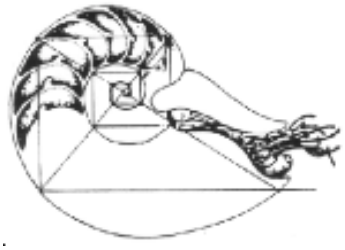

Mathematical Biology Newsletter

Volume 14 #2 – May 2001

The Society for Mathematical Biology

Edited by: Elizabeth H. Scholl

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Dear SMB member:

Preparations are continuing for our joint Annual Meeting with the Japanese Society this summer in Hilo. Alex Mogilner, as chief organizer representing SMB, has been doing an outstanding job, and the meeting looks like it will be particularly exciting. The lineup both of plenary speakers and mini-symposia is very promising, and there are sure to be very good contributed papers as well. Don't miss out on a truly exciting opportunity.

I just returned from a trip that raised several interesting issues I would like to share with you. The first is one that needs your help to further the goals of our society. While at NSF in Washington, I had the chance to talk with Mike Steuerwalt, who is in the Applied Mathematics Program. NSF is still searching for an individual to play a leadership role in the funding of mathematical biology by serving as a 'rotator' at NSF in the Applied Mathematics Program. I have heard (and seen) that this can be an exciting opportunity for the right individual - someone with sufficient breadth and knowledge and the right kinds of skills to work with others - and you will have a real chance to affect the direction of research in mathematical biology. If you are interested, or if you know of someone else who might be interested and are willing to provide this name, phone or e-mail Mike Steuerwalt at (703) 292-4860 or msteuerw@nsf.gov. Ultimately, the support of mathematical biology at NSF and other federal agencies is not a question of them, but a question of us.

Second, I had the opportunity to participate in the First Brazilian Symposium on Mathematical and Computational Biology (see http://www.biomat.org for more information). This is a group that is in the early stages of forming a scientific society, and they have already planned their second symposium. I would urge any of you who have the opportunity to work with these wonderful scientists to do so in the future. Our society has supported efforts throughout the world in the past, and by continuing to do so will help further the study of mathematical biology throughout the world.

Finally, I must report with regret that the editor of our journal, Lee Segel, has decided that he has reached an age where he would like to retire. Lee has overseen the tremendous growth of our journal in many ways, and he will be almost impossible to replace. The committee given this difficult task is headed by Philip Maini (maini@maths.ox.ac.uk) and I am certain he would welcome any assistance or suggestions.

Looking ahead, Mark Lewis starts his term as President at the end of the annual meeting, and I will then serve as past President for one year. (This means elections will be held next year.) I will continue to look forward to hearing from you with any ideas, suggestions or concerns you have.

Yours sincerely,

Alan Hastings

President, Society for Mathematical Biology

International Conference on Mathematical and Theoretical Biology and Annual Meeting of the Society for Mathematical Biology Joint with Japanese Association of Mathematical Biology

July 15-19, 2001
Hilo, Big Island, Hawaii

You are invited to attend the SMB-JAMB 2001 meeting and to contribute a paper or poster.

Now is the Time to Submit an Abstract!
Abstract Submission Deadline is May 15 2001

Now is the Time to Register and Make Travel Arrangements!
Inter-Island Flights in Hawaii Fill Up Fast and Ticket Prices Will Start to Go Up!

The purpose of this meeting is to highlight exciting areas of growth in the field of Mathematical and Theoretical Biology and to provide a perspective on future directions. The meeting will consist of plenary talks, minisymposia, contributed talks, and poster sessions. There will be two field trips to volcanoes and rainforest at the meeting.

Plenary Speakers:

Yoh Iwasa (Kyushu University, Fukuoka)
Les Loew (University of Connecticut Health Center)
Masayasu Mimura (Hiroshima University)
Charles Peskin (New York University)
George Oster (University of California at Berkeley)
Nanako Shigesada (Nara Women's University)

Minisymposium Subjects and Organizers:

Matrix Population Models: Hal Caswell and Takenori Takada
Spatial Models in Ecology: Simon Levin and Toshiyuki Namba
Mathematical Modeling in Medicine: Lee Segel
Immunology: Ramit Mehr
Mathematical Neurophysiology: Gerda deVries
Bioinformatics/Proteomics: Richard Goldstein

Information, registration, abstract submission, accommodation, field trip information and student mentoring information is available at the web site: http://www.itd.ucdavis.edu/SMB-JAMB-2001

This site contains all that you need to register and make arrangements for the meeting.

