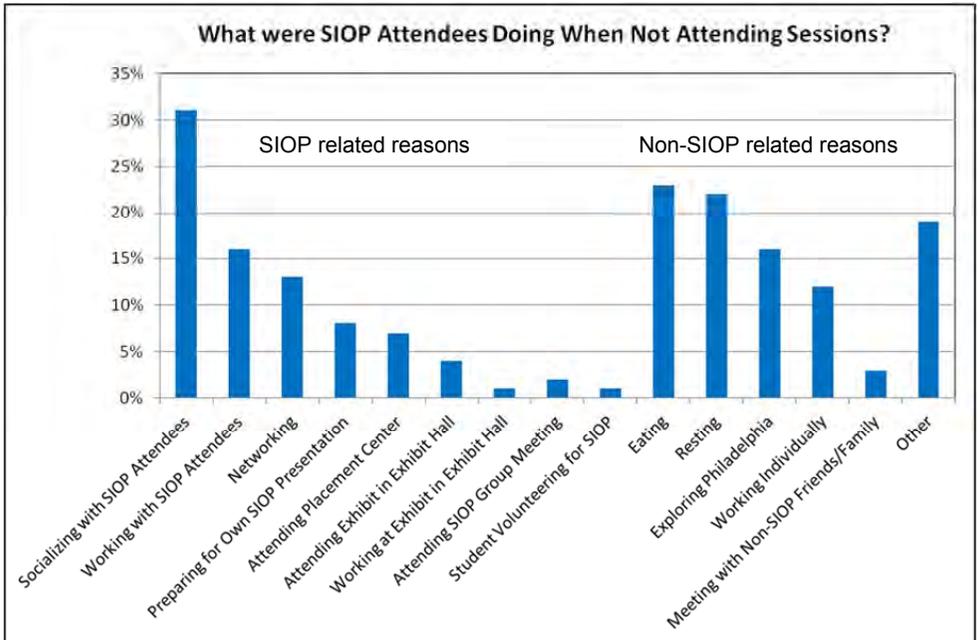


Figure 2. Activities Engaged in When Not Attending Conference Sessions.

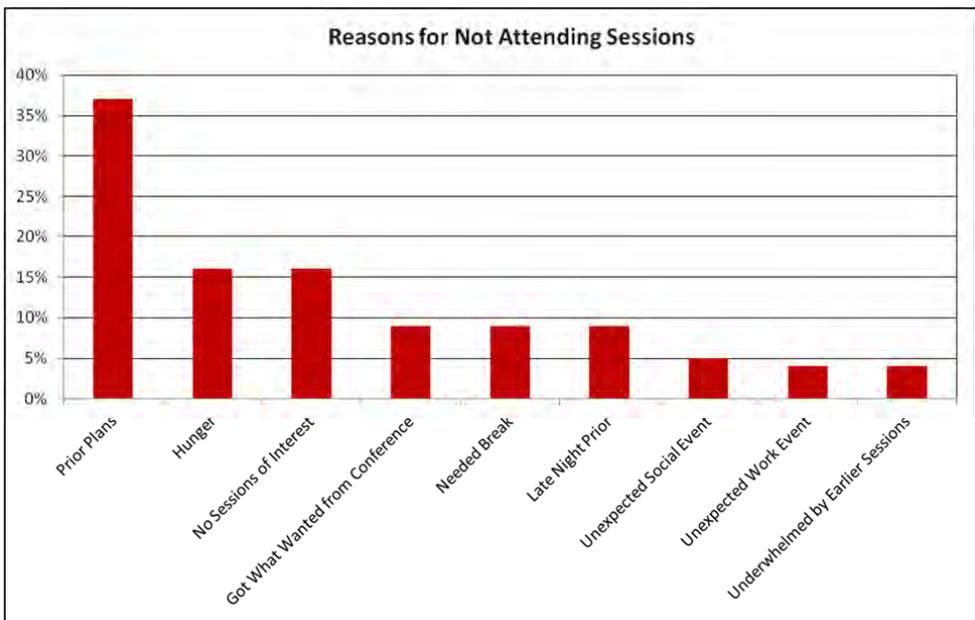


Figure 3. Reasons for Not Attending Conference Sessions.

tively. Please note that participants were provided an opportunity to select multiple responses for these two questions, so the sum of percentages exceeds 100.

In terms of using this information to improve future conferences, one area worthy of consideration is whether the program should include a built-in lunch break, given that one of the most common reason for missing sessions was hunger. This notion has previously been raised by conference attendees, but the decision not to include a lunch break has been driven by concerns over (a) loss of programming time and (b) potential bottlenecks created by all conference attendees exiting/returning at the same time. One possible solution to minimize the loss of programming time would be to replace the two 30 minute breaks each day with a lunch break. In the 2008

postconference survey, 52% of respondents indicated they would prefer to keep the two 30 minute breaks. Nonetheless, the insights provided from this study suggest this question may be worth reconsidering.

What Types of Sessions Were Most Attended?

To examine the popularity of sessions based upon their content area, we compared the number of sessions attended and the number of sessions appearing on the conference program, rank ordered by content area. As shown in Table 2, we found differences in the popularity of various content areas. The top four content areas in terms of representation on the program (testing/assessment, measurement/statistical techniques, research methods, and leadership) also all ranked

Table 2

Popularity of Content Areas by Attendance and by Program Representation

Rank	Attendance	Representation
1	Testing/Assessment	Testing/Assessment
2	Measurement/Statistical Techniques	Leadership
3	Research Methodology	Measurement/Statistical Techniques
4	Leadership	Research Methodology
5	Teaching I-O Psychology/Student Affiliate Issues/Professional Development	Staffing
6	Careers/Mentoring/Socialization/Onboarding/Retirement	Careers/Mentoring/Socialization/Onboarding/Retirement
7	Inclusion/Diversity	Occupational Health/Safety/Stress and Strain/Aging
8	Coaching/Leadership Development	Inclusion/Diversity

in the top four in most well attended. The popularity of testing/assessment and leadership is not surprising given the large interest in these areas in both applied and academic domains. Likewise, analogous to articles in our research literature (Landers, 2009), conference sessions focusing on methods and statistics tend to be the very popular, likely due to their broad appeal.

Another noteworthy finding is that sessions in the content area of teaching I-O psychology/student affiliate issues/professional development were very well-attended but were not highly represented on the program. This may be due in part to the high proportion of conference attendees who are students and are eager for professional development insights. Nonetheless it speaks to the thirst of attendees for more sessions on these issues, and we encourage submitters to take heed!

To examine the popularity of sessions based upon their type, we also compared the number of sessions attended with the number of sessions appearing on the conference program, rank ordered by session type. As shown in Table 3, we found a number of

differences between the types of sessions placed on the program and their relative popularity. Specifically, if people did not have preferences between types, we would expect these popularities to be very similar. Instead, we found that roundtables, communities of interest, other session types (including plenaries, seminars and award sessions), and, to a lesser extent, symposia were less popular than would be anticipated. In contrast, theme track presentations, debates, invited sessions, master tutorials, and alternative session types including the new IGNITE format had much greater attendance than would be expected.

From these results, we made several conclusions. First, some of the sessions that were less popular than would be expected are de facto aspects of the SIOP program. To the extent possible, SIOP leadership might consider collapsing plenaries, award sessions, seminars, and the remaining “other” session types into as few sessions as possible in order to free space for content-oriented sessions. Second, of member-submitted types, roundtables and communities of interest were much less popular than would be anticipated; SIOP members submitting

Table 3

Popularity of Session Types by Attendance and Program Representation

Rank	Attendance				Representation	
	Percentage	Diff.	% Diff.	Type	Percentage	Type
1	36.2	-2.7	-7.50%	Symposium	38.9	Symposium
2	32.1	1.7	5.30%	Panel	30.4	Panel
3	7.8	2.7	34.60%	Alternative Type (incl. IGNITE)	5.6	Poster
4	5	-0.6	-12.00%	Poster	4.2	Other
5	3.5	2.1	60.00%	Theme Track	5.1	Roundtable
6	2.6	-2.5	-96.20%	Roundtable	5.1	Alternative Type
7	3	-0.9	-30.00%	Community of Interest	3.9	Community of Interest
8	2.9	-1.3	-44.80%	Other (incl. plenaries, seminars, awards)	1.4	Master Tutorial
9	2.8	1.7	60.70%	Debate	1.4	Theme Track
10	2.7	1.3	48.10%	Master Tutorial	1.1	Debate
11	2.3	1.2	52.20%	Invited Session	1.1	Invited Sessions

Note. Executive board sessions are not included. Differences shown are comparisons of session attendance versus program representation within type; for example, posters were 12% less attended than would be expected if people attended different session types randomly.

these session types should be very clear in the value proposition for their inclusions on the program, and reviewers should be cautious when concluding value from them. Third, the popularity of the theme track is evidence of good decision making among the program committee in identifying topics of interest to the general membership and should be recognized. Fourth, alternative session types like IGNITE, debates, and master tutorials were all much more popular than would be expected and should be increased. The total number of symposia, although a mainstay of the conference, could be reduced slightly to make way for these alternative session types, which might increase overall session attendance. We do note one caveat to these analyses. Although several relative differences were quite large, the largest relative differences were often associated with the smallest absolute differences. For example, debates only made up 1.1% of the program and attended by 2.8% of survey respondents, representing a 60.7% gain; given this imbalance, this

estimate may be unstable. These results should be compared to those collected next year before drawing firm conclusions.

We also examined how session attendance was impacted by whether the attendee self-identified as an academic or practitioner, specifically, whether participants self-specified as an academic or practitioner was crossed with whether the session rated was targeting an academic, practitioner, or mixed audience. This cross was statistically significant ($\chi^2(2, N = 868) = 54.55, p < .001$; see Figure 4). In general, sessions targeting a mixed audience received the largest proportion of attendees among both the academic and practitioners groups. Beyond that, however, a notable difference is that practitioners strongly favored practitioner-targeted sessions (39%) over academic-targeted sessions (9%), whereas academics attended academic-targeted sessions (24%) and practitioner-targeted sessions (19%) approximately equally. This classification is not displayed on the SIOP program, so presum-



Figure 4. Self-Classification of Academic/Practitioner Identification in Relation to Type of Session Attended per Submitter's Classification.

ably, something about the session titles, abstracts, or author lists led to this difference. Regardless, we can conclude from this analysis that sessions targeting mixed audiences are generally successful at doing so.

