CornellEngineering

Agenda for Spring 2016 Engineering College Council Meeting

THEME: COMPLEX SYSTEMS, NETWORK SCIENCE AND COMPUTATION

Pre-record College Update, in advance

<u>**THURSDAY, APRIL 7, 2016**</u>

3:30 – 5:00 pm	**Optional: Networking Event with Cornell Engineering Undergraduates** **Location:** Yale/Princeton Room, Statler Hotel *Moderated by Christa Downey, Director, Engineering Cooperative Education and Career Services*
5:30 – 6:30 pm	**Reception** **Location:** Ballroom Foyer, Statler Hotel
6:30 – 8:30 pm	**Dinner** **Location:** Ballroom, Statler Hotel *Lance Collins, Joseph Silbert Dean of Engineering,* to introduce new members, recognize outgoing members of the ECC, and discuss Engineering Quad Renovations

<u>**FRIDAY, APRIL 8, 2016**</u>

Engineering College Council Meeting
Location: Cornell campus, 423 ILR Conference Room

8:00 – 8:45 am	**Continental Breakfast**
8:45 – 9:00 am	**Welcome** *ECC Chair Greg Galvin and