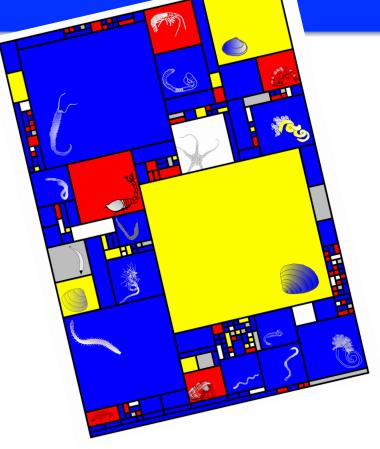
ISCB MEWSLETTER



FALL 2018

Congratulations to the 2018 Art in Science Competition Winner!

Ruth Callaway, Swansea
University, Biosciences,
United Kingdom
Mondrian's Sum of Squares

EXCITING HIGHLIGHTS FROM ISMB 2018

The ISMB 2018 conference in Chicago welcomed over 1,600 delegates. The conference was opened by the ISCB President, Thomas Lengauer welcoming attendees and introducing the conference opening keynote. Completing the opening evening, attendees were invited to the welcome reception with exhibitors giving them the opportunity to seek out information on new technologies, platforms and ideas, in addition to review the ISCB jobs board and introduce themselves to recruiters on site for professional development opportunities.

ISMB 2018 provided an intense multidisciplinary forum for disseminating the latest developments in bioinformatics/computational biology, and fostering dialogie. Over the course of the 4 day conference, attendees had innumerable amounts of opportunities to come face to face with cutting edge science, presented through outstanding keynotes (Steven Salzberg, The ISCB Overton Prize Keynote, Cole Trapnell, Martha L Bulyk, the ISCB Innovator Keynote, Madan Babu and the ISCB Accomplishments by a Senior Scientist Award winner, Ruth Nussinov).

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ISCB's Member-Get-a-Member Campaign

Share that value and your stories of ISCB with your **students**, **colleagues**, and **friends**.









Recruit 5 members – receive 10% off ISMB/ECCB registration
Recruit 10 members – receive 25% off ISMB/ECCB registration
Recruit 15 members – receive 40% off ISMB/ECCB registration
Recruit 25 members – A complimentary registration to an ISCB conference of your choice!

In need of resources to help recruit? Check out the brand new Member Recruitment Toolkit!

ISMB 2018 continued to streamline the thematic organization of the scientific program. The conference also saw the addition of new Communities of Special Interest (COSIs) - MLCSB: Machine Learning in Computational and Systems Biology and EvolCompGen: Evolution & Compar- ative Genomics. Most of the conference talks are available on the ISCB Youtube channel. Be sure to check it out so you don't miss a minute of incredible science! In addition to having access to incredible science through talks and presentations, professional development and focus on opporutnities in the field was the cornerstone of the conference through the new ISCB Career Fair. With nearly 300 attendee participants interacting with 15 recruiting entities the ISCB Career Fair was a notable event. The Career Fair allowed for a designated time for engaging discussion among talented candidates seeking positions in the fields of computational biology and bioinformatics. If you are a recruiter looking for talent, be sure to reserve your spot early next year!

https://www.youtube.com/c/ISCBScienceonDemand

Over 900 posters were presented at the meeting, many of them, which are available through the ISCB Community Journal - https://

f1000research.com/gateways/ISCB/iscbconferences. Those who have not submitted their posters may still do so if you are interested and publishing a poster is complimentary.

Thank you to all who attended to make ISMB 2018 a smashing success! We hope you enjoyed the conference. A special thanks to our conference chairs, <u>Honorary Chair Gary Stormo</u>, <u>Conference Co-chair Christine Orengo</u> and <u>Conference Co-chair Tandy Warnow</u>.

ISCB would also like to thank all of the many volunteers who dedicated time to review papers, abstract submissions, posters, technology talks, and travel fellowship applications. Without this dedicated community, we would not be able to produce such an outstanding event.

We hope to see you in Basel for ISMB/ECCB 2019! View some photos here -

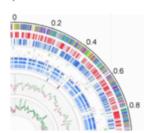
https://www.flickr.com/gp/ismb/n34pY1

Call for participation in the 8th ISCB Wikipedia Competition

The International Society for Computational Biology (ISCB) is pleased to announce the 8th ISCB Wikipedia Competition. The competition has been run since 2012 and awards students and trainees for the best improvements to Wikipedia's coverage of topics relating to computational biology. Entry to the competition is open internationally to students and trainees of any level, both as individuals and as groups. Further information about the competition can be found here: https://en.wikipedia.org/wiki/WP:ISCB-WP8



The competition began on 10 July 2018, and will end on 17 May 2019. Each article entered in the competition will be reviewed by a panel of experts including bioinformatics educators and ISCB Board members. The winners will be presented with their awards at ISMB/ECCB 2019 in Basel, Switzerland.