We encourage all Applications to give contributed talks or posters.

Organizers: Alex Mogilner (Davis) and Yasuhiro Takeuchi (Shizuoka)

International Scientific Committee: Hal Caswell (Woods Hole), Mark Chaplain (Dundee), Alan Hastings (Davis), Mark Lewis (Utah), Ramit Mehr (Bar-Ilan), Lisette de Pillis (Harvey Mudd), Lee Segel (Weizmann), K.Tainaka (Shizuoka), J.Yoshimura (Shizuoka)

Mentoring Program for Junior Scientists Attending the 2001 Annual Meeting of the Society for Mathematical Biology

Objective:

The Society for Mathematical Biology recognizes the importance of mentoring in the development of a successful career in mathematical biology. Following the successful pilot mentoring program at our annual meeting in Utah last year, we are again offering a mentoring program for the benefit of junior scientists attending the International Conference on Mathematical and Theoretical Biology (Annual Meeting of the Society for Mathematical Biology, joint with the Japanese Association for Mathematical Biology), held in Hilo, Big Island, Hawaii, July 16-19, 2001. The goal of this program is two-fold:

- to optimize the educational and professional experience of mentees attending the conference;
- to assist the mentees' socialization into the field of mathematical biology.

The SMB plans to extend the program to any member of the SMB wishing to benefit from a relationship with a mentor at a more advanced career stage. Watch for future announcements in the SMB Newsletter and the electronic SMB Digest.

How does it work?

If you would like to participate, either as a mentee or as a mentor (or both), contact the coordinator of the mentoring program (see below). The coordinator will find suitable matches, based on research interests and/or special requests.

It is expected that the bulk of the interaction between the mentor and mentee will occur during the conference, although initial contact may be made before the conference. Of course we hope that the relationship is mutually satisfying to the mentor and mentee, and will continue after the conference!

At the conference, we envision the following types of interactions, as the mentor and mentee see fit:

- mentors introduce mentees to their colleagues to help the mentee establish a professional network;
- mentors and mentees spend a lunch or dinner together discussing the mentees' educational and/or career objectives;
- mentors share their career experience with their mentees;
- mentors attend the (poster or lecture) presentation of the mentee and provide constructive feedback;
- mentors spend some time explaining how conference presentations relate to each other, or how they fit into 'the bigger picture'.

We ask that mentors and mentees keep their discussions confidential to protect the privacy of everyone involved.

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How do I sign up?

Please contact the coordinator of the mentoring program by June 30, 2001:

Gerda de Vries
Department of Mathematical Sciences
University of Alberta
Edmonton, Alberta
T6G 2G1 CANADA
Email: devries@math.ualberta.ca
Fax: (780) 492 – 6826

In your message, please include the following information:

- Your mailing address, email address, and fax number;
- A brief (one paragraph) description of your research interests;
- Your career stage;
- For mentees: Do you have any special requests? For example, perhaps you would like a mentor who speaks a certain language, lives in a certain geographical region, has a dual-career family, etc. Or perhaps you know of a senior scientist coming to the conference whom you would like to have as a mentor (if that person were available).
- Mentors: Do you have any special expertise that may be of benefit to mentees? Please include with your information whether you are willing to interact with mentees in a language other than English, whether you can advise on dual-career issues, etc.

We cannot guarantee perfect matches, but we will try our best!
For more information see http://www.smb.org/mentoring.shtml

Funding for Individuals' Travel to Meetings - Clarification

by Ramit Mehr

The guidelines for SMB funding to meetings or to individuals' travel to meetings, published in the January Newsletter, have not indicated whom the applications should be directed to. Hence I would like to clarify that:

- Students and postdocs applying for a Landahl or Busenberg travel award to SMB or SMB-sponsored meetings, should send their application to Artie Sherman (sherman@helix.nih.gov).
- Everyone applying for travel funding to other meetings in their area of research, should send their application to the chair of the new committee for individuals' funding, Lisa Sattenspiel (sattenspiell@MISSOURI.EDU).
- If the meeting has been sponsored by the SMB World Outreach Committee, contact committee members to inquire about individual funding.
- Requests for sponsoring of whole meetings should be directed to the president of SMB.

In all cases, please supply all the relevant information about yourself and the meeting you would like to travel to. Students and Post-Docs should enclose their supervisor's recommendation; students should enclose a proof of student status.

