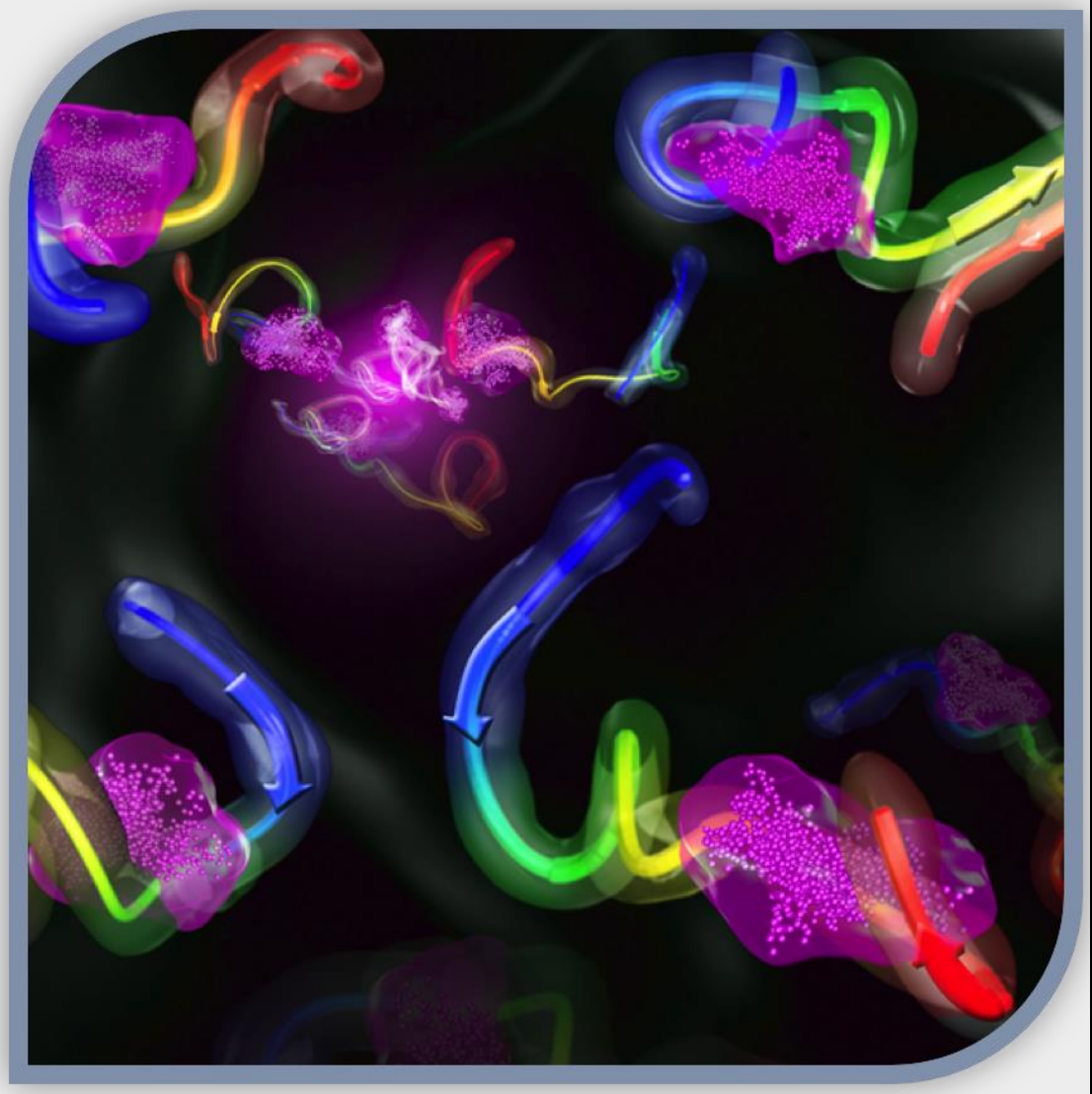
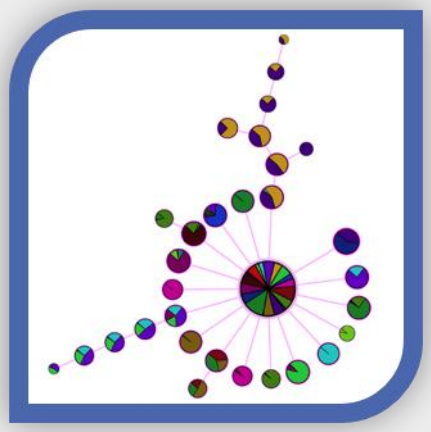
ISCB Annual Report 2013



ISCB INTERNATIONAL SOCIETY FOR COMPUTATIONAL BIOLOGY

INTERNATIONAL SOCIETY FOR COMPUTATIONAL BIOLOGY

2013 ANNUAL REPORT



The International Society for Computational Biology (ISCB) - www.iscb.org - is the first and only society dedicated to representing the computational biology and bioinformatics community on a global scale. ISCB is incorporated in the United States as a 501(c) (3) non-profit corporation, and is registered in the state of California as a Charitable Trust. ISCB serves a community of over 3,000 scientists committed to advancing the scientific understanding of living systems through computation. It convenes world experts and emerging leaders in respected conferences, and it partners with scientific publications that promote discovery and expand access to computational biology and bioinformatics. ISCB provides valuable information to its members about training, education, employment, and relevant news. ISCB serves as an influential voice on government and scientific policies that are important to its members and benefit the public.

ISCB hosts numerous annual meetings, including ISMB (Intelligent Systems for Molecular Biology), the world's longest running and largest conference on computational biology and bioinformatics. ISMB alternates between North America and Europe where it is held jointly with the European Conference on Computational Biology (ECCB). ISCB also affiliates with and supports many other significant meetings, associations, and interest groups.

ISCB has two official journals, *Bioinformatics* and *PLOS Computational Biology*, which have some of the highest impact factors in the Mathematical & Computational Biology category. ISCB also has affiliations in place with several other publications for the benefit of its members.

Collaboration is an essential element to promoting the advancement of bioinformatics and computational biology research. To that end, ISCB has made a significant effort to foster and promote collaborations between researchers in these fields by organizing a greater number of meetings. Beyond ISMB, these meetings include ISCB-Africa (since 2009), ISCB-Latin America (since 2010), and ISCB-Asia (since 2011), as well as focused meetings (now called ISCB-focus meeting): CSHALS (since 2007), RECOMB/ISCB Regulatory and Systems Genomics (since 2012), and ISCB-NGS (since

2013). ISCB also supports several regional meetings in the United States including Rocky (since 2003) and GLBIO (since 2011).

The following report summarizes contributions and activities of the ISCB's elected leaders, committee members, volunteers, and staff during 2013. Grateful acknowledgment goes to the many members named in this report, and the many more left unnamed, whose generosity of time and selfless effort have been essential to advancing the mission of ISCB.

In addition to the volunteer member efforts, ISCB employs a professional staff consisting of an executive director, a director of corporate development, and two part-time administrative assistants. The organization relies on long-term contractors to fulfill additional needs, including the roles of conferences manager, meeting planner, conference administrative assistant, database/web programmers, and graphic designers. Each of these individuals provides essential support to the Society's leadership and global membership.

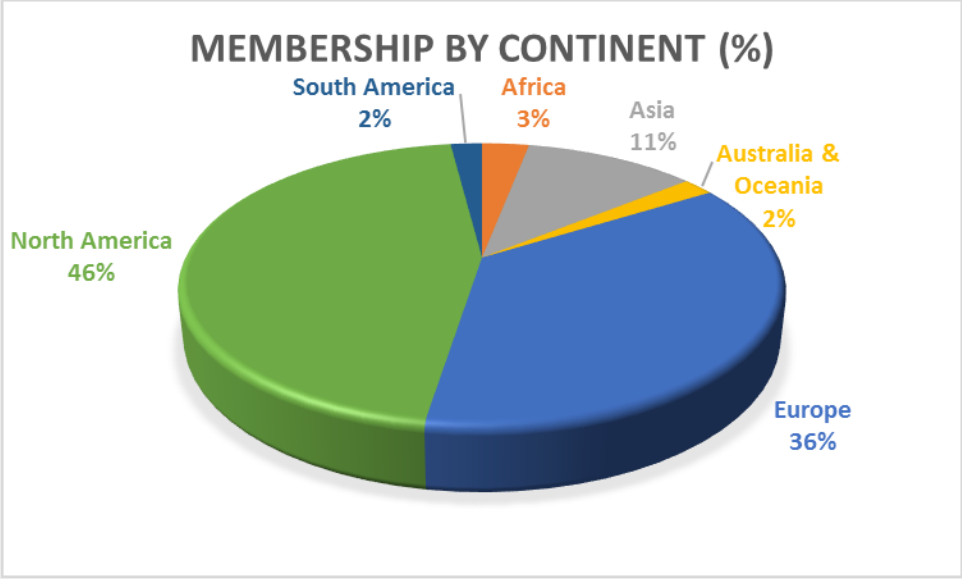
In early 2013, the Society announced the hiring of a new professional executive director, Diane E. Kovats, CMP. It is with great excitement and anticipation that the Society prepares to enter a new phase of growth, financial strength, and community development under the leadership of Diane.

