

ACM Bioinformatics, Computational Biology, Health Informatics (ACM-BCB'2017)



Challenge, Solution, and Action

Distinguished
Panelists:

Lenore I Cowen, Ph.D. (Tufts Univ., Prof., USA)
 Tamsen Dunn, Ph.D. (Illumina and UCSD, Team Lead, USA)
 Nurit Haspel, Ph.D. (Umass Boston, Assoc. Prof., USA)
 Shilpa Nadimpalli Kobren, (Princeton Univ., Ph.D. Student, USA)
 Margaret Okomo-Adhiambo, Ph.D. (CDC, Health/Bioinfo Lead)
 Dagmar Ringe, Ph.D. (Brandeis Univ., Prof., USA)
 Jérôme Waldispühl, Ph.D. (McGill Univ., Assoc. Prof., Canada)
 Tandy Warnow, Ph.D. (U, Illinois Urbana-Champaign, Prof., USA)
 May D. Wang, Ph.D. (Georgia Tech and Emory U., Prof. USA)

Chair:

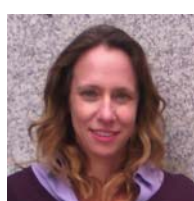
Women in Bioinformatics Panelists



Lenore I Cowen
Prof.
Tufts Univ.



Tamsen Dunn
Team Lead
Illumina, UCSD



Nurit Haspel
Assoc. Prof.
Umass Boston



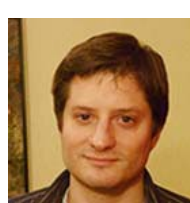
Shilpa Nadimpalli Kobren,
Ph.D. Student
Princeton Univ.



Margaret Okomo-
Adhiambo
Health Sci/Bioinfo Lead
CDC



Dagmar Ringe
Prof.
Brandeis Univ



Jérôme Waldispühl
Assoc. Prof.
McGill Univ.



Tandy Warnow
Prof.
UIUC

Prof. Lenore J. Cowen PhD



- Title: Professor
- Affiliations: Dept. of Computer Science, Dept. of Mathematics, Tufts University
- Contact: lenore.cowen@tufts.edu
- Weblink: www.cs.tufts.edu/~cowen

- Research Interests: Computational Biology, Protein Structure and Function, Biological Networks, Protein Function Prediction, Graph theory and Graph Algorithms, Spectral Graph Theory, Data Science.

Tamsen Dunn, Scientist, Illumina



- Genomic Algorithms Scientist
- Affiliations: Illumina, Inc, Northrop Grumman Space Technology, University of California San Diego.
- Team Lead for the Pisces Project
- Contact: tamsen.dunn@gmail.com
- Weblink: <https://github.com/Illumina/Pisces>

- Research Interests: Disruptive and Emerging Technologies, Open Source Software, Open Science, Sequencing Data Analytics, Systems Modeling for Personalized, Predictive, and Precision Health, Software Systems for the Clinic
 - Simulations and Algorithms, Autonomous Systems, Robotics
 - Optimization, Numerical Methods, Machine Learning, Decision Theory
 - Somatic Variant Calling and Oncology,
 - Next Generation Sequencing and Clinical and Health Decision Systems
 - Rock climbing!

Prof. Nurit Haspel, PhD



- Title: Associate Professor, Dept. of CS, UMass Boston
- Contact: nurit.haspel@umb.edu
- Weblink: <http://www.cs.umb.edu/~nurith>

- Research Interests: Computational Biology, Protein Structure and Function, Protein-protein interaction, algorithms, Computational geometry, genomics, big data.

Shilpa Nadimpalli Kobren



- Title: Graduate Student in Computer Science
- Affiliation: Princeton University (Mona Singh's lab)
- Contact: snadimpa@princeton.edu
- Weblink: <http://shilpakobren.com>

- **Research Interests:** *integrative computational approaches* for detecting and analyzing variation in protein interactions/networks with respect to:
 - evolution of regulatory networks (coding & non-coding variation)
 - natural and disease-related protein interaction changes across human
 - disease mutation prioritization and mechanistic insights (e.g., in cancer)

Dr. Margaret Okomo, DVM, PhD, MPH



- Title: Health Scientist, Bioinformatics Team Lead
- Affiliation: Office of Informatics, National Center for Immunization and Respiratory Diseases (NCIRD), CDC
- Contact: GFV3@CDC.GOV
- Weblink: <https://www.cdc.gov/ncird/>

Research Interests: Bioinformatics solutions for pathogen detection, outbreak investigations and infectious disease surveillance.