A Report on
Workshop on Mathematical & Computational Biology
Centre for Cellular & Molecular Biology,

January 8 -13, 2001, Hyderabad, India

Somdatta Sinha, CCMB, Hyderabad and Philip K. Maini, Oxford.

Application of mathematical and computational analyses to describe the structure and function of complex biological systems is an emerging area of study. The role in describing patterns and processes in cellular and molecular biology is assuming greater importance with the fast emerging information of genome sequences in a variety of organisms, including the human. On the other hand, conceptual advancements in physical theory of complex systems are increasingly playing significant roles in describing emergent biological processes.

In India, many people are armed with methodologies specific to their own field of work in both biological and physical sciences, yet a close communication leading to an interdisciplinary description of the natural world is not forthcoming. The need is felt to have discussions encompassing a larger canvas to expose the commonalties across the boundaries of individual disciplines and to use the powerful tools available in each discipline to arrive at a coherent description of nature. We feel that one way to promote changes in the desired direction is to make students and young researchers in different fields of inquiry aware of the power of interdisciplinary research by exposing them to theoretical treatment of specific biological problems. This is also one of the aims of the World Outreach Committee (WOC) of the Society for Mathematical Biology, which was formed to encourage activities in mathematical biology in different parts of the world.

One of the undersigned, Dr. Somdatta Sinha, also a member of the WOC, proposed to hold a Workshop on Mathematical and Computational Biology in India for students and young researchers in different disciplines of science which would consider specific problems in a few selected areas in biology and, in the process, expose participants to the variety of mathematical and theoretical approaches that are used to study them. The response of the SMB was very encouraging and they offered support with a grant of $1000 to enable participation of students.

This workshop was the first of its kind in India and was held at the Centre for Cellular & Molecular Biology (CCMB), a premier national laboratory of the Government of India engaged in research in modern biology, during January 8-13, 2001 in Hyderabad, India. It comprised five faculty and two associate faculty members (four from USA, two from UK and one from India); seven computational laboratory associates (all from CCMB), and forty participants (10 females and 30 males) selected from over 70 applicants.

The participants came from diverse scientific backgrounds (e.g., biochemistry, microbiology, agriculture, veterinary science, physics, mathematics, engineering, biotechnology and zoology), from 24 different institutes, universities and engineering colleges in India, and ranging from undergraduate level to junior faculty. Everyone was received at the railway station or airport and housed at the very comfortable guest house of the CCMB, which is two minutes walk from the lecture theatre in the main research building. The lecture hall was adequately equipped, catering to the lecturers needs for electronic or conventional modes of display.

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The programme started on the evening of the 7th with registration of participants and a mixer followed by dinner where the participants met the faculty and organisers. The workshop started on the morning of the 8th. There were five course modules, each lasting one day. Each module consisted of three one hour lectures in the morning, followed by a computer 'lab' in the afternoon lasting 4-6 hours. Participants worked in pairs (per computer) during the lab and tackled exercises designed to reinforce the mathematical and computational concepts introduced in the lectures. Advanced exercises were set to challenge the more mathematically sophisticated participants. The faculty, along with the computer lab associates, discussed specific issues with participants and provided general help during this session. Each participant was given a workbook which had an impressive compilation of relevant articles for each module chosen by the faculty along with some introductory material on the lectures. All required software was downloaded, and available on all (twenty) computers which were networked with internet and telnet connections.

The first module was entitled "Modeling and analysis of large scale gene expression data" and was given by Andreas Wagner (Department of Biology, University of New Mexico, USA). It described a number of experimental techniques for measuring single and large scale gene expression, and the statistical and computational approaches used to analyse the data obtained. Methodologies used for data pre-processing and a variety of hierarchical and non-hierarchical clustering algorithms were discussed that gave a clear overview of the importance of theoretical studies in the area.

The second module, "Ionic models and the physiology of electrically excitable cells", was given by Arthur T. Sherman (Mathematical Research Branch, NIDDK, NIH, USA). It consisted of an introduction to cell electrophysiology, with particular application to modeling the bursting dynamics of the pancreatic beta cell that secretes insulin in response to glucose. Classical ordinary differential equation (ODE) models describing the temporal dynamics of ionic currents were derived, linear stability and phase plane analysis discussed, and time evolution profiles studied.