How Well Were the Sessions Received?

Due to the fundamental differences between poster sessions and other session types, we asked distinct questions and conducted distinct analyses for each. Beginning with nonposter session types, we assessed the quality of the session with a set of eight questions. In addition, survey respondents were asked to estimate the attendance of the session, indicate whether they would recommend the session to a colleague, and respond whether they thought the session should have been included in the program.

All questions and response options are included in Table 4. Across all of the items there was some variance, and responses were recorded at the full range of the scale; however, generally the sessions were rated very positively ($M = 3.86$ to 4.36), were seen as worth recommending to colleagues (81.4%), and were viewed as deserving to be on the program (93.3%). The lowest rated item, though still above the midpoint of the scale, was the item measuring how novel the session was ($M = 3.86$). Based on these findings, we urge submitters to carefully consider the novelty issue both when organizing sessions and when ultimately presenting. Some topics are bound to come up each year in the conference (e.g., check out the recent Big Data session trend!), but having a new spin or presenting unique information will help improve the conference overall.

Table 4

Descriptive Data of Quality Items: Non-Poster Sessions

	Mean	SD
The relevance of session content to your job and/or research.	4.22	0.87
The match of the session content with the description in the program.	4.36	0.82
The presenters' ability to keep interest in the session.	4.14	0.97
The presentation itself and the presenters' explanations.	4.21	0.91
The presenters' effectiveness in addressing questions.	4.15	0.85
Attending this session was a valuable use of my time.	4.11	1.04
The content presented in the session was novel.	3.86	1.04
Information presented was based on high-quality scientific or practice methods. ¹	4.1	0.95
Session Attendance (1= almost empty to 6 = standing room only)	4.5	1.4
Percent (%) that would recommend the session to a colleague.	81.40%	
Percent (%) that believed the session should have been on the program.	93.30%	

¹16% responded "Not Applicable" to this item. In all cases responses of "Not Applicable" were not included in Means and Standard Deviation calculation.

Items measured on a 1 = Very Dissatisfied to 5 = Very Satisfied scale unless otherwise indicated.

The poster sessions' quality were measured with a similar set of six questions, listed in Table 5. These quality rankings were also positive, with means ranging from 4.11 to 4.30, and the vast majority (92%) were deemed worthy of recommending to a colleague. Students make up a big proportion of poster presenters, and we want to acknowledge the great job they are doing!

In addition to examining descriptive statistics, we analyzed the relationships among a quality composite variable and more global assessments of the sessions (i.e., recommend to a colleague, should be on program, and subjective attendance) for nonposter session types. The composite quality variable was created by averaging the eight continuously measured items ($\alpha = .91$; exploratory factor analysis suggested the presence of one factor). As illustrated in Table 6, the composite quality variable was highly correlated with willingness to recommend the session to a colleague ($r = .73, p < .01$) and belief that the session should have made it onto the conference program ($r = .54, p <$

$.01$). The correlation with attendance was substantially lower, though still significant ($r = .13, p < .05$). This may be due to the fact that the quality of a session is hard to glean from the program description.

Next, we examined the individual items that made up the composite in relation to the more global assessment variables described above. Although all individual items were highly correlated with the outcomes (with the exception of attendance), two items regarding the presentation, "the presenters' ability to keep interest in the session" and "the presentation itself and the presenters' explanations," as well as "this session was a valuable use of my time" tended to have the highest correlations. The correlations between these items and the more global assessment variables were significantly higher than the correlations of the other items with the global assessments ($z_s = 2.18$ to $13.23, p_s < .05$). With this in mind, we urge SIOP presenters to take these findings to heart: Practice your presentations and be sure to check out presentation [advice post-](#)

Table 5

Descriptive Data of Quality Items: Poster Sessions

	Mean	SD
Attending this poster session was a valuable use of my time.	4.36	0.79
The posters I viewed were of high quality.	4.26	0.61
The relevance of the poster session to your job and/or research.	4.11	0.79
The match of the posters with their description in the program.	4.23	0.63
The poster authors' effectiveness in answering questions.	4.3	0.83
Percent (%) that would recommend the session to a colleague.	92%	

Items measured on a 1 = Very Dissatisfied to 5 = Very Satisfied scale.

Table 6

Correlations Between Session Quality Ratings

	Recommend	Should be on program?	Attendance
Quality composite	.73**	.54**	.13*
The relevance of session content to your job and/or research	.55**	.39**	.18**
The match of the session content with the description in the program	.56**	.36**	.13**
The presenters' ability to keep interest in the session	.63**	.48**	.17**
The presentation itself and the presenters' explanations	.67**	.54**	.13**
The presenters' effectiveness in addressing questions	.43**	.32**	-0.01
The content presented in the session was novel	.51**	.40**	0.06
The information presented in the session was based on high-quality scientific or practice methods.	.401**	.385**	0.02
The session was a valuable use of my time	.77**	.52**	.14*

** $p < .01$, * $p < .05$

ed by SIOP on how to make your presentation as engaging as can be! Please note that given the high correlations between the quality items, it is possible that these findings are a result of chance. Future replication will help us confirm these initial results. Regardless, we can all agree that having more engaging presentations would benefit the overall conference experience.

We also explored the content areas of sessions that were the most highly rated. We limited these analyses only to sessions that were rated by at least five people. The five highest rated content areas based on the

composite quality variable (all with means over 4.30) were:

- Work and family/nonwork life/leisure
- Leadership
- Inclusion/diversity
- Groups and teams
- Performance appraisal/feedback/performance management.

The lowest rated content areas (with means under 3.80) were:

- Emotions/emotional labor
- Job analysis/job design/competency modeling

It is important to note that both emotions/emotional labor and job analysis/job design/competency modeling have relatively few sessions on the program; thus, these low ratings could be driven by just a few sessions that were less positively received. In addition, the lowest mean rating was 3.72 for a content area, which is still above the scale midpoint.

Using the same procedure described above, we examined which session types were the most highly rated. The top rated session types (with means of 4.71 and 4.62, respectively) were master tutorials and invited sessions. These findings echo those stated above with regard to attendance. We implore submitters to consider submitting master tutorials, and we applaud the program committee for a job well done with this year's invited sessions! The lowest rated session types (with means of 3.99 and 3.50, respectively) were panels and roundtables. Although panels and roundtables are a critical component of the conference, these results lead us to conclude that they may not be as well-received as submitters intend. Careful preparation by participants in these types of sessions and a focus on ensuring that the discussions are truly unique from year to year may increase both quality and attendance.

Conclusion

Overall, the conference sessions were well attended and well received. Throughout this article we offer some ideas on how to improve the future conference, both from

the point of view of the conference organizers and submitters/presenters. Our analyses from the Daily Feedback Study mimic those of past conference evaluation survey results (see <http://www.siop.org/tip/jan11/06hegestad.aspx> and <http://www.siop.org/tip/April10/25olson-buchanan.aspx>) in terms of attendees being generally quite satisfied with the conference. However, here we provide a more fine-grained analysis of satisfaction with specific session types and content areas. We also provide insights about attendance (and nonattendance) that have not previously been captured.

This was the first time we conducted a study of this nature, and we appreciate both your participation and feedback on how to improve it for future data collection. We plan to repeat the study next year and will take into account some of the feedback you have already given, such as allowing the links to be active for a longer period of time, tailoring the survey so that it's easier to identify the session number, and considering the design of the study altogether (e.g., asking people to report on everything they attended that day versus just the most recent). Look out for information during registration regarding how to sign up to participate in the study next year!

Reference

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NSF Graduate Research Fellowships: A Toolkit and Q&A for Applications

Sarah Frick^a, Jaclyn Martin^a, Sean Potter^a, Kimberly French^a, Danielle King^b,
and Scientific Affairs Committee

^a = University of South Florida, ^b = Michigan State University

NSF graduate research fellowships are an excellent way to fund graduate student research in I-O psychology. With the deadline quickly approaching, this *TIP* article presents a toolkit to assist I-O graduate students in preparing application materials. We will cover the reasons students should apply for these fellowships, the eligibility requirements, components of the applications, some tips for applying, and finally, some frequently asked questions.

Why Should I-O Graduate Students Apply?

The Graduate Research Fellowship Program (GRFP) recognizes and provides funding for graduate students in NSF-supported science disciplines. We believe I-O psychology's high impact and broad audience lends itself to meeting and exceeding the requirements of the fellowship program. Receiving a fellowship also has higher-level benefits. It increases the visibility of the students' I-O program, their psychology department, and the university as a whole. It also enhances the reputation of I-O psychology among sciences that compete for NSF GRFP awards.

Eligibility

To be eligible for an NSF fellowship, you must:

- Be a U.S. citizen, U.S. national, or permanent resident

- Intend to pursue a research-based master's or PhD in an NSF-supported field
- Be enrolled in an eligible program at an accredited U.S. graduate institution
- Have completed no more than 12 months of full-time graduate study (or the equivalent) as of August 1, 2015. Applicants who have completed more than 12 months of graduate study or have earned a previous graduate or professional degree may be considered eligible under some circumstances. For details, please visit the NSF GRFP eligibility webpage: <http://www.nsfgrfp.org/applicants/eligibility>

Application Components

1. *Personal statement (limit of three pages)*

Outline your educational and professional development plans and career goals. *Discuss what you have done and what you plan to do.* Rather than just listing your research and professional activities in chronological order, explain how they have built upon each other to advance your knowledge and skills and prepare you for graduate study. Highlight some significant accomplishments to show reviewers that you are prepared to execute your proposed research plan, and keep in mind that NSF is evaluating your potential as a future STEM (science, technology, engi-

neering, and mathematics) scholar. As an entering graduate student, you are certainly not expected to understand the I-O field deeply; however, your statement should clearly lead up to your research plan statement as the logical next step in your early career development.

2. Graduate student research plan statement (limit of two pages)

Choose an original research topic that you would like to pursue in graduate school. Reviewers of your application will be social scientists; they may not be I-O psychologists, and they may not even be psychologists. Therefore, be sure to define your constructs, explain their connection, and list your hypotheses. Include important citations to support your ideas. Discuss specifics (sample, procedure, and measures) of your research plan to show reviewers that your plan is concrete and feasible. Be sure your theoretical and empirical contributions are stated in clear and broadly accessible language. It is important to emphasize *broad impact* in your application. Discuss how your proposed research will impact the scientific community, organizations and institutions, and society. Be sure your project plan is feasible given your skills, available resources, and time constraints.

