

Wednesday, 16 June 2010

**Forensic Science:  
A Balance of Art and Science**

Science 275  
Wednesday  
8:30 a.m. – 12:00 p.m.

Program organizer: *Mary Carrabba* (Department of Chemistry, Southern Oregon University, Ashland, OR)

Program sponsored by the Pacific Division Section on General and Interdisciplinary Studies

Forensic science is the application of science to address legal inquiries related to civil or criminal activity in an effort to establish the authenticity of an artifact or event. In its application, forensic science typically utilizes many focused scientific disciplines, such as chemistry and biology. However, nonscientific disciplines, including art, are important elements of forensic analysis. This first session of a two-part symposium (see #2 below) will seek to explore the many ways art is encountered in the field of forensic science, from detailed images viewed through a light microscope to the tell-tale details in a piece of artwork suspected of being a forgery.

Session Chair: *Mary Carrabba*

**8:30** *Introductory Comments*

**8:35 66** *Ivory Identification at the National Fish and Wildlife Forensics Laboratory*, **MARGARET E. “COOKIE” SIMS** (National Fish and Wildlife Forensics Laboratory, Ashland, OR).

**9:20 67** *Amazonian Feather Art in the Forensic Context*, **PEPPER W. TRAIL** (National Fish and Wildlife Forensics Laboratory, Ashland, OR).

**9:45 BREAK**

**10:05 68** *Use of X-ray Microanalysis and Infrared Microspectroscopy for Multianalytical Characterization of the Walters Codex, an Ethiopian Manuscript*, **NATASJA A. SWARTZ and TAMI LASSETER CLARE** (Department of Chemistry, Portland State University, Portland, OR).

**10:30 69** *Uncovering Mysteries of a Chinese Burial Relic*, **TAMI LASSETER CLARE** (Department of Chemistry, Portland State University, Portland, OR).

**11:15 70** *The Art of Raman and Raman of Art: A Powerful Technique to Direct Art Restoration and the Identification of the Real and Fake*, **ANDREW WHITLEY** (HORIBA Scientific, Edison, NJ).

**Wildlife Forensics**

Science 275  
Wednesday

1:30 p.m. – 4:20 p.m.

Program organizer: Peter Schroeder (Department of Biology, Southern Oregon University, Ashland, OR)

Program sponsored by the Pacific Division section on Ecology, Organismal Biology, and Environmental Sciences

Ashland, Oregon, the host city of the 91<sup>st</sup> Annual AAASPD Meeting, is home to the only federal wildlife forensic laboratory in the world. This second session of a two-part symposium (see #1 above) will center on either wildlife forensic science as conducted in the U.S. National Fish and Wildlife Forensic Laboratory or selected presentations on different disciplines encountered in a more typical crime laboratory.

Session Chair: *Peter Schroeder*

**1:30** *Introductory Comments*

**1:40 71** *Numbering the Dead: Techniques for Determining the Minimum Number of Individuals Represented by Feathers and Other Bird Remains*, **PEPPER W. TRAIL** (National Fish and Wildlife Forensics Laboratory, Ashland, OR).

**2:20 72** *Forensic Identification of Black Coral*, **EDGARD ESPINOZA, MIKE SCANLAN, PAMELA McCLURE\*, and BARRY BAKER** (USFWS National Fish and Wildlife Forensics Laboratory, Ashland, OR).

**2:40 73** *Forensic Identification of Bald and Golden Eagles using Nuclear DNA Markers*, **MARY K. BURNHAM-CURTIS** (National Fish and Wildlife Forensics Laboratory, U.S. Fish and Wildlife Service, Ashland, OR).

**3:00 BREAK**

**3:20 74** *Utility of Short Tandem Repeat (STR) Markers for Forensic Application in Gemsbok (*Oryx gazella*)*, **BRIAN C. HAMLIN\*, STEVEN R. FAIN, JOE ZOLINE-BLACK and JAKE C. MINER** (USFWS NFWFL, Ashland, OR).

**3:40 75** *Species Identification of Ivory Source*, **ROBERT M. HOESCH\* and STEVEN R. FAIN** (U.S. Fish and Wildlife Forensics Laboratory, Ashland, OR).

**4:00 76** *Mitochondrial and Y-Chromosome Data Reveal Evidence for Historical Introgression of *Canis**

*lycaon* and *C. rufus* DNA into *C. latrans*, **DYAN J. STRAUGHAN\*** and **STEVEN R. FAIN** (USFWS National Fish and Wildlife Forensic Laboratory, Ashland,

***Defended by Poets: The Role of Art in Communicating Climate Change in Our National Parks***

Science 171

Wednesday

1:30 p.m. – 5:00 p.m.

