



# FROM THE CLARK SCIENCE CENTER DIRECTORS' OFFICE

March/April 2016

## Meet the 63<sup>rd</sup> Black American Female Physicist...



So said the headline of the [Huffington Post article](#) from last summer. She is Dr. Chanda Prescod-Weinstein, a theoretical astrophysicist at MIT. Today, that number is still under 100 total African American women who have received their doctorate in physics, astronomy, astrophysics, applied physics, and space physics, according to a group of [African American Women in Physics](#) (AAWIP) who keeps a running tally.

This is a problem across STEM disciplines. We need to do better. Last week, Dr. Evelyn Hammonds, the Barbara Gutmann Rosenkrantz Professor of History of Science and Professor of African and African American Studies at Harvard, described how she was repeatedly mistaken for Shirley Ann Jackson (#2 on AAWIP's list and current President of Rensselaer Polytechnic Institute) when Dr. Hammonds was a graduate student in physics in the same program from which Dr. Jackson received her degree. Her story is a reminder of the ways in which sexism and racism pervade the history of science, a discipline that Dr. Hammond ultimately pursued as the questions of underrepresentation crowded out her interests in lasers.

So what can we do? Dr. Hammonds' talk emphasized how we must be color brave and willing to talk with one another and our students about issues related to inclusion. That same week, Dr. Maria Klawe, President of Harvey Mudd College, gave an inspiring talk on how to get more women in technology. At her institution, [three promising practices](#) have increased the number of women majoring computer science: revising the introductory curriculum; building community for women through attendance at the Grace Hopper conference; and deepening confidence about computer science through a summer research experience between the first and second years.

To tie the themes sounded by each visitor, we need to think of our classrooms and labs as places where we actively shape the face of science. From the ways in which we send messages about success in STEM to the choices that we make as instructors about texts, tests, and projects, faculty and staff shape the sense of belonging that students have in connection to our disciplines.

Let's continue working to strengthen our learning environments for the next generation of Smith scientists. Take a look at this ongoing work through the recently launched HHMI website (see sidebar). Come participate in our sustained faculty development effort (see next page) to develop the Smith College Science Collaborators (SC)<sup>2</sup> program. We can and must do this together.  
--Patty DiBartolo

For over a year, Smith College, one of HHMI's 11 "Capstone" Institutions, has collaborated with its fellow Capstones on improving STEM success in a liberal arts context. We are pleased to announce the [publication of the website](#) synthesizing the experiences of all 11 institutions in striving to strengthen the undergraduate experiences in science and math for all students.

This collaboration has revealed striking similarities in approaches taken by Capstone Institutions to improve science education, particularly in four areas:

- ❖ *Developing inquiry skills*
- ❖ *Increasing persistence*
- ❖ *Fostering integrative or interdisciplinary learning*
- ❖ *Creating pathways to institutional change*

Look at the site as well as [Smith's institutional profile](#) where we highlight our work in the sciences.

Let us know what you think!

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*Do you find that your most rewarding moments as a teacher happen when mentoring students in your lab? Have you ever wondered how you could blur the lines between your classroom and what you do as a scholar? Consider joining your colleagues in pedagogical conversation and collaboration...*

## CREATING SUSTAINABLE COURSE-BASED RESEARCH MODELS: EXPONENTIAL LEARNING THROUGH (SC)<sup>2</sup>

*(SC)<sup>2</sup> stands for Smith College Science Collaborators and represents the idea that students are better educated as scientists when they engage early and often in research collaborations with science faculty and staff.* There are a number of Div III folks in the midst of working to assess and play with approaches that create successful and sustainable models for course-based research experiences (CBRE) at Smith. Through our pilot efforts, **we've learned a lot.**<sup>1</sup>

Of course, **good teaching is never simple** and it is always improvable. We still have a lot to learn about how to best align our resources and approaches in order to teach well using course-based research experiences. **We want you to join us** in piloting this pedagogical approach. We also want to include staff (like center managers) who may be able to help in solving some of the resource and “how” questions involved in introducing course-based research.

**If you are interested in participating,** please send a letter of interest to Patty DiBartolo, Faculty Director at [pdibarto@smith.edu](mailto:pdibarto@smith.edu), indicating the courses you plan to teach in 2016-2017 that you will revise to include, expand, or strengthen a course-based research experience for your students, **by May 2nd.**

To that end, we are offering a **sustained faculty development opportunity** to help folks transform a course at the **introductory** or **intermediate** level of the curriculum by engaging with all of the questions that we have when we set out to make our classrooms more like our labs.<sup>2</sup>

**DETAILS:** WE WILL MEET FOR A **2-DAY WORKSHOP IN MAY** (MAY 9<sup>TH</sup> – 10<sup>TH</sup>), A DAY-LONG MEETING IN AUGUST (LIKELY THE WEEK OF THE 29<sup>TH</sup>), AND THEN MONTHLY IN THE FALL. TOGETHER, WE WILL ENGAGE IN PEER MENTORING AND THOUGHTFUL REFLECTION ON HOW TO MAKE THIS WORK IN OUR CLASSROOMS AND AT SMITH. THE PROVOST'S OFFICE WILL PROVIDE LUNCH DURING THE DAY-LONG MAY MEETINGS. THROUGH HHMI FUNDING, WE WILL OFFER A MODEST RESEARCH GRANT STIPEND TO PARTICIPANTS FOR COURSE EXPENSES (AMOUNT TBD). THE WORK OF THIS GROUP WILL HELP TO INFORM STRATEGIC BUDGET REQUESTS FROM THE SCIENCE CENTER.

