





Preliminary Program

Friday, October 26, 2018

	Big Data in Biology and Medicine	Big Data in Physics and Astronomy	Big Data in Climate, Energy and the Environment	Ethics and Science Communication
8:00 a.m.	Opening Remarks given by Jamie Vernon, Executive Director, and Joel Primack, Sigma Xi President			
8:30 a.m.	 <p>Plenary Session: Observing the Universe Broadly, Deeply, and Frequently Steve Ritz, University of California - Santa Cruz</p>			
9:30 a.m.	Break/Transition to Symposia			
9:45 a.m.	Making the Most of Petabases of Genomic Data: Benjamin Langmead, Johns Hopkins University	Title TBA Risa Wechsler, Stanford University	Title TBA William Collins, Lawrence Berkeley National Laboratory	Ethics Track: Big Data Challenges from Total-Body Positron Tomography to Explore Addiction, Schizophrenia, and Other Diseases Tom Budinger, University of California, Berkeley
10:45 a.m.	Break			
11:00 a.m.	11:00 a.m. Pharmacogenomics of Arsenic Trioxide: Steve Scully, Thaddeus Medical Systems, Inc. 11:20 a.m. Artificial Intelligence, Premature Infants: Amrita Dosanjh, Pediatric Respiratory, San Diego 11:40 a.m. Genetic Predisposition for Methamphetamine Intake: Ovidiu D. Iancu, Oregon Health & Science University	TBA	11:00 a.m. Global Parameterization: Micha Tomkiewicz, Brooklyn College of CUNY 11:30 a.m. Big Data Demand Forecast: Richard Boudreault, Sigma Energy Storage	11:00 a.m. Ethical Debate on Standards for Authorship: Pamela Saha, University of Washington; Subrata Saha, Florida International University 11:30 a.m. Ethical Background for Governing Big Data: G. Arthur Mihram, Princeton University
12 noon	<p>Luncheon and Walston Chubb Award for Innovation Lecture: A Personal Journey into Mathematics, Software, Music and Art Timothy A. Davis, Texas A&M University</p> 			
1:15 p.m.	Break			
1:30 p.m.	Title TBA Mark Gerstein, Yale University	From Supercomputers to the IMAX Screen: Cinematic Scientific Visualizations Frank Summers, Space Telescope Science Institute	Title TBA David Reidmiller, White House Office of Science & Technology Policy	Science Communication Talks: Increasing Data Literacy and Building Science Communication Skills: Lisa D. White, Univ of Cal, Berkeley; Anna Monfils, Central Michigan Univ
1:50 p.m.				Challenges of Sharing Data in Long-Distance Collaborations. Allen Thomas, University of Nebraska at Kearney
2:30 p.m.				Seeking Science: A Round- table with California Legislative Staff organized by the California Council on Science and Technology
2:30 p.m.	 <p>The Importance of Diversity in Big Genomic Data: Dana Crawford, Institute for Computational Biology and Case Western Reserve University</p>	Big Data and Theoretical Astrophysics: Fred Adams, University of Michigan	How Big (Biological) Data is Changing our Approach to Environmental Health Dr. Cavin Ward-Caviness, US Environmental Protection Agency	
3:30 p.m.	Professional Poster Session			
5:00 p.m.	 <p>Plenary Session: Deep Learning and the Grand Engineering Challenges Jeff Dean, Google</p>			
6:00 p.m.	Dinner on Your Own			
7:00 p.m.	8:30-10:00 p.m. War stories from the science policy front. Presented by the California Council on Science and Technology Fellows. Attendees will be able to purchase dinner at the venue.	7-9 p.m. Science Communication Workshop Part I: Darcy Gentleman	Data Visualization Walkthroughs	

Preliminary Program

Saturday October 27, 2018

8:00 a.m. Power Up Breakfast/Student Research Conference Judge & Student Orientations

9:00 a.m. Student Research Conference Poster Session—Featuring a Special Section on Big Data

12 noon **Luncheon and Young Investigator Award Lecture:**
Uncovering the Fundamental Behaviors of Materials with Ultrafast Electron Microscopy,
David Flannigan, University of Minnesota



1:15 p.m. Break

	Biology and Medicine	Professional Development	SciComm	Ethics
1:30 p.m.	1:30 p.m. Hearing Loss in Kids: Pranav Dinesh Mathur, Otonomy, Inc. 1:50 p.m. 1000 Genomes Project: Latifa Jackson, Howard University 2:10 p.m. Joshua Neunuebel, University of Delaware 2:30 p.m. Psychiatric Disorders: Shaolei Teng, Howard University	1:30 p.m. How Can We Build on Our Strengths?: Chris Olex, The Point Sue Weiler, Whitman College	1:30 - 3:00 p.m. Connecting with your Audience: Ben Young Landis, Professional Writer	Big Data Ethics: From Writing Code to Coding Rights in an Era of Intelligent Machines: Kenneth Goodman, University of Miami

2:00–4:00 p.m.

SAS Demonstration

SAS Viya Data Mining and Machine Learning is a new product from SAS that showcases a rich set of data mining and machine learning capabilities that run on a robust, in-memory, distributed computing infrastructure. We will show you how to build various machine learning models with SAS software.


2:50 p.m. Break

3:00 p.m.		Surviving and Thriving in a Research Career: Chris Olex, The Point Sue Weiler, Whitman College	3:15 p.m. Science Communication Workshop - Part II: Darcy Gentleman	Sigma Xi Panel Discussions on Ethics in Research. Moderator: Allen Thomas, University of Nebraska at Kearney. Panelists: Subrata Saha, University of Washington
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3:30–5:30 p.m. Exhibits and Networking

4:00 p.m.	Tentative: Introduction to Data Visualization	4:15 p.m. Grant Writing Workshop: Emma Perry, Unity College		
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5:30 p.m.



John P. McGovern Award for Science and Society and Lecture:
Title TBA,
Daniel Rubenstein, Princeton University

6:30 p.m. Reception

7:00–9:00 p.m.

Banquet; William Procter Prize Lecture:
Lessons from Viruses: Agents of Disease and Drivers of Evolution,
Anna Marie (Ann) Skalka, Fox Chase Cancer Center;
Student Research Conference Awards; and Induction Ceremony for New
Sigma Xi Members (formal attire)



9:00–10:00 p.m. Comedy Show by Science Comedian Brian Malow

Sunday, October 28, 2018

8:30–10:00 a.m. Sigma Xi Town Hall