Spatiotemporal patterns were introduced by Philip K. Maini (Mathematical Institute, Oxford University, UK) in the module, "Pattern formation in development", which explored the phenomenon of self-organisation in Turing structures and cellular slime mould using partial differential equation (PDE) models. Given the mathematical nature of the topic and non-mathematical background of a large number of participants, he developed the theory from first principles which he then illustrated in the afternoon's computer exercises.

Pejman Rohani (Zoology Department, Cambridge University, UK) derived ODE models of the SEIR type for microparasite infections in his module, "Models in epidemiology". He analysed the models for measles and whooping cough, and carried out detailed comparison with data for England and Wales, both before and after vaccination. He also introduced stochasticity, spatial effects, and investigated interactions between diseases (interference). He stressed the need to consider mathematical modelling as a means to reveal the underlying dynamics in data.

The final module, "Sequence analysis and phylogenetic trees", given by Catherine Macken (Theoretical Biology & Biophysics, Los Alamos Laboratory, USA) introduced the concept of alignment and methods for comparing different DNA and protein sequences. Techniques for constructing the most likely phylogenetic tree, based on the given sequences, were introduced and the Maximum Likelihood Approach was discussed in detail. She applied the concepts in the context of evolution of the influenza virus and development of the flu vaccine.

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As well as learning a range of mathematical techniques and biological background on a variety of problems, the students were exposed to a diverse number of computational tools; for example, XPP, FORTRAN programmes for studying PDEs, various packages for sequence alignment and statistical analyses for cluster analysis and phylogenetic analysis.

The participants were very motivated and enthusiastically grabbed the opportunity to discuss concepts and problems with a very helpful faculty. The set-up, with buffet lunches, dinner, and coffee/tea together on the roof terrace (offering splendid views of the twin cities of Hyderabad and Secunderabad) afforded easy mixing and communication. At times the participants became so engrossed in the lab that they had to be prised from their computers and ordered to take a coffee break! Everybody found the food truly wonderful and the biscuits (baked in the canteen of CCMB) were addictive. The CCMB was a welcoming host and the Director organised a special rooftop dinner on the11^{th} affording people the chance to meet with experimental scientists from the Institute. The organisers took very detailed feedback from both the faculty and participants for information which will help in organising future events of this kind.

The funding from the SMB allowed the organisers to support registration fees for 12 and travel for 9 participants. It also helped defray the cost of accommodation and food for the participants.

Support was also available from local governmental bodies such as the Department of Biotechnology, Indian Council of Medical Research, and Council of Scientific and Industrial Research, India

On the last day there was a concluding session where the Certificates of Attendance were presented to the participants and they expressed their view about the workshop. Judging from the responses of the participants, the workshop was a tremendous success. Both the biologists and physical scientists learned from the course and it seemed that the workshop helped reduce the gap between them as they felt that the interdisciplinary approach was important in studying biological systems. This made both the faculty and the organisers feel that the whole activity was worth the months of effort that they had put in. The workshop ended with a tour of Hyderabad and a "Sound & Light Show" in the historic fort of Golconda.

Discounted Journal Subscriptions for SMB Members

Recently it was announced that members of the Society for Mathematical Biology would be able to receive certain professional journals at discounted prices. There is now a web page, http://www.smb.org/pubs.shtml, listing which journals are available and at what price SMB members may subscribe. Currently there are no links to get to this website – you will need to type in the web address directly. This will be the case until the webmaster can implement some sort of security to limit access to the information (preventing non-members from fraudulently subscribing at the discounted price).

It is important to make sure that your name and email address are current in our database, so we may email you later about how to access this site when security measures are in place. Please go http://www.smb.org/phonebook.shtml to check that your contact information is correct.

Keywords to be Allowed with Members' E-mail Directory Entry

Raymond Mejia

The Society is planning to add keywords to the Members' E-mail directory on the web page (www.smb.org). This will facilitate a search for members with a particular interest or expertise. Members who wish to have this information included should forward their name and up to six (6) keywords to the Treasurer, Torcom Chorbajian, at

Society for Mathematical Biology
P.O. Box 11283
Boulder, CO 80301 U.S.A.

e-mail: tchorbaj@concentric.net

Currently, wild-card searches of the directory are limited to provide a maximum of ten matches in order to discourage spams. A keyword search may provide more e-mail addresses. Hence, please note that the SMB cannot be responsible for how others might use information on the web page.