3. Reference letters

Applicants are required to submit three reference letters but are strongly encouraged to use all five available slots. Your letter writers should be senior research collaborators and mentors who can speak to your potential. The reference letters should explain the nature of the relationship to the applicant, comment on the

applicant's potential and prior research experiences, proposed research, and any other information that enables review panels to evaluate the application according to the NSF Merit Review Criteria of Intellectual Merit and Broader Impact (see National Science Foundation, 2014b).

4. Academic transcripts

An academic transcript is required from each institution you have attended.

Additional Suggestions

Solicit feedback from multiple individuals. Receiving feedback from various sources will help to improve your application (Gaffey, 2014). Getting different perspectives helps ensure that individuals with different areas of expertise are able to read, understand, and appreciate your potential. Having more people read over your application will give you more insight about the perceptions of readers.

Tell a good story. Why are you qualified for this fellowship? What questions are you seeking to answer? Weave a narrative throughout your answers, building a compelling case for your proposed research. Be sure to reflect on and incorporate relevant accomplishments to date, because you might discover connections that you hadn't thought of (e.g., you used R programming in a statistics course, and this programming will help you in conducting psychological research).

Don't be shy to reach out! You can contact NSF through their website if you have questions that are not answered in the on-

line materials. Often, individuals in charge of a given program are willing and timely when providing applicants with additional information and feedback.

FAQs

When is the deadline this year?

The deadline changes from year to year and varies across disciplines. In recent years, psychology applications were due in early November. For up to date information, consult the online announcement: http://www.nsfgrfp.org/applicants/important_dates

How competitive is the fellowship?

The success rate is about 17%. Although this is competitive, the success rate for the fellowship is not much different from getting published in a top-tier journal or acceptance into a top I-O graduate program.

How much is the stipend awarded with the fellowship?

For 2015 awardees, the stipend was \$32,000 annually for 3 years, accompanied by a \$12,000 educational allowance (paid to the institution towards tuition and fees).

I started graduate school last fall. Am I still eligible?

Yes, you are still eligible unless you completed other graduate study between your undergraduate program and the start of your current graduate program.

What criteria will be used to evaluate my application?

Applications are reviewed by a panel of social scientists based on two primary criteria: intellectual merit and broad impact. These criteria are used to assess the merits of the applicant and research statement simultaneously.

When should I start preparing for the application process? Where do I start?

As soon as the application is available, applicants should start the process. Before applying, you can make yourself competitive by engaging in activities that demonstrate your ability to have broad impact from your research. Find and ask your reference writers as soon as possible to ensure they have plenty of time.

Q&A With Award Recipients

What was one aspect of the application you wish you had approached differently?

- *Research proposal.* “What they want to see is that your research plan is well thought out and that you are capable of executing it. In the end they’re funding the researcher, not the research, and what’s most important is convincing them that you have the know-how, resources, and support to take a great research idea and put it into action.”
- *Personal statement.* “I wish I had been a bit more creative during the writing process.”
- *Time allocation.* “I would advise others to approach time allocation based on

component difficulty and progression of ideas at the time of applying.”

How did you describe something you considered a potential weakness in your application?

- *Experience level.* “I was only a graduate student for a few months at the time of my application submission. To address this, I highlighted my research experiences from undergraduate school, the capabilities of the faculty members who would be supporting me in this research, and the research skills I gained in those first months of graduate studies. I focused on my willingness and ability to seek support from others and learn new skills.”
- *Project appeal.* “I addressed this potential weakness by finding pertinent examples that would interest and draw a reader in to the application (and the subsequent publication). Most proposals will have a solid methodology, but convincing the reviewers that your project is important because it answers interesting questions is necessary.”
- *Scientific basis.* “My research was on a very applied topic. That made it easy to address the broader impacts, but I had to make sure that it would still be considered ‘basic science.’ I went to great pains to discuss how my project would add to general psychological knowledge.”

What was the most difficult part of the application process?

Most recipients said that the research plan statement was most difficult. The two-

page limit made it hard to strike a balance when describing the details and broad impacts of the project.

Which part of the application did you find the most time consuming?

All recipients indicated that the research plan statement was most time consuming.

- “These essays require research, creativity, numerous drafts, feedback, and revisions. The trick is starting early and asking for help from reliable editors.”
- “To draft a proposal for a 3-year project plan that I was invested in and that was persuasive enough to convince others, in a few pages, that this research was both possible and meaningful was no easy feat. I gained a deeper appreciation for the quote, ‘If I had more time, I would have written a shorter letter.’”

To save time, recipients suggested using materials you already have.

- Build on the personal statement from your graduate school applications.
- Develop a research plan for a project that you’ve already started working on.

Q&A With Award Recipients’ Advisors

How would you define your role in the application process?

Advisors can act as sounding boards early on to help students clarify and organize their research plans. They can help students identify topics that have theoretical

and practical/societal importance. Later in the process, advisors can read drafts and provide feedback relative to the NSF criteria (scientific merit, broader impact).

What is one thing students can do to fully utilize the insight of their advisors throughout the process?

- *Start early.* Begin brainstorming with your advisor as early as possible and start your essays well ahead of time.
- *Ask questions.* Students may have good research ideas but need help describing the broader impacts of their proposal.
- *Try to obtain successful proposals* from other students.
- *Pick a topic that is new, bold, and has great societal importance.*

What is helpful information that students can provide to aid in the writing of their recommendation letters?

Students should provide letter writers with their curriculum vita/resumé, essays, and research proposal as early as possible. Information about goals, skills, and roles in previous projects can help a letter writer comment on a student's capacity to carry out the research plan. Students should also send letter writers reminders in advance of the deadline.

Q&A With Application Reviewers

What characteristics distinguish applications that are funded?

Reviewers indicated that strong applicants had high GPAs and previous research ex-

perience, such as publications and conference presentations. Successful applications were written clearly and logically, outlining research plans that were feasible and possessing potential for broader impact.

Have there been any instances that caused you to immediately eliminate an application from consideration?

Reviewers indicated that applications are not immediately eliminated for one particular reason. Applications that lack logical flow and consistency or fail to incorporate all NSF criteria are likely to be rejected during the review process.

What did you look for in the letters of recommendation to demonstrate an applicant's potential?

Reviewers stated that strong recommendation letters help connect applicants' previous accomplishments to the NSF criteria. Recommendations should provide evidence that the applicant has received strong and relevant training and that the applicant will receive strong mentorship in connection with the proposed research. Provide recommenders with a list of your accomplishments to remind them of what you have achieved and how it might relate to the NSF criteria.

Additional Information

A more detailed version of the Toolkit information is accessible on the SIOP website:

<http://www.siop.org/studentdefault.aspx>

For further information regarding NSF GRFP awards and the application process, please visit the NSF website: <https://www.nsfgrfp.org/applicants/>

Faculty members and postdoctoral researchers are encouraged to submit their names for consideration to serve on a GRFP review panel. For more information, please visit: https://panelists.nsfgrfp.org/program_info/nsf

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Author Notes and Acknowledgements

The first three authors contributed equally to this effort and thank coauthor **Danielle King**, who provided her presentation about NSF GRFP awards at the inception of this effort.

*The authors also thank the following individuals for contributing to the Q&A sections of this article: **Abdifatah Ali, Tammy Allen, Michelle Gelfand, Jesse Harrington, Sarah Lyons, Fred Oswald, Ann Marie Ryan, Mo Wang, and Jasmine Lyn Wheeler.***

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SIOP 2016: Anaheim
31st Annual Conference: April 14–16, 2016
Preconference Workshops: April 13, 2016

Scott Tonidandel

Program Chair, SIOP 2016
Davidson College

Eden King

Conference Chair, SIOP 2016
George Mason University

SIOP is going back to Cali! Planning for the 2016 conference is well underway and we have an outstanding lineup in store for you. Consider this your official notice. Mark your calendars for the 31st amazing opportunity to immerse yourself in all that is I-O!

Submissions

For all of you who submitted proposals in response to the Call for Proposals drafted by **Alyssa McGonagle** and her CFP committee, thank you! The results of the peer reviews will be e-mailed in early December.

Concurrent Sessions: Something for Everyone

As always, the member-submitted, peer-reviewed sessions will be at the heart of our conference. We will have hundreds of sessions featuring I-O psychology research, practice, theory, and teaching-oriented content. Presentations will use a variety of engaging formats including symposia, roundtables, panel discussions, posters, debates, master tutorials, and the alternative session type format for

IGNITE, research incubators, and other innovative presentation styles. In addition, we will have addresses from many of our SIOP award winners, a host of Executive Board-sponsored sessions, the Thursday Theme Track, and several other special sessions that you won't want to miss!

Thursday Theme Track

The Program Committee is excited to offer an inspiring and action-oriented theme track titled "Enhancing Impact: A Multilevel Approach." The Theme Track is essentially a miniconference within the larger conference. This full day of programming on Thursday is designed to bring President **Steve Kozlowski's** vision to life, by both encouraging and enabling initiatives that make an impact from "bottom-up, emergent, and self-organizing communities of SIOP members who are prepared to act." Chair **Zack Horn** and his committee are assembling an inspirational group of difference makers to participate in a variety of interactive sessions with actionable takeaways for every SIOP member. The sessions include:

- an engaging IGNITE session uncovering how and in what ways I-Os can use their knowledge and skills to broaden the visibility of I-O and make a BIG impact in their *local communities*;
- a TED talk-style session featuring success stories from inspiring I-O figures who will discuss how to make a meaningful difference by enabling prosocial change through and for *organizations*;
- a panel discussion with I-Os who are making an impact at the *societal level* will describe how they managed to create change in areas such as poverty reduction, education, global health, and others;
- a “how-to” workshop with success stories and new avenues for SIOP members to self-organize and make an upward impact *within SIOP* by bringing important issues, needs, and goals to the attention of SIOP leadership; and
- a fully interactive session that will bring academics and practitioners together to form new *impact action teams*: teams that will organize in this session and begin drafting a plan for making their impact at any level.

It’s sure to be a highly interactive and informative series of sessions! These sessions will be scheduled back-to-back in the same room. We invite you to stay all day or attend only the sessions of most interest to you. CE credits may be obtained by attending the Theme Track.

