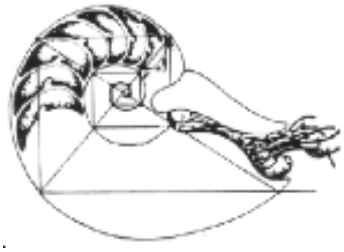

# Mathematical Biology Newsletter

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**The Society for Mathematical Biology**
http://www.smb.org

*Edited by: Holly Gaff*


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## The Joint Annual Meetings of the Society for Mathematical Biology and the Japanese Society for Mathematical Biology

*San Jose, California, USA*
*July 31-August 3, 2007*

The themes for the meeting will include: Ecology, Evolution, Conservation Biology, Resource Management, Epidemiology, Developmental Biology, Pattern Formation, Tumor growth and cancer therapy, Cell dynamics, and Mathematical Biology Undergraduate Education.

Plenary Speakers will include H.T. Banks, North Carolina State University; Helen Byrne, University of Nottingham; Carlos Castillo-Chavez, Arizona State University; Gerda de Vries, University of Alberta; Louis Gross, University of Tennessee; Alan Hastings, University of California, Davis; Akira Sasaki, Kyushu University; Yasuhiro Takeuchi, Shizuoka University

The meeting will be held in conjunction with MathFest, the summer meeting of the Mathematical Association of America, which will take place at the same hotel, August 3-5, 2007. Attendees of the SMB meeting may register for MathFest at the MAA member rate. Additionally, the meeting will be followed by the Joint Annual Meeting of the Ecological Society of America and the Society for Ecological Restoration International August 5-10, also in San Jose, at the San Jose Convention Center.

**Call for submissions**

- Contributed talk proposals will be accepted from March 15 until May 15.
- Poster proposals will be accepted from June 1 until July 15.
- Registration is now open.

All details at www.smb.org/meetings

Letter from the President

Dear SMB Colleagues,

Welcome to the May 2007 issue of the Newsletter.

A few weeks ago I attended a seminar on circle maps where period-two solutions played an important role in the dynamics. Looking forward a few months, it will be time for a new "period-two" solution to begin for The Society as Avner Friedman takes over as President. Of course, this brings us to the Society's Annual Meeting, which this year is being held jointly with The Japanese Society for Mathematical Biology (JSMB). It is also being held jointly with MathFest, the summer meeting of the Mathematical Association of America and promises to be an exciting and varied program. For those who have the energy (and the funding!) the meeting will be followed by the Joint Annual Meeting of the Ecological Society of America (ESA) and the Society for Ecological Restoration International.

The SMB/JSMB Meeting takes place in The Farimont Hotel, San Jose, California, 31 July – 3 August, with the ESA/SERI meeting taking place 5-10 August in the San Jose Convention Centre, San Jose.

Full details of the SMB/JSMB meeting are available at the conference web-site: abacus.bates.edu/~mgreer/smb_jsmb_2007/ with registration details available at: abacus.bates.edu/~mgreer/smb_jsmb_2007/registration.html (please note the early registration deadline of 3 July).

Once again, one aspect of the meeting I would particularly like to draw your attention to is the Society's highly successful **Mentoring Program** where a junior scientist (mentee) is teamed up with a senior scientist (mentor). On behalf of The Society I would like to thank Dr. Caroline Bampfylde of the University of Alberta for taking over the running of the mentoring program and also to sincerely thank Dr. Gerda de Vries for all her efforts as the "past organiser" of this program.

I would encourage potential mentors and mentees to sign up and participate in the Mentoring Program this year. To do this, please contact the coordinator of the mentoring program, Dr. Caroline Bampfylde, cbampfylde@math.ualberta.ca, by **June 4**. More detailed information about the Mentoring Program can be found at the Society's website: www.smb.org/meetings/mentoring.shtml

I look forward to seeing many of you in San Jose in July/August.

SMB President

## Simon Levin named 2007 AIBS Distinguished Scientist Award Winner

Each year the American Institute of Biological Sciences (AIBS) presents awards to eminent individuals or groups for outstanding contributions to the biological sciences.

Simon A. Levin received the Distinguished Scientist Award, presented to individuals who have made significant scientific contributions to the biological sciences. Levin is the George M. Moffett Professor of Biology and the director of the Center for Biocomplexity at Princeton University. He is also a prolific author whose contributions have helped shape modern ecology. His research on the loss of biodiversity due to human impact has led to new methods of environmental protection. Among the many awards and honors that mark his distinguished career are the 2005 Kyoto Prize in Basic Sciences and the 2004 Heineken Prize for Environmental Sciences.

The 2006 Distinguished Scientist Award was given to Louis J. Gross.

## TIMBER 2006 Conference for Undergraduate Research

*Eric Marland and René Salinas*
*Appalachian State University*

November 3-4, 2006 Appalachian State University played host to TIMBER (The Institute for Mathematical Biology Education and Research) 2006, a two- day conference focusing on mathematical/computational biology undergraduate research. The venue was the Broyhill Inn and Conference Center at the top of the Appalachian Campus in the mountains of North Carolina. Attendees included 60 participants (32 students) representing 15 institutions from as far away as Missouri and Ohio.

The conference began Friday night with an outstanding plenary given by Duke University's Dean Urban who spoke on the graph theoretic applications to landscape ecology. The talk, while highlighting Urban's research, provided an accessible introduction to some of the big issues in landscape ecology, a glimpse into some open problems, and some applications of graph theoretic approaches to biology. A reception followed where students and faculty were able to meet the speaker and sample some of the fantastic treats prepared by the Inn staff.

