

November 15th 2010 Joint ASM and Capital District Microscopy and Microanalysis Society

2010 Materials Poster & Micrograph Contest and Exhibition Russell Sage Dining Hall, RPI (Troy, NY)

* * *

Poster Viewing and Social Hour
5:00 - 6:30 pm

Hors d'oeuvres and Cash bar

Posters: 1st Place - \$200 2nd Place - \$100
Micrographs: 1st Place - \$100

Professional, Undergraduate, and Graduate Student Categories

Student winners receive complimentary registration to
the 2010 Local ASM Spring Symposium
and a one year membership in CDMMS

Contact Jim McGee or Karl Schmidt for an entry form:
jmcgee@nycap.rr.com, 518-395-4612 or
kds221@nyu.edu, 518-395-6637

Entry forms must be submitted by Friday, Nov. 5th

Dinner
6:30 - 8:30 pm

Fresh Mesclun Salad and Baked Potato (butter + sour cream)
Fresh Rolls and Butter

Rosemary Chicken Tuscany: Chicken breast with rosemary, garlic and
tomatoes.

- or -

Eggplant Rollard: Eggplant rollard stuffed with wild mushrooms and tofu,
ricotta and roasted plum tomato sauce and mozzarella.

Dessert
Coffee/Tea/Ice Water

Please register your dinner selection by noon on Friday, November 5th
by contacting Jim McGee at jmcgee@nycap.rr.com or 518-395-4612
\$20/professionals and guests; \$10/retirees; \$5/students

Guest Speaker 7:30 - 8:30 pm

“Microanalysis and the FBI’s Amerithrax Investigation of the 2001 Anthrax Attacks”

Paul Kotula, Sandia National Laboratories

The Anthrax attacks of 2001 in the US killed 5, sickened 22 others and caused a significant disruption of mail and other government facilities. Although the attack materials were for the most part recovered (*Bacillus Anthracis*) in powder form in sealed envelopes, the US Federal Bureau of Investigation (FBI) was unprepared to perform the needed forensic analyses on these bio-weapon materials. In particular, it was identified that microanalysis from the micro-to nano-scale was a key missing piece of their capabilities. As a result, Sandia was asked to analyze the materials from the attacks by early 2002 and we reached our general conclusions within a few months. We also analyzed over 200 samples of *B. anthracis* between 2002 and 2008 in an attempt to discern the method of manufacture of the attack materials.

This talk will describe Sandia’s involvement in the FBI’s investigation and in particular the power of microanalysis in answering several critical questions: Was the *Bacillus Anthracis* intentionally weaponized (i.e., contain an additive to make it disperse predictably) and were the materials from the attacks from the same source? In particular x-ray spectral imaging (in the SEM and STEM) combined with multivariate statistical analysis were used to answer these questions. Specimen preparation was both by conventional microtomy and focused ion beam (FIB) sectioning of spore preparations. In addition, significant advances in analytical throughput were achieved by modification of a FE-SEM with an annular Si-drift detector with a solid angle of over 1 steradian. STEM in SEM was then performed with this new hybrid instrument in order to analyze large numbers of spores in a short time.

Directions to Russell Sage Dining Hall at RPI:

Route 7 East: Cross the Collar City Bridge and follow signs for Hoosick Street. At the 4th traffic light, **turn right onto 15th Street**. Continue through the third traffic light on 15th Street. Signs for parking for the **armory parking lot will be on the left** immediately following the pedestrian bridge. No parking passes are needed after 5 p.m.

Walking from the armory parking lot (P1) to the Sage Dining Hall: Cross 15th street using the pedestrian bridge. The Sage Dining Hall will be on the right after passing the Quad buildings.