Table of Contents

Membership

Members are the lifeblood of ISCB, and recruiting and maintaining active members is essential to the vitality of this Society. At the close of 2013, ISCB celebrated a milestone – the highest membership on record with 3,074 members. Members hailed from 73 countries. The two largest representations come from North America at 45%, primarily from the United States, and Europe at 36%. The truly global nature of the discipline and the Society is reflected in the number of members coming from countries in Africa (76), Asia (341), Australia and Oceania (63), and South America (69) (Figure 1). ISCB's worldwide presence is also shown by its support of 23 affiliate societies from around the world.

Figure 1. Membership by Continent (%)



Membership

ISCB supports members of the computational biology community at all stages of their career, and to that end, offers three types of membership: professional, postdoctoral trainee, and student. More than half of the Society's members are professional scientists (1566) from academic, government, or industry settings (Figure 2). Trainees are also represented well in the ISCB membership, with over 400 postdoctoral fellows and nearly 1000 student members (Figure 3).

Figure 2. Membership by Type

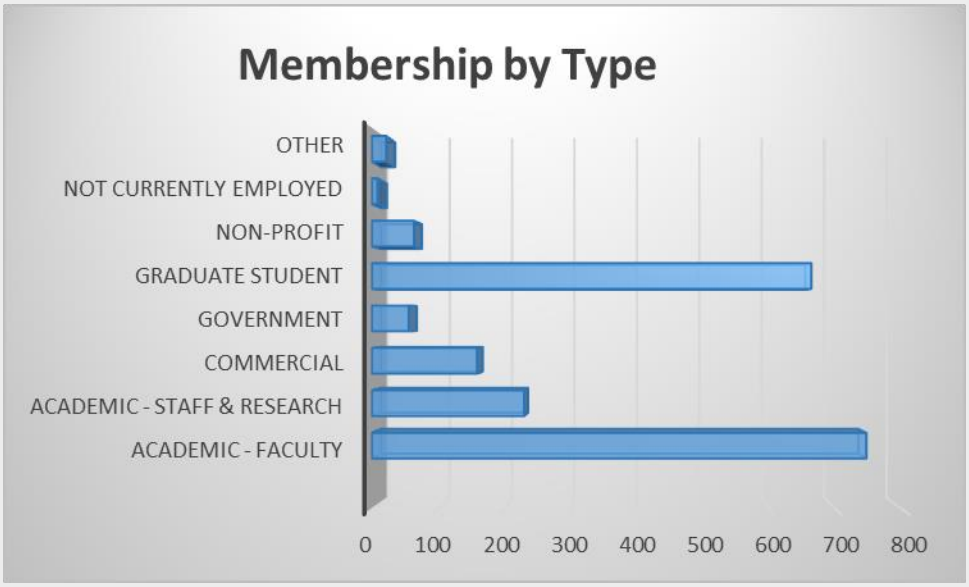
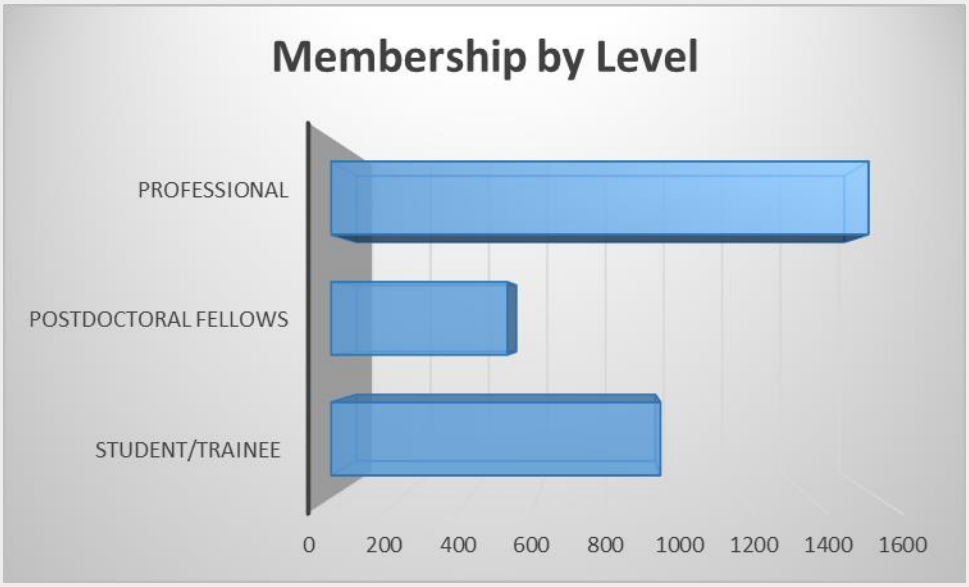


Figure 3. Membership by Level



Society Committee and Leadership Highlights

ISCB thrives on the dedication of its volunteer members. Their passion and commitment to the ISCB mission is evident each year as the Society continues to grow and offer more programs and benefits to its members. The highlights of some of the major achievements throughout 2013 are featured below.

ISCB Holds Elections for President-elect, Vice President, and Student Council Leadership Positions

The Nominations Committee spearheaded the 2013 election for the President-elect, Vice President, and Student Council Leadership positions. An open nomination period was offered to ISCB members to nominate any eligible active member for one of the available positions. Elections were held in mid-July during ISMB.

The Board of Directors of ISCB announced the results of the elections in early August. Members of the society elected the following individuals as officers beginning their terms in January 2014:

- **President-elect – Alfonso Valencia, Ph.D.**, Spanish National Cancer Research Centre. Valencia is an ISCB Fellow and has been involved with the leadership of the organization since its international expansion in 2002. He currently serves on the Board of Directors, is the chair of both the Fellows Committee and Awards Committee, and has been involved in other leadership roles throughout his volunteer tenure. Valencia brings with him a long list of accolades and management experience. He will serve as President-elect starting 21 January 2014 and will serve as President beginning in 2015 for a three-year term.
- **Vice President – Thomas Lengauer, Ph.D**., Max Planck Institute for Informatics. Lengauer has been involved with ISCB since the late 1990s. He is currently a member of the Board of Directors and was a key organizer of ISMB/ECCB 1999 (Heidelberg) and ISMB/ECCB 2007 (Vienna). Lengauer is also involved with and a co-founder of RECOMB and ECCB. He will serve as Vice President starting 21 January 2014 for a three-year term.

The ISCB Board of Directors is also pleased to announce the election of the young professionals who will lead the **ISCB Student Council (SC)** in 2014.

- **Chair -** Darbha Anupama Jigisha, University of Geneva and Swiss Institute of Bioinformatics
- **Vice Chair -** Umesh Nandal, Academic Medical Centre
- **Treasurer -** Esmeralda Vicedo, Technical University of Munich
- **Secretary -** Tomas Di Domenico, University of Padova
- **Student Council Representative to ISCB Board of Directors** - Avinash Kumar

Shanmugam, University of Michigan.

For additional information on ISCB's annual nominations and elections procedures, please see http://iscb.org/iscb-leadership-a-staff-/officers-and-board-directors/nomination-election-procedures.

The next call for nominations for directors, officers, and student council leaders will open February 2014 for terms beginning in January of 2015.

Communities of Special Interest (COSI) Start to Take Shape

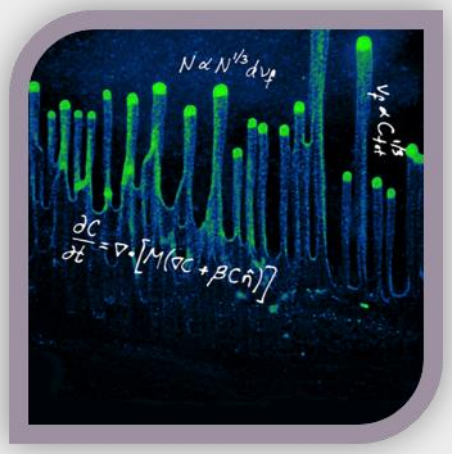
The July 2012 ISCB Board of Directors meeting in Long Beach set up a task force to identify the value of establishing year round virtual communities for themes currently associated with Special Interest Groups (SIGs) and workshops at ISMB.

