[AIMS] Arizona Imaging and Microanalysis Society

Using light, electrons, ions, electromagnetism and x-rays

AIMS Newsletter Volume 5, Issue 1

PRESIDENT'S NOTE

Doug Cromey, AIMS 2010-2011 President

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Happy New Year! As we begin this new year, I'd like to take a moment to look back and thank my Phoenix-based colleagues for putting on an excellent annual meeting in March of 2010. In particular, I'd like to thank AIMS Past-President Page Baluch, Treasurer Peter Crozier, Webmaster Charles Kazilek, and all the others who planned and hosted the 2010 AIMS conference at Arizona State University.

We would also like to thank our 2010 **Platinum** *(EDAX, EMS/Diatome, FEI, Gatan)*, **Gold** *(BioSyn, BioSynthesis, Boeckeler Instruments, Bruker AXS Microanalysis, Carl Zeiss, Hamamatsu, Hitachi, Invitrogen, JEOL, Leeds Precision Instruments, Leica microsystems, Marine Reef International, Mettler Toledo, Nikon Instruments, Oxford Instruments, Ranin, Southwest Precision Instruments, Thermo Fisher Scientific)* and **Silver** *(Anaspec, Olympus)* corporate sponsors. Without the generous financial support of these vendors, it would be extremely difficult to host these AIMS annual meetings.

The 2011 AIMS conference is scheduled for Thursday, March 24, 2011, at the University of Arizona, in the South Ballroom of the Memorial Student Union. We hope that you will join us to learn from, and network with, colleagues and vendors.

Registration for the conference is a two-step process. You must first register for membership online at http://www.azmicroscopy.org at the student, individual or

corporate level then register for free admission to the AIMS conference. Corporate members have the option to register at various sponsorship levels which includes a booth at the conference. Due to limited seating, only those registered for conference attendance will be admitted to the luncheon.

KUDOS

Congratulations to AIMS webmaster Chuck Kazilek, of Arizona State University, for his prize winning essay ("Got a Question? "Ask A Biologist") found in the November 26, 2010 edition of Science. The Ask a Biologist website can be found at: http://askabiologist.asu.edu/

Congratulations to AIMS Treasurer Dr. Peter Crozier, of Arizona State University, for his recent election as Director, Physical Sciences for the Microscopy Society of America.

Congratulations to AIMS Past President Dr. Supapan Seraphin, of the University of Arizona, for being awarded a "Ben's Bell" for her outreach work with undergraduate students. See: http://uanews.org/node/37122

Congratulations to AIMS Past Secretary Dr. Lynne Oland, of the University of Arizona, for being given the Outstanding Faculty Mentor award by the Undergraduate Biology Research Program (UBRP). http://uanews.org/node/37043

STUDENT AWARDS INFORMATION

We would like to invite any undergraduate or graduate student who uses microscopy to visualize their research to present their work at the AIMS conference poster session. We will have four $150 awards, thanks to our Platinum sponsors, for the best posters in the category of either physical or life sciences. We will need a final copy of your poster abstract (max 250-300 words) emailed to cromey@arizona.edu by March 1st to be included in the conference program. Below are the guidelines for the poster design and award evaluation.

Student Poster Guidelines:

1. Applicants must be or have been an undergraduate or graduate student during the academic year of the meeting.
2. The work must consist of original research authored by the participant and be co-authored by his/her advisor.
3. Each student will be given 2 minutes to present the most important aspects of their poster. It is suggested that the student prepare 1-2 PowerPoint slides to assist in the presentation.
4. The poster must be formatted to fit within an area of 60 inches wide by 40 inches high.
5. The poster should contain: title, author and affiliation, abstract, introduction, methods and materials, results, discussion, figures and legends, and references.

Award Evaluation Criteria:

The AIMS judges will use the following criteria to evaluate the student's poster and oral presentation:

1. Scientific merit
2. Soundness of the research proposal
3. Experimental design and thoroughness of investigation
4. Validation of conclusions
5. Application of microscopy/microanalysis in answering the experimental question
6. Quality of micrographs/images/data
7. Presentation
8. Response to questions
9. Diversity of instrumentation and technique
10. Clarity and quality of writing
11. Grammatical correctness

STUDENT TRAVEL SUPPORT

Out of town students wishing to apply for partial travel support to attend the meeting should contact AIMS President Doug Cromey at cromey@arizona.edu. The Society has set aside a small pool of funds to assist students. If you would like to request assistance, please do it sooner rather than later. It is on a first come, first served basis. We may request a letter of support from your faculty advisor and/or an AIMS member.

2011 AIMS CONFERENCE PROGRAM

University of Arizona, Memorial Student Union - South Ballroom

7:30 - 8:15	Check-In
8:15 - 8:30	Welcome: Doug Cromey- President AIMS
8:30 - 9:15	**Glen MacDonald, University of Washington** *Toxicity testing and High Content Screening of Compounds in Zebrafish*
9:15 - 10:00	**Jeff Rodriguez, University of Arizona** *Customized Techniques for Automated Image Analysis*
10:00 - 10:45	Coffee Break - Vendor demonstrations
10:45 - 11:30	**Neal R. Armstrong, University of Arizona** *Nanomaterials for the formation of fuels from sunlight: Semiconductor nanocrystals in and on polymer hosts*
11:30 - 1:00	Buffet Lunch
1:00 –2:00	**Warren Zipfel (Keynote speaker), Cornell University** *Optimizing in Vivo Multi-photon Imaging*
2:15 - 3:00	**Russ Witte, University of Arizona** *Special Effects with Light, Sound and Electricity for Biomedical Imaging*
3:00 - 3:30	Student Presentations
3:30 - 4:15	Break with Student Poster Session
4:15 - 5:00	Student Awards and Closing Remarks
5:00 - 5:45	Annual Society General Meeting (open to the membership)
6:00	No Host Dinner

SPEAKERS

Glen MacDonald is a Research Scientist at the University of Washington. He manages the Digital Microscopy Center, an instrumentation facility shared by the Center on Human Development and Disability, and the Virginia Merrill Bloedel Hearing Research Center, as well as the Microscopy and Imaging Core for the VM Bloedel Hearing Research Center. Mr. MacDonald has been a faculty member at the Live Cell Microscopy course held at the University of British Columbia for 15 years. He has a great deal of experience with light microscopy.