- Automated NGS pipelines
- Genomics, metagenomics
- Infectious disease molecular epidemiology
- Scientific data management/analysis
- Project management

Prof. Dagmar Ringe, PhD



- Title: Harold and Bernice Davis Professor in Aging and Neurodegenerative Disease, Department of Biochemistry and Department of Chemistry, Rosenstiel Basic Medical Sciences Research Center, Brandeis University;
- Contact: ringe@brandeis.edu
- Weblink: www.bio.brandeis.edu/prlab

- Research Interests: structural and mechanistic enzymology, computer simulations in enzymology, drug design
- X-ray crystallography
- Protein dynamics
- Mechanisms of inhibitors and inactivators

Prof. Jérôme Waldispühl



- Title: Associate Professor
- Affiliation: School of Computer Science, McGill University, Montréal, Canada.
- Contact: jeromew@cs.mcgill.ca
- Weblink: <http://csb.cs.mcgill.ca>

▪ Research Interests: We develop computational systems to study folding, binding and evolutionary properties of bio-molecules. We also design crowd-computing platforms for citizen science projects in Biology.

- Computational Biology
- Algorithms
- RNA & Protein structure
- Molecular Evolution
- Crowdsourcing & Human-Computing

Prof. Tandy Warnow, PhD



- Title: Founder Professor of Computer Science, The University of Illinois at Urbana-Champaign.
- Awards: ISCB Fellow, ACM Fellow, Guggenheim Fellow, and Packard Fellow.
- Affiliation: Department of Computer Science, The University of Illinois at Urbana-Champaign
- Contact: warnow@illinois.edu
- Weblink: <http://tandy.cs.illinois.edu>

Research Interests: Statistical inference problems in biology, using algorithms and graph-theory to improve accuracy and scalability to large datasets

- Large-scale and complex phylogenetic tree estimation, including species tree estimation from multi-locus datasets taking gene tree heterogeneity into account
- Large-scale multiple sequence alignment
- Metagenomic data analysis
- Historical linguistics

Topics for 2017 WiB Discussion

- (1) To work in Bioinformatics (BI) and Health Informatics (HI), what are the top three factors you consider to be important for a productive career in academic/industry/government?
- (2) What are the skills students or post-docs should acquire to pursue career in industry/government/academic? What guided you to follow an academic or industry career path? What would you do differently in your early career if you had a do-over?
- (3) If you are in academia: how to successfully secure (external) funding? How do you balance research vs. teaching vs. service?
- (4) As a woman in BI and HI, do you have a mentor in your career? Do you want to serve as a mentor for young women in BI & HI?
- (5) Depression is a prevalent problem among graduate students. What can advisors *and universities* do to address & mitigate this issue?

Topics for 2017 WiB Discussion

- 1) Do you observe any bias in men vs. women working in Bioinformatics and Health Informatics? If yes, what are they? What do you suggest to address that issue?
- 2) How can more women attain leadership roles in all types of career positions? How do you think of changing institutions for advancing career?
- 3) How do you choose research topics and collaborators? Please give 1-2 examples and share your insights.
- 4) From the perspective of a manager / PI, when is the best/worst time to have children? What are other factors (location, finances) contributing to staying on top of research/work while starting a family? How do you balance work and family?

Chair: Prof. May D Wang, PhD



- Title: Professor, Georgia Tech Petit Institute Faculty Fellow, Director of Biomedical Big Data Initiative, Kavli Fellow, Georgia Research Alliance Distinguished Cancer Scholar, Fellow of AIMBE
- Affiliation: Department of Biomedical Engineering, Electrical and Computer Engineering, Winship Institute, Parker H. Petit Institute of Bioengineering and Biosciences, Georgia Institute of Technology and Emory University
- Contact: maywang@gatech.edu
- Weblink: <https://bme.gatech.edu/bme/faculty/May-Dongmei-Wang>

- Research Interests: Biomedical Big Data Analytics and Dynamic Systems Modeling for Personalized, Predictive, and Precision Health;
 - Translational Bioinformatics;
 - Pathological Imaging Informatics;
 - Critical Care and Chronic Health Care informatics ;
 - Bio-Nanoinformatics;
 - Clinical and Health Decision Support System
 - Telemedicine