The task force is exploring setting up an ISCB web portal that would link to websites for groups organizing SIGs/workshops and enable ISCB members and others to network regularly with other researchers and learn about developments and activities in their field.

The task force included several ISCB members: Paul Horton, (Chair), Christine Orengo (Co-Chair), Lonnie Welch, Alan Christoffels, Janet Kelso, Diane Kovats, and organizers of well-established SIGS/workshops. The group met to discuss the needs of the community and field at large during 2012-2013 through a series of conference calls. A questionnaire was sent to all SIG/workshop organizers to solicit comments and identify groups wishing to establish COSIs.

ISCB is planning to establish a web portal for the COSIs. The portals will link to individual websites set up by each COSI. A working group was set up to explore the technical requirements for the ISCB web portal. Leading the efforts to develop the portal are Iddo Freidberg, Alex Pico, and Bettina Roth. The site will be designed based on a mechanism using WIKImedia infrastructure.

Eleven groups have agreed to become COSIs and these groups have agreed to provide regular updates on the progress of their COSI websites from January 2014 onwards to ensure that they are ready for the July 2014 launch. They have also agreed to a standardized ISCB webpage style to ensure uniform branding of the COSIs.



The COSIs continue to evolve and the task force is excited about official launch of the community at ISMB 2014 in Boston.

Fostering Relationships through Affiliated Groups

The Affiliates Committee continues to foster interactions between the Society and its affiliated regional and institutional groups. It welcomed two new groups in 2013: Hellenic Society for Computational Biology and Bioinformatics and Society for Bioinformatics in Nordic Countries. ISCB now has 23 active affiliated groups.

The “Best Affiliate Paper Program” celebrated its first success with John Parkinson’s paper, "Generation and Analysis of a Mouse Intestinal Metatranscriptome through Illumina-Based RNA Sequencing”. This paper was recognized as an outstanding paper at GLBIO and was accepted in the Highlights track at ISMB/ECCB 2013 and was also identified as a “Recipient of the Best Paper Award at the 2012 Great Lakes Bioinformatics Conference” in the ISMB/ECCB program.

ISCB continues to strengthen its ties with affiliated groups by providing an annual review of the website content posted on ISCB to ensure organization information is accurate. Additionally, ISCB offers a bulk membership option for affiliated groups. This bulk membership drive allows these regional and institutional groups to establish a group membership for their individual organization and ISCB and simplifies the registration process with ISCB.

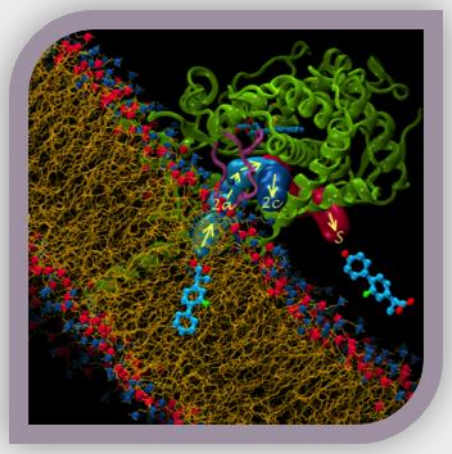
The Affiliates Committee is working closely with the COSI Task Force to continue to offer incentives and enhancements to regional and institutional groups.

Education Committee Furthers Mission through their Achievements

The Education Committee was busy and productive over the past year and has highlighted some of its activities below. In May, the Committee established a Genomics Education Partnership with Dr. Sarah Elgin of Washington University. Dr. Elgin invited ISCB to be involved with a consortium focused on incorporating bioinformatics into undergraduate biology courses. The Education Committee also organized an education panel at the ISCB GLBIO Conference. The Committee is applying for an NSF RCN (Research Coordination Network) Incubator grant. If funded, this grant will enable participation in a steering committee that will bring together computer scientists, biologists, and bioinformatics faculty from diverse institutions in a two-day workshop that will explore core issues related to the effective integration of bioinformatics into life sciences curricula.

In July, the Committee organized the Workshop on Education in Bioinformatics (WEB 2013). This workshop addressed the training needs of the expanding audience of computational biology users. In addition to the workshop, a Birds of the Feathers meeting provided additional collaboration opportunities for educators and curriculum developers.

Lonnie Welch of Ohio University, a co-chair of the education committee, was a speaker on a panel at the Association of American Medical Colleges (AAMC) annual meeting of the Group on Graduate Research, Education, and Training (GREAT). The AAMC's GREAT group is a professional development group for graduate school deans, MD-PhD program directors, postdoctoral program directors, and training program administrators that are responsible for managing biomedical PhD and postdoctoral training at accredited medical schools in the United States and Canada. The group functions as a national forum to help these programs achieve their goal of educating successful biomedical researchers, and it holds an annual meeting to discuss issues related to the training and education of future biomedical scientists.



The theme of this year's meeting was "Evolution of the Training Paradigm: Developing the Biomedical Workforce of the Future." The graduate education deans, MD-PhD directors, and postdoctoral training program leaders asked ISCB to speak about the competencies needed for all biomedical PhD students in bioinformatics and computation. In particular, Lonnie Welch discussed his experience running the Ohio University certificate program in bioinformatics over the past five years. He also talked about his role on the ISCB Education Committee conducting surveys related to the competencies needed for bioinformatics training across a broad spectrum of students, including biomedical PhD students. This was an excellent opportunity for ISCB to interact with the education community at large and articulate the importance of the computational biology component to research and training.

The curriculum subcommittee headed up by Lonnie Welch, Russell Schwartz, and Fran Lewitter worked on a follow-up article to the piece published in 2012: Welch LR, Schwartz R, Lewitter F. A report of the Curriculum Task Force of the ISCB Education Committee. PLoS Comput Biol. 2012;8(6):e1002570. The article will be released in early 2014 as part of the ISCB Society pages on *PLOS Computational Biology.*

The Education Committee continues to represent ISCB in at Global Organization for Bioinformatics Learning, Education and Training (GOBLET). GOBLET is a group of leaders from a number of international societies, networks and organizations that meet to discuss global bioinformatics training initiatives. They continue to advocate for and support the great need to coordinate worldwide bioinformatics training activities: to share, not duplicate, effort; to share, not duplicate, cost; to work together in a mutually respectful way towards common solutions and a sustainable future.

Welcome Class of 2013 ISCB Fellows

The ISCB Fellows Program was established in 2009 to recognize members that have made significant contributions to the fields of computational biology and bioinformatics and service to the Society.

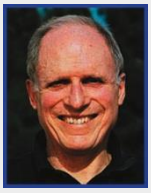
Fellows are identified by a rigorous process involving a call for nominations from the ISCB members, and selection by the Fellows Selection Committee, which includes the ISCB Board of Directors and previously selected Fellows. Recipients of the ISCB Accomplishment by a Senior Scientist Award are also granted Fellows status.

The 2013 ISCB Fellows epitomize the mission to advance scientific understanding of living systems through computation. Each Fellow has made outstanding contributions to computational biology through research, teaching, and service to the scientific community.

PIERRE BALDI

Pierre Baldi is a Chancellor's Professor in the Department of Computer Science and Director of the Institute for Genomics and Bioinformatics at the University of California in Irvine. Baldi is a leader in the fields of artificial intelligence and machine learning and has used these approaches for comparative genomics, computer-based drug design, and modeling of metabolic, neural, and signaling networks.

DAVID EISENBERG



David Eisenberg is a Professor in the Departments of Chemistry and Biochemistry, and Biological Chemistry at the University of California, Los Angeles, and he is also a Howard Hughes Medical Institute Investigator. Eisenberg is the winner of the 2013 ISCB Accomplishment by a Senior Scientist Award.

MINORU KANEHISA

Minoru Kanehisa is a Professor in the Institute for Chemical Research at Kyoto University in Japan. Kanehisa is one of Japan's most recognized and respected bioinformatics experts. He is a co-developer of the GenBank database.

SATORU MIYANO

Satoru Miyano is a Professor at the Human Genome Center, Institute of Medical Science at The University of Tokyo. Miyano is a leader in the computational biology community, is a former member of the ISCB Board of Directors and has been a key organizer of numerous international bioinformatics and computational biology meetings.

