



NEWSLETTER

BMD Fall 2008

We hope to see you in Reno (November 2008)



Sheraton Keauhou Bay Resort, Kona, HI, home of the MARC VIII conference

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Welcome to the Fall Newsletter of the Biology and Medicine Division! The following pages provide an overview of the Biology and Medicine Division's upcoming activities and other areas of potential interest to our members. We also are working to update the website. Your feedback is greatly appreciated. Contents include:

1. Chairman's Message
2. Program Committee Report
3. Upcoming and Recent Conferences
4. ICAA Young Scientist Award Report

We hope you find the following information useful and we encourage you to get involved. There are many opportunities for involvement including the executive committee, developing ANS position papers, review of papers for the national meetings, and participation at national meetings by giving papers or helping to organize technical sessions.

Sincerely,

Biology and Medicine Executive Committee

<http://bmd.ans.org>



CHAIRMAN'S MESSAGE

Greetings from your division Chair and Chair Elect. We decided on a joint message for this newsletter to provide a consolidated view of the state of the Biology and Medicine Division. This year the BMD has attempted to initiate several new approaches to service to our membership.

First, we were the primary sponsor for the extremely successful embedded topical meeting, Isotopes for Medicine and Industry, held in Anaheim in June. This was our first experience with an embedded topical and we owe BMD Executive Board member, Ralph Butler, a huge thank-you for his work as Technical Program Chair of the meeting. The meeting's sessions were very well attended and provided an excellent review of the current status of the field.

At the same meeting, we offered, also for the first time, a tutorial session on activation analysis. Dick Lindstrom, Rolf Zeisler and Dennis James provided some of the nuts-and-bolts details of activation analysis methodology, geared towards the student or young scientist members. It turned out that many of our attendees and interested participants were established scientists who needed the information to evaluate activation analysis for their individual needs.

In addition to these changes in our methods of session development, we are continually endeavoring to expand the breadth of participation of the division into the medical community. In particular, our association with the Computational Medical Physics Working Group, is a bright focus, not only for programmatic development, but hopefully for identifying new enthusiastic leadership for the division's fu-

ture. The CMPWG is a well organized unit, recognized by the society under the authority of both the Biology and Medicine and the Math and Computational Divisions, which is already planning the third in a series of workshops on the computational benchmarks on phantoms and detectors and development of new approaches to clinical treatment. It is our view, that the CMPWG embodies many of the unique properties of our division and therefore its importance to the society.

The membership should be aware that the BMD is rapidly transforming, under the direction of our new Program Chair (and past-Division Chair) from a "once-a-year" division to routinely presenting sessions at both national meetings each year. Due to this and other improvements, our division is experiencing a rise in "health" as monitored by the society based on our division metrics and participation in Society activities.

Of course, all of these activities are meant to be a service to you, the Division member. We hope that the actions of your division Executive Board and officers are in keeping with your wishes; but, of course, we can only know that if communication between the division leadership and the membership thrives. We urgently request your continued participation in future BMD programs and, for those of you who might want to take a more active role, we have lots of committee positions just waiting for you. Please contact us!

Elisabete de Nadai Fernandes, Chair
Dennis James, Vice Chair/Chair-Elect

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PROGRAM COMMITTEE REPORT

In June, the Division initiated new programmatic events at the 2008 Annual Meeting in Anaheim. BMD provided primary sponsorship for the embedded topical "Isotopes for Medicine and Industry". The embedded meeting showcased our efforts in June. General Chair Wynn A. Volkert, University of Missouri-Columbia, and Technical Program Chair Ralph A. Butler, University of Missouri-Columbia, had put together a 3-day program with one opening plenary session (Radioisotopes—The 21st Century) and 12 technical parallel sessions covering isotope production and distribution, industrial applications, applications in medical diagnostics and therapy, as well as manpower and education. This well-attended topical meeting was a success covering core interests of BMD and IRD in today's aspects and future development of isotope technology.

