Session J20 COM CSWP: Invited Session: Sexual and Gender Diversity Issues in Physics

11:15AM J20.00001 The State of Higher Education for STEM LGBTQQ Faculty/Staff

SUSAN RANKIN, The Pennsylvania State University — It has long been understood—an understanding that has been well supported by research-based evidence—that institutional "climate" has a profound effect on any academic community's ability to carry out its tripartite mission of teaching, research, and service (Bauer, 1996; Boyer, 1990; Peterson & Spencer, 1990; Rankin, 1998; 2003; 2010; Rankin & Reason, 2008; Tierney & Dilley, 1996). With the acknowledgment that institutions differ in the level of attention and emphasis on issues campus climate, it is safe to say that a campus climate offering equitable learning opportunities for all students, academic freedom for all faculty, and fairness in employment for all staff and administrators is one of the primary responsibilities of institutions of higher education. The research also suggests that a challenging campus climate exists for LGBTQQ students, faculty and staff. Based on the literature, a challenging climate leads to decreased productivity, decreased sense of value to the community, decreased retention, and negatively influences educational outcomes (Settles, et al. 2006; Trower & Chait (2002); Pascarella & Terenzini, 2005; Whitt, Edison, Pascarella, Terenzini, & Nora, 2001). Little is available in the literature on LGBTQQ faculty in the STEM fields. This program will engage participants in a review of the results of the 2010 project with regard to the experiences of LGBTQQ faculty and staff in the STEM fields.

1Project supported by Campus Pride.

11:51AM J20.00002 Shattering the Lavender Ceiling: Sexual Minorities in Physics

MICHAEL RAMSEY-MUSOLF, University of Wisconsin-Madison — I will discuss some of the challenges experienced by sexual minorities in physics, from both a personal and broader perspective. I will also comment on the opportunities for the field to become more inclusive, supportive, and scientifically stronger by addressing these challenges.

12:27PM J20.00003 Why Awareness of LGBT issues in the Physics Community Makes Sense

JANICE HICKS, National Science Foundation — A thriving innovation ecology requires diversity of perspective and knowledge. We want to attract and retain the best possible talent to Science and Engineering, particularly after expensive investments in training of faculty, postdoctoral fellows and students. Participants who bring their authentic identity to work are much more efficient, as it takes a lot of energy to stay in the closet. It is a concern that so few S&E faculty are out of the closet – we don’t know the numbers and they are difficult to obtain. This makes it difficult for the younger generation of students to relate as they do not see sexual orientation as an obstacle. It is also important for LGBT people to be visible in order to benefit from workplace policies such as family leave and other benefits. There are some activities to promote a positive view of LGBT people in S&E. The National Organization of Gay and Lesbian Scientists and Technical Professionals (NOGLSTP) has been in existence since 1983, and holds receptions and symposia at the AAAS meeting and other professional society meetings, as well as a symposium called “Out to Innovate,” next to be held October 13-14, 2012 at Ohio State University. The American Chemical Society started an LGB subdivision of its Division of Professional Relations in 2010. Much more needs to be done to educate leaders so they can speak knowledgeably about LGBT issues. Their ability to do so can affect their success in hiring and retaining top talent.

1:03PM J20.00004 Physics Climate as Experienced by LGBT+ Physicists

ELENA LONG, Kent State University — In 2009, Elena Long created the LGBT+ Physicists website (http://lgbtphysicists.x10hosting.com) as a warehouse for resources useful for sexual and gender minorities working in physics. This resource has grown to include networking resources, lists of LGBT-friendly universities and localities, recommendations for enacting positive change in physics communities, and out-reach to other STEM-oriented LGBT organizations. This has been possible in large part by the dynamic community of LGBT+ physicists and allies looking to make physics more welcoming towards our community. In 2011, Elena used her position as Member at Large on the executive committee of the Forum of Graduate Student Affairs (FGSA) to conduct a climate survey that included, among other things, the first serious look at LGBT+ demographics in physics. The survey focused particularly on issues of language heard and harassment experienced by physicists and was broken down into categories based on race, physical and mental ability, gender, and sexuality. Furthermore, it examined the outcomes of experienced harassment and the reasons for when harassment was not reported. Due to the nature of the study, overlapping demographics, especially “multiple minorities,” were also explored. This talk will give a brief history of the LGBT+ Physicists resource as well as an overview of the FGSA study.

1:39PM J20.00005 TBA

THEODORE HODAPP, American Physical Society APS — No abstract available.