The competition is run collaboratively with WikiProject Computational Biology (WCB), which shares a core principle of open access to scientific information with the ISCB. WCB celebrated its 10th anniversary in 2017 and has grown to a group of over 160 Wikipedia editors overseeing more than 1,400 articles relating to computational biology. ISCB's collaboration forms part of a larger push towards greater integration between Wikipedia and academia.

The ISCB encourages students and trainees of all levels to participate and strongly encourages lecturers, teachers and tutors of computational biology to use the competition as part of their courses, with contributions to relevant Wikipedia content as part of a class assignment. There are multiple benefits of doing so, for both entrants and the general public. In particular, developing effective communication skills for a range of audiences has previously been identified by the ISCB as a core bioinformatics competency.

We encourage your participation and look forward to continued collaborations and efforts by the community towards enhancing and disseminating computational biology knowledge.

Congratulations to the 2018 **Competition Winners!**

1st Place: Diego César Batista Mariano (Federal University of Minas Gerais, Brazil), Renato Augusto Corrêa dos Santos (University of Campinas, Brazil), Cristiane Hayumi Taniguti (University of Sao Paulo, Brazil), Fernando Henrique Correr (University of Sao Paulo, Brazil), Jenifer Camila Godoy dos Santos (University of Sao Paulo, Brazil) and Ana Letycia Basso Garcia (University of Sao Paulo, Brazil) for "Biostatistics"

2nd Place: John Douglas Huff for "Ruzzo-Tompa algorithm"

3rd Place: Kayla M Steen for "Molecular

phylogenetics"



Congratulations to the 2017 **Competition Winners!**

1st Place: Yichao Li, Ohio University, USA for "Chromosome conformation capture"

2nd Place: Bethany Jose, University of Otago, New Zealand for "Conserved

sequence"

3rd Place: Erika Anderson, UC Berkeley,

USA for "Genome"





Congratulations to the recipients of the ECCB 2018, ISCB sponsored Travel Awards!

Mona Alshahrani, King Abdullah University of Science and Technology
Lorraine Ayad, King's College London
Eric Bach, Aalto University
Peyton Greenside, Stanford University
Maxat Kulmanov, King Abdullah University of Science and Technology
Jiecong Lin, City University of Hong Kong
Emine Sıla Ozdemir, Koç University
Gayathri Sambamoorthy, Indian Institute of Technology,
Florian Schmidt, Saarland University
Arshdeep Sekhon, University of Virginia
Yaxuan Wang, Rice University
Xiaoqian Wang, University of Pittsburgh
Alex Warwick Vesztrocy, University College London
Zhixun Zhao, University of Technology Sydney



ISCB CAREER CENTER

EWS AGE



Post a Job

Looking for strong job candidates? ISCB's Career center is the place to start. ISCB members receive complimentary posting and resume research. Nonmembers can register for free and post -- job posts are \$300.00 each.

TWOOR



Find a Job

Representing organizations worldwide, start your job search here!

PET COLOR



Post a CV/Resume

Get your talents discovered! ISCB resume repository allows you to post your most current resume for recruiters to search. ISCB members get free uploads. Nonmembers may participate for \$100 per resume.



https://careers.iscb.org

ISCB introduces its Strategic Map

The ISCB Board of Directors is please to release its strategic vision, which will guide the organization over the next three years – Strategic Map 2018-2021. This Strategic Map is a living document. Over the course of the next three years, the Board of Directors will assess the goals, as well as the strategies and tactics set forth to achieve those goals. The Board of Directors may from time to time adjust the Strategic Map to address changes in the environment to ensure the success and sustainability of ISCB.

Strategic discussions started in 2016 when the Board of Directors was led through a discovery and assessment discussion of the organization. In the early stages of the development of the strategic map, the Board of Directors openly discussed the strengths and weaknesses, opportunities and threats of the organization. From those discussion came a matrix of what we were doing well, what needed to be improved and where we could expand our research as the professional society for the field. At the closure of the meeting in 2016, the board approved five core competencies, which formed the foundation of the strategic map:

- Community
- Education
- Meetings
- Membership
- Profession

Throughout 2017, members of the Board of Directors participated in various task forces that took a deeper look at the defined core competencies. Each task force developed a goal statement, three-year success vision, and priority milestones for their assigned competency. At the annual in-person meeting, each group reported on their findings and recommendations. Feedback was collected and a membership survey was issued. At the end of 2017, each task force was asked to further define their competencies by identifying implementable strategies to achieve the milestones.