We also sponsored our first tutorial session Neutron Activation Analysis – Status after Five Decades. The intent was to provide a comprehensive discussion of the basics of the method, complementary techniques which have been derived to enhance either the sensitivity or applicability of the method, and to take a realistic look at the place activation analysis holds in today's analytical world. The tutorial aimed at refreshing knowledge of professionals in the nuclear science and applications domain and providing a glance at the synergistic opportunities for young professionals and older hands alike to integrate activation analysis into today's methods and practice. Additional special

sessions for the Annual Meeting included studies in Radiochemical Separations and Neutron Depth Profiling.

The 2008 Winter Meeting will be held in Reno, Nevada in November. For that meeting we have organized special sessions on Advances and Issues in Computational Phantom Modeling in collaboration with the Computational Medical Physics Working Group with five papers, and (Anti) Coincidence Instruments and Software for Activation Analysis and Other Applications with ten papers scheduled.

The eighth installment of the ANS topical meeting, Methods and Applications of Radiochemistry (MARC-VIII) will be held April 5 - 10, 2009, in Kona, HI. For information and call for papers please refer to <http://altmine.mie.uc.edu/nuclear/marc/viii.shtml>

For the next ANS Annual Meeting in Atlanta, June 14 - 18, 2009, BMD and IRD are sponsoring sessions on nuclear imaging methods and technology. BMD is pleased to announce a special session on Nuclear-Based Imaging for Medical Diagnosis and Therapy organized by Bruce Smith (bruce.smith@utsa.edu), University of Texas San Antonio, TX, and Nicholas Spyrou (N.Spyrou@surrey.ac.uk), University of Surrey, UK.

The session will cover methods and applications of nuclear based imaging techniques in research as well as clinical environments. Imaging techniques are undergoing intense development as desirable replacement for invasive techniques. They



are expanding from anatomical and functional imaging to molecular imaging, where significant contribution is expected to emerge from nuclear-based methods. In addition to diagnosis and disease staging, there is escalating interest in imaging-during-therapy, where the patient's response to a given treatment regime is continuously evaluated and fine-tuned based on the data feedback. In addition to single- and dual-modality scanners, systems integrating a plural combination of imaging modalities are emerging. The session is expected to cover recent advances in research, implementation in the clinic, current trends as well as future directions and provide a forum for our expanding membership in this field. The session organizers (or the Program Chair) would be pleased to hear from our membership about contributions to this session and planned attendance.

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UPCOMING CONFERENCES AND EMBEDDED TOPICAL MEETINGS

MARC VIII-METHODS AND APPLICATIONS OF RADIOANALYTICAL CHEMISTRY

APRIL 5-10, 2009

The Biology and Medicine Division along with the Isotopes and Radiation Division and Northern California section of the ANS will host the 8th International Conference on Methods and Applications of Radioanalytical Chemistry. The conference will be held April 5-11, 2009 in Kona, HI. Over 250 scientists typically attend the meeting. Additional details of the conference and proceedings may be found at the conference website: <http://altmine.mie.uc.edu/nuclear/marc/index.shtml>

A major change in the conference is that the Sheraton Keauhou Bay Resort in Kona, HI will be the venue and serve as the conference hotel. Please contact Sam Glover (sam.glover@uc.edu) or Steve LaMont (lamont@lanl.gov) with any questions regarding the MARC conference.

Abstracts are due November 15, 2008.

Mahalo,

MARC VIII Organizing Committee

NAMLS-9, A BIG SUCCESS!

