October 24, 2017

Strengthening the Profession through Diversity, Inclusion and Equity: Best Practices and Distinguished Practitioners

Michael P Johnson, Jr.
STRENGTHENING THE PROFESSION THROUGH DIVERSITY, INCLUSION AND EQUITY: BEST PRACTICES AND DISTINGUISHED PRACTITIONERS

Michael P. Johnson
University of Massachusetts Boston
Deborah Urbanski
NASA Johnson Space Center
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Texas Southern University

INFORMS National Conference
Houston, TX
October 24, 2017
Co-sponsors: Minority Issues Forum; Women in OR/MS; Junior Faculty Interest Group
SESSION KEY QUESTIONS

What is the state of diversity in our professional societies, employers and the profession?

What strategies and tactics can support greater success in diversity, equity and inclusion?

How does our understanding of diversity vary according to discipline & domain (STEM; operations research, management science and analytics; urban planning, public policy and public management)?
MICHAEL JOHNSON
Professor, Department of Public Policy and Public Affairs, University of Massachusetts Boston
Vice President, Chapters and Fora, INFORMS
Chair, INFORMS Committee on Diversity, Equity and Inclusion
PhD, Northwestern University
M.S., University of California, Berkeley
M.S., Georgia Institute of Technology
B.S., Morehouse College
Primary interests: Community-based operations research; decision models for public-sector facility location and service delivery; housing and community development
Resource:
https://www.umb.edu/academics/mgs/faculty/michael_johnson
DEBORAH URBANSKI

Director of the Office of Equal Opportunity and Diversity at NASA, Johnson Center
Member, JSC Inclusion & Innovation (I&I) Council
Chair, JSC Diversity Network
Primary mission: Enhance JSC’s efforts to attract, and retain a diverse, highly-qualified workforce
B.A., University of Texas
J.D., South Texas College of Law
Resource: https://www.nasa.gov/offices/oeod/oeod-home
JEFFREY LOWE
Associate Professor of Urban Planning and Environmental Policy, Barbara Jordan-Mickey Leland School of Public Affairs, Texas Southern University
Co-Chair, Planners of Color Interest Group, Association of Collegiate Schools of Planning
Ph.D., Urban Planning and Policy Development, Rutgers University
Master of City and Regional Planning, Morgan State University
Bachelor of Business Administration, Howard University
Primary research interest: Social justice and racial equity outcomes within the context of housing and community development planning processes and policies affecting lower-income communities of color

Resource: http://bjmlspa.tsu.edu/
INFORMS AD-HOC COMMITTEE ON DIVERSITY, EQUITY AND INCLUSION

Mission:
Make INFORMS more accommodating and reflective of members from different backgrounds, perspectives and abilities, thereby enabling INFORMS to generate research and practice knowledge to improve an increasingly diverse society.

Members:
- Victoria Chen, University of Texas at Arlington
- Mark Daskin, University of Michigan
- Luyi Gui, University of California Irvine
- Shannon Harris, Ohio State University
- Pinar Keskinocak, Georgia Institute of Technology
- Anahita Khojandi, University of Tennessee Knoxville
- Renata Konrad, Worcester Polytechnic Institute
- Mariel Lavieri, University of Michigan
- Gina Lloyd, INFORMS Director of Human Resources
- Emmett Lodree, University of Alabama
- Rubén Proaño, Rochester Institute of Technology
- Grace Trent, INFORMS Executive Assistant & Board Services Administrator
- Gabriel Zayas-Caban, University of Michigan
Diversity: The quality of being different or unique at the individual or group level. This includes age; ethnicity; gender; [and many others]. Diversity can be broadly understood to encompass externally-identifiable individual measures that are often viewed or treated as markers of difference, as well as internal individual measures that may reflect personal understandings of the world, often referred to as cognitive diversity.

Inclusion: A strategy to leverage diversity. Diversity always exists in social systems. Inclusion, on the other hand, must be created. A diverse environment does not imply an inclusive environment. Inclusivity fosters diversity and makes diversity sustainable. In order to leverage diversity, an environment must be created where people feel safe, supported, listened to, valued and able to do their personal best.

