

Brown SRP scientists partner with ATSDR to discuss nano design

By Sara Mishamandani

To share their nanomaterial research and foster collaboration with Agency for Toxic Substances and Disease Registry (ATSDR) scientists, Brown University Superfund Research Program (SRP) grantees [Robert Hurt, Ph.D.](http://research.brown.edu/myresearch/Robert_Hurt), (http://research.brown.edu/myresearch/Robert_Hurt) and [James Rice, Ph.D.](http://www.brown.edu/Departments/Engineering/Labs/Suuberg/2012-5%20James%20Rice%20CV.pdf), (<http://www.brown.edu/Departments/Engineering/Labs/Suuberg/2012-5%20James%20Rice%20CV.pdf>) spent Feb. 27 at ATSDR in Atlanta.

Nanomaterial design for environmental health

Hurt presented his NIEHS-funded nanomaterial research to an audience of ATSDR and U.S. Environmental Protection Agency (EPA) employees, as an invited speaker in a joint SRP/ATSDR seminar and networking series. Hurt discussed both the applications and implications of nanotechnology for environmental health, one of the themes of the Brown SRP, and the main focus of his [project](http://tools.niehs.nih.gov/srp/programs/Program_detail.cfm?Project_ID=P42ES136600104&FY=2012) (http://tools.niehs.nih.gov/srp/programs/Program_detail.cfm?Project_ID=P42ES136600104&FY=2012) and collaborative work with Brown SRP grantee [Agnes Kane, M.D., Ph.D.](http://research.brown.edu/myresearch/Agnes_Kane) (http://research.brown.edu/myresearch/Agnes_Kane)

“It is interesting to merge the two topics, because one sees the risk-benefit tradeoffs quite clearly,” said Hurt. “It also opens up the possibility to design technologies for safety up front, by considering risks at the early stage of development.”

Because of the potential health implications of nanomaterials, Hurt introduced the need for safety by design, or the reduction or elimination of hazard or exposure through intelligent, science-based synthesis and formulation. Brown scientists are working to understand the materials and molecular basis for nanotoxicity, by creating nanomaterials and testing their biological properties. By better understanding the relationship between nanomaterial structure and activity, the development of general rules for safe nanomaterial design is achievable.

Hurt also described several Brown SRP research projects related to nanomaterial design and safety, including his [research](http://pubs.acs.org/doi/full/10.1021/nl2045952) (<http://pubs.acs.org/doi/full/10.1021/nl2045952>) to synthesize filled nanosacks made of graphene, which have the potential to allow for controlled release and delivery of therapeutic agents in the body, as well as other biomedical applications.

Building partnerships and moving forward

Rice, the state agencies liaison in the Brown SRP Research Translation Core, joined in for a networking lunch and discussion session with ATSDR staff and some EPA employees. Rice and Hurt delved into their research ideas, answered general questions about their work, and learned about current research needs from ATSDR staff.

“Based on the feedback by ATSDR staff, the visit assured us that what we are doing at Brown SRP is valuable and relevant,” said Rice. “ATSDR and EPA employees also gave us some ideas that will help us formulate new research moving forward.”

Rice emphasized that the visit is starting conversation with other agencies and making it known that Brown SRP researchers are available as a resource. He also provided insights into ways to translate nanomaterial research effectively with ATSDR staff.

“It was a very informative visit for me, and my first time at ATSDR,” said Hurt. “It was also interesting to hear that the ATSDR is beginning to think about its role in the nanotechnology field.”

(Sara Mishamandani is a research and communication specialist for MDB Inc., a contractor for the NIEHS Superfund Research Program and Division of Extramural Research and Training.)



Hurt's talk attracted a large audience, from high-level ATSDR managers to staff scientists. (Photo courtesy of Jim Rice)



After the presentation ended, a long line of researchers stayed behind to continue discussions with Hurt, second from right, on nanomaterial design and safety. (Photo courtesy of Jim Rice)



After his talk, Hurt, left, also chatted with ATSDR Director Christopher Portier, Ph.D. (Photo courtesy of Jim Rice)

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