Special Sessions

This year we will feature several invited speaker sessions throughout the confer-

ence, architected by Special Sessions chair **Enrica Ruggs** and her committee. We will, of course, host the usual and well-attended IGNITE session. This year’s IGNITE session will focus on teaching I-O psychology. Some of the best teachers in our field will discuss topics such as innovative teaching tools, integrating applied experiences in the classroom, mentoring students, and what no one ever taught them about teaching in grad school. Join us as we learn new tips and are reminded about the joys of teaching and power of learning. A second session will focus on cultural integration during mergers and acquisitions (M&A). M&A research often cites lack of culture integration as the single biggest cause of this failure. In an economy where markets are consolidating and M&As are becoming increasingly frequent, there is a strong need for I-O psychology expertise, be it in the realm of change management, culture measurement and integration, or people analytics. This session will bring together practitioners and researchers who have worked in the M&A space to discuss real life examples from M&A deals and why I-O psychologists need to have a seat at the table. The final session will feature an exciting interactive session exploring organizational citizenship behavior. Participants will have a chance to engage with panelists as we discuss the differences in the conceptualization and measurement of OCBs between scholars and practitioners and consider relevant topics related to OCB evaluation in applied settings.

Master Collaboration

Each year, the Program Committee creates a Master Collaboration session that

connects leading researchers and practitioners on a topic. The goal is to facilitate science–practice connections, enhancing the understanding of the topic from both perspectives and sparking ideas for continued collaboration. Rather than focusing on a single topic, this year’s Master Collaboration session plans to take that collaboration to a new level by providing scholars and practitioners with the opportunity to come together and discuss collaboration opportunities within their area of interest. Using a speed-dating type format, scholars will have the opportunity to meet with practitioners who are interested in forming partnerships to discuss goals, interests, and possible collaborations.

Friday Seminars

Friday Seminars offer a unique educational opportunity within the body of the conference. These 3-hour sessions are the only extended length session on the schedule and take place on Friday. The sessions are intended to provide a rich immersion experience for attendees about cutting-edge content areas presented by true content experts. Each session is shaped around learning objectives in order to ensure that professional developmental goals are met and that continuing education credits can be earned, if desired. Please note that Friday Seminars require advance registration and an additional fee. Due to their increased popularity, we are expanding our usual Friday Seminars this year to include six sessions. This year’s Friday Seminars committee, led by **Songqi Liu**, will offer the following sessions:

Topic: **Integrating Occupational Health Psychology Into I-O Psychology Research and Practice**

Speaker: **Bob Sinclair and Autumn Krauss**

Topic: **Modern Prediction Methods and Big Data in I-O Psychology**

Speakers: **Fred Oswald and Dan Putka**

Topic: **Organizational Socialization**

Speaker: **William Sheppard**

Topic: **Person-Centered Analysis**

Speakers: **Bob Vandenberg**

Topic: **Voice Behavior**

Speakers: **Linn Van Dyne and Ethan Burris**

Topic: **Careless Survey Responding**

Speakers: **Adam Meade and Paul Curran**

Featured Posters

We will once again showcase the top 20 rated posters at an evening all-conference reception. Come view some of the best submissions to the conference while enjoying drinks in a relaxed atmosphere with the presenters. If you’ve never been to this event, make 2016 the year you check it out!

Communities of Interest

Looking for a SIOP forum that is informal, insightful, and encourages audience interaction with one another and ongoing participation? Communities of Interest allow you to meet new people, discuss new ideas, and have an active role at the forefront of a hot topic in I-O. These sessions are designed to enhance existing communities and cre-

ate new ones around common themes or interests. They have no chair, presenters, discussant, or even slides. Instead, they are audience-driven discussions informally moderated by one or two facilitators with insights on a topic of interest. These are great sessions to attend if you would like to meet potential collaborators, generate ideas, have stimulating conversations, meet some new friends with common interests, or expand your network to include other like-minded SIOP members. Chair **Jamie Donsbach** and the rest of the COI Committee are lining up some great sessions and facilitators for this year's conference, covering a wide range of topic areas:

- Recent Trends in Performance Management
- SIOP's Response to the APA Collusion Report
- Identifying High Potentials in Organizations
- Generational Shifts in the Workplace
- Helping Organizations Win the War for Talent
- Allies in the Workplace and Public Sphere
- Big Data Science Needs
- Rethinking Our Approach to Organizational Science
- Social Networks and Selection
- Unobtrusive Measurement in I-O
- Job Stress, Burnout, and Organizational Health
- Developing Publication Process Savvy

Continuing Education Credits

The annual conference offers many opportunities for attendees to earn continuing

education credits, whether for psychology licensure, HR certification, or other purposes. Information about the many ways to earn CE credit at the SIOP annual conference can be found at <http://www.siop.org/ce> and will be continually updated as more information becomes available.

Closing Plenary and Reception

Your Conference Committee is ready to shout the name of our closing plenary speaker from the rooftops! We could not be more delighted that Laszlo Bock, SVP of People Operations at Google, will be sharing his insights with us. This "Human Resources Executive of the Year" will undoubtedly deliver an inspirational message that you do not want to miss. Seriously. This is not the year to catch an early flight home. We will follow Laszlo's address with a California-themed closing reception full of the sights, tastes, and sounds of our sunny destination.

The Conference Hotel and Convention Center

The Hilton Anaheim hotel, mere steps from the Anaheim Convention Center, will provide an ideal setting for our conference. Our annual Welcome Reception will be held on a sun-sparkling Hilton patio lined with palm trees, and the entire scholarly program will be held in the bright, spacious, and modern convention center. (For those of you reporting on the 2015 Conference Evaluation Survey that the Philadelphia meeting rooms were too small, we can promise an abundance of space in Anaheim.)

Walking distance from bars and restaurants featuring California wines, craft beers, and fresh cuisines, as well as family-friendly Disney options, SIOPerS will have plenty of options this year. These options also include access from 4 airports: SNA, LGB, LAX, and ONT!

Please see the SIOp Web page for details on booking your room and taking full advantage of all the SIOp conference has to offer. Let the California dreamin' commence!

It's only October when this goes to press, but we hope we've sparked your excitement for SIOp 2016 and California. We can't wait to see you there!



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SIOP 2016 Preconference Workshops

Emily Solberg
CEB

Save the date! **Wednesday, April 13, 2016**, is the date for the SIOP preconference workshops at the beautiful Hilton Anaheim in California. The Workshop Committee has identified a diverse selection of innovative and timely topics to offer this year as well as a spectacular set of experts to lead these workshops. The lineup includes:

Show Me the Data: Techniques and Tools for Visualization-Based Data Discovery.

Eric Doversberger, Google, Inc.; Evan Sinar, Development Dimensions International, Inc. (DDI)

Using Live Experiments to Rapidly Learn, Innovate, and Drive Results in Your Organization. Stacey Valy Panayiotou, The Coca-Cola Company; Tiffany Poeppelman, LinkedIn; Dan Heasman, The Rise Group

The Best New Thinking in I-O: What You Should Be Reading (or Writing) But Don't Have Time To. Eden King, George Mason University; Tracy Kantrowitz, CEB

Through the Crystal Ball: Where Do Simulations Fit in the Future of Assessment Practice? Suzanne Tsacoumis, HumRRO; Eugene Burke, Burke Consulting

A Personality-Based Approach to Developing Versatile Leaders for Complex Times. Robert B. Kaiser, Kaiser Leadership Solutions; Tomas Chamorro-Premuzic, Hogan Assessment Systems, Inc.

Preparing Leaders for the Future: Dealing With Complexity, Ambiguity, and Rapid Change. David B. Peterson, Google, Inc.; Karen May, Google, Inc.

Engagement: Approaches and Evidence. Benjamin Schneider, CEB; John Meyer, The University of Western Ontario

Legal Update: What's New and How It Affects You. Kathleen Kappy Lundquist, APTMetrics; R. Lawrence Ashe, Jr., Ashe, Parker, Hudson, Rainer & Dobbs LLP

Validation Strategies: Making Them Better, Stronger, Faster. Calvin C. Hoffman, Los Angeles County Sheriff's Department. Piers Steel, Canadian Centre for Advanced Leadership in Business, University of Calgary

Experience-Driven Leadership Development: Exploring Three Tough Challenges. Morgan W. McCall, Jr., University of Southern California; Jeffrey J. McHenry, Rainier Leadership Solutions; Mary Mannion Plunkett, Global Organisation and Leader Development, Inc.

You do not want to miss the 2016 workshops! Not only will you learn new skills and grow professionally, you will also have the opportunity to network with recognized experts in these content areas as well as other prominent professionals in our field who will be attending workshops with you.

Look for the detailed workshop descriptions and presenters' biographical sketches in the preconference announcement and on the SIOP Web site when registration opens!

The 2015–2016 Workshop Committee consists of:

Emily Solberg, CEB (Committee Chair)
Amanda Allen, Edison Electric Institute
Mike Benson, Johnson & Johnson
Alok Bhupatkar, IMPAQ International
Kristin Charles, Amazon
Tori Culbertson, Kansas State University
Alyson Margulies, PepsiCo, Inc.
Gavan O'Shea, Human Resources Research Organization
Brooke Orr, Coca-Cola
Kevin Smith, PDRI, a CEB Company

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www.siop.org/Consultant

Professional Practice Committee Updates

Mark L. Poteet

Organizational Research & Solutions, Inc.

Since the Annual Conference in Philadelphia, the Professional Practice Committee (PPC) has been busy adding new members, continuing with initiatives already underway, and defining its agenda for the coming year. As always, the mission guiding the PPC's work is to support and promote the sound practice of I-O psychology by SIOP's members. This is achieved by supporting efforts to build SIOP's brand as the authority on workplace psychology, to address practice-related issues that may arise, and to facilitate members' knowledge and practice of science, evidence-based psychology in organizations. This report provides an overview of several PPC goals that support this mission, noting progress and accomplishments, and outlines new initiatives.

For the coming year, the PPC will continue its work on several ongoing goals, including:

- Creating and validating a model of business acumen competencies related to successful I-O practice
- Implementing a database of practitioners interested in reviewing for journal articles that will be made available to editors
- Continuing to facilitate and manage the practitioner speed and group mentoring programs
- Recording and publishing miniwebinars focused on providing practitioners with tips, insights, and information to encourage sound practice

Working with the SIOP Task Force on Contemporary Selection Recommendations to provide white papers that summarize research and provide recommendations to the EEOC on various selection-related topics.