Two Post-Doc Positions Available

IACR-Rothamsted, UK

Transgene induced life-history changes and the ecology of transgenic crops.
(BBSRC funded)

One of the risks of transgenic crops is their invasion and persistence as weedy species in crop fields or as feral populations in more natural habitats. In the project a set of generic ecological models is developed to study population establishment, population growth rate, persistence time and prevalence of the genetically modified plant line. The emphasis will be on stochastic dynamic models. Oilseed rape and sugar beet will serve as example species. The ecological consequences of transgene induced life history changes will be quantified.

This post is available for 3 years. Salary range will normally be between £19,500 - £23,000. Ref: 434.

Stochastic dynamic models and computer modelling. *(Core funded)*

Stochastic models are an essential instrument in current frontline research on many aspects of biology, biotechnology and agriculture. The researcher will develop his/her own area of expertise in stochastic dynamic modelling. The developed expertise will be put to work in collaborative projects with departments at IACR.

Computer modelling: The researcher collaborates in multi-disciplinary projects that combine experimental, statistical and dynamic modelling approaches. The researcher will assist in these projects on the computational aspects of the work.

This post is available for 5 years. Salary range will normally be between £15,300 - £17,800 for a recent graduate and between £18,500 -£21,400 for a more experienced candidate. Ref: 420

Further information for either of these positions:
Frank van den Bosch
E-mail: Frank.vandenBosch@BBSRC.AC.UK
Tel.: +44 1582 763133 ext. 2372.

NIGMS Support for Complex System Centers

The National Institute of General Medical Sciences (NIGMS) announces a request for applications (RFA) for the establishment of new academic Centers of Excellence in Complex Biomedical Systems Research (CE/CBSR). This initiative is the most recent of a suite of similar initiatives emphasizing computational approaches to analyzing and modeling the behavior of cellular and higher level biological phenomena within the NIGMS mission. Investigators may apply for planning grants of up to $150,000 in direct costs per year for up to 3 years, or center grants of up to $2 million in direct costs per year for 5 years.

The deadline for both types of applications is October 11, 2001; letters of intent should be received by September 1, 2001. For detailed information on this RFA and other NIGMS complexity initiatives, see http://www.nigms.nih.gov/funding/complex_systems.html

Neural Information Processing Systems Natural and Synthetic

December 3 - 8, 2001, Vancouver, British Columbia, Canada

This is the fifteenth meeting of an interdisciplinary conference, which brings together cognitive scientists, computer scientists, engineers, neuroscientists, physicists, statisticians, and mathematicians interested in all aspects of neural processing and computation. The conference will include invited talks as well as oral and poster presentations of refereed papers. The conference is single track and is highly selective. Preceding the main session, there will be one day of tutorial presentations (Dec. 3), and following it there will be two days of focused workshops on topical issues at a nearby ski area (Dec. 7-8). Invited speakers this year will be Barbara Finlay (Departments of Psychology, and Neurobiology and Behavior, Cornell University), Alison Gopnik (Department of Psychology, University of California at Berkeley), Jon M. Kleinberg (Department of Computer Science, Cornell University), Shihab Shamma (Department of Electrical Engineering, University of Maryland), Judea Pearl (Department of Computer Science, UCLA), and Tom Knight (Artificial Intelligence Laboratory, MIT).

Major categories for paper submission, with example subcategories (by no means exhaustive), can be found on our website, http://www.cs.cmu.edu/Web/Groups/NIPS

Submission Deadline:

Submissions Must Be Logged by Midnight June 20, 2001 Pacific Daylight Time (08:00 GMT June 21, 2001).

The LaTeX style files for NIPS, the Electronic Submission Page, and other conference information are available on the World Wide Web at http://www.cs.cmu.edu/Web/Groups/NIPS

For general inquiries or requests for registration material, send e-mail to nipsinfo@salk.edu or fax to (619)587-0417.

Mathematical Models of Viral Infection, ETH Zurich

Postdoc position available

We are currently looking for a postdoc interested to join our theoretical biology group at the ETH in Zurich. We have a growing group of people working on the development of mathematical models of viral infections. Our main interests are the population dynamics of HIV within an infected individual and the evolution of drug resistance in response to therapy. We are looking for a highly motivated candidate with a creative, independent mind and with research experience related to some of the following areas: theoretical biology / evolution / virology / immunology / microbiology. The successful candidate may choose among several research topics, but will be strongly encouraged to develop her/his own research project within the realm of the group's research interests. The earliest starting date would be June 2001. Review of the applications will begin in May 2001, but will continue until a suitable candidate has been identified. The working language of the group is English. More detailed information about our research group can be found on our web page http://www.eco.ethz.ch. The applicants should submit a detailed CV including a statement about research experience and interests, and addresses of persons to contact (phone/fax/e-mail) for references.