The finalization of the report occurred this July. The Board of Directors approved the Strategic Map with the understanding that it would be a living, breathing document of the Society. As the volunteer leadership of ISCB works towards achieving the goals and milestones set forth, the group fully expects that from time to time there may have a slight change in direction or additions to the scope. Each year the Board of Directors is committed to a review of the progress. It is with great pleasure and anticipation that we release this document to our membership. As always, we welcome constructive feedback and look forward to serving you.

https://www.iscb.org/images/stories/strategic-map/ISCB-Strategic-Map-2018-2020.pdf

MARK YOUR CALENDAR!

Upcoming official ISCB Conferences

ISCB-LA SOIBIO EMBnet 2018

Nov 5 – 9, 2018 Viña del Mar, Chile

ROCKY 2018

December 6 - 8, 2018 Aspen/Snowmass Colorado

RECOMB/ISCB Conference on Regulatory and Systems Genomics, with DREAM

December 8 - 10, 2018 New York City, USA

Pacific Symposium on Biocomputing 2019

Jan 3-7, 2019 Hawaii, USA

RECOMB 2019

May 5 – 8, 2019 Washington, USA

GLBIO 2019

May 19 - 22, 2019 Madison, Wisconsin, USA

ISMB/ECCB 2019

July 21 - 25, 2019 Basel, Switzerland *ISCB's Flagship Meeting*

COSI Session Highlights from ISMB 2018

CAMDA

CAMDA 2018 started off with a bang, kicked off a by an inspiring keynote by Larry Lesko (Univ. Florida) on trends in drug safety assessment - highlighting the need for Real World Data / Evidence to complement clinical studies, in the light of 1/3 of all FDA approved drugs receiving a boxed safety warning after a few years. Following up on that, with 60% of drugs failing due to unexpected liver toxicity in clinical trials, Weida Tong (FDA) put the challenge of predicting drug toxicity into a wider context (improving drug viability, reducing animal models, ...) and introduced the CMap Drug Safety Challenge, a contest jointly run by CAMDA and the FDA, where human clinical liver injury was to be predicted from the response of cell lines to hundreds of drugs. As it emerged in the subsequent talks, this turns out to be a hard problem for classical approached, traditional machine learning, and deep neural networks alike, with the unbalanced nature of the data proving particularly challenging. The first day of the CAMDA track closed with a session of focused highlight talks covering the latest developments in all three contest arenas (CMap Drug Safety, MetaSUB Forensics, Cancer Data Integration), setting off lively discussions over CAMDA posters before delegates gathered for informal scientific exchange over the CAMDA dinner at All-American Ditka's.

BIOINFO-CORE

The bioinformatics core facilities COSI had a useful workshop following a new format of lightning talks plus small group discussion on three topics: hiring and retaining talent, clouds/workflows, and experimental failures and use of marginal data. The small groups allowed members of core facilities to build relationships and share knowledge on our topics. Of interest to many was the discussion of the practical application of workflow technologies for reproducibility. Slides and notes are posted on http://bioinfo-core.org, where you can join in the conversation.

EvolCompGen COSI

With the new EvolCompGen COSI, ISMB has recovered a dedicated track on Evolution and Comparative Genomics. Today's meeting included a stimulating mix of proceeding and contributed talks selected among over 50 abstract submissions. The COSI started with talks on modelling evolution at the level of amino-acids, genes, and operons. One other main theme of the morning was the development and use of phylogenetic methods to study cancer and epidemiology. Beyond these, the COSI also featured talks on orthology (including robust discussion around the ortholog conjecture), phylogenetic networks, and sequence alignment. If you would like to stay in touch with the EvolCompGen COSI, make sure to update your ISCB member profile by adding this COSI to your Interest Areas.