- Collaborating with SHRM to create and publish an educational series including white papers and research summary articles on evidence-based HR practices
- Analyzing and reporting the results of a recent practitioner needs survey that can be used to help drive the PPC's forward-looking agenda
- Supporting Division 13 and SIOP's efforts to define and validate a coaching competency model
- Continuing to study career paths of I-O psychologists to identify competencies and critical experiences in order to shape career development efforts of current and prospective I-Os

In addition to the ongoing initiatives, the PPC is making plans to move forward on the following new or expanded goals for the coming year:

- Surveying membership's satisfaction with SIOP's research access service to identify improvement opportunities and ways to enhance practitioners' access to cutting edge research
- Expanding the SHRM-SIOP Educational Series by pilot testing a joint webinar series to further provide SHRM and

SIOP members with information on evidence-based HR practices

- Working with SIOP to provide support for the 2015 Salary Survey
- Supporting SIOP's efforts to expand relationships and work with organizations in the occupational/health and well-being space to provide research-based expertise into effective practice
- Investigating and pursuing potential opportunities to facilitate sharing of research findings and practice-based issues between SIOP members

Progress has been made in several of these initiatives over the past several months, thanks to the hard work of the PPC's members.

- For the *business acumen competency model*, the subcommittee of **Bethany Bynum, Cole Napper, Kyle Morgan, and Samantha Chau**, under the leadership of **Matthew Minton**, have administered and are now analyzing the competency model validation survey results, with a goal of publishing the results in *TIP* and in a technical report and working with relevant SIOP committees to use the information for ongoing education of I-O practitioners.
- The PPC has authored two additional feature articles in the July and October issues of *TIP* summarizing results of the *SIOP Careers Study* for the industry and government employment sectors. The team of **Samantha Chau, Beth Bynum, Soner Dumani, and Joshua Quist**, with assistance from **Alexandra Zelin**, will continue the study into additional aspects of movements within and be-

tween career paths and work to create interactive career paths for each employment sector on the SIOP website.

- By the publication date of this report, the team of **Lizzette Lima, Cole Napper, Meredith Ferro, Natalie Goode, and Soner Dumani** will have begun the next cycle of *practitioner group mentoring*. This follows another successful practitioner speed mentoring event held at the annual conference in Philadelphia (see the evaluation report for this event in this issue of *TIP*).
- Two new *SHRM-SIOP Educational Series* white papers on the subjects of new talent management strategies (authored by **George Graen** and Miriam Grace) and coaching for professional development (authored by **Joel DiGirolamo**) were published in May and June, respectively. Several other white papers are currently in progress. You can view the white papers published to date [here](#). **David Dubin** will be taking over leadership of this work from **Jim Kurtessis**, as Jim moves on to leading the pilot test of a SHRM-SIOP joint webinar series mentioned earlier. The Research Insights Series, being led by **Kayo Sady**, has two articles in progress with going forward plans to retool the process for creating articles.
- Two new *practitioner miniwebinars* have been recorded and are in the final stages of production before posting to the SIOP website. At the time of this writing another miniwebinar is in production planning and looks to be recorded in the coming days. You can view the practitioner miniwebinars as well as those from other SIOP commit-

tees [here](#). Thanks to **Ben Porr** for the leadership on this initiative.

- The *SIOP Contemporary Selection Practice Recommendations task force*, being facilitated by **Eric Dunleavy**, David Dubin, and Kyle Morgan, has made final edits to three white papers on the topics of minimum qualifications and data aggregation in adverse impact measurement, and a review of the scientific reference manual. A presentation on borrowing validity evidence is currently under final review.
- The *practitioner needs survey* team of Meredith Ferro, Ben Porr, Soner Dumani, and **Ted Axton** are busy analyzing data from the survey to highlight key findings and results. An overview of the survey's results was presented in the July issue of *TIP*. Going forward, the survey's results will be communicated to SIOP membership through various *TIP* articles in the coming months.
- Thanks to the efforts of Beth Bynum, Kyle Morgan, Meredith Ferro, and Ben Porr, the *practitioner reviewer database* is being prepared for the final stages of pilot testing and revisions before being rolled out to SIOP membership.
- Analyses for the coaching competency model validation survey have been completed. Thanks to Cole Napper

for his diligent efforts to assist in this important work.

Finally, the PPC will look to enhance its communications with membership over the coming months with a stronger social media strategy. Thanks to **Lynda Zugec** for spearheading this effort. To accomplish this ambitious set of goals requires a strong group of SIOP members dedicated to professional service. New members to the committee for the coming year include Ted Axton, **Laura Byars**, Soner Dumani, **Laura Freeman**, Natalie Goode, **Jerilyn Hayward**, Joshua Quist, **Craig Wallace**, and Lynda Zugec. I would also like to take a moment to recognize the valuable contributions and service of committee members who have transitioned off the committee for the coming year: **Bob Bloom**, **Gary Carter**, **Maya Garza**, **Megan Leasher**, **Richard Tonowski**, **Joy Oliver**, and **Nathan Wiita**. Thanks for all of your work and continued support!

If you would like more information about the PPC's activities or goals, or have any feedback or ideas for how the PPC might further support the effective practice I-O psychology, please contact me directly at mlpoteet@verizon.net.

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Practitioner Speed Mentoring Event Report

Cole Napper
CenturyLink

On behalf of the SIOP Professional Practice Committee and the Mentoring Subcommittee, we would like to thank all of our 22 mentors who made the 6th Annual Practitioner Speed Mentoring event held on Friday, April 24 at the 2015 SIOP Annual Conference in Philadelphia, PA a wonderful success! We had a great turnout, and over 60 protégé students and early career practitioners received mentoring on 11 different topic areas. Topics ranged from tried-and-true areas of I-O psychology, such as selection and survey design, to budding areas of interest, including HR/talent analytics and developing business acumen. Overall, the protégés indicated that they enjoyed the speed mentoring experience; ratings showed modest improvements over last year in almost all categories assessed, including a moderate improvement in getting sound career advice, which could be due to the inclusion of the “Landing your First Job” topic. In addition, protégés commented positively on all aspects of mentoring, such as networking, career advice, and dealing with challenges in the workplace.

(Summarized) Sample comments provided by protégés include:

- [Mentoring] provided practical advice that was implementable tomorrow.
- I have more realistic job expectations for first job.
- I am better equipped to sell new consulting work on the job.

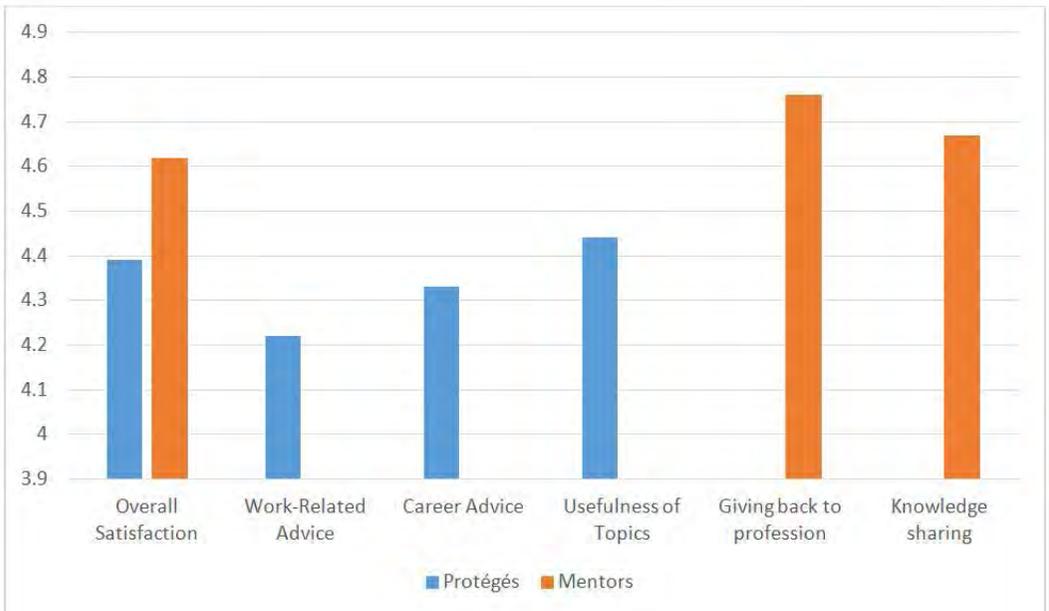
Mentoring is a shared experience that benefits both protégés and mentors. Therefore, we also surveyed the mentors to obtain feedback on their experiences. Overall, mentors were very satisfied with the event. Most mentors relished the experience by being able to give back to the I-O community and reflect on their own experiences.

(Summarized) Sample comments from mentors include:

- I enjoyed the variety of questions and reflecting on the challenges faced in early career.
- I enjoyed helping to share with and give advice to young professionals.
- It’s nice interacting with those who genuinely want to learn and expand their network.

See the next page for a summary of ratings from the mentor and protégé evaluation surveys provided on a five-point scale (higher scores being more favorable):

For those of you who have not participated in practitioner speed mentoring, we hope to see you in 2016 at the SIOP Annual Conference! Please reach out to the Mentoring Subcommittee (cole.napper@gmail.com or lizzette.lima@right.com) if you’d like more information on the Speed Mentoring Event or the practitioner Group Mentoring program that is running from September 2015 to February 2016.



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Keep up
with SIOP on
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I-O @ APS—Why You Should Attend the 2016 APS Convention in Chicago

Silvia Bonaccio

University of Ottawa

Margaret Beier

Rice University

Angela Grotto

Manhattan College

Christopher Wiese

Purdue University

Each year, the Association for Psychological Science (APS) Annual Convention proves to be an exciting meeting attracting internationally renowned researchers from every area of psychology, including some of our very own renowned I-O scholars. With over 25,000 members, APS is the premiere international organization solely dedicated to the advancement of psychological science and the use of science-based psychology in the development of public policy. Last year's convention, held in New York City, was the biggest APS convention ever with over 5,000 attendees.

I-O had a strong presence at APS in 2015, with close to 150 poster presentations and five symposia. Exciting I-O events included two invited symposia (I-O at Teaching/Liberal Arts Colleges and Ostracism/Exclusion in the Workplace), and several invited talks by I-O scholars, such as **Gilad Chen** (University of Maryland), **Miriam Erez** (The Technion), **Adam Galinsky** (Columbia University), **Mikki Hebl** (Rice University), **Ed Locke** (University of Maryland), and **Louis Tay** (Purdue University).