“INFORMS values and seeks diverse and inclusive participation within the membership and profession it represents. To achieve this goal, INFORMS is committed to providing an environment that encourages and supports equal opportunity, free expression, freedom from discrimination, harassment and retaliation, full participation in all activities and leadership, and collaboration among people of different backgrounds.”
POLICY AND PROCEDURES

Policy:
The Diversity, Equity, and Inclusion Committee shall provide insight and advice into promoting diversity and inclusion in INFORMS and the profession. The committee will consider and develop strategies for Board consideration that foster greater participation and make INFORMS more accommodating and reflective of members from diverse backgrounds, perspectives and abilities. The Committee will be aware of and ensure coordination and collaboration of diversity, equity and inclusion efforts throughout INFORMS.

Membership:
Chair, vice chair and up to eight additional members, including representatives of Women in OR/MS, Minority Issues Forum and Junior Faculty Interest Group, INFORMS staff member

Relation to board:
Committee reports to the Board through the President-Elect via written reports submitted prior to the INFORMS annual fall meeting

Review and evaluation:
Board report every two years to review mission and provide an update on the impact of diversity efforts on INFORMS and the profession
# PROPOSED PROGRAMS AND ACTIVITIES

<table>
<thead>
<tr>
<th>Program/Activity</th>
<th>How?</th>
<th>In order to...?</th>
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<tbody>
<tr>
<td>Measure and monitor levels of diversity within INFORMS and the profession</td>
<td>Measure diversity of:</td>
<td>Identify areas of high achievement and areas for improvement</td>
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<tr>
<td></td>
<td>• INFORMS entities and activities;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Educational institutions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Employers</td>
<td></td>
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<tr>
<td>Create and recommend opportunities for under-represented groups to fully participate in the profession</td>
<td>Identify areas of participation, for example:</td>
<td>Enable the profession to achieve organizational, commercial and social impact that reflects and supports societal diversity</td>
</tr>
<tr>
<td></td>
<td>• Organization leadership</td>
<td></td>
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<td></td>
<td>• Educational programs</td>
<td></td>
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<td></td>
<td>• Community outreach</td>
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<tr>
<td>Encourage INFORMS subdivisions to promote diversity and inclusion</td>
<td>Highlight and reward those that demonstrate the positive impact of under-represented groups with their subdivision</td>
<td>Enable diversity and inclusion to become part of subdivisions’ routine practices and expectations</td>
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# PROPOSED PROGRAMS AND ACTIVITIES, CONTINUED

<table>
<thead>
<tr>
<th>Program/Activity</th>
<th>How?</th>
<th>In order to...?</th>
</tr>
</thead>
</table>
| Create and maintain diversity, inclusion *and equity* best practices for INFORMS | Identify desired benchmarking, management and engagement initiatives, for example:  
  • Implicit bias training  
  • Access to current research  
  • Benchmarking and goal-setting | Improve diversity and inclusion-related performance                  |
| Support efforts to increase the profile and impact of under-represented groups within INFORMS and the profession | For a range of INFORMS entities and activities, and those of associated institutions, assess profile of, relevance to and impact on underrepresented groups | Increase the quantity and value of their work to organizations and to society |
## PROPOSED PROGRAMS AND ACTIVITIES, CONTINUED

<table>
<thead>
<tr>
<th>Program/Activity</th>
<th>How?</th>
<th>In order to...?</th>
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</thead>
<tbody>
<tr>
<td>Make best diversity practices and data available</td>
<td>Publish diversity and inclusion data</td>
<td>Serve as a model for other institutes, societies, universities, and organizations</td>
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<tr>
<td></td>
<td>Maintain repository of current research and practice</td>
<td></td>
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<tr>
<td>Advocate for and recognize scholarly research on diversity, equity and inclusion</td>
<td>Define ways in which research can help define, encourage, and evaluate individual and organizational activities</td>
<td>Build evidence on which best practices may be identified and evaluated.</td>
</tr>
<tr>
<td>Enable members to identify activities in conflict with INFORMS’ diversity and inclusion statement</td>
<td>Examples:</td>
<td>Increase trust among members of underrepresented groups that diversity-related concerns are documented and addressed</td>
</tr>
<tr>
<td></td>
<td>• INFORMS staff may document concerns</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Success stories: problems solved</td>
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<tr>
<td></td>
<td>• Member engagement, especially face-to-face</td>
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SUCCESS MEASURES