3DSIG

The 2018 3DSIG is in its 14th edition and remains as exciting as the first and every other meeting in between. 3DSIG is the COSI for all aspects of computational molecular biology in which structural data offers new and unique perspectives to increase our understanding of biological processes and their utilisation for practical applications. One of our defining characteristics is the emphasis on oral presentations of which we have 26 in 2018. The first day of 3DSIG started with an exciting keynote by Christine Orengo from UCL who presented their extensive work on CATH and FunFam and how these give insights into the impacts of genetic variations in splicing and disease. A number of presentations involved the use of convoluted neural networks in a number of applications: the prediction of contact maps in conjunction with co-evolution data, the discrimination of protein models and protein threading. Other talks discussed the use of linguistic methods to predict contact maps, the analysis of the accuracy of loop prediction methods and unique manners in which aminoacyl tRNA syntheses bind ATP. The order of assembly of multimeric protein complexes as well as method to model protein structures from Cryo-EM maps. The use of co-evololution data to understand metalloproteins and the clustering and classification of kinase active and inactive structures closed our day. We invite you all to the second day of 3DSIG in which we will discuss and have a hands on session (bring your laptop!) on reproducibility as well as sessions on protein engineering, analysis of allostery, ligand and protein docking among others.



Continued... COSI Session Highlights from ISMB 2018

RegSys

The first day of the Regulatory and Systems Genomics (RegSys) COSI highlighted the most recent advances in understanding genome regulation at the systems level with a mix of both computational and experimental advances. Particular foci today included regulatory logic, single-cell analysis, and three-dimensional genome conformation. We started off with the role of DNA shape on transcription factor binding, which goes beyond just the primary sequence of the genome to consider its more complex biophysical properties, with a keynote by Remo Rohs and talks by Raluca Gordan and Aliel Afek. We continued with several talks on diverse methods for predicting transcription factor binding. The afternoon session showcased numerous recent methods and analyses for studying gene regulation at single-cell resolution at the RNA, DNA accessibility, and Hi-C interaction levels, starting with a keynote by Smita Krishnaswamy. The last session covered advances in understanding genome organization in 3D with numerous methods and applications, starting with a keynote by Katie Pollard on the interplay between 3D conformation and genome evolution. Lastly, we had two sessions in the morning and late afternoon highlighting notable posters in regulatory and systems genomics.

Manolis Kellis - <u>manoli@mit.edu</u> - <u>http://compbio.mit.edu</u> Professor, MIT Computer Science, CSAIL, Broad Institute

TransMed COSI

TransMed COSI is kicked off with a wonderful talk by Steven Brenner covering the interpretation of human genomic variation from exomes of newborn patients with undiagnosed primary immune disorders. He covered, how these approaches helping guide appropriate treatment, family genetic counseling, and avoidance of long diagnostic journey. Maria Secrier, in her plenary talk shed light on mutational footprints and recent advances in computational methodologies for inferring these footprints to retrace patterns of cancer development to the environmental or intrinsic risk factors. She illustrated the current approaches to explore evolutionary dynamics and the tumour-immune crosstalk in primary tumour samples from oesophageal cancer cohorts. The proceedings talks as well as the talks selected from the abstracts covered different disease areas including diabetic kidney diseases, various types of cancers, neurological diseases etc and discussed the novel statistical and machine learning approaches (for example GSEA-InContext, S3M, LONGO R package etc) for analysis of clinical and translational data including time series data and drug bioactivity prediction. The session also covered privacy preserving large scale genome analysis as well as exchange of sensitive data between rare diseases communities. Our COSI session is closed with a great plenary talk by Jessie Tenenbaum covering the landscape of clinical and translational informatics and provided context for how bioinformatics methods and discoveries were improving human health.

Don't miss these talks and MANY MORE!

Visit https://www.youtube.com/c/ISCBScienceonDemand today and learn in depth, the exciting opportunities for learning new technologies and methods being developed within the field.

EXCLUSIVELY FOR MEMBERS



Member Discount

ISCB Members enjoy discounts on conference registration (up to \$150), journal subscriptions, book (25% off), and job center postings (free).



Why Belong

Connecting, Collaborating, Training, the Lifeblood of Science. ISCB, the professional society for computational biology!

Join TODAY!

https://www.iscb.org/become-a-member

Recognize Achievement and Distinguished Science!