RUTH NUSSINOV

Ruth Nussinov is a Principal Investigator at the National Cancer Institute of the National Institutes of Health and a Professor in the Department of Human Genetics of School of Medicine at Tel Aviv University, Israel. She is the Editor-in-Chief of *PLOS Computational Biology* and has served on the editorial boards of several other biomedical journals.

Photo courtesy of SAIC-Frederick, Inc.

STEVEN SALZBERG

Steven Salzberg is a Professor in the Departments of Medicine, Biostatistics, and Computer Science, and Director of the Center for Computational Biology McKusick-Nathans Institute of Genetics Medicine, Johns Hopkins University School of Medicine. He is well known for developing scalable algorithms for genomic analysis.

C. Fogg, ISCB Summer Newsletter, July 2013

2013 Student Travel Fellowship Campaign

ISCB focused on student travel fellowships as the theme for the 2013 donations program. To date, over $13,300 has been raised from members, with nearly $10,700 earmarked to support student travel fellowships. There is still time to make a difference in the future of computational biology and bioinformatics by supporting tomorrow's researchers. The ISCB Board of Directors and the Fundraising Committee have determined that the individual giving emphasis will be placed on student support in 2014.

Student travel fellowships help propel young investigators toward important future discoveries. Join ISCB in giving students access to the principal role models within the field and help influence the paths of scientific careers. As government-funding opportunities continue to decline, ISCB is reaching out to the membership to help this important initiative. Each year, ISCB receives over 300 travel fellowship requests. With currently available funds, this can only support ~70% of these requests by providing

partial funding to each recipient.

Making a donation to the travel fellowship fund will enable support of even more students with higher travel awards. We continue to do all we can but there is still more to do—your contributions at any level will allow us to reach more students. By donating to ISCB student travel fellowships, you are investing in the future of our science. Support our students at https://www.iscb.org/donation/donation.php

Publications

ISCB Society Pages become Features of OUP *Bioinformatics* and *PLOS Computational Biology*

In 2012, Lonnie Welch and Olga Troyanskaya proposed and started to execute a plan to better utilize the Society pages of *PLOS Computational Biology* (pages edited by Troyanskaya) and OUP *Bioinformatics* (pages edited by Welch and Troyanskaya).

Throughout 2013, ISCB began the process of rolling out a new and improved line-up on the ISCB Society Pages. Fifteen articles were published in 2013. Articles describe specific ISCB programs, highlight significant accomplishments of groups and individuals, and provide opportunities for those who oversee the Society's activities to communicate their vision and plans.

The Society Pages provide a valuable portal for members of the computational biology and bioinformatics community to learn how to get involved in a wide spectrum of activities that include research, education and professional service.

The pages also enable ISCB to cover the society's activities in a more timely fashion. The coordinated plan included the following elements: (1) enhanced breadth and depth, (2) systematic coverage of major ISCB activities, and (3) expansion into both of ISCB's official journals to ensure that critical topics are given broad exposure, and synergistic articles are featured at times.

As the plan is further developed and refined, feedback and guest authorship queries are welcome, especially for articles that highlight conferences, discuss major breakthroughs in the field, or are of interest to the membership. Contact executive.office@iscb.org to offer suggestions.

The ISCB's Official Journal *Bioinformatics* Annual Report to ISCB

Alex Bateman stepped down from his role of co-Executive Editor of *Bioinformatics* at the end of 2012 after a successful eight-year term. The ISCB community is grateful to Alex for all his efforts on behalf of the journal In 2013, Janet Kelso was welcomed to the role of co-Executive Editor, and will be working alongside Alfonso Valencia.

New Associate Editors Gunnar Rätsch, Ziv Bar-Joseph, John Hancock, and Igor Jurisica came on board in 2013. Trey Ideker moved on from being an Associate Editor for the journal after many years and has joined the Editorial Board.

Once again, *Bioinformatics* received ~2000 submissions in 2012; ~30% were accepted, with an average time from submission to first decision of 30 days. Once accepted for publication, a manuscript was usually published online ahead of print within five days and published in an issue within eight weeks.

Uptake of the open access optional model in 2012 was ~22%. A new form of Creative Commons license was introduced during 2012 for new *Bioinformatics* content published under an open access model. In short, the journal moved from a CC-BY-NC license to a CC-BY license. The CC-BY license allows unrestricted use, distribution, and reproduction in part or whole provided that the original work is properly cited. The key difference between this and the CC-BY-NC license is that the latter allows unrestricted reuse for non-commercial purposes only (users are required to seek permission for commercial reuse).

In June 2013, the Thomson-Reuters Journal Citation Reports published that the *Bioinformatics* Impact Factor was 5.323, making it a top-ranked journal in the Mathematical & Computational Biology JCR category.

A new article category of Bioimage Informatics was introduced in 2012. In an editorial to introduce the new category, Peng et al. wrote that “Tremendous volumes of multi-dimensional bioimaging data are now being generated in almost every branch of biology. How to interpret such image datasets in a quantitative, objective, automatic and efficient way has become a major challenge in current computational biology. Bioimage informatics methods have begun to turn image data into useful biological knowledge...“ The full editorial can be read at http://bioinformatics.oxfordjournals.org/content/28/8/1057.full.

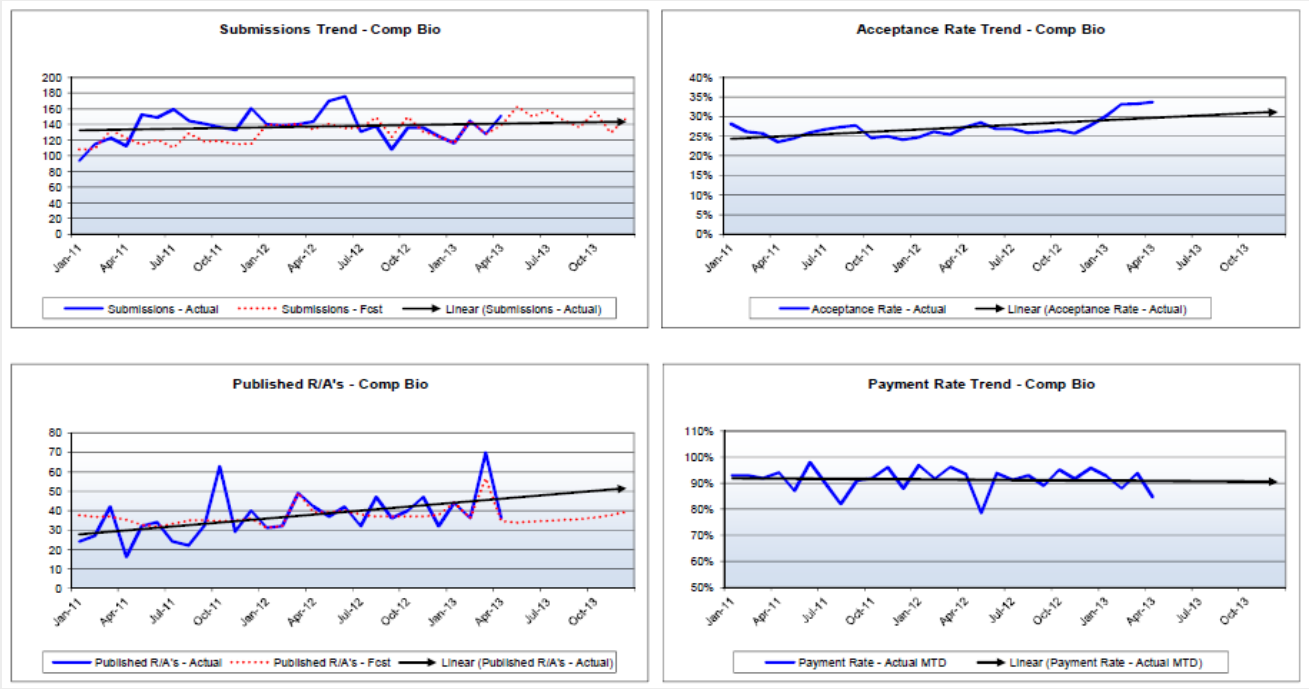
During the first half of 2013, the journal has worked with ISCB Executive Director Diane Kovats to publish ‘Message from the ISCB’ articles. The first of these, announcing the 2013 Overton Prize, was published in in the June 15, 2013 issue of the journal. A further schedule of ISCB articles is planned.