• Increased diversity within INFORMS’ membership across many activities and functions
• Increased satisfaction among members of diverse groups that INFORMS is meeting their needs, and perception among general membership that INFORMS is supportive of diversity and inclusion
• Perception by board that funds, time and effort spent are commensurate with improvements in diversity and inclusion metrics

The committee will have done its job when issues of diversity and inclusion become so well-understood, and so central to notions of how INFORMS does its job, that there will be no need for named diversity committees and activities
Description: National study of women, racial and ethnic minorities, persons with disabilities, and lesbian, gay, bisexual, transgender, and queer (LGBTQ) individuals working in the science, technology, engineering and math (STEM) workforce

Purpose: Better understand processes of disadvantage; inform diversity and inclusion efforts across STEM-related entities and institutions

Authors: Erin A. Cech, University of Michigan; Tom Waidzunas, Temple University

Method: Survey of 15 – 20 STEM professional societies; statistical analysis

Funder: National Science Foundation
### PORTRAIT OF INFORMS MEMBERSHIP

<table>
<thead>
<tr>
<th>Demographic Characteristics</th>
<th>Percent of the Sample</th>
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<tbody>
<tr>
<td>Female</td>
<td>28.50%</td>
</tr>
<tr>
<td>Male</td>
<td>70.85%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>6.88%</td>
</tr>
<tr>
<td>Asian</td>
<td>25.40%</td>
</tr>
<tr>
<td>Black</td>
<td>2.55%</td>
</tr>
<tr>
<td>White</td>
<td>60.88%</td>
</tr>
<tr>
<td>Other Race/Ethnicity</td>
<td>5.95%</td>
</tr>
<tr>
<td>LGBTQ</td>
<td>3.10%</td>
</tr>
<tr>
<td>Disability (physical, mental or emotional difficulty)</td>
<td>15.23%</td>
</tr>
<tr>
<td>Employed at University or College</td>
<td>50.86%</td>
</tr>
<tr>
<td>Employed in for-profit sector</td>
<td>30.98%</td>
</tr>
<tr>
<td>Employed in other sector</td>
<td>18.36%</td>
</tr>
<tr>
<td>Broad discipline category: Math/Statistics</td>
<td>18.20%</td>
</tr>
<tr>
<td>Broad discipline category: Engineering</td>
<td>42.67%</td>
</tr>
<tr>
<td>Broad discipline category: Administration &amp; Management</td>
<td>16.11%</td>
</tr>
<tr>
<td>Broad discipline category: Other</td>
<td>23.02%</td>
</tr>
</tbody>
</table>

Cech and Waidzunas, 2017

Not so different from internal INFORMS surveys!
“I feel like I fit in with other people in my workplace.”

Cech and Waidzunas, 2017

(**p<.01, *p<.05, †p<.10, two-tailed test)
“I HAVE READ OR HEARD INSENSITIVE COMMENTS IN MY WORKPLACE THAT I FOUND OFFENSIVE.”

Predicted Probabilities by gender, race/ethnicity, LGBTQ and disability status, net of differences by sector, age, and education level. (1=Never, 2=At least once in the past year, 3=At least once a month or more)

Cech and Waidzunas, 2017
“I WORRY THAT MY MISTAKES ARE MORE NOTICEABLE THAN THE MISTAKES OF OTHERS.”

Cech and Waidzunas, 2017
“I WAS HARASSED VERBALLY OR IN WRITING ON THE JOB IN THE LAST YEAR.”

Cech and Waidzunas, 2017
“A CO-WORKER MAKES A NEGATIVE COMMENT OR JOKE ABOUT WOMEN, A RACIAL/ETHNIC MINORITY, LGBTQ PEOPLE, OR PEOPLE WITH DISABILITIES.”

Cech and Waidzunas, 2017
“IN MY WORKPLACE, MY WORK IS RESPECTED.”

Predicted Probabilities by gender, race/ethnicity, LGBTQ and disability status, net of differences by sector, age, and education level. (1=strongly disagree to 5=strongly agree)

Cech and Waidzunas, 2017
“MY SUPERVISOR TREATS ME WITH RESPECT.”

Cech and Waidzunas, 2017
“IT AM HELD TO THE SAME STANDARD AS OTHERS FOR PROMOTION AND ADVANCEMENT.”