Prof. Sebastian Bonhoeffer
Experimental Ecology & Theoretical Biology
ETH Zentrum NW
CH-8092 Zurich, Switzerland
Phone: +41 1 6327106 / Fax: +41 1 6321271
E-mail: bonhoeffer@eco.umnw.ethz.ch,
http://www.eco.ethz.ch

WABI 2001
Workshop on Algorithms in BioInformatics

August 28-31, 2001, BRICS, University of Aarhus, Denmark

Submission deadline: May 1, 2001
Notification to authors: May 31, 2001

http://www.brics.dk/wabi2001/

The Workshop on Algorithms in Bioinformatics covers research in all aspects of algorithmic work in bioinformatics. The emphasis is on algorithms that address important problems in molecular biology, that are founded on sound models, that are computationally efficient, and that have been implemented and tested in simulations and on real data sets. The goal is to present recent research results, including significant work-in-progress, and to identify and explore directions of future research.

WABI 2001 is sponsored by BRICS and EATCS (the European Association for Theoretical Computer Science) and jointly organized and colocated with ESA 2001 and WAE 2001 in the context of ALGO 2001 (http://www.brics.dk/algo2001/).

Ph.D. Scholarship in Integrative Biology
The University of Queensland (UQ), Australia

The Department of Botany and the Centre for Plant Architecture Informatics.

A Ph.D. scholarship for a project on Integrative Biology is available at The University of Queensland (UQ), Australia in the Department of Botany and the Centre for Plant Architecture Informatics.

With the enormous advances in the genomic sequencing of complete organisms, and the detailed knowledge obtained through the reductionist approach to studying gene function, the stage is set to adopt a systems-level viewpoint to study plant development as it occurs in reality - as an integrated, coordinated, dynamic regulatory network.

A Centre for Plant Architecture Informatics (CPAI) Ph.D. Scholarship is available in the Department of Botany for a suitable, motivated student interested in working on a project that brings together expertise in the fields of plant development, functional genomics, and plant modelling. The aim of the project is to develop an integrated systems-level model of coordinated plant growth and development using sophisticated mathematical and visual models.

The project will initially involve collaborations with experts on various aspects of plant development at the Department of Botany at UQ and School of Plant Science at The University of Tasmania and on mathematical modelling, numerical simulation and visualisation at the CPAI, the Virtual Reality Centre, the Department of Mathematics and the Advanced Computational Modelling Centre at UQ.

Applicants must possess an Honours degree in at least one relevant field.

For further information contact:

Dr Christine Beveridge
Phone: ++ 61 (0) 7 3365 8582
Email: c.beveridge@botany.uq.edu.au

or

Dr Jim Hanan
Phone: ++ 61 (0) 7 3365 6132
Email: jim@cpai.uq.edu.au.

For information on plant architecture informatics and plant modelling see http://www.cpai.uq.edu.au and on the Advanced Computational Modelling Centre see http://www.acmc.uq.edu.au

Applications will be accepted until the position is filled.

Special Issue on Imaging in Bioinformatics
Journal of Real-Time Imaging, Academic Press

Guest Editors:
Prof Luciano da Fontoura Costa, Coordinator, University of Sao Paulo, Brazil
Prof Juan Carlos Izpisua Belmonte, Salk Institute, USA

The application of imaging and pattern recognition techniques in biology is posed to catalyze several breakthroughs in critical areas, including genetics and neuroscience, over the forthcoming decade. This special issue targets high quality and original contributions involving the application of imaging concepts and techniques, including related works involving pattern recognition and data mining, in several relevant biological problems.

The considered areas include but are not limited to: Morphogenesis, Neuromorphometry, Biological shape analysis, Microarray analysis, Data mining, Pattern recognition, Image databases, Comparative anatomy, Morphometry, Cellular and developmental biology, Visualization, Parallel and concurrent processing, Micrograph image processing , and Karyotyping.

Intended deadlines:

Submission: July 2001
Publication: April 2002

For further information:

Special Issue WWW site: http://cyvision.if.sc.usp.br/~luciano/si_bioinf.htm
E-mail: Luciano da F. Costa (luciano@if.sc.usp.br)

Manuscript submissions should follow the guidelines and format usually adopted by the journal.