Tuesday, February 28, 2012 2:30PM - 5:30PM

Session L20 CSWP COM: Invited Session: STEM Outreach to Underrepresented Communities

2:30PM L20.00001 LIGO: Impacting science education through gravity-wave research in the local community and beyond

STEPHEN MCGUIRE, Southern University and A&M College — We describe our integration of the science teacher pre-service and in-service education programs at Southern University (SUBR) with the Laser Interferometer Gravitational-wave Observatory (LIGO) Science Education Center (SEC). Inquiry-based interactive exhibits are employed wherein we emphasize classical physics concepts of oscillations, waves, wave propagation, interference, resonance, lasers, and Newtonian gravity. An aggressive museum docent training program is providing a means for undergraduates to learn how to effectively communicate science concepts within informal learning environments. This local educational partnership will ultimately create a science education continuum of engagement, working at multiple levels and multiple audiences to strengthen science literacy within the targeted STEM African-American community. Following a brief overview of our program of LIGO-related optical materials research, we give a detailed presentation of our K-12 science teacher preparation program with results.

1Work supported by National Science Foundation Grants No. (s), PHY-011077, PHY-0701652, PHY-030554, and PHY-0917543.
3:06PM L20.00002 STEM Outreach to the African Canadian Community - The Imhotep Legacy Academy

KEVIN HEWITT, Dalhousie University — Like the African American community in the US, the African Canadian community is underrepresented in the Science Technology Engineering and Mathematics (STEM) fields. To serve these communities two outreach organizations emerged in Canadian cities where there is a critical mass of learners of African Descent - Toronto and Halifax. I will describe the Imhotep’s Legacy Academy, which began in the Physics labs of Dalhousie University in Halifax, Nova Scotia and has grown to a province-wide program serving three-quarters of the school boards in the province with an annual budget that has grown to $400,000 in 2011-12. It follows the learner from the time they enter grade 7 to the time they graduate from university, through three programs: (a) Weekly After-School science enrichment for junior high learners, (b) Virtual High school tutoring program and (c) Summer student internships and research scholarships for post-secondary students. This year, the program was the beneficiary of funding from TD Bank to establish scholarships for program participants to enter Dalhousie university. Modeled on the Meyerhoff scholarships the program participants are identified at an early stage and are promised a subset of funding as they meet selected criteria during participation in the program. The program enjoys support from the Department of Education and the highest levels of government. A tri-mentoring system exists where faculty of African descent train mentors, who are science students of African descent at associated universities, to deliver hands-on enrichment activities to learners of African Descent. Evidence supporting the success of the program will be highlighted. Project outcomes measured include (i) recruitment; (ii) attendance; (iii) stakeholder relationships; (iv) programming; (v) staff training; (vi) perception of ILASP’s value; (vii) academic performance. The end results are new lessons and best practices that are incorporated into a strategic plan for the new project year. Teachers perceived that ILASP had a positive ripple effect on the entire academic and non-academic educational experience of the learners, crediting the project with (i) encouraging self-learning; (ii) assisting in honing learners’ science and math skills; (iii) developing core skills that were applicable in learners’ schoolwork; (iv) boosting learners’ self-esteem; (v) improving school attendance; (vi) boosting learners’ motivation to be engaged participants in all other classes.

1We acknowledge financial support from the Nova Scotia Department of Education - African Canadian Services Division, NSERC, EnCana Corporation, TD Bank, Dalhousie University, CACE, OANSA, NS Labour and Advanced Education and SuperNova.

3:42PM L20.00003 Knowing your Hispanic community to improve outreach effectiveness

CRISTINA TORRES, LIGO Livingston Observatory — “Know your audience,” wise words for properly conveying information. For outreach, this can make the difference between successful connection or failure to connect to the community around us. When the target audience is the Hispanic community knowing your audience can potentially take on unexpected complexity. Like some other minority communities, the Hispanic community’s culture is complex dual culture system. I will discuss my own personal observations about how this community interacts with the academic world. I also will discuss how the Hispanic community perceives itself as a member of the broader community we all live in and how non-homogeneous, our broadly defined Hispanic community really is. Discussing the Hispanic community’s hidden nuances will bring to light the difficulty in getting to “know your audience,” when it comes to effective outreach in the rapidly growing Hispanic community.

4:18PM L20.00004 Outreach to the Native American community through the Navajo-Hopi program

KEVIN SCHINDLER, Lowell Observatory — No abstract available.

4:54PM L20.00005 Intersections of Gender and Power: Improving the Status of Women in Physics

SAEQA VRTILEK, Harvard-Smithsonian Center for Astrophysics — Numerous problems bedevil the twin goals of increasing the numerical participation in science, technology, engineering, and mathematics (STEM) fields by women and increasing the quality of that participation. The nature of the difficulties is everywhere slightly different, but there are underlying commonalities. A wide portfolio of lessons learned that can be applied to the confluence of cultures, backgrounds, and experiences that shape any given institution have been developed and will be presented. Among these, common and dominant themes are the need for mentoring, management training, and the increased visibility of successful women scientists. These have been identified (Nelson and Rogers 2004; Sonnert and Holton 1995a; Vetter 1996) as some of the key factors in securing the encouragement and increased stability needed for more senior women scientists to thrive to their full potential and provide the example and mentoring needed for a larger and more productive new generation.