The conference continued Saturday morning with pedagogical talks detailing ongoing projects at ETSU, NCA&T State, and the Shodor Education Foundation. Following these reports, a panel discussion moderated by Eric Marland outlined how to prepare for graduate studies in mathematical or computational biology. Panelists were Cynthia Peterson from the University of Tennessee, Charlie Smith from North Carolina State University, Tim Elston from the University of North Carolina at Chapel Hill, and Steve Seagle from Appalachian State University.

An informal lunch allowed for continuing discussions between students and faculty. The afternoon was spent hearing a variety of fantastic talks by undergraduate students. In all, 11 students made presentations, making for a successful conference.

TIMBER 2006 represents a significant increase in participation from 2005, partly through the support of the SMB and the MAA (Mathematical Association of America). For 2007, we look forward to another great conference, with more undergraduate presentations. We also will invite graduate students to come and participate in a Saturday morning program for the undergraduate students, giving them an idea of the types of research and programs available.

The conference is an ideal place for undergraduates to present their research in mathematical and computational biology to a friendly and knowledgeable audience in a small comfortable setting in the mountains. These students may also find a potential graduate advisor at this conference. It also provides graduate students the opportunity to give a low stress talk prior to the primary interviewing season, or perhaps meet representatives from a smaller school interested in starting a program in mathematical biology. Finally, faculty will find this conference an opportunity to communicate about trends in undergraduate research and pedagogical innovations in mathematical and computational biology. We look forward to seeing you next year for TIMBER 2007, November 2-3, 2007.

For more information see www1.appstate.edu/~marland/TIMBER

Dr. Greg Goins of North Carolina A&T State University is describing their Undergraduate BioMath program A Biomathematical Learning Enhancement Network for Diversity (BLEND) at TIMBER 2007

## Open Student and Postdoctoral Positions

**Postdoc: Computational Neuroscience, OIST**
The Computational Neuroscience Unit at the Okinawa Institute of Science and Technology (http://www.oist.jp), Japan is looking for postdocs to work on reaction-diffusion modeling of signaling pathways involved in synaptic plasticity and cellular modeling of Purkinje cells with an emphasis on channel homeostasis. Send curriculum vitae, summary of previous experience and research interests and the names of three referees to Prof. Erik De Schutter at erik@oist.jp.

**Postdoc: Biomedical Image Modeling**
A postdoctoral position is available at the Department of Radiology, Washington University School of Medicine in St. Louis. The successful candidate will be engaged in mathematical modeling and/or statistical modeling of biomedical image data (e.g. PET, CT, MRI) as well as in the development of state-of-the art image processing applications. Interested individuals should send a CV and a brief statement of research goals to shoghik@wustl.edu.

**Postdoc: Biomathematics, William and Mary**
The Department of Biology at the College of William and Mary seeks applications for a two year Visiting Assistant Professor postdoctoral position in biomathematics. The candidate should be trained in modeling approaches to population ecology and evolution and exhibit a sincere commitment to undergraduate education and research. More information about recent biomathematics projects and faculty involved with this group can be found at http://jpswad.people.wm.edu/iibbs/home.htm

**Student: University of Idaho**
A graduate research assistantship in biogeography, conservation science, and climate change at the University of Idaho is available to study climate change impacts on species distributions in the United States. The project will utilize regional GAP analyses and climate change scenarios to quantify geographic patterns of change and identify species and areas of concern. Interested persons should apply to the UI Department of Geography; applications are currently being accepted. Informal inquires are strongly encouraged; contact Dr. Jeffrey Hicke (jhicke@uidaho.edu).

**Student: Math & Biomedical Engineering**
PhD-student Positions in Mathematical and Biomedical Engineering are available at Katholieke Universiteit, Leuven, Belgium. Three PhD positions are for the following projects: 1. Numerical algorithms for tensor decompositions and tensor based signal processing with applications in epileptic seizure detection; 2. Advanced signal processing for data fusion of multimodal information acquired simultaneously (such as EEG, ECG, EMG, EOG, (functional) MR Imaging, PET and SPECT) with applications in neonatal intensive care monitoring; 3. Integration of EEG and functional MR Imaging with applications in monitoring cognitive disorders in patients with MS and ADHD. To apply, please send a CV and a cover letter before June 15, 2007 to Prof. Sabine Van Huffel (sabine.vanhuffel@esat.kuleuven.be).

**Postdoc: Neuroscience**
A postdoctoral fellow is available in computational/theoretical neuroscience to join the laboratories of Jonathan Victor and Nicholas Schiff in the Department of Neurology and Neuroscience at the Weill Medical College of Cornell University (in New York City). This is a new position to undertake innovative data-driven modeling of brain dynamics in humans with chronic but fluctuating impairment of consciousness. The interested candidate should send email to jdvicto@med.cornell.edu.

**Postdoc: Evolutionary Epidemiology**
Applications are sought for two postdoctoral positions in the mathematical evolutionary epidemiology of influenza, in the labs of Drs. Troy Day, Jonathan Dushoff, David Earn, and Junling Ma. Both positions will involve developing and analyzing mathematical and simulation models of influenza evolution. To apply, send a current curriculum vitae and arrange to have two letters of reference sent to Dr. Troy Day at tday@mast.queensu.ca.

**Postdoc, PhD student: University of Amsterdam**
The Computational Science Section at the University of Amsterdam has a vacancy for a postdoc and a PhD student for the project "A visual exploration environment for analyzing gene regulation in developmental processes (VEARD)". Further information can be obtained from: Dr Jaap A. Kaandorp. jaapk@science.uva.nl. Closing date is 31 May 2007. http://www.uva.nl/vacatures