***PLOS Computational Biology* Annual Report to ISCB**

PLOS Computational Biology's relationship with the ISCB remains strong, with the Journal Agreement between PLOS and the ISCB renewed for another three years at the beginning of 2013. Journal editors and staff meet with ISCB members on a regular basis and enjoy working closely with Fran Lewitter, Scott Markel, Diane Kovats and others to guide the journal's progress.

Review of Journal Progress

A selection of standard metrics are shown below (Figure 1) and a summary of other key performance indicators is given below (unless otherwise stated, all information relates to



1st June 2012 to 31st May 2013).

Figure 4. Summary of PLOS Computational Biology *journal metrics. The blue lines are the actual values and the red dotted lines indicate our plan assumptions*

Journal Performance

Numbers of published Research Articles (RA) have increased by 15% since last year, with an average of 42 articles published per month. Following a huge increase in RA submissions of 22% during the period 2011–12 (double the percentage increase during the previous 12-month period) these high levels of submissions were maintained during 2012–13, with total submissions decreasing by only 5% over this period. The months of June 2012 and May 2013 saw the journal receive a record 177 RA submissions.

Journal Performance June 2012 to May 2013 (numbers in parentheses refer to the previous year):

500 (**435**) Research Articles published – 15% up on last year
1668 (1758) manuscripts submitted – 5% fewer than last year
Acceptance rate (during May 2013): approximately 27% (28%)
Average submissions per month: 139 (147)

Average editorial decision times without review have remained steady at 10–13 days, while decision times for manuscripts sent out for review showed a slight increase to around 50–58 days. Following expansion of the editorial board during the early part of 2013, however, they have dropped back down to around the 50-day mark.

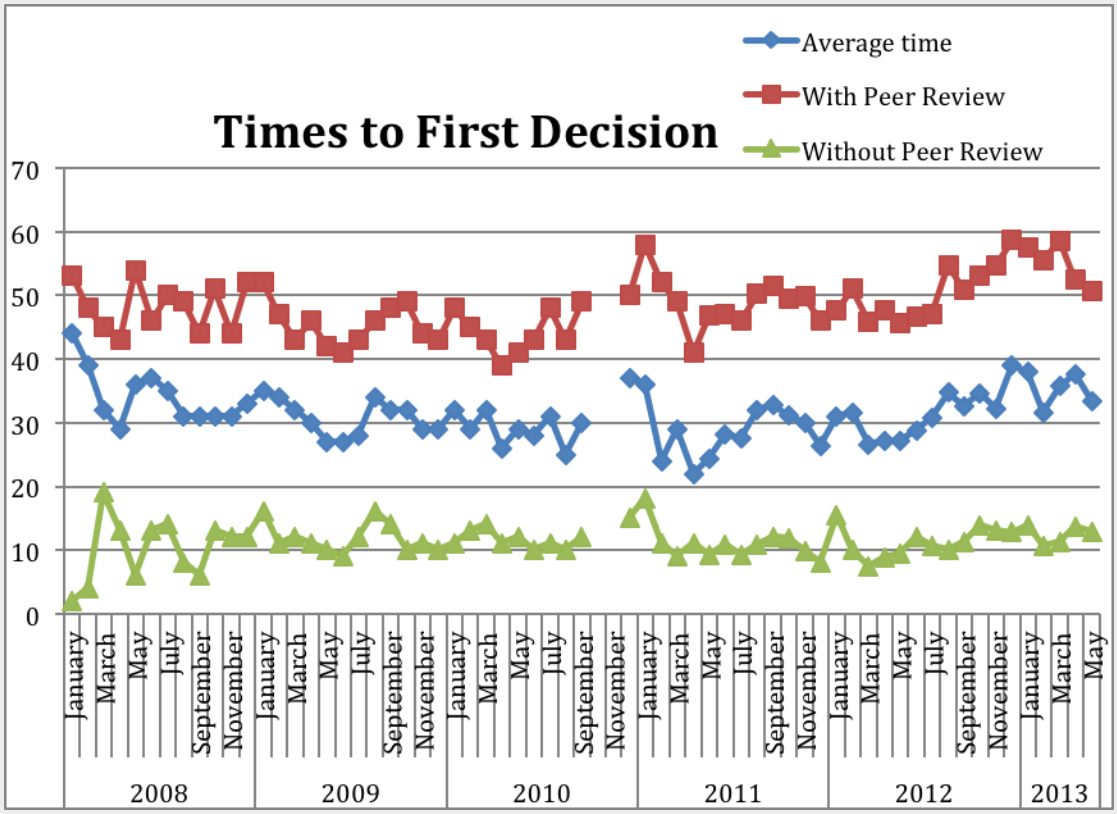


Figure 5. Average monthly times from submission to first decision (data from submission system cross-over period omitted for the sake of accuracy).

Publication Highlights

While publishing the highest quality research remains the main focus of the journal, *PLOS Computational Biology* also aims to serve the community by providing shared resources that engage and educate our readership and offering scientists a way of making less traditional contributions. With this goal in mind, the period 2012–13 has seen the launch, development and/or conclusion of several projects.

Education section

Over the past 12 months the Education section, led by Education Editor Fran Lewitter, has flourished. The journal published a new collection, 'Translational Bioinformatics', as well as several new Topic Pages articles and other Education articles.

Translational Bioinformatics is a collection of Education articles that forms an online textbook that is intended for use as a reference or tutorial for a graduate level introductory course on the science of translational bioinformatics. Edited by Maricel Kann and Fran Lewitter, the collection of 14 chapters from leading experts in translational bioinformatics, along with an introduction by Russ Altman(Altman, 2012), was published in December 2012. The collection was released as an ebook in January 2013 (a first for PLOS), and three new chapters were added in April. Translational Bioinformatics has been well received by the community, and the editors are considering proposals for additional chapters covering areas of the field currently missing from the book.

Topic Pages, a new article type introduced in 2012, are now well established as a regular feature of the journal's front section. Aimed to fill gaps in Wikipedia coverage of computational biology, Topic Pages are Education articles presented in a review format, drafted and openly reviewed in a wiki setting, published in *PLOS Computational Biology*, and then uploaded to Wikipedia to undergo the usual updates and edits from the Wikipedia community. Since January 2013, 4 Topic Pages have been published: "Approximate Bayesian Computation" (Sunnåker, M. et. al., 2013), "Evolving Digital Ecological Networks" (Fortuna, M.A., et. al., 2013), "Viral Phylodynamics" (Volz, E.M., et. al., 2013), and "Cooperative Binding" (Stefan, M.I. and Le Novère, N., 2013).

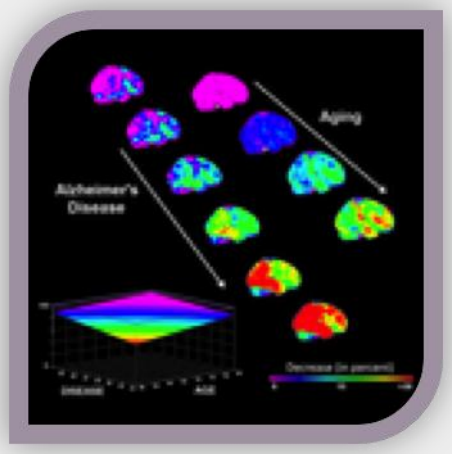
Software section

The *PLOS Computational Biology* Software Section was launched in 2011 and has been steadily gathering momentum since its establishment. Handled by the journal's Software Editors, software papers are a type of research article that highlights and describes outstanding open source software of exceptional importance that has been shown to provide new biological insights, either as a part of the software article, or published elsewhere. In November 2012, published software articles were brought together in a collection where new articles will be added. The introduction of this new collection was accompanied by an editorial (Prlic A, Lapp, H., 2012) from Software Editors Andreas Prlic and Hilmar Lapp. The collection also includes the perennially popular Ten Simple Rules articles on the open development of scientific software by Andreas Prlic and

James B. Procter (Prlic A., Procter. J., 2012), which has been viewed almost 24,000 times since its publication in December 2012.

Press Coverage

Several research articles picked up a significant amount of press and social media coverage in the past year. In March, an article by Simon Garnier and colleagues reported on the use of ant-like robots to investigate the behaviour of ants moving through a network (Garnier, S., et. al, 2013) and was covered by the BBC (http://www.bbc.co.uk/news/21956795) and National Geographic (http://bit.ly/YkM5oC). The paper was viewed 6000 times in the first week of publication. In October, a research article entitled “Estimating the Hidden Burden of Bovine Tuberculosis” by Andrew Conlan and colleagues (http://bit.ly/R9Y56i) was covered by Farmers Weekly and the University of Cambridge Research News (http://bit.ly/TvKZ2i). A summary of the most-read articles published last year in the journal can be found in the Appendix.