Obituary: Dr. Philip E. Seiden

Dr. P. E. Seiden received his A.B. and M.S. in Physics from the University of Chicago in 1954 and 1956, respectively, and his Ph.D. in Physics from Stanford University in 1960. Dr. Seiden was a staff member in the Research Laboratory of the Lockheed Missiles and Space Division from 1956-59 and joined IBM at the Research Center in 1960. He was an NSF Postdoctoral Fellow at the University of Grenoble, France, in 1960, a Visiting Professor at Indiana University in 1967-68, and a Lady Davis Visiting Scientist at the Technion, Haifa, Israel, in 1974-75. Dr. Seiden held a number of research and managerial positions at IBM, including Director of Physical Sciences (1972-76) and Director of General Sciences (1976-77). In recent years, Dr. Seiden was a Research Staff Member Emeritus in the Physical Sciences Department of the IBM Research Center, Yorktown Heights, NY, and a visiting scientist at the Department of Molecular Biology of Princeton University, Princeton, NJ and the Department of Molecular Immunology of the Hospital for Joint Diseases, New York, NY. His research efforts have been in Solid State Physics, Astrophysics and Immunology, ranging over the fields of magnetism, superconductivity, organic metals, structure and evolution of galaxies, solar physics, and modeling the immune system. Dr. Seiden was the creator of "ImmSim", a simulation of the immune system which has been used extensively for both research and teaching. Dr. Seiden passed away on Sunday, April 22nd, 2001. The Theoretical Immunology community mourns this loss. In lieu of flowers, the family is requesting donations may be made in memory of Dr. Philip E. Seiden, Memorial SloanKettering Cancer Center, PO Box 750 NY,NY 10131-0304, USA.

Endangered Theoretical Biology Group at Leiden University

Andre M. de Roos

Many scientists working in Mathematical/Theoretical Biology, Ecology, or Evolutionary Biology, will be familiar with the work of the Theoretical Biology group at Leiden University, led by Hans Metz since 1985. A number of fundamental contributions in the field of modeling animal behavior, structured populations and, of late, adaptive dynamics and evolutionary theory have been the products of this group during the last 20-25 years. This group is now threatened with extinction as a result of a re-channeling of most biological funding toward molecular biology. Notwithstanding the importance of these latter disciplines, to disband a research group with such an outstanding reputation I consider intolerable. Hence, I kindly ask you to consider the request of Hans Metz to write a letter of support to be sent to the Dutch Minister of Science and Education, the Rector of Leiden University and the Dean of the Leiden Faculty of Sciences, voicing your opinion on this policy.

Below you will find:

- a letter by Hans Metz;
- additional information about the faculty plans and about the institute;

Dear Friend,

My apologies if this [letter] reaches you more than once. I am having it sent through different routes in order to give it the greatest possible distribution. (I even kindly ask you to relay it to colleagues whom to your knowledge might be willing to help and who are not on one of the lists through which this mail was sent to you.)

The Leiden Faculty of Sciences is scrapping my Theoretical Biology group.

Background:
The Faculty has to implement a 20% budget cut, mainly as the result of a countrywide reduction in enrollment in the sciences. Biology student numbers also decrease but much less so than in the other sciences. The Institute of Ecological and Evolutionary Sciences (EEW), which houses my Theoretical Biology group has kept attracting roughly the same number of students for the past years. The present yearly budget deficit of the EEW is 15%, that of the faculty 20% and at the EEW we are having a budget reduction of 55% imposed on us. According to the plan of the Dean of the Faculty, the preliminary form of which is currently circulating under wraps, the smallest departments, Astronomy and Mathematics, will be protected. In addition the research effort of the Faculty will be concentrated on Living Matter, i.e., the physics and chemistry of (sub)cellular processes, research that has its largest concentration in the Physics and Chemistry departments. Finally the Biology department and more in particular the EEW will be cut disproportionately, with only four out of its nine groups remaining.

Leiden Theoretical Biology is an order of magnitude smaller than, e.g., Theoretical Physics, and in my prejudiced opinion no less valuable. My group has extensively contributed to the theory of Adaptive Dynamics, Physiologically Structured Populations, and Continuous Time Markov Models for Animal Behaviour, and to a lesser extent to Mathematical Epidemiology, Metapopulation Theory, Evolutionary Game Theory, and Life History Theory. I hope that you are

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willing to argue our case in a letter to the Minister of Education and Science, the Rector Magnificus of Leiden University, and the Dean of our Faculty of Sciences. A link to addresses and a draft letter (please vary!!) are provided below.