His presentation will deal with a screen using a multi-cellular organism that does not work well with high throughput screening instruments. The presentation is entitled *Toxicity testing and High Content Screening of Compounds in Zebrafish.*

Warren Zipfel is a Professor of Biomedical Engineering at Cornell University. He is the director of the Developmental Resource for Biophysical Imaging and Optoelectronics (DRBIO, http://www.drbio.cornell.edu/), a nationally funded resource for the "creation and optimization of quantitative optical instrumentation for biophysical and biomedical research, specifically multiphoton laser-scanning microscopy for biological research and biomedical imaging." Dr. Zipfel has been a long-time colleague of multiphoton pioneer, Dr. Watt Webb. The DRBIO laboratory is currently working on several projects, including intravital multiphoton, developing novel femtosecond lasers, endoscopic & clinical imaging, and applications of Fluorescence Correlation Spectroscopy.

Dr. Zipfel's presentation is entitled *Optimizing in Vivo Multiphoton Imaging.*

Neal Armstrong is a Professor of Chemistry and Optical Sciences at the University of Arizona. Dr. Armstrong's research is involved with the interface science of materials which lead to new solar electric and solar fuel energy conversion technologies. These materials include thin-film molecular semiconductors (polymers and small molecules), semiconductor nanocrystals (quantum dots), and the contacts which allow them to harvest energy efficiently. In addition to his several other honors, he was recently named a 2011 member of the UA College of Sciences' Galileo Circle of Fellows.

Dr. Armstrong's presentation is entitled: *Nanomaterials for the formation of fuels from sunlight: Semiconductor nanocrystals in and on polymer hosts*

Russell Witte is an assistant professor of radiology, optical sciences, and biomedical engineering at the University of Arizona. His Experimental Ultrasound and Neural Imaging Laboratory develops new methods using a combination of light, ultrasound and radio frequencies that potentially affect a variety of medical disorders from epilepsy to cancer.

Dr. Witte's presentation is entitled *Special Effects with Light, Sound and Electricity for Biomedical Imaging.*

Jeff Rodriguez is an Associate Professor and Director of Graduate Studies for the Department of Electrical & Computer Engineering at the University of Arizona. In addition Dr. Rodriguez is the Director of the Signal and Image Laboratory (http://www.ece.arizona.edu/~sail), which is involved in research into signal/image/video processing and analysis, combined with pattern recognition techniques, to develop novel solutions to interdisciplinary problems in biology, medicine, homeland security, and consumer electronics.

Dr. Rodriguez' presentation is entitled *Customized Techniques for Automated Image Analysis.*

MSA 2011 ANNUAL MEETING

http://www.microscopy.org/mandm/2011/

Fellow Microscopists/Microanalysts, Colleagues, Students, and Friends,

The M&M conference is the premier meeting, spanning the physical, life and analytical sciences, which brings together delegates from around the globe who report on the latest work and advances in microscopy and microanalysis. Our Program Committee has once again put together a compelling suite of over 30 symposia reflecting the current state-of-the-art, as well as the innovative and emerging fields of research. Whether your interest is in nanotechnology or traditional metallurgy, biology or clinical diagnosis, or the growing field of multifunctional hard/soft materials, you will find a fascinating venue. In addition to

our thematic symposia, we also feature a range of educational opportunities ranging from "Back to the Basics" tutorials, to in-depth, multi-day intensive workshops, as well as the chance to network with your peers.

Our meeting will begin with a plenary session featuring Prof. Stefan Hell, who will be discussing super-resolution microscopy. We will also honor the winners of our major societal awards for distinguished scientists, professional technical achievement as well as student and post-graduate scholars.

Complementing the symposia is one of the largest exhibitions of microscopy/microanalysis instrumentation and resources in the world, which includes access to our very popular evening vendor tutorials. In addition, the traditional Sunday Short Courses will be joined this year by a Pre-Meeting Specialist Workshop on Opportunities, Artifacts and Interpretation of Aberration-Corrected Electron Microscopy Data.

We encourage all of you, whether newcomers or veterans of M&M, to submit a paper on your latest research for presentation in Nashville. We are looking forward to greeting you at our opening Sunday Reception in the Music City for what we are sure will be an exciting and educational conference for all.

Sincerely,
Nestor J. Zaluzec, President, Microscopy Society of America
John Henry Scott, President, Microbeam Analysis Society
Nat Saenz, President, International Metallographic Society

2011 AIMS SPONSORS

AIMS would like to acknowledge the generous support of the **Microscopy Society of America** for this meeting.

AIMS would also like to thank the following individuals and companies who have agreed to be meeting sponsors and corporate members. Without their generosity, it would be very difficult to hold our annual meeting. This list includes the companies that had indicated their sponsorship before the newsletter was sent out. There may well be more by the date of the meeting.

Platinum Sponsors

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http://www.swpinet.com/