Change of Scope

At the beginning of October, *PLOS Computational Biology* announced an expansion of the journal’s scope in response to discussions among the editorial board and the community. This expansion will include papers describing outstanding methods of exceptional importance that have been shown to, or have the promise to, provide new biological insights. Methods papers are a separate category of research article, and are handled Methods Deputy Editor Thomas Lengauer, whose Editorial on the new Methods section was published in March (Lengauer, T., and Nussinov, R., 2013).

Editorial Board & Reviewers

Leadership change

The journal underwent a leadership change in July 2012. After seven years as *PLOS Computational Biology* Editor-in-Chief, Phil Bourne took on the new title of Founding Editor-in-Chief. While Phil is now less involved in the day-to-day running of the journal, he remains fully involved in special projects and in content for the front section, providing advice as needed. Ruth Nussinov, Deputy Editor-in-Chief since 2010, accepted the role of *PLOS Computational Biology* Editor-in-Chief. The journal published two editorials in early October outlining changes. In "A Future Vision for *PLOS Computational Biology*" (Nussinov, R., 2012), Ruth introduces herself as the new Editor-in-Chief and outlined some of her plans for the future. In "Seven Years; It's Time for a Change" (Bourne, P., 2012) Phil announced his transition to the role of Founding Editor-in-Chief and took a

look back over the previous seven years. Editorial Manager Rosemary Dickin highlighted both the scope and leadership changes in a blog post on PLOS Biologue (http://bit.ly/VrvrT8).

Editorial Board Changes

PLOS Computational Biology is grateful for the contributions made by many members of the community during 2012–13. To accommodate the high numbers of submissions to the journal and the broad range of topics they cover, several new additions have been made to the Editorial Board in the last 12 months:

Joseph Ayers Jeff Beck Nir Ben-Tal Matthias Bethge Gunnar Blohm	Kevin Chen Shi-Jie Chen Michael Doebeli Wolfgang Einhäuser Bard Ermentrout	Aldo Faisal Helmut Grubmuller Lilia Iakoucheva Maricel Kann Alex MacKerell Alice McHardy
Rob de Boer, Bill Noble, Arne Elofsson and Jason Papin also took on more senior roles at the journal, shifting from Associate Editors to Deputy Editors, while Paul Gardner joined us as a Software Editor.		
Finally, several of our Associate Editors stepped down from their roles over the past year:		
Markus Covert Fritz Roth Luhua Lai	Wen-Hsiung Li Eran Segal	Edmund Crampin Adam Siepel

Software Editor Hilmar Lapp and Reviews Editor Johanna McEntyre also stepped down at the end of the year.

F1000 and ISCB Pilot New Partnership

ISCB Publications and Communications Committee struck a partnership with F1000 Research Limited to expand its member benefits and special offers by providing ISCB members complementary and full access to Faculty of 1000 F1000Prime. This special offer will expire on April 30, 2014, after which ISCB members may subscribe to the service at a 30% discount. Accessing the complementary access is easy and requires members to sign in with the email address associated with their ISCB membership.

F1000Prime is an in-depth directory of top articles in biology and medicine, as recommended by a Faculty of over 5,000 expert scientists and clinical researchers. The service covers over 40 disciplines and more than 3,700 journals, including many

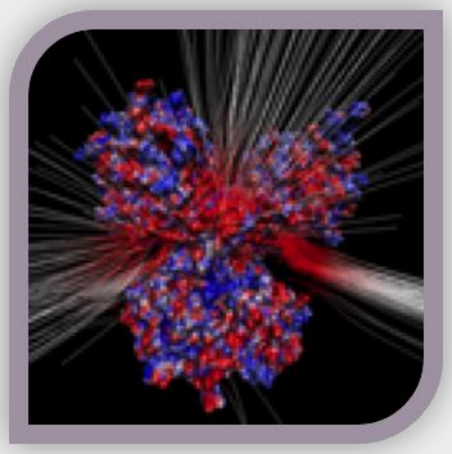
papers in genomics, bioinformatics and computational biology. Articles are rated and expert commentaries explain their importance. F1000Prime helps life scientists and clinicians find important papers in the rapidly growing body of literature. It combines the readability of short expert commentary with the scope of bibliographic database searches, and the precision of self-learning software that adapts to an individual's research interests.

Your Federation of American Societies for Experimental Biology (FASEB) Membership at Work

By Allison Lea

ISCB is a member of the Federation of American Societies for Experimental Biology (FASEB), a coalition of 27 scientific societies representing over 110,000 researchers from around the world. FASEB works continuously to promote biological research and has become an organization that legislators, federal agencies, and the media turn to for information on policies related to biomedical science and engineering.

FASEB's Office of Public Affairs (OPA) staff and FASEB's elected leaders meet regularly with National Institutes of Health (NIH) and National Science Foundation (NSF) officials to provide the perspective of the membership on a wide range of issues. In November, the FASEB Public Affairs Committee met with NIH Principal Deputy Director Lawrence Tabak, National Institute of General Medical Sciences Director Jon Lorsch, and National Association for Biomedical Research Director Frankie Trull. The Committee also met with Dr. Tabak and twelve other NIH Institute Directors in the spring of 2013. At these meetings, FASEB presented concerns of the FASEB membership and received insights into NIH and NSF projections and plans.



Big Data

FASEB has a committee specifically charged with monitoring Information Technology issues and developing policy statements in this area. As a result of the committee's work, FASEB submitted responses to Requests for Information (RFI) on the NIH Big Data to Knowledge (BD2K) training plans and the NIH Data Catalog. FASEB also commented on NIH's Data and Informatics Implementation Plan and draft Genomic Data Sharing Policy.

Federal Funding for Biomedical Research

FASEB's Washington staff met regularly with congressional staff, conveying the views of the research community to the nation's legislators. In March, as part of FASEB's annual

Capitol Hill Day, 40 scientists were brought in for meetings in more than 70 congressional offices.

FASEB issued an e-Action alert over the summer urging advocates to email their members of Congress in support of increased funding for NIH. As a result of FASEB's call to action, nearly 20,000 email messages were sent to Capitol Hill imploring lawmakers to prevent further erosion in the nation's biomedical research capacity. OPA staff developed and conducted three advocacy webinars in September, "Capitol Hill Budget Battle: What's At Stake for the Research Community?" for scientists and patients.

During the government shutdown in October, FASEB issued an e-Action alert urging the public to call their elected representatives and ask Congress to end the shutdown, restore funding to NIH, the NSF, and other science agencies to pre-sequestration levels, and agree on FY 2014 budget that sustains prior investment in research. FASEB also created a radio talk guide and encouraged scientists to participate in local call-in radio shows to get the message out about the impact of budget fights on the research community. In December, as part of a final push to increase research funding for the current fiscal year, FASEB mobilized scientists again to write Congress.

Animal Research

FASEB sent letters to four international airlines (Air France and Air France Cargo; China East; China West; and China Cargo) in July encouraging them to continue transporting non-human primates for research purposes, In September, FASEB sent a letter in support of Pro-Test Italia, an Italian group supporting animal research. The letter was featured in *Nature*.

FASEB initiated and coordinated a coalition letter to the American Bar Association House of Delegates opposing a proposed resolution calling for repeal of the Animal Enterprise Terrorism Act. FASEB also developed an Animal Rights Extremists (ARE) Report with guidelines for organizations with animal research facilities to negate ARE threats and activity. The Report will be released in early 2014.

Regulatory Burden

OPA organized a review of FASEB subcommittee positions on regulatory burden in response to a RFI from the National Science Board (NSB) and FASEB submitted the letter to NSB in June.

To support the response to NSB, OPA surveyed investigators on regulatory burden and received over 1300 responses. FASEB published a report of the survey results in June.

Promoting Basic Research

OPA released a new article from its Breakthroughs in Bioscience series, “Conquering Cancer with Drugs from Nature’s Medicine Cabinet.”

FASEB held its second annual BioArt competition and Stand Up for Science Video competition. The winning BioArt images were announced in August and were featured in *Science* as well as the NIH Director’s blog and were also placed on display at the NIH Visitor’s Center. FASEB has received 12 video submissions for its Stand Up for Science competition, and will announce the winners in February 2014.

Get to Know Your ISCB FASEB Representatives

Judith Blake, PhD, FASEB Board Representative
Dr. Blake is an Associate Professor of Bioinformatics and Computational Biology at the Jackson Laboratory. She has been a member of the FASEB Board of Directors since 2003.

