Session T6 FGSA FIP: Panel Discussion: Preparation of Graduate Students for Careers in a Globalized World

3:30PM T6.00001 Modern International Research Groups: Networks and Infrastructure

LINDA KATEHI, University of Illinois at Urbana-Champaign — In a globalized economy, education and research are becoming increasingly international in content and context. Academic and research institutions worldwide try to internationalize their programs by setting formal or informal collaborations. An education that is enhanced by international experiences leads to mobility of the science and technology workforce. Existing academic cultures and research structures are at odds with efforts to internationalize education. For the past 20-30 years, the US has recognized the need to improve the abroad experience of our scientists and technologists: however progress has been slow. Despite a number of both federally and privately supported programs, efforts to scale up the numbers of participants have not been satisfactory. The exchange is imbalanced as more foreign scientists and researchers move to the US than the other way around. There are a number of issues that contribute to this imbalance but we could consider the US academic career system, as defined by its policies and practices, as a barrier to internationalizing the early career faculty experience. Strict curricula, pre-tenure policies and financial commitments discourage students, post doctoral fellows and pre-tenure faculty from taking international leaves to participate in research abroad experiences. Specifically, achieving an international experience requires funding that is not provided by the universities. Furthermore, intellectual property requirements and constraints in pre-tenure probationary periods may discourage students and faculty from collaborations with peers across the Atlantic or Pacific or across the American continent. Environments that support early career networking are not available. This presentation will discuss the increasing need for international collaborations and will explore the need for additional programs, more integration, better conditions and improved infrastructures that can encourage and support mobility of scientists. In addition, we will discuss the need to incorporate internationalization into existing norms and legacy forms that govern the research enterprise in the US.

4:06PM T6.00002 Working on an experiment half a world away

MORGAN WASCKO, Imperial College London — Particle physics is already one of the most global fields of study in an increasingly globalized world. I am an American physicist now employed and living in England, working on neutrino experiments in the US and Japan. I will discuss my experiences as a physicist living and working abroad, with tips for students interested in doing the same.

4:18PM T6.00003 How the LHC has revolutionized collaboration and research

MICHAEL TUTS, Columbia University — I will be discussing my experience as a high energy experimental physicist involved in large international collaborations for many years. As the US ATLAS Operations Program Manager, I manage the US ATLAS Operations Program at the Large Hadron Collider (LHC), and am responsible for about a $35M annual budget to support US technical personnel in the areas of operations, computing and R&D that participate in the ATLAS experiment. US ATLAS has about 400 US physicists from 43 US institutions around the country that make up about 20% of the total number of physicists from 35 countries in the International ATLAS collaboration. In this panel discussion I will highlight the unique challenges of large, international collaborations as well as the logistics of such an undertaking.

4:30PM T6.00004 Life as a graduate student in a globalized collaboration

CLAUDIA FRACCHIOLLA — A global vision is important, if not essential, in all scientific fields. In the case of graduate students, the language of instruction is not the only issue. We must learn different research methodologies and understand a new set of complex cultural dynamics both in our living situations and in our new university workplaces. My research program is in experimental particle astrophysics. I study ultra-high energy cosmic rays with the Pierre Auger Observatory located in Argentina. More than 400 scientists from 18 different countries are a part of this science program. As a graduate student within this model provides me with a comprehensive understanding of global cultures combined with research skills, proficiency in different languages, and an international experience. I will discuss the benefits and challenges of working in a large international collaboration, and how it can help you grow not only as a scientist, but also as a person.

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4:42PM T6.00005 Panel Discussion