Nominate a Fellow today to join a group of distinguished individuals who have set themselves apart through outstanding contributions to the fields of computational biology and bioinformatics.

http://www.iscb.org/iscb-fellows-program













ISCB Announces Results of the 2018 Leadership Elections

The Board of Directors of the International Society for Computational Biology (ISCB) is pleased to announce the results of the recent elections. Members of the society elected the following as incoming and returning officers beginning January 2019:

Officers
Terry Gaasterland, Vice President
Bruno Gaeta, Treasurer

Directors
Iddo Friedberg
Yves Moreau
Yana Bromberg

Student Council Representative to the Board Farzana Rahman ISCB Student Council
Elections

Aishwarya Namasivayam,
Student Council Chair
Rodrigo Gonzalo Parra,
Student Council Vice Chair
Nazeefa Fatima,
Student Council Secretary
Bart Cuypers,
Student Council Treasurer

Nominate a deserving scientist today for one of four ISCB Annual Awards:



ISCB Overton Prize

Award

ISCB Accomplishments by a Senior Scientist

ISCB Outstanding Contributions to ISCB Award

ISCB Innovator
Award







https://www.iscb.org/iscb-awards

ISCB Student Council Internships Program By Emre Guney (Chair, SC's Education and Internships Committee)

Education and training are two essential ingredients for a successful career. On one hand, universities provide students the curriculum for specializing in one's field of study, and on the other, internships complement coursework, and provide invaluable training experience for a fruitful career. Consequently, undergraduates and graduates are encouraged to undertake an internship during the course of their degree. The opportunity to explore one's research interests in the early-stages of their education is important for students, as it improves their skill set and gives their career a boost. In the long term, this helps to close the gap between skills and employability among students across the globe, and balance the research capacity in the field of computational biology. However, training opportunities are often scarce for computational biology students, particularly for those who reside in less privileged regions. Aimed at helping students develop research and academic skills in computational biology, and alleviating the divide across countries, the Student Council of the International Society for Computational Biology introduced its Internship Program in 2009. The Internship Program is committed to provide access to computational biology training, especially for students from developing regions, and improving competencies in the field.

In addition to the support that the ISCB-SC provides in matching students with principal investigators the Anna Tramontano Fellowship Fund was established in 2017 to help financially support the activities of the internship program. The internships program is currently in the process of advertising one internship but we are always looking for more volunteers at all stages (host, interns, and committee members). For detailed information about the program read the recently published article in PLOS Computational Biology (http://doi.org/10.1371/journal.pcbi. 1005802)! Information about currently available internships or hosting an internship can be found at internships.iscbsc.org or by contacting the ISCB-SC's Education and Internships Committee at internships@iscbsc.org.

Student Council Symposium (SCS) 2018

By Eli Draizen and Numrah Fadra (Symposium Chairs)

The ISCB Student Council's flagship annual event SCS 2018 was organised in Chicago in July 2018. This annual gathering brought together researchers from all subfields of Computational Biology. Chaired by Eli Draizen (University of Virginia) and Numrah Fadra (University of Minnesota) and co-organized by student volunteers from all over the world, the event provided, for many, a first opportunity to present their work to an international audience and to network with those that will become their peer and potential collaborators at later career stages.

This year marked the 14th edition of the symposium, and we were pleased to be highlighting more than 12 presentations and over 80 posters representing a wide variety of topics from over 30 countries! Our delegates also had the opportunity to hear from two wonderful and thought-provoking keynote speakers: Prof. Philip E. Bourne (University of Virginia) and Dr. Lucia Peixoto (Washington State University College of Medicine). The 15th edition of the symposium will be hosted in Basel, Switzerland in 2019. Link to symposium website:

http://symposium.iscbsc.org.







UPCOMING AFFILIATED CONFERENCES

VIS 2018

Berlin, Germany
Oct 21, 2018 through Oct 26, 2018
http://ieeevis.org/

ISCB Member Discount: 20 percent

The International Symposium on Health Informatics and Bioinformatics

Turkey - N/A - Antalya

Oct 25, 2018 through Oct 27, 2018

http://hibit2018.org/

ISCB Member Discount: 10 percent

Spanish Symposium on Bioinformatics (JBI2018)
Spain - Granada

Nov 13, 2018 through Nov 16, 2018

http://jbi2018.ugr.es

ISCB Member Discount: 20 percent

Hellenic Bioinformatics 11 • 2018
Greece - Thessalonica

dicece - ilicasalollica

Nov 15, 2018 through Nov 18, 2018

http://hbio2018.hbio.info

ISCB Member Discount: 10 percent

ISCB Executive Committee

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President, ISCB

Alfonso Valencia, Ph.D.

Immediate Past-President Bonnie Berger, Ph.D.

Vice President

Terry Gaasterland, Ph.D.

Vice President

Janet Kelso, Ph.D.

Vice President

Christine Orengo, Ph.D.

Vice President

Bruno Gaeta, Ph.D.

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Scott Markel, Ph.D.

Secretary

Diane E. Kovats, CAE, CMP

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