The North Carolina chapter of the Society of Toxicology (NCSOT) held its annual fall meeting Oct. 9 in the Rodbell Auditorium at NIEHS.

Chapter president and RTI International nanotoxicologist Christie Sayes, Ph.D., opened the meeting, which featured talks on hydrofracturing, coal fly ash, and e-cigarettes, by describing the professional responsibility of members to stay abreast of new developments and hot topics in toxicology.

“We need to educate ourselves and educate our peers on how we can have successful positive conversations with our friends, neighbors, and colleagues on these areas of toxicology and environmental health that are hitting the news,” Sayes stated.

Postdoctoral fellows honored for quality research

The President’s Awards for Research Competition (PARC) were also presented to postdoctoral fellows who submitted abstracts to the competition. The third place winners were Yong Ho Kim, Ph.D. and Rui Yu, Ph.D. The second place winner was Yongquan Lai, Ph.D., and first place went to Samantha Snow, Ph.D., who gave an oral presentation as part of her prize.

Snow discussed the connection between ozone exposures and the metabolic diseases diabetes and obesity. “A risk factor for metabolic disease includes ambient air pollution,” Snow said. “There is a link between fine particulate matter and prevalence of diabetes in America.”

Fracking, coal ash, and e-cigarettes — emerging public health concerns

University of Pennsylvania pharmacologist Trevor Penning, Ph.D., discussed hydraulic fracturing (hydrofracking). He focused on the rapid growth of hydrofracking in Pennsylvania, where the Marcellus Shale, a rich source of natural gas, takes up about half of the state’s land mass.

“I think this industry is here to stay, but it needs to be done safely,” said Penning. Health issues include water contamination from drilling and air pollution from diesel truck exhaust. “I think there are ways to improve the technology,” said Penning.

North Carolina State University environmental toxicologist David Buchwalter, Ph.D., explored the growing controversy over coal ash in North Carolina waterways.
“The more stuff we keep out of air, the more we are creating waste streams that pollute water,” he explained.

Buchwalter’s focus was the wet storage of ash. Once ash is released from power plants and makes contact with water, trace elements are released almost immediately, resulting in water contamination. “Arsenic and selenium are the two things we focus on the most in terms of ecological human health concerns,” said Buchwalter. He concluded that water contamination is preventable, but very costly to remediate.

University of North Carolina at Chapel Hill (UNC) respiratory biologist Ilona Jaspers, Ph.D. (http://www.med.unc.edu/tcors-lung/about-us/faculty/ilona-jaspers), discussed the health concerns of the increasingly popular e-cigarettes. “They [e-cigarettes] may very well be safer,” she said, as she compared them to traditional cigarettes, but e-cigarettes are not currently regulated by the U.S. Food and Drug Administration (FDA).

“We have absolutely no idea about flavor toxicity,” she said, pointing to the more than 7,000 flavors now on the market for e-cigarettes. Because little data are available, animal and in vitro models are needed to study the short- and long-term effects of using e-cigarettes.

NCSOT councilor and NIEHS postdoctoral fellow, Jason Stanko, Ph.D., secured sponsorship for the meeting from Charles River Laboratories, The Society of Toxicology, The Hamner Institutes for Health Sciences, and Burroughs Welcome Fund.

(Deacquinta Diggs, Ph.D., is a National Health and Environmental Effects Research Laboratory postdoctoral fellow at the U.S. Environmental Protection Agency in Research Triangle Park, North Carolina)
Jaspers focused her talk on the potential health concerns of e-cigarettes and the flavors people inhale along with nicotine. In addition to her NIEHS respiratory research, Jaspers is supported by a National Institutes of Health and a FDA Tobacco Centers of Regulatory Science grant. (Photo courtesy of Steve McCaw)

NCSOT vice president, MaryJane Selgrade, Ph.D., introduced the coal fly ash presentation. Buchwalter is funded by the Tennessee Valley Authority. (Photo courtesy of Steve McCaw)