David M. Rocke, PhD, FASEB Board Advisor
Dr. Rocke is Distinguished Professor in the Division of Biostatistics, Department of Public Health Sciences and the Department of Biomedical Engineering at the University of California, Davis, where he has been on the faculty since 1980.

Harel Weinstein, DSc, FASEB Science Policy Committee Representative
Dr. Weinstein is the Maxwell Upson Professor of Physiology and Biophysics and Chairman of the Department of Physiology and Biophysics, and the Founder and Director of the Institute for Computational Biomedicine at Weill Cornell Medical College of Cornell University.

Scott Markel, PhD, FASEB Publications and Communications Committee
Dr. Markel is the Principal Bioinformatics Architect at Accelrys and is a part of the Research & Development group. He is also the secretary of ISCB and the Chair of the ISCB Publications and Communications Committee.

Fran Lewitter, PhD, FASEB Science Research Conferences Advisory Committee
Dr. Lewitter is the Director of Bioinformatics and Research Computing at Whitehead Institute. She also is the ISCB Education Committee Chair and leads the ISCB GOBLET collaboration.

Taner Sen, PhD, FASEB Excellence in Science Award Committee
Dr. Sen is a Computational Biologist for the USDA-ARS and a Collaborator Assistant Professor, Department of Genetics, Development and Cell Biologist at Iowa State University. He is also a member of the ISCB Public Affairs Committee.

Society Conferences Highlights

Once again, under the direction of the Conference Committee and chairs Janet Kelso and Paul Horton, ISCB offered some of the best conferences on computational biology and bioinformatics. Highlights and recaps for each meeting are featured below.

ISMB/ECCB 2013

The ISMB/ECCB 2013 meeting was held July 19 - 23, 2013, in Berlin, Germany. Much like previous ISMB/ECCB meetings, the science presented in Berlin was exceptional. During the three main meeting days, 40 original scientific papers, 47 highlights from recently published papers, 23 late breaking research papers, 23 oral poster presentations, 816 posters, 36 technology track presentations, and 6 special sessions were presented. Additionally, 2 satellite meetings, 11 special interest group meetings, a Student Council symposium, a Junior Principal Investigator workshop, and two tutorials filled the two days preceding the main meeting.

ISMB/ECCB 2013 attracted over 1,900 total participants, including more than 1,600 attendees to the main meeting. There were 28 organizations exhibiting.

In addition to the main conference, special interest group pre-meetings and satellite meetings attracted over 1,200 participants. The one-day Student Council Symposium attracted 77 participants, and 39 attendees came to the first-ever Junior Principal Investigator meeting.

The participants at ISMB/ECCB 2013 represented a broad spectrum of backgrounds, with 56 countries represented at the conference, thus emphasizing the meeting's world class reputation. Participation based on geographical origin of attendees (regardless of citizenship) included 19% from the United States, 39% from Europe, 13% from the United Kingdom, 7% from Asia and the remainder coming from all over the world. Among all attendees, 59% were from academia/non-profit/government sectors (researchers and faculty), 33% were student registrants and 8% were from the commercial sector.

ISCB expresses its deepest gratitude to all those who participated in the organization of the meeting and our partners from ECCB.

CSHALS 2013

The ISCB hosted the sixth annual Conference on Semantics in Healthcare and Life Sciences on February 22-24, 2012 in Cambridge/Boston, MA. The conference is the premier event focused on the use of semantic technologies in the pharmaceutical industry, including hospitals/healthcare institutions and academic research labs.

Topics covered by CSHALS 2013 span the continuum between standards development and big data workflows, and the scope between life science data representation and its analysis. The conference welcomed nearly 80 registrants over the course of three days, with 50% of the attendees coming to the meeting for the first time.

In addition to the five keynote talks and 21 posters, participants also enjoyed a full day of tutorials, which focused on Semantic Automated Discovery & Integration (SADI) Web Services, and Semantic Web 101 functions. Additionally, attendees had the opportunity to participate in four technology talks that highlighted some of the most cutting edge technologies available to the community.

ISCB-Africa ASBCB Conference on Bioinformatics

ISCB partnered with the African Society for Bioinformatics and Computational Biology (ASBCB) to hold the 2013 ISCB-Africa ASBCB Conference on Bioinformatics in Casablanca, Morocco in March. More than 70 people from 24 countries attended, primarily from countries in Africa. As a scientific conference with an international audience, oral and poster presentations, as well as all printed materials, were in English.

The meeting constituted the third joint meeting of ISCB and ASBCB, and the fourth conference of the ASBCB on Bioinformatics of African pathogens, hosts and vectors. It featured a broad Bioinformatics scope that included a special focus on infectious diseases relevant to Africa. Over 60 papers were submitted to the conference and 36 selected for presentation. The conference also has two poster sessions with nearly 70 submissions.

GLBIO - Great Lakes Bioinformatics Conference

2013 marked the third annual Great Lakes Bioinformatics Conference (GLBIO) offered as an official regional conference of the ISCB and the tenth year of the conference. As in past years, this conference provided an interdisciplinary forum for discussing approaches, research findings, and educational experiences regarding computational investigations of biological problems.

An important goal of this regional conference continues to be fostering long-term collaborative relationships among informatics and life sciences researchers and educators from academia, government, and industry, spanning the North American Great Lakes region and the Canadian provinces of Ontario and Quebec. Researchers from outside these regions were welcomed and encouraged to participate, especially those looking to form collaborations with key labs in the Great Lakes region.

This meeting was not only for experts in bioinformatics, but also for faculty, students, and staff who make substantial use of bioinformatics tools in their work or would like to expand their use.

GLBIO 2013 was held in May and was attended by nearly 250 registrants. The conference featured four keynote presentations, three tutorial sessions, eleven highlight presentations, fourteen proceedings, fourteen flash presentations, a career session and an education session, as well as a jobs board and a career consultant to assist with resume and cover letter development and review. There were also two poster sessions held in the exhibition area so that attendees could visit poster presenters and exhibitors alike.

Rocky - Rocky Mountain Conference on Bioinformatics

The ISCB hosted Rocky 2013, the eleventh annual Rocky Mountain Bioinformatics Conference, in December in Aspen/Snowmass, CO. The Rocky series began as a regional conference and has grown into an international program with a spotlight on regional development in the computational biosciences. The presenters of the Rocky conference are scientists representing a broad spectrum of universities, industrial enterprises, government laboratories, and medical libraries from around the world.

The meeting lasted two and half days, with eight keynote presentations (two invited, five elevated abstracts, and one sponsor) and the remaining time filled with 39 10-minute flash presentations and a poster session selected from submitted abstracts that allow everyone who wants to present to do so. On Thursday and Friday, long lunchtime ski breaks allowed skiers and non-skiers alike to network in a casual setting outside the meeting room. These extended breaks are one of the key reasons most attendees believe they have established new collaborations after having attended this meeting.

TBC/ISCB-Asia

TBC/ISCB-Asia 2013, co-hosted by the Korean Society of Medical Informatics and ISCB and chaired by Ju Han Kim of the Seoul National University College of Medicine was held at the JW Marriott in the Gangnam district of Seoul Korea on Oct 2-4, 2013. 273 delegates including 65 international delegates enjoyed 64 scientific presentations, generally with a focus on translational bioinformatics but touching on most aspects of computational biology. Indeed a timely focus as genome sequencing and sequencing based measurement of gene expression -- the data that fuels our field -- makes its way

into the clinic.

The keynote speakers included such luminaries as Larry Hunter, Atul Butte, Steven Brenner and the ISCB keynote Terry Speed. ISCB organized a special scientific session with four speakers from Taiwan, Korea, Japan and Australia. Nineteen Highlights track presentations also gave delegates ample opportunity to survey and grasp current trends in translational bioinformatics. On the other hand, graduate students and post-docs were also well represented with 27 proceedings track presentations and 33 poster presentations.

Sponsors

ISCB thanks the following sponsors for their generous support of meetings and conferences

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CSHALS 2013

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Rocky 2013

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HONOR ROLL

ISCB recognizes the individuals below for their generous volunteer service that made the 2013 meetings a great success.

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Burkhard Rost, Technical University
Anna Tramontano, University of Rome,
Martin Vingron, Max Planck Institute for Molecular Genetics

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Thank you for supporting ISCB!

ISCB thanks everyone who has made a gift in support of the Society, including the many generous donors who wish to remain anonymous.