Cech and Waidzunas, 2017
“MY BOSS GIVES ME LESS CREDIT THAN I DESERVE.”

Cech and Waidzunas, 2017
“I HAVE TO WORK HARDER THAN MY COLLEAGUES TO BE PERCEIVED AS A LEGITIMATE PROFESSIONAL.”

Predicted Probabilities by gender, race/ethnicity, LGBTQ and disability status, net of differences by sector, age, and education level. (1=strongly disagree to 5=strongly agree)

Cech and Waidzunas, 2017
“WOMEN IN MY WORKPLACE MUST WORK HARDER THAN MEN TO CONVINCE COLLEAGUES OF THEIR COMPETENCE.”, BY SECTOR AND DISCIPLINE

*Cech and Waidzunas, 2017*

*Predicted Probabilities by employment sector and by discipline. (proportion who agree between 0 and 1). University is the comparison category for sector; Engineering is the comparison category for discipline.*
“RACIAL/ETHNIC MINORITIES IN MY WORKPLACE MUST WORK HARDER THAN WHITES TO CONVINCE COLLEAGUES OF THEIR COMPETENCE.”, BY SECTOR AND DISCIPLINE

Cech and Waidzunas, 2017
“LGBTQ INDIVIDUALS IN MY WORKPLACE MUST WORK HARDER THAN NON-LGBTQ PERSONS TO CONVINCE COLLEAGUDES OF THEIR COMPETENCE.”, BY SECTOR AND DISCIPLINE

Cech and Waidzunas, 2017
PROPORTION WHO HAVE WITNESSED PERSONS BEING TREATED DIFFERENTLY DUE TO GENDER IN LAST THREE YEARS, BY SECTOR AND DISCIPLINE

Cech and Waidzunas, 2017
PROPORTION WHO HAVE REPORTED WITNESSING PERSON(S) BEING TREATED DIFFERENTLY DUE TO RACE/ETHNICITY IN LAST THREE YEARS, BY SECTOR AND DISCIPLINE

Predicted Probabilities by employment sector and by discipline. (proportion who agree, between 0 and 1). University is the comparison category for sector; Engineering is the comparison category for discipline.

Cech and Waidzunas, 2017
PROPORTION WHO REPORTED WITNESSING PERSON(S) BEING TREATED DIFFERENTLY DUE TO LGBTQ STATUS IN LAST THREE YEARS, BY SECTOR AND DISCIPLINE

Predicted Probabilities by employment sector and by discipline. (proportion who agree, between 0 and 1). University is the comparison category for sector; Engineering is the comparison category for discipline.

Cech and Waidzunas, 2017
PROPORTION WHO REPORTED WITNESSING PERSON(S) BEING TREATED DIFFERENTLY DUE TO DISABILITY STATUS IN LAST THREE YEARS, BY SECTOR AND DISCIPLINE

Cech and Waidzunas, 2017
# INSIGHTS AND RECOMMENDATIONS

<table>
<thead>
<tr>
<th>Key Finding</th>
<th>Recommendation</th>
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<tbody>
<tr>
<td>Women and racial/ethnic minorities report persistently more negative experiences compared to men and white respondents. Feelings of marginalization and experiences of exclusion are significantly more common among these populations than among white men.</td>
<td>Consider ways to help foster inclusion for women and people of color, as well as fostering open dialog about the ways that the STEM expertise of women and people of color are undermined in members’ workplaces.</td>
</tr>
<tr>
<td>Disability status was a significant factor in a number of the marginalization and devaluation measures.</td>
<td>Consider programming and initiatives that allow persons with disabilities to articulate the ways in which the organization could better support them and promote their interests.</td>
</tr>
<tr>
<td>Respondents in university settings reported instances of differential treatment and bias toward disadvantaged groups significantly more frequently than respondents in other employment settings.</td>
<td>Explore departmental and institution-level factors that promote these patterns of bias at the local level. Enable organization members from different employment sectors to learn from one another.</td>
</tr>
</tbody>
</table>
…AND MANY OTHER SUGGESTIONS!

Full report:

Website: The STEM Inclusion Study (https://www.steminclusion.com/)

Funder: National Science Foundation (#HRD 1535385, 1535360)