The 9th International Conference on Nuclear Analytical Methods in the Life Sciences was convened in Lisbon, Portugal from September 7 to 12, 2008. The conference was organized and hosted by Professor Maria do Carmo Freitas, Instituto Tecnológico e Nuclear (ITN). The conference series is held under the authority of the NAMLS International Scientific Committee. While the conference was not officially an ANS sponsored meeting, the subject matter and the history of the series ties it to the Biology and Medicine Division. Several of your BMD officers and executive committee members participated in the meeting and can report that the development of nuclear methods and their applica-

tions to a wide variety of biological and medical problems seems to be as active as ever. Some 134 participants representing 28 countries participated. Sixty-nine oral presentations were given as well as many poster papers. One hundred papers were submitted for publication as meeting transactions to the Journal of Radioanalytical and Nuclear Chemistry. The topics covered included leading edge methodology in medical use of isotopes, in-vivo body composition measurements, nano-material applications in imaging and therapy, applications to agriculture and just about every sub-field of the life sciences. We hope to incorporate similar discussions on the latest work in BMD sessions at future ANS meetings.



SUMMARY OF THE 2008 ANS STUDENT CONFERENCE

The 2008 ANS National Student Conference was held from February 28 to March 1 at Texas A&M University in College Station. The event evidenced the growing popularity of the annual student conference and attracted world-class speakers, international participation, and nearly one-quarter of the entire U.S. nuclear student community.

The conference was host to a record 375 students and 175 professionals from 16 universities and 40 companies and organizations. Also noteworthy were the record 170 student research presentations. Guest speakers included Dr. Mohamed ElBaradei via video (Nobel Peace Prize Lauriat and Director General, IAEA), Dr. Patrick Moore (Co-Founder, Greenpeace), Dr. Anne-Marie Choho (Vice President for Engineering and Construction of the Plants sector, AREVA NP), Mr. Luis A. Reyes (Executive Director for Operations, NRC), and Mr. James J. Sheppard (President and CEO, South Texas Project Nuclear Operation Company). Unique to the 2008 conference was the INMM Embedded Topical, hosted by the TAMU Chapter of the Institute of Nuclear Materials Management.

The meals and social events were, as usual, a wonderful time for students to meet and reconnect with their friends and classmates from across the country. This year's conference hosted three social events (as compared to the typical single

event). After the opening session on Thursday evening, buses took participants to the Wolf Pen Creek entertainment center for bowling, laser tag, and socialization. On Friday night, each dinner table formed a team to build a "perpetual" motion machine in the Engineering Design Challenge (the winning team's machine ran for over 20 minutes). At the final social, held after the Saturday evening awards dinner, conference participants enjoyed music provided by two bands and students and professionals were seen dancing and talking late into the night. On Thursday, prior to the start of the conference, participants were invited to play in a golf tournament. A post-conference trip to the NASA Johnson Space Center in Houston was given on Sunday.

Of particular interest to the Biology & Medicine division were the six student papers and keynote presented in the BMD track. Dr. John Ford and Dr. Warren Reece of TAMU judged the sessions and selected Michael Shannon's paper as the outstanding presentation and John Oliver Perry's as the runner-up. (As no undergraduates presented in the track, only graduate awards were given.) Thanks go to the BMD for their generous sponsorship of award money for the outstanding papers (\$250 to the outstanding presentation and \$125 to the runner up).

Thanks to financial support from the ANS and its professional divisions,



private industry, and federal laboratories and organizations, the conference committee was able to provide reimbursements for a portion of the travel expenses paid by each student.

Three universities submitted conference proposals in hopes of hosting the next conference. The University of Florida was chosen as the location of the 2009 ANS National Student Conference and we look forward to the event in Gainesville.

For more information contact:

Jennifer Koop Wagner

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Biology & Medicine Track Presentations

- Sarmadi Almecci, *Spectroscopic Gamma-Ray Phantom*, Georgetown University
- John Oliver Perry, *Innovative Radiation Treatment Planning Tool based on MCNP5 and Python*, Purdue University
- Manuel Szejnberg Gonzalves-Carralves, *Novel MCNPX-based Dosimetry of a Liver Exposed to Y-90 Microspheres*, Purdue University
- Shannon Prentice Voss, *Detector Photon Response, Absorbed Dose and Their applications to Rapid Triage During an RDD Event*, Texas A&M University
- Kevin A. Makinson, *Proton Irradiation of Malignant Melanoma in the Choroid Using Monte Carlo Modeling*, Oregon State University
- Michael P. Shannon, *The Application of Biokinetic Modeling in Assaying Internal Contamination*, Georgia Tech University
- Keynote *Medical Advances at the Nuclear Science Center* by Warren D. Reece, Ph.D., Director of the Texas A&M University Nuclear Science Center

