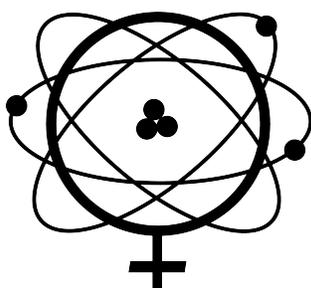


# CONFERENCE FOR UNDERGRADUATE WOMEN IN PHYSICS AT YALE 2015



CUWiP at Yale  
2015

## Speaker Biographies

**Dr. Lilian Childress**, *Assistant Professor of Physics, McGill University*



Lilian Childress is currently an Assistant Professor at McGill University in Montreal. She received her B.S. in Physics from Harvard College in 2001 after undergraduate studies that included a year-long stint at Oxford University as a visiting student. She stayed at Harvard for her PhD (2007), where she worked on a broad range of projects including theoretical proposals for circuit QED with quantum dots and Rydberg atoms, as well as experimental studies of quantum memory in atomic vapor, before finally beginning work with optically-active defects in diamond. In 2007, she joined the faculty of Bates College in Lewiston, Maine. As an Assistant Professor at a liberal arts college, an institution emphasizing teaching, she continued research on techniques to control single nuclear spins in diamond, working only with undergraduate students. In

2011, she spent a sabbatical in the group of Ronald Hanson in T.U. Delft, collaborating on a series of experiments that led to the demonstration of long-distance entanglement between solid-state spins. She then took a postdoc at Yale University in the group of Jack Harris; there, she started a project to examine interactions between superfluid excitations and cavity-confined photons. She joined the faculty at McGill in 2013, where her current research explores quantum information and metrology applications of solid-state spins.

## CONFERENCE FOR UNDERGRADUATE WOMEN IN PHYSICS AT YALE 2015

**Dr. Bonnie Fleming**, *Horace D Taft Professor of Physics, Yale University*



Bonnie T. Fleming, a Professor of Physics at Yale University, is leading the effort in neutrino physics at Yale. Her research focuses on high energy neutrino physics to study the nature of neutrinos and what neutrinos can tell us about the rest of the Standard Model of particle physics and the universe. As a graduate student at Columbia University, Dr. Fleming studied proton structure by observing high energy neutrino-nucleon interactions at the NuTeV experiment at Fermilab. Following her Ph.D. work, she held a Lederman Fellowship at Fermilab working on the MiniBooNE experiment, searching for neutrino oscillations. While at Fermilab, Dr. Fleming started a hands-on program called the “Girls Science Salon” encouraging middle school girls in science.

At Yale, Dr. Fleming is pursuing next generation, precision neutrino detection techniques. Dr. Fleming combines a rigorous R&D program on Liquid Argon Time Projection Chamber (LArTPC) detectors with pressing questions in neutrino physics. Dr. Fleming is the Co-spokesperson of the MicroBooNE experiment, an LArTPC designed to examine low energy neutrino interaction phenomena observed by MiniBooNE, and serve as a prototype detector for LArTPCs for neutrino oscillation experiments in the future. Combined with her research program, Dr. Fleming actively encourages women and girls to pursue science through mentoring and several programs including *Girls Science Investigations*.

**Ms. Arlene Knowles**, *Career/Diversity Administrator, American Physical Society*



Arlene Modeste Knowles is the Career and Diversity Administrator at the American Physical Society. She serves as the manager of the APS Scholarships for Minority Undergraduate Physics Majors, is in the Program Management Group of the APS Bridge Program, and manages most other diversity programs for the APS. In her capacity as the career administrator at APS, Knowles has organized and moderated career panels and tutorials at APS meetings, managed the APS job fairs and online career center, and worked on other career specific programs. Before coming to APS, Knowles received her Bachelor of Science degree in Human Development from Cornell University, on a pre-medical track. While at APS, Knowles first focused on programs aimed at recruiting and retaining minorities in physics, and later began working on programs to build awareness of career opportunities for all members of the physics community. Today, she works more exclusively on diversity initiatives, which include programs and activities that address the recruitment, retention, mentoring and careers of underrepresented groups.

## CONFERENCE FOR UNDERGRADUATE WOMEN IN PHYSICS AT YALE 2015

**Dr. Andrea Markelz**, *Professor of Physics, University of Buffalo, SUNY*



Andrea Markelz received a PhD in physics from the University of California, Santa Barbara in 1995. From 1995-1998 she was a National Research Council postdoctoral fellow at the National Institute of Standards and Technology (NIST) in Gaithersburg, MD. In 1998 she was an NSF GOALI postdoc with Bell Labs, Murray Hill and University of Maryland, College Park. In 1999 she joined the physics faculty at the University at Buffalo, SUNY and is currently a full professor there. In 2004 she was awarded an NSF CAREER award for establishing the use of THz spectroscopy to characterize protein flexibility. Her main research interests are

biomolecular structural dynamics and semiconductor nanosystem transport studied mainly with terahertz time domain spectroscopy and near field THz microscopy.

**Dr. Meg Urry**, *Israel Munson Professor of Physics & Astronomy, Yale University*



Meg Urry is the Israel Munson Professor of Physics and Astronomy and the Director of the Yale Center for Astronomy and Astrophysics (and she was the Chair of the Physics Department at Yale 2007-2013). She is also the President of the American Astronomical Society. Professor Urry received her Ph.D. from the Johns Hopkins University in 1984 and her B.S. in Physics and Mathematics *summa cum laude* from Tufts University in 1977. Her scientific research focuses on active galaxies, which host accreting supermassive black holes in their center. She has published over 230 refereed research articles on supermassive black holes and galaxies and was identified as a “Highly Cited Author” by Thomas Reuters. Prof. Urry is a Fellow of the American Academy of Arts and Sciences, the American

Association for the Advancement of Science, the American Physical Society and American Women in Science; received an honorary doctorate from Tufts University; was awarded the American Astronomical Society’s Annie Jump Cannon and George can Biesbroeck prizes. Prior to moving to Yale in 2001, Prof. Urry was a senior astronomer at the Space Telescope Science Institute, which runs the Hubble Space Telescope for NASA. Professor Urry is also known for her efforts to increase the number of women in the physical sciences, for which she won the 2010 Women in Space Science Award from the Adler Planetarium.