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ISCB Student Council Annual Report

The ISCB Student Council (SC) had an amazing year in 2013. This volunteer-based student group is lead by the executive team of:

Anupama Jigisha (**Chair**), Umesh Nandal (**Vice Chair**), Margherita Francescatto (**Secretary**), Cynthia Prudence (**Finance Committee Chair**) Avinash K Shanmugam (**BoD Representative**) and Chinmay Dwibedi (**RSG Committee Chair**).

In addition to the Executive Team, the SC is made up of a number of volunteer sub-committees. Each committee has a Chair and Executive Team advisor.

Sub-committee	**Chair**	**Executive Team Advisor**
Education/Internship	Maina Bitar	Margherita Francescatto
Fundraising	Cynthia Prudence	Cynthia Prudence
Outreach/Volunteer	Umesh Nandal	Umesh Nandal
Web	Pieter Meysman, Dan De Blasio	Avinash K. Shanmugam
Regional Student Group	Chinmay Dwibedi	Chinmay Dwibedi

The mission of the ISCB SC is to promote the development of the next generation computational biologists. This goal is achieved through the development of scientific events, networking opportunities, soft-skills training, educational resources, and career advice. The SC is also involved with policy developments affecting science and education.

Summary of Activities by various committees
Student Council Symposia

The Student Council (SC) held its 9th Student Council Symposium in Berlin in July prior to the Intelligent Systems for Molecular Biology (ISMB) conference. Chaired by Tomás Di Domenico and Tomasz Stokowy, the symposium attracted nearly 100 participants. More than 90 abstracts were submitted for presentation, and nine travel fellowships were awarded. Participants enjoyed keynote lectures by Alex Bateman (EBI), Satoru Miyano (University of Tokyo) and Gonçalo Abecasis (University of Michigan), as well as scientific speed dating, and other networking opportunities. This annual event continues to gain momentum. The SC is preparing for the 10th symposium, which will be held in Boston in 2014.

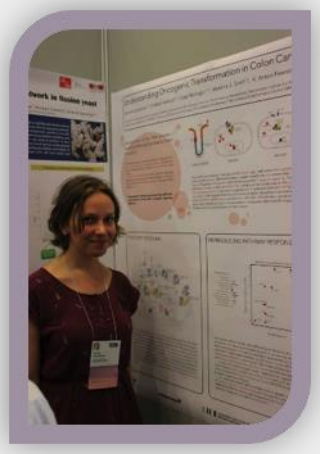

Image below: **Glimpses of the Student Council Symposium 2013, Berlin:** Many networking opportunities, including scientific speed dating, and social events were held at the SCS social headquarters.

Education Committee

Mentorship and guidance are at the heart of the mission of the ISCB SC as it supports young trainees within and beyond the laboratory. The education committee helped organize internships for undergraduates and graduate students in collaboration with leading international research labs and institutions working in the field of computational biology. The internship program aimed to help students from developing nations to improve their practical skills by providing short-term (3 to 6 months) fellowships. The initiative has some challenges to overcome, including outreach and funding. The SC believed that if ISCB members were better informed of this opportunity, the program could grow significantly in the number of internships available. A task force has been formed with ISCB and SC members in order to generate ideas for improved outreach.

In addition to promoting the program, the education committee is also seeking potential sponsors to provide financial support for the internship program. The goal of the financial support is to aid Principle Investigators with the financial resources to support an intern.

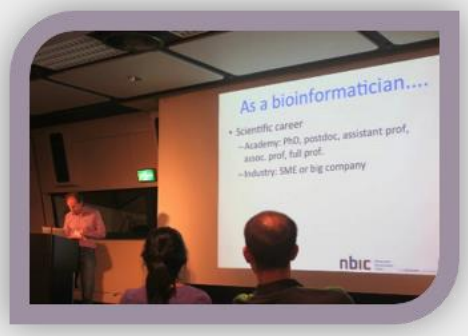

Image at right:Dr. Jaap Heringa giving his talk at the Student Council Career session

Regional Student Group (RSG) Committee

The RSG committee added two new RSGs this year to its network and revived two inactive RSGs, thus maintaining a pool of 19 active RSGs worldwide for the year 2013. The first half of 2013 saw the addition of RSG Switzerland, and RSG North Africa. Later in the year, RSG United Kingdom and RSG Germany rejoined the active network.

The committee has successfully completed two cycles of RSG funding program whereby proposals to conduct events are submitted by RSGs, reviewed by the

SC and funded from the annual budget. The SC received 7 applications from various RSGs this year. A total funding amount of $1490 was approved for various events organized by six different RSGs. Five of the six events have already been organized and the SC is awaiting reports on these events.

Presently, the RSG committee is working towards expanding the RSG footprint and to integrate SC activities throughout the RSG network. One strategy is sponsor recruitment for the Student Council Symposium at ISMB 2014. RSGs are being used to secure potential funding from their local areas to fund travel fellowships for RSG leaders.

Web Committee

The web committee continues to provide support for websites and other infrastructure used for SC activities. At the end of last year, the web committee underwent a transition from the previous volunteer team that has been in place for the past 3-4 years to a new team. Over the past year, the new team was fully integrated and has assumed administrative control of all aspects of SC web infrastructure.

The new web committee team initiated a move between server hosts from Rackspace Mosso to Dreamhost. This was mainly done to improve the flexibility available for the web server since the Rackspace admin options were found to be quite restrictive. But as an additional benefit, we were also able to apply for and get Dreamhost's free hosting plan for non-profit organizations, thereby saving on hosting costs. The migration to the new host is proceeding well, and the move to the new server will likely be completed in the coming few months.

Alongside this main initiative, a comprehensive re-design of the SC website is underway in collaboration with the outreach committee. The goal is to make the website more user friendly, more future-proof, and accommodating to a new model of providing separate but linked websites to each RSG. In addition, various conference submissions management systems are being assesed in an effort to settle on a system that can be customized to the requirements of the upcoming Student Symposia (SCS and ESCS). These initiatives should be completed in the coming year.

Outreach Committee

The outreach and volunteer committee of the SC is involved in planning and implementing of activities related to the promotion of the SC outside the ISCB and to advancing membership recruitment. The ouderdag committee also handles queries concerning SC activities, and disseminaties information to various SC social media outlets, including Facebook, LinkedIn, and Twitter.

The outreach committee is now working closely with the web committee to redesign the SC website and to keep its content up to date. The new membership recruitment form on the SC website (http://iscbsc.org/content/membership) is designer to bring more active volunteers to the SC and connect more young computational biology researchers across the globe.

Finance Committee

The fundraising committee aims to raise sufficient funds to support the activities and growth of the SC. This includes events such as the Student Council Symposium, as well as funding opportunities for RSGs and for costs of SC general operations. The committee is responsible for recruiting sponsors, applying for grants and other funding opportunities, and creating and maintaining the SC budget.

This year, the committee raised $15,000 USD for the Student Council Symposium that was held in July in Berlin, Germany. The committee is currently in the process of raising funds for both the Student Council Symposium in Boston and the European Student Council Symposium in Strasbourg to be held in 2014. They are also preparing to fundraise for the extension of the SC series in Latin America. Finally, the committee is establishing a mentoring initiative to better collaborate with RSGs to raise funds to enable more members to attend the Student Council Symposium in the future.

Image above: Sponsors of Student Council Symposium 2013

Publications Committee

Since 2005, the RSG program of the ISCB Student Council has continued to grow and flourish. With over 2,000 student members, across 23 countries, the RSGs are providing valuable initiatives to support and promote students in bioinformatics and computational biology. Their experiences are worth sharing and can inspire many more students to join these groups. An article series documenting the various RSG initiatives, experiences, and issues was proposed by the SC and approved by the ISCB publications committee to be published in the *PLOS Computational Biology* Society Pages. There are currently twelve articles in the series, and has involved an immense coordination effort. A new SC

publications committee was set up to help organize the series and the first articles appeared in mid-2013.

Three articles have already been published, and several more will be submitted in the coming months.

Links to published articles:

http://www.ploscompbiol.org/article/info:doi/10.1371/journal.pcbi.1003241

http://www.ploscompbiol.org/article/info%3Adoi%2F10.1371%2Fjournal.pcbi.1003305

http://www.ploscompbiol.org/article/info:doi/10.1371/journal.pcbi.1003340

Future plans

The SC strives to provide successful initiatives such as the ISCB Student Council Symposium, internship programs, and RSG programs. Over the coming year, effort will be placed on fundraising, website redesign, increasing collaborations for our internship initiative, and welcoming more RSGs.

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