The draft letter is very much geared to saving my group as such. However, we all would appreciate it if you were to weave in a few sentences stressing the need for safeguarding evolutionary biology, or population and organismal biology, against the onslaught wrought by an overly vigorous competition from the molecular sciences. In the long run we need all branches of biology. Moreover, a too depauperated School of Biology will attract few students!

Thankfully yours,
Hans (J.A.J.) Metz

Section Theoretical Evolutionary Biology
Institute of Evolutionary and Ecological Sciences, EEW
Rijksuniversiteit Leiden
Kaiserstraat 63
NL-2311 GP Leiden, The Netherlands
tel: +31-71-5274937
fax: +31-71-5274900
Email: metz@rulsfb.leidenuniv.nl

PS: Please, send us also a "to whom it may concern" copy of your letter, so that we may pass that on to those members of parliament specializing in science and education for their respective parties:
Hans Metz, EEW
P.O.Box 9516
2300RA Leiden
The Netherlands

Additional Information:
In the present plan of the faculty the following groups have to go:

1. **Animal Ecology** [Jacques van Alphen, Leo Beukeboom, Jan Sevenster, cs]
2. **Evolutionary Morphology** [Gart Zweers, Herman Berkhout, Ron Bout, David Povel pp, John Videler pp, cs]
3. **Theoretical Biology** [Diedel Kornet pp, Eke van Batenburg, Rino Zandee, Sacha Gultyaev, cs] & Phylogenetics [Edi Gittenberger pp, cs]
4. **Theoretical Evolutionary Biology** [Hans Metz, Patsy Haccou, Evert Meelis, cs]
5. **Environmental Biology** [Wim ter Keurs, Hans de Graaf, Cees Musters, Paul Vos, cs]

The groups to be retained are:

1. **Plant Ecology** [Eddy van der Meijden, Peter Klinkhamer, Tom de Jong, Klaas Vrieling, Hans van Veen pp, cs]
2. **Evolutionary Biology** (Paul Brakefield, Bas Zwaan, Hans Roskam, Rinny Kooi, cs)
3. **Integrative Zoology** [Mike Richardson, Guido van den Thillart, Kees Barel, Frans Witte, cs]
4. **Behavioural Biology** [Carel ten Cate, Katharina Riebel,cs (Johan Bolhuis has accepted a professorship in Utrecht)]

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Please keep this in mind while writing letters. I at least would appreciate if we could keep as much of the EEW, and of Leiden biology, intact as is feasible.

Officially my chair is in Mathematical Biology (not Theoretical Biology), and my group is called Theoretical Evolutionary Biology. Please make a choice. (There is no need to be precise.)

Presently my group consists of one professor, one senior lecturer (Patsy Haccou) one lecturer (Evert Meelis) [all tenured, but due to be fired], one postdoc on EU money (Tom van Dooren), and 5 PhD students (2 from university funds, 3 on grants). This is all that remains after the group was split in 1998 into a mathematically oriented group and an informatics and philosophy oriented group (Eke van Batenburg, Rino Zandee, and Diedel Kornet). Under the current plans both groups will disappear. The history of the group goes back to beginning as an independent Theoretical Biology department in 1957, prior to my becoming a student.

Recently we obtained:

1. A grant from the EU, as part of larger grant [Modern Life-History Theory and its Application to the Management of Natural Resources], orchestrated from IIASA and Leiden, which got the highest marks in its category.
2. Three grants from NWO (the major Dutch granting organisation). Last year we were first [Putting life history theory in a realistic ecological context] and fourth [Sexual imprinting, song learning and gene-culture co-evolution: modelling the evolution of brood parasitism in birds] in the ecology competition among roughly 50 applications, 6 of which were granted, and the year before we were second [Developing a bifurcation theory for Evolutionarily Stable Strategies] under comparable circumstances.

A list of all PhDs involving the chair of Mathematical Biology since 1986 (the year Odo Diekmann and I were jointly appointed) can be found under:
http://wwwbio.leidenuniv.nl/~meelis/phds.pdf

A list of publications of the group since 1985 can be found under:
http://wwwbio.leidenuniv.nl/~meelis/pubs.pdf

Further information, including the draft letter and this announcement, can be found in a special issue of the SMB Digest at:
ftp://ftp.ncifcrf.gov/smb/digest/v01i07a

Officer and Directors