Those interested in viewing the full conference program may do so here:

http://ans.tamu.edu/conference/documents/2008_A&M_Conference_Program.pdf



UPDATE ON POSITION STATEMENTS

The Biology and Medicine Division is currently responsible for updating two position statements for the ANS. These include (1) the health effects of low level radiation, (2) Food Irradiation and (3) radon. Several BMD members are beginning to work on updating these position statements with the most current references and best available science. If you would be interested in working on developing one of these statements, please contact Sam Glover (sam.glover@uc.edu) to express your interest. Currently available position statements are available on the American Nuclear Society website.

Contact: Sam Glover, e-mail:
sam.glover@uc.edu

ICAA YOUNG SCIENTIST AWARD 2008

Established in 2007 by the International Committee on Activation Analysis / Modern Trends in Activation Analysis (ICAA / MTAA), the ICAA Young Scientist Award (YSA) is given in recognition of an excellent contribution to and early career achievements in the fields of radioactivation analysis methodology and applications, development of radiochemical separation procedures and analytical schemes, radiotracer applications to analysis such as substoichiometric isotopic dilution analysis, automated systems and computerized systems, and widespread fields of application. This Award is international in scope and proposals as well as sponsorship are being sought by the ICAA from the international community. The award panel had selected Dr. Diandou Xu, Institute of High Energy Physics, Beijing, as recipient of the first award in 2007.

The call for applications for the 2008 YSA was issued in December 2007. The members of the ANS BMD and IRD divisions were informed via newsletter and the respective web sites. An additional announcement was made to the ANS Young Members Group. Three applications were received by the deadline of

March 1, 2008. Based on the evaluations by the 5-member award panel, Professor A. Chatt, ICAA/MTAA President, announced Dr. Raghunath Acharya of the Bhabha Atomic Research Centre, Mumbai, India, as winner of the Award in April 2008. The BMD executive committee congratulates Dr. Acharya to his accomplishments.

The award was presented to Dr. Acharya at the 9th International Conference on Nuclear Analytical Methods (NAMLS-9) held in Lisbon, Portugal, 7 - 12 September 2008. Dr. Acharya presented his award lecture on "Prompt gamma-ray neutron activation analysis methodology for determination of boron concentrations at major to trace levels in different samples" in the first plenary session of NAMLS-9.

The ICAA is indebted to the financial sponsors of the 2007 and 2008 awards: the ANS Biology and Medicine Division and Isotopes and Radiation Division, the Reactor Institute Delft, the Center for Chemical Characterization and Analysis of the Texas A&M University, and the organizers of MTAA-12 and NAMLS-9. BMD will continue to promote this premier award for young scientists.



A self-test for the reader:

Are you a member of BMD? Did you attend the ANS Annual Meeting, any of this year's BMD-sponsored sessions? Do you plan to attend any of the future sessions? Is the content of these sessions relevant to you? Do they represent what you expect from ANS?

If your answer is yes in more than one case, come to our next Program Meeting and/or Division Meeting Sunday Nov. 9, 2008 in Reno and help us to do even more on your behalf. You are also invited to propose and organize a session for a future ANS meeting.

If your answer is no in more than one case, then please let us know what we can do for you. Make your problem known to the Program Chair (rolf.zeisler@nist.gov) and/or the Division Chair Elisabete Fernandes (lis@cena.usp.br), or best attend our next Program Meeting and/or Division Meeting. You also are invited to become a candidate for the BMD Executive Committee.