<sup>1</sup>Our CBRE pilots have been quite effective. Take a look: <http://serc.carleton.edu/liberalarts/capstones/smith/inquiry.html>. Many of us have endorsed CBREs as a strategic direction for Smith. This is what we said to CMP after over 40 faculty and staff engaged in vibrant discussion during an open meeting in May 2015 about the college's strategic planning. We converged on one big bold idea for the future: engaging students with a question or issue owned by the student that has impact beyond the classroom through collaborative research and purposeful inquiry. Beyond Smith, course-based research is now pretty well-recognized as an effective and high-impact educational practice in science education.

<sup>2</sup>Like: How to pick a productive research question that will work in a semester course. How to get students to become researchers when they have no research experience. How to find allies and resources that will make this work possible. How to create meaningful course assignments. How to supervise multiple projects during the same class or lab time. How to make decisions about what to give up to make room for research. What we need to sustain/expand this model throughout the division's curriculum.

# The Latest News on Enabling Neilson's Renovation

**From Facilities and the Library:** *The Young Science Library and Green Street Classroom Annex (aka the "Green Box") will be reconfigured to serve as the on-campus presence for both library services and special collections. The science library staff and functions will be absorbed into the Neilson operations during this enabling period. There will not be a modular on-campus building used for library services. The current plan has all occupants of the Green Street Annex and Young Library relocated by January 1, 2017 at which time the Young Science Library will also be closed with books relocated. Construction work in Young will be light, but will be ongoing through the spring semester of 2017. Neilson Library will close the summer of 2017 to allow for their relocation to Young and the Annex. They will be fully moved and up and functioning for the start of the fall 2017 semester.*

In the early stages of "Neilson Enabling," Facilities Management staff have tackled the challenges of finding or creating new spaces to suit the needs of some of the largest space users in the Green Box. This work includes finding classroom spaces suitable for and large enough to serve the needs of Engineering (principally for *EGR 100 Engineering for Everyone*) and Landscape Studies (principally for studio courses). Both programs use existing Green Box space as design studios where furniture is flexible, students can get messy if they need to, and students can work on projects over comparatively long periods of time, getting access to the studios 24/7 if necessary. **We will keep updated.**

## FELLOWSHIPS: TIME FOR CONGRATULATIONS & ENCOURAGEMENT

**Congratulations** to Goldwater Scholar, Sara Callahan, EGR, Ada Comstock Scholar, and honorable mention, Megan Wancura, CHM, '17! Well done, too, to NOAA Hollings Scholars, Emma Harnisch, '18, and Courcelle Stark, '18, both geosciences majors! Four science majors have been offered Fulbright awards: Sophia Deady, PSY, '16; Hanna Francis, GEO, '16; Anna Partridge, EGR, '16; Helena Tatgenhorst, GEO, '16. We wish the following students best of luck as they head off to take up competitive summer fellowships: Emmie Knobloch, '17, BCH (NIST SURF); Miatta Ndama, '17, BIO, & Anna Render, '17, EGR (HHMI EXROP); & Amalia Sweet, '17, BCH (Amgen Scholars Program, UCLA).

As the academic year draws to a close, encourage students to think about applying for the fellowships and opportunities that will suit their interests and circumstances. Share information about your department's or program's prize winners with Margaret Lamb; this is one of the best ways we have of gathering information about potential candidates for the most competitive fellowships and scholarships!

### IMPORTANT ANNOUNCEMENTS:

April 27 <sup>th</sup> 2016	Buju Dasgupta, University of Massachusetts, <i>STEMing the Tide: How female experts and peers act as "social vaccines" to protect young women's self-concept in STEM</i> , 12:10 pm, Ford Hall 240
April 29 <sup>th</sup> 2016	Last day of classes, Spring semester
May 9-10 <sup>th</sup> 2016	Faculty development workshop, <i>Creating sustainable course-based research models: Exponential learning through (SC)<sup>2</sup></i>

CONTACT US: PATRICIA DIBARTOLO ([pdibarto@smith.edu](mailto:pdibarto@smith.edu)); MARGARET LAMB ([mlamb@smith.edu](mailto:mlamb@smith.edu))

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