The Program Committee is already hard at work on the 2016 Annual Convention. Some of the highlights of the program so far are:

- Keynote Address by Dan Ariely (*Duke University*)
- Bring the Family Address by Alison Gopnik (*University of California, Berkeley*)
- Distinguished Lecture on the Science and Craft of Teaching Psychological Science by Kelly McGonigal (*Stanford University*)
- Fellow Award Addresses by Mahzarin R. Banaji (*Harvard University*), Robert A. Bjork and Elizabeth L. Bjork (*University of California, Los Angeles*), Phoebe C. Ellsworth (*University of Michigan*), Stephen P. Hinshaw (*University of California, Berkeley*), Richard B. Ivry (*University of California, Berkeley*) and Steven A. Pinker (*Harvard University*).

Moreover, there will be lots of wonderful **I-O content on the program at APS 2016**. Here are some events that you won't want to miss:

The Meaning of Time Cross-Cutting Theme

Susan Mohammed (*The Pennsylvania State University*)

I-O Track Invited Talks

Alice Eagly (*Northwestern University*)

Carsten de Dreu (*University of Amsterdam*)

Michele Gelfand (*University of Maryland*)

Filip Lievens (*Ghent University*)

I-O Track Invited Symposia: Mental Health at Work

Kevin Kelloway (*Saint Mary's University*)

Julian Barling (*Queen's University*)

Leslie Hammer (*Portland State University*)

Nick Turner (*University of Calgary*)

Aging and Work:

Ruth Kanfer (*Georgia Institute of Technology*)

Tammy Allen (*University of South Florida*)

Lisa Finkelstein (*Northern Illinois University*)

This section of the program is still in development, so make sure to stay tuned for updates. In addition to the *invited* symposia and talks, the I-O track of the convention program will feature several symposia and a large number of posters submitted by I-O researchers. **Beginning in October, we encourage you to submit your work at <http://www.psychologicalscience.org/index.php/convention/call-for-submissions>**

Workshops

In addition to the I-O content at APS, the convention features several workshops that promise to be of considerable interest to I-O psychologists. Last year, workshops were \$65 for regular convention attendees and \$40 for students. This year's workshops are:

- Intro to R with William Revelle (*Northwestern University*)
- Writing for a Popular Audience with Steven Pinker (*Harvard University*)
- Latent Growth Modeling with Jessica Logan (*The Ohio State University*)
- Conducting Lavaan in R with Yves Rosseel (*Ghent University*)
- Models for Personal Relations with Thomas Malloy (*Rhode Island College*)
- Multilevel Modeling with Elizabeth Page-Gould (*University of Toronto*)
- Bayesian Analysis in JASP with Richard Morey (*University of Groningen*)
- Uses and Challenges of Mechanical Turk with Michael Crump (*Brooklyn College*)
- Using the open science framework with Brian Nosek (*University of Virginia*)
- Machine Learning with Brian Baucom (*The University of Utah*)

Other workshops will be announced as they are finalized.

Mark Your Calendars!

If you're dedicated to the advancement of scientific psychology, you won't want to miss the 2016 APS annual convention. **The call for submissions will open in October with the Symposium deadline on December 1, 2015, and the Poster deadline on January 31, 2016 (<http://www.psychologicalscience.org/index.php/convention/call-for-submissions>).** Poster acceptances are communicated on a rolling basis, and so the sooner you submit your work the sooner you'll know if it is accepted for presentation!

The **2016 APS Annual Convention will be held May 26-29 in Chicago**, and...you're invited to join us at the **I-O happy hour at APS**, which is a great place to make new I-O connections and to get a drink on us!

Stay connected to future developments by following us on [Twitter](#), [Facebook](#), and on [my.SIOP](#).



Having a good time at the I-O reception.

From left to right: Daniel Smith (West Point), Gary Latham (University of Toronto), Alison O'Malley (Butler University), Jia Hao Goh (PhD Student at Singapore Management University), and Alaina Ploski (MSc Student at Eastern Kentucky University).

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Submit Your Work to the APA Convention in Denver!

Tara Behrend

2016 APA Program Chair

Division 14 of the APA just had a successful program at APA's Annual Convention in Toronto, thanks to past program chair **Ann Huffman** and her excellent committee. Highlights of the program included invited talks from **Gary Latham** on the setting of implicit goals; Amy Adler on the well-being of soldiers deployed to Ebola outbreaks; and Jim Sales on running North America's fifth-largest fire department. On top of these amazing talks we enjoyed a wide range of symposia and posters that dealt with critical, timely topics that spanned I-O and other areas of psychology. The program also featured a fantastic social event at the Steamwhistle Brewery, set in a historic railroad building and museum. If you weren't there, you missed out! Luckily, you'll have your chance at next year's convention in Denver.

There are two types of submissions you should consider:

Collaborative Programming: Due **October 15**

This type of submission is meant to focus on integrative topics that bridge two or more divisions. Many of you may belong to multiple divisions, or have colleagues in other divisions. These sessions go through a special review process and are featured in the program. This year's themes for collaborative programming include:

- Social Justice in a Multicultural Society
- The Circle of Science: Integrating Science, Practice, and Policy

- Advancing the Ethics of Psychology: Issues and Solutions
- Cannabis: Concerns, Considerations, and Controversies

Think about submitting a session with a colleague from Div 5 (Measurement); 19 (Military); 15 (Education); 21 (Human Factors); 8 (Personality); 35 (Women); 17 (Counseling), or another division you love! If you'd like to discuss an idea with the program committee, please get in touch and we'll be happy to brainstorm with you.

You can also submit your work the regular way, as a poster, presentation, or symposium, through the open call, due **December 1**. More information about submission requirements can be found on the APA web site at apa.org/convention.

The American Psychological Association has had a difficult year, in the face of serious ethical challenges that affect all psychologists. These issues were the focus of a number of sessions at this year's convention and will no doubt continue to be a topic of ongoing conversation. Please consider joining this conversation and demonstrating how I-O psychology can contribute to the field of psychology as a whole. If this isn't compelling enough for you, consider the amazing location of Denver and everything it has to offer (visit denver.org to start daydreaming!) The 2016 program promises to be an important and exciting one, and I hope you will consider joining.

Paul M. Muchinsky 1947 – 2015

By Veronica Schmidt Harvey and Patrick Powaser



With a heavy heart, we share the news that Dr. Paul M. Muchinsky passed away at his home on Tuesday, September 8, of pulmonary fibrosis at the young age of 68. He is survived by his

wife Kay, daughter Andrea, sons Brian and Zachary, six grandchildren, and hundreds of grateful students.

In quintessential Paul style, he was well-prepared, even for death, by writing his last column of *High Society*, by ensuring that the legacy of his book—*Psychology Applied to Work*[®]—would be continued, and by enlisting former students to prepare his “serious” obituary.

Paul was the inaugural recipient of SIOP’s Distinguished Teaching Award in 2004, and for good reason. He dedicated his life to teaching I-O psychology at both Iowa State University and in the Bryan School of Business & Economics at UNC-Greensboro. He spent over 42 years teaching and actively mentored to the very end of his life. While at Iowa State, Paul shepherded 24 students to obtaining their PhDs and served on committees for many more graduate students. At UNCG, Paul’s focus shifted to teaching undergraduates, many of whom

were first-generation college students. I am extremely proud and privileged to have been one of his doctoral students at Iowa State.

In a recent conversation, Paul said his years at Iowa State brought out the best of his brain. He then warmly said that his years at UNC-Greensboro brought out the best of his heart. The UNCG students seem to agree, and he was proud of that. We encourage you to read his students’ comments at <http://www.ratemyprofessors.com/ShowRatings.jsp?tid=657392>. They are heartwarming and inspiring.

As most of you know, Paul’s most far-reaching impact on teaching was the publication of the textbook *Psychology Applied to Work*[®]. It has become the most widely read I-O textbook in the history of the field. What many of you may not know is Paul was a baseball fanatic, and a New York Yankees fanatic, more specifically. His official photo at UNCG was of him in his Yankees jacket. In the final week of his life, he continued writing a blog on baseball that is dedicated to his grandchildren and is his legacy to them.

In 2008, Paul received an honorary doctorate, the Doctor of Science, from his undergraduate alma mater, Gettysburg College. More important to Paul than his honorary degree was that U.S. Supreme Court Justice Sandra Day O’Connor also

received an honorary doctorate the same day. Paul proudly said, “Quite inappropriately I dragged her on the dance floor and we boogied to ‘Celebrate, Celebrate, Dance to the Music.’ I ended the dance by putting my arm around her and kissing her on the cheek.”

Toward the end of his life, we both had the opportunity to reflect with Paul on his legacy. He truly cared about his students. Both his personal interest in his students and his ability to help students apply psychology to their own lives was remarkable. Paul not only opened the doors to learning and practicing I-O psychology, he helped build confidence in his students of their capability to walk through them. Paul instilled a sense of responsibility in others to teach (not just academics) and help others grow.

Although Paul was an undeniably skilled researcher and practitioner, he will be best remembered as a wise (and yes, sometimes wise-ass) teacher. Despite Paul’s illustrious awards and honors (he was a Fellow of four divisions of APA, including SIOP), what mattered most to him was the impact he has had on the lives of others. The contributions he made through his teaching, mentoring, and his textbook have undoubtedly contributed to the growth in I-O psychology over the past 4 decades. I can think of no better criterion of “impact” than to grow the members of our profession.

Paul’s humor, wisdom, and dedication to teaching will be greatly missed.

Lyman W. Porter 1930 – 2015

By Milton D. HakeI



Lyman William Porter died on July 2, 2015, in Newport Beach, California. Known as “Port” by friends and colleagues, he was SIOP’s president in 1975–76 and was a trustee of the SIOP

Foundation since its creation in 1996. He was one of our most distinguished and admired researchers, authors, and mentors.

Port was born in 1930 in Lafayette, Indiana, and graduated from Northwestern University in 1952. He earned a PhD in psychology at Yale University in 1956 and then became a professor of industrial psychology at UC Berkeley. In 1967, he was appointed assistant dean of what was then UC Irvine’s Graduate School of Administration. He was dean of the school from 1972 to 1983, and he was instrumental in starting both its PhD and MBA programs.