Program organizers: *Leigh Welling* National Park Service Climate Change Response Program, Fort Collins, CO) and *Will Elder* (Golden Gate National Recreation Area, San Francisco, CA)

Sponsored by the Pacific Division Sections on Ecology, Organismal Biology, and Environmental Sciences, and General and Interdisciplinary Studies

The National Parks have been described as America's best idea. The pristine waterways, majestic mountains, and cultural treasures protected under the National Park Service (NPS) Organic Act are a legacy to leave our children and grandchildren. The beauty and splendor of the nation's natural and cultural landscapes have inspired music, poetry, paintings, and dance from artists such as U2, Ansel Adams, Emma Lazarus, and Amelia Rudolph. Art played a critical role in the establishment of the NPS. In 1872, the paintings of Thomas Moran were presented to Congress as testimony to the extraordinary wildlife and terrain of what would become Yellowstone National Park and inspired them to set aside a system of national parks in 1916. Artistic expression remains an integral component for connecting the American public with their National Parks and in communicating the scientific complexity and rich cultural value of these special places. It is one of the three critical elements that Aristotle believed is necessary for effective human communication: *logos* (logic and reason), *pathos* (appeal to the audience's emotions), and *ethos* (being of moral character). As scientists we understand that the parks, while protected, are not unimpaired. Global climate change in particular is challenging the ability of the NPS to carry out its mission of preserving nature unimpaired for the enjoyment of future generations. While some impacts of climate change have already been documented, we are only beginning to grasp the possible long-range consequences. These will likely include the loss of native species, arrival of new species and diseases, loss of coastal resources to rising water levels, an increase in ocean temperatures and acidification, and changes in snowpack, streamflow, and fire severity and frequency. What will this mean for how America perceives and experiences its parks? How can we appeal to the logic, emotion, and moral integrity of the American public to communicate science and inspire action in abating the consequences of climate change?

The speakers in this symposium will demonstrate examples

of how visual, audio, and emotive expression is being used in National Parks of the Pacific region to capture and communicate the science of climate, its impacts, and the risks to park values. Images, stories, and poems will be shared by park employees and friends from Golden Gate Natural Recreation Area, Crater Lake National Park, Yosemite National Park, and the NPS Climate Change Response Program Office. Examples will include the Artwork of Artist-In-Residence participants, a program that offers opportunities for artists, photographers, sculptors, performers, writers, composers, and craft artists to live and work in the 29 parks currently participating in this program. Other examples will be communication and outreach products developed through Research Learning Centers (RLCs) in the NPS such as the Crown of the Continent Research Learning Center and the Crater Lake Science and Learning Center. Discussions will explore how art and science can be used together to more effectively communicate the profound effects that climate change is having on our nation's heritage. By bringing together Aristotle's *logos* (logic of climate science), *pathos* (emotional connection to nature), and *ethos* (the integrity of interpretive rangers), the NPS is in a unique position to foster changes in science literacy and social awareness through art and creative media tools.

Moderator: *Leigh Welling*

**1:30** *Introductory Comments*

**1:35** *77 Harnessing the Communication Power of the National Parks to Address Climate Change*, **LEIGH WELLING** and **ANGIE RICHMAN** (Climate Change Response Program, National Park Service, Fort Collins, CO).

**2:05** *78 From Cool Globes to Kid's Songs – Can Art in the Parks Make Climate Change Connections?* **WILL ELDER<sup>1\*</sup>**, **LAURA CASTELINI<sup>1</sup>**, **CRISSEY FIELD CENTER STAFF<sup>2</sup>** and **GEORGE SU<sup>1</sup>** (<sup>1</sup>Golden Gate National Recreation Area, Fort Mason, San Francisco, CA; <sup>2</sup>Golden Gate National Parks Conservancy, Crissy Field Center, San Francisco, CA).

**2:35** *79 Crater Lake National Park: Translating the Wonder Through Art and Sound!* **LINDA HILLIGOSS** (Crater Lake Science and Learning Center, Southern Oregon University, Ashland, OR 97520).

**3:05** **BREAK**

**3:20** *80 Visualizing Climate Change: A Survey*, **WILL GEORGE<sup>1\*</sup>** and **MICHEAL LIANG<sup>2</sup>** (<sup>1</sup>Lewis and Clark National Historic Park, Astoria, OR; <sup>2</sup>North Cascades National Park and North Coast and Cascades Science Learning Network, Sedro-Woolley, WA).

## SYMPOSIA – Wednesday

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**3:50 81** *Painting the Lifespan of a Forest*, **JIM A. LUTZ** (College of the Environment, University of Washington, Seattle, WA).

**4:20** *Open Discussion on the Intersection of Art and Science in Climate Change Communication*