

Outreach workshop keeps teachers engaged

By Sheila Yong

The NIEHS Rodbell Auditorium was abuzz with activity and laughter March 11, as 21 science teachers and educators joined in the Rx for Science Literacy workshop organized by the NIEHS [Office of Science Education and Diversity](#), in partnership with the North Carolina Association for Biomedical Research (NCABR). NCABR is a nonprofit organization that promotes science education and biomedical research throughout the state. Participants of this workshop earn credit towards their continuing education and certification.

“We are grateful to NIEHS for their donation of resources and staff time, which allows us to provide you with materials for your classrooms, as you talk to your students about biomedical research,” said NCABR Director of Programs Regina Williams in her opening remarks. As she introduced the attendees to the workshop’s agenda, Williams also highlighted the various presentations featuring scientists at NIEHS.

Following Williams’ introduction, NIEHS Program Analyst Liam O’Fallon, of the Division of Extramural Research and Training, gave an overview of the research goals of the Institute. His presentation also detailed various printed and online resources available through NIEHS, which teachers can use to introduce their students to environmental health research.

A morning of hands-on fun

The participants spent the first half of the workshop engaging in hands-on activities, under the guidance of Pamela Lovin, educational consultant from NCABR. To simulate the classroom environment, Lovin had participants work in pairs and groups to complete the assignments.

In the midst of fun and laughter, the participants exercised their observational and analytical skills to solve problems that Lovin put forward, and gained insights into how they could implement these activities in their classrooms.

One such activity required attendees to picture the appearance and characteristics of a scientist, and some volunteered to describe their drawings to the rest of the participants. The drawing that stood out came from teacher Jill Messer of Piedmont High School, who displayed her depiction of Sheldon Cooper, the uptight physicist on the popular sitcom “The Big Bang Theory.” Her presentation was later complemented by a video Lovin played of actress and neuroscientist Mayim Bialik.

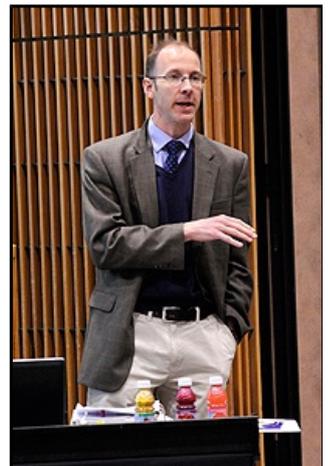
Linked Video

[Watch the video of Bialik discussing her own passion for science \(04:14\)](#)

Overall, the goal of Lovin’s activities was to help teachers instill curiosity and passion in their students about science. “Your students don’t have to be extremely intelligent to become scientists. They just have to be curious and willing to learn new things,” she said.



Besides welcoming the participants to the Rx for Science Literacy workshop, Williams also encouraged them to provide comments and feedback on topics they would like to see presented at future NCABR programs. (Photo courtesy of Steve McCaw)



O’Fallon creatively used Johnny the crossing guard as an example of how exposure to various environmental elements may impact human health, and described the NIEHS mission to understand the outcome of such exposures. (Photo courtesy of Steve McCaw)

NIEHS behind the scenes

The afternoon section of the workshop began with a presentation by Veterinary Staff Scientist David Kurtz, D.V.M., Ph.D., on the humane use of animals in environmental research. Following his talk, the participants, led by Kurtz and Veterinary Medicine Section Chief Terry Blankenship-Paris, D.V.M., toured the Comparative Medicine Branch facilities.

Next to speak was Ruth Lunn, Dr.P.H., director of the NTP Office of the Report on Carcinogens (RoC). In her presentation titled “Environmental Exposures and Cancer Hazards,” Lunn introduced the teachers to the RoC, a congressionally mandated document that discusses substances that cause, or are anticipated to cause, cancer. She also described the procedures required for the classification of these substances and how the general public can participate in the process.

Humphrey Yao, Ph.D., lead researcher in the NIEHS Reproductive Developmental Biology Group, concluded the workshop with his presentation on “Sex, Arsenic, and the Environment: How Maternal Exposure Affects the Reproductive System of the Offspring.” At the start of his presentation, Yao expressed his gratitude to the participants for their efforts in teaching science to the next generation. “All of you, as science educators, are in a very important position, by helping us communicate the importance of scientific research to your students and the community at large.”

During his talk, Yao presented recent findings from his group on the effects of *in utero* arsenic exposure on body weight and the onset of puberty. His presentation raised several questions among the attendees who wanted to understand the effects of long-term arsenic exposure and how they can be minimized.

(Sheila Yong, Ph.D., is a visiting fellow in the NIEHS Laboratory of Signal Transduction.)



Much like a teacher in her classroom, Lunn first laid down the ground rules for her session of the workshop, before engaging the attendees in various hands-on activities. (Photo courtesy of Steve McCaw)



Messer proudly showed her drawing of Sheldon Cooper, a theoretical physicist on the hit American sitcom “The Big Bang Theory.” Her witty presentation drew laughter from everyone in the auditorium. (Photo courtesy of Steve McCaw)



Left to right, teachers Abria Vodenichar of Bethany Community Middle School, Janet Brower of Weddington High School, and Matthew Boyd of Clinton City Schools were deep in discussion during one of the group activities. (Photo courtesy of Steve McCaw)



Lunn guided the attendees through the process of compiling the Report on Carcinogens, which provides information to the public on substances that have been shown to cause, or may result in, cancer. (Photo courtesy of Steve McCaw)



Along with sharing his research findings, Yao also filled his presentation with information relevant to the well-being of the community. In the midst of his wit and jokes, he drove home the solemn point that the arsenic level in some drinking water, today, is in fact sufficient to cause the phenotypes his group had observed in their laboratory mice. (Photo courtesy of Steve McCaw)



Left to right, Evelyn Lynge of the Onslow County Council for Women, Staton, and teacher Crystal Payton-Demry of Kinston High School listened attentively to Yao's presentation. Staton said the workshop provided him with many ideas and resources, and he looks forward to sharing them with his students (see text box). (Photo courtesy of Steve McCaw)

A day full of ideas on science learning

One of only four male participants of the Rx for Science Literacy workshop, teacher Brandon Staton of Thomasville High School appreciates the opportunity to learn more about how he can engage his students in biomedical research and promote diversity in the scientific workforce. "I think the workshop is awesome. Not only can we visit a science building where research is being done, but we also get some good lesson ideas that we can take back to our classrooms," he exclaimed.

Staton said that workshops like this are beneficial for all teachers who strive to educate their students about the importance of science. Although males often outnumber their female counterparts in scientific careers, Staton feels that more can be done to encourage female, as well as minority, students. "You don't see a lot of female and minority scientists. We, as teachers, are trying to change that," he commented. Staton said he plans to apply what he learned at the workshop in his classroom and to engage his students in the fun, yet educational, scientific activities.

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