His research contributions to I-O psychology and organizational behavior were numerous and path-breaking. Port was one of the founders of organizational behavior and served as the first chair of the Academy’s OB Division (1971). His scholarship was acknowledged by many awards, including the James McKean Cattell Award for Research Design (1969) and the Distinguished Scientific Contributions Award (1989) from SIOP, and the first Scholarly Contributions to Management Award

(1983) from the Academy of Management. Let me convey three stories to illustrate Port’s influence and leadership.

Prosocial advocacy: At the 1970 Division 14 Business Meeting in Washington DC, Ann Lavee Hussain, a new PhD, introduced a resolution from the floor. It called for the Division of Industrial and Organizational Psychology to become engaged in matters of public policy and social issues. This unexpected new business item turned out to be quite controversial; some thought it to be “revolutionary” and “seditious,” whereas others thought it was “overdue” and “a no brainer.” After contentious debate and a straw vote that took so long as to delay the social hour, the matter was referred to an ad hoc committee, which recommended a bylaws amendment to create a standing Public Policy and Social Issues Committee. That committee was created the following year, and eventually it conducted a *pro bono* technical assistance demonstration project for the National Association of Secondary School Principals. It was Port’s “light but firm hand on the tiller” that resolved the initial controversy and set Division 14 on a constructive path. By 1985 there were projects in all 50 states covering 1,000 school districts. Most projects were collaborative, multidistrict, or statewide efforts, and follow-up research published in the *Journal of Applied Psychology* affirmed the validity of the program.

Publications: Port is well known for his texts and monographs. What is less well known is that he edited the *Annual Review of Psychology* with Mark Rosenzweig for 21 volumes from 1974 through 1994. It is easy to trace the growth of our field through inspecting the tables of contents over that interval, with a progression from one to several topical chapters per volume. Since then, Port and we have witnessed the launch in 2014 of the *Annual Review of Organizational Psychology and Organizational Behavior*. Its editor Fred Morgeson interviewed Port and Ben Schneider about the development of the field, an interview you can watch at <https://youtu.be/yF3vr-vDHmTA>. The thoughtfulness and charm shown there are also readily evident in his SIOP presidential autobiography, [An Unmanaged Pursuit of Management](#).

Management education: Port succeeded in gaining full accreditation for UC Irvine's fledgling school and graduate programs quite quickly. That brought him into contact with the leaders of the American Assembly of Collegiate Schools of Business, so when they decided that it was time to evaluate the state of their art, they recruited Port. he signed on for what became a 3-year international examination of viewpoints, opinions, and objective data. Publication of Porter and McKibben's *Management Education and Development* in 1988 was welcomed for its frank and candid assessments. It noted, for instance, that graduates were weak in the "soft" skills: leadership, working in teams, social interaction. It also described graduates as narrowly trained specialists, unable to integrate their technical knowledge to solve practical problems.

It provoked the full range of reactions, from defensiveness and grumbling on one hand to creativity and innovation on the other. Most crucially, it solidified the growing understanding that grade point averages and credit hour totals are weak proxies for direct evidence of what really matters—applying one's knowledge and skills to solve the problems and to meet the challenges of working productively in organizations.

In sum: I will close this appreciation in a personal vein. I'll never forget my second meeting with Port. The first one took place at APA in Chicago 50 years ago. As a second year graduate student I attended the Division 14 Workshops. At lunch, another graduate student and I sat at the end of a long table, leaving ample room for the professionals. Then some professional-looking guy wandered over to sit with us—we both instantly recognized the name of Lyman Porter. We had a fine lunch, and I was deeply impressed with Port's warmth and humility, most especially because he was already so famous.

The unforgettable second meeting took place a year later at APA in New York. What startled me is that when we saw each other Port recognized me and called me by name! As I got to know him over the years, I began to understand that Port's greeting of me in New York was representative of how he related to everyone. It typified his strong sense of enjoyment of working with others.

Our field's growth and vitality owes so much to his grace and wisdom. He clearly was one of the "people who make the place." He was a giant among us.

Lauren Kenney
Xavier University



Transitions, New Affiliations, Appointments

Lynda Zugec has been designated as the new “Practice Makes Perfect” columnist for the Canadian Society for Industrial and Organizational Psychology (CSIOP). The Canadian Society for Industrial and Organizational Psychology (CSIOP) is an organization whose mission is to further the welfare of people by: (a) helping organizations effectively manage their human resources, (b) scientifically investigating human behaviour and cognition at work, and (c) helping individuals realize their work goals, including helping them to maximize job satisfaction and minimize work stress. CSIOP prints a quarterly newsletter and is an active participant at the annual conference of the Canadian Psychological Association. At the conference, CSIOP hosts workshops featuring leaders in the field of I-O Psychology and human resource management, and has a rich slate of symposia, paper and poster sessions, and round-table discussions.

Lynda received her MA in I-O Psychology from the University of Guelph and is currently the managing director of The Workforce Consultants in Ontario, Canada.

Radford University is excited to announce that two new faculty members, **Ben Biermeier-Hanson** (Wayne State University) and **Nicole Petersen** (Bowling Green State University), have joined Jay Caughron and Nora Reilly in its I-O master’s program.

Honors and Awards

Judith Blanton was awarded a Presidential Citation at the annual American Psychological Association (APA) meeting in Toronto. Blanton was honored for her “superlative career in Consulting Psychology,” including contributions she has made to the APA Model Practice Act and her efforts to raise awareness of the needs of I-O and consulting psychologists with the the Association of State and Provincial Psychology Boards.

She currently heads Blanton Consulting in Pasadena, CA. She has served as a past chair of the State Affairs Committee for SIOP and was a contributing columnist for *TIP* for several years.

Good luck and congratulations!

Keep your colleagues at SIOP up to date. Send items for IOTAs to Morrie Mullins at mullins@xavier.edu.

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SIOP Members in the News

Clif Boutelle

Generally when we think of the media, it is the major newspapers, magazines, and network radio and television that come to mind. Although they remain important to any organization seeking to generate awareness about itself, the Internet has created a whole new vista of media outlets that should not be overlooked.

A growing number of SIOP members are finding their way on to Internet sites because writers, whether mainstream media or on the Internet (often reporters are writing for both), still need credible resources. So, the opportunities for media mentions are expanding and that is good for the field of I-O psychology.

Following are some of the press mentions, including online sites, which have occurred in the past several months:

For an August 31 story on procrastination, the *Wall Street Journal* contacted **Piers Steel** of the University of Calgary for insight into chronic procrastination. Many chronic procrastinators believe they can't get started on a project because they want to do it perfectly. Yet studies show chronic procrastination isn't actually linked to perfectionism but rather to impulsiveness, which is a tendency to act immediately on urges, he said. People may assume anxiety is what prevents them from getting started, yet data from many studies show that for people low in impulsiveness, anxiety is the cue to get going. Highly impulsive peo-

ple, on the other hand, shut down when they feel anxiety, he added.

Jamie Lopez of Booz Allen Hamilton contributed to an August 13 story in *All Analytics*, a data management publication, about a model Booz Allen is developing to build data science teams drawing from a range of skillsets and backgrounds. Lopez and his team are formalizing the behavioral questions to be used in the model and working with the personality assessment firm of Hogan Assessments. The model breaks down data science competencies into four clusters; technical, data science consulting, cognitive, and personality.

The August 3 *Philadelphia Inquirer* ran a story on the Future of Work that prominently mentioned industrial and organizational psychology. Citing a Bureau of Labor Statistics report that listed I-O psychology among the fastest growing occupations, the story said "evidence of the popularity of industrial and organizational psychology came in April when more than 4,300 practitioners, academics, and graduate students attended the Society for Industrial and Organizational Psychology's annual conference in Philadelphia." Quoted in the story were **Randall Cheloha** of Cheloha Consulting Group in Wynnewood, PA and **James Outtz**, of Outtz Associates in Washington D.C. and SIOP's president-elect. "Right now, the topic of leadership development and executive coaching is hot," Cheloha said. Outtz noted that "more

employers are using (I-O) practitioners to devise assessments, evaluate leaders and build workplace cultures.”

When cameras caught New York Mets shortstop Wilmer Flores crying on the field after learning he had been traded (it turned out he wasn't), the July 30 issue of the *New York Daily News* ran a story about crying at work that included comments from **Lynda Zugec** of The Workforce Consultants. “Crying at work is more acceptable under certain circumstances” such as “in response to a job loss or negative feedback delivered poorly,” she said, adding that workplace crying may be unrelated to work, such as the loss of a loved one.

Zugec also contributed to a July 13 *HR Magazine* story about how one-third of the American labor force is composed of contingent workers and asking if HR is ready to manage a hybrid talent pool. One drawback is that an increasing use of freelancers can create insecurity among regular workers, who may worry about job security and resent that certain freelancers garner higher pay and enjoy more flexibility, she pointed out. In many cases, organizations can no longer afford in-house staff for some functions, and that's where HR leaders can help. “They need to take a holistic view of the organization and see where it might be beneficial to use freelancers,” she said.

She also was quoted in a May 19 *Main-Street.com* story about a recent Gallup poll that revealed more than half of managers are not engaged in their jobs, a startling finding because a key function of a man-

ager is to develop engaged workers. Zugec said that in some cases managers are distracted by personal issues—a divorce or a cancer diagnosis—and work can easily become a secondary concern.

A July 27 *Human Relations Executive Online* story about the 25th anniversary of the Americans with Disabilities Act included comments from **Silvia Bonaccio** of the University of Ottawa. When the ADA was first enacted it was envisioned that there was a narrow view of who qualified as an employee with a workplace disability. That has changed considerably, she said, adding that the ADA's definition of disabilities is now broad by design so that a wide range of people are protected.

A July 8 *Wall Street Journal* story about the effects of being late for meetings cited a study led by **Steven Rogelberg** of the University of North Carolina at Charlotte. Nearly one in four participants says they are frustrated when a colleague is 6 to 10 minutes late; 14% lost concentration. Others feel insulted, disrespected, or just plain mad when meetings have latecomers.

Bill Byham of Development Dimensions International, Inc. was featured in a June 21 *Pittsburgh Post-Gazette* story about leadership skills. “Leaders don't fail on the job because they don't have the technical knowledge. Failure comes because leaders don't have the skills to interact with people,” he said. A core leadership trait is showing an understanding of the facts and the feelings that people have about their work. Successful leaders show support for their workers without taking away the re-

sponsibility that allows employees to take ownership of their own work.

Byham was also featured in a May 9 *Sarasota Herald Tribune* article describing how baby boomers' impending retirements are affecting the workplace. He said employers should open a dialogue with employees to help them decide whether to stay or go. In a typical workplace, he says, "72 to 80% of employees before they reach retirement age say they're not going to retire, but when they get to retirement age, it drops down to 45%—that's almost 50% of your people." With older workers accounting for nearly one-quarter of the U.S. labor force, it's only a matter of time before organizations worry about the experience and productivity they may be allowing to walk out the door. He said the current "don't ask, don't tell" method of putting retirement decisions in workers' hands is chaotic—and counterproductive—for employers.

The June 17 *Wall Street Journal* contacted **Tom Rauzi** of Dell Inc. and **Matt Paese** of DDI for a story on the difficulty some companies have in selecting and developing top talent. The article stated that despite new assessment tools the search for high potential employees is more art than science. When managers are in charge of high potential rosters they tend to select protégés who are like them and sometimes "people are horrible at predicting the future," Rauzi said. It's an approach that results in some "false positives" and some "false negatives." But there are assessments that have a good track record at identifying high potentials. Paese said companies are bringing in assessments,

similar to those used to vet executive-level talent to evaluate thousands of employees at many levels of the organization.

People who are out of work often receive career advice and words of comfort and encouragement, much of it irritating and sometimes harmful, notes a June 15 *Toronto Globe and Mail* story."It's tricky to try to help someone who's laid off and looking (for work), but we often feel the need to," says Silvia Bonaccio of the University of Ottawa. "People like to feel helpful....so a lot of people get advice from others who are not experts in the domain," she said. A better move is to ask the unemployed person what would be helpful to them.

Advice giving was the subject of a May 21 *Esquire Magazine* story that cited research conducted by Bonaccio and **Reeshad Dalal** of George Mason University. They described four types of advice: advice for ("Walk out of here and don't look back."), advice against ("Don't walk out of here"), information ("Here's some information about what it's like to not have a job"), and decision support ("take the time to talk to family before quitting a job"). Research responses indicated that people consistently preferred being provided with information about one or more options as opposed to being advised to "do this" or "don't do that." The main thing: Don't provide answers and don't say what you would do, which may seem helpful but is actually self-centered and most likely irrelevant.

The June issue of *Talent Quarterly* focused on developing talent and several SIOP members contributed articles. Hogan

Assessment Systems' **Blair Gaddis** and **Michael Sanger** wrote a piece on "Removing the Politics from High Potential Programs," citing the fact that far too often individuals are identified as high potentials because they are socially skilled, confident, and interested in influencing others and moving up within the organization. **Eric Hanson** and Richard Wellins of Development Dimensions International, Inc. authored "When Talent Reviews Go Wrong," which noted that judgments on high potentials are often reached with confusion about what constitutes potential and what defines readiness. **Allan Church** of Pepsico contributed an article titled "Six Things You Need to Know about Defining Potential in Your Organization," in which he said an organization's success is dictated by the future leadership potential of the talent in the pipeline (or from outside) to succeed those who eventually leave. **Joy Hazucha** and Claudia Hill of Korn Ferry wrote "Are You Wasting Your Money on High Potentials?" which stated many organizations are dissatisfied with practices to develop high potentials and offered ways to correct the issues. **JP Elliot** of The Brink's Company added an article urging HR practitioners to "Start With the Science" and utilize the most relevant, compelling, and valid research related to talent management.

Tomas Chamorro-Premuzic authored articles in two recent issues of *Fast Company*. In June he wrote "What it Really Takes to Find Meaningful Work." He said that it has almost nothing to do with money, but a person can be genetically predisposed to finding his or her meaningful work. That was followed by "Three Steps to Becoming

a Better Version of Yourself" in the July magazine. He offered tips that can help people to be better liked and respected, including getting feedback from others as to how they see you, targeting small behaviors that can be changed and evaluating your self-intervention, and focusing on specific evidence of the progress you are making in your efforts to better yourself.

Michael "Woody" Woodward of Human Capital Integrated attended the 2015 EY World Entrepreneur of the Year Awards and filed a June 9 report for *Fox Business News* on traits of successful business leaders. He focused on the human side of business and leadership and said good leaders exhibit humility, relationships in which everyone is treated with dignity, and fostering empathy for others.

Research by **Aaron Wallen** of Columbia University and colleagues was featured in a May 29 *Forbes* story. Their study found that, in lean times, decision makers favored the young. "Scarcity of resources seems to make people fall back on stereotypes about older employees," he said.

Research by Development Dimensions International, Inc. titled "Leaders in Transition: Progression Along a Precarious Path" was featured in the May 20 issue of *Human Resource Executive Online*. DDI's **Evan Sinar** said two-thirds of the 618 leaders surveyed felt unprepared for their new job. Respondents named several types of people who supported them during their job change and HR was at the bottom of the list. It was unclear who was responsible for making their transition successful. The results

reflect a unique opportunity for HR, he said. To do so, though, said DDI's **Tacy Byham**, HR must first adopt the belief that leadership training is simply part of the employee development process. "HR leaders need to realize that training is not the end state. Development is the end state," she said.

Sinar also co-authored an article in the June issue of *Training Magazine* about new insights in selecting and developing leaders. With coauthors Richard Wellins and Stephanie Neal, both of DDI, the article focused on research-driven insights found in the Global Leadership Forecast 2014/2015 that showed the powerful financial advantages exclusively seen by organizations executing high-quality leadership development across the full pipeline, from front line to senior level.

Tacy Byham of Development Dimensions International, Inc. and colleague Linda Miller co-authored an article in the May 20 issue of *Chief Learning Officer* magazine about how mentors can play a key role in the rise of women to senior leadership positions. Citing a relatively low number of female C-suite executives, the authors said when organizations provide access to and strongly support mentoring programs, women will rise through the ranks at an accelerated rate and are more likely to be promoted within a 5-year time frame.

Paul Baard of Fordham University wrote a column in the May 3 *New Hampshire Union Leader* about how organizations' can improve their hiring successes. In some

hiring models all a candidate needs to do is impress an HR representative and the hiring manager who hopes they have chosen the right candidate. Baard related a different process in which HR does all the background checking, and then candidates with the appropriate experience, education, and training are referred to a hiring committee composed of the employees with whom the candidate will be working. Employees know the distinct culture of the organization and often can make a better recommendation. Candidates hired in this manner have a smoother path within the organization.

A March 29 *Washington Post* story focused on the climate surveys the FBI employs to make personnel decisions. The surveys are used to create snapshots of FBI offices, which pinpoint strengths and weaknesses. **Amy Grubb**, an I-O psychologist with the FBI who helps interpret the surveys, said it was understandable why some of the responses dealt with complaints like "it takes more effort than necessary to get stuff done around here." "They get a little frustrated with the bureaucracy. There are a lot of things we have to do because of the nature of the job. We have ts to cross and is to dot to protect civil liberties." Still, the surveys indicate that employees were proud of working for the FBI and believed in its mission and had a "high level of respect" for FBI Director James Comey.

Send copies of the article to SIOP at boutelle@siop.org or fax to 419-352-2645 or mail to SIOP at 440 East Poe Road, Suite 101, Bowling Green, OH 43402.

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Conferences and Meetings



Please submit additional entries to Marianna Horn at
Marianna.Horn@Sodexo.com.

2015

October 2–3
SIOP Leading Edge Consortium. Boston, MA. Contact: www.siop.org.

October 23–24
Annual River Cities I-O Psychology Conference. Chattanooga, TN. Contact: <http://www.utc.edu/psychology/rcio/>

October 26–30
Annual Conference of the Human Factors and Ergonomics Society. Los Angeles, CA. Contact: The Human Factors and Ergonomics Society: <http://www.hfes.org/web/HFESMeetings/meetings.html>
(CE credit offered.)

November 9–14
Annual Conference of the American Evaluation Association. Chicago, IL. Contact: AEA, www.eval.org.

2016

January 6–8
The British Psychological Society Division of Occupational Psychology Annual Conference. Glasgow, Scotland. Contact: <http://www.bps.org.uk/events/conferences/division-occupational-psychology>

February 24–28

Annual Conference of the Society of Psychologists in Management (SPIM). Atlanta, GA. Contact: www.spim.org.
(CE credit offered.)

March 20–23

Annual Innovations in Testing Conference, Association of Test Publishers. Orlando, FL. Contact: www.innovationsintesting.org.

March 30–April 2

Annual Conference of the Southeastern Psychological Association. New Orleans, LA. Contact: SEPA, www.sepaonline.com. (CE credit offered.)

April 8–12

Annual Convention, American Educational Research Association. Washington, DC. Contact: AERA, www.aera.net.

April 7–11

Annual Convention, National Council on Measurement in Education. Washington, DC. Contact: NCME, <http://www.ncme.org/ncme/NCME/>

April 14–16

Annual Conference of the Society for Industrial and Organizational Psychology. Anaheim, CA. Contact: SIOP, www.siop.org.
(CE credit offered.)

March 18–22

Annual Conference of the American Society for Public Administration.

Seattle, WA.

Contact: ASPA, www.aspanet.org

May 22–25

Annual Conference of the Association for Talent Development. Denver, CO.

Contact: ATD (Formerly ASTD),

<https://www.td.org/>.

May 26–27

18th International Conference on Applied Psychology. Tokyo, Japan.

Contact: <https://www.waset.org/conference/2016/05/tokyo/ICAP>.

May 26–29

Annual Convention of the Association for Psychological Science. Chicago, IL.

Contact: APS, www.psychologicalscience.org.

(CE credit offered.)

June 9–11

Annual Conference of the Canadian Psychological Association.

Victoria, British Columbia.

Contact: CSIO, <http://csiop-scpio.ca/>

June 19–22

Annual Conference of the Society for Human Resource Management. Washington, DC.

Contact: SHRM, www.shrm.org.

(CE credit offered.)

August 4–7

Annual Convention of the American Psychological Association. Denver, Colorado.

Contact: APA, www.apa.org

(CE credit offered.)

August 5–9

Annual Meeting of the Academy of Management (AoM). Anaheim, CA.

Contact: AoM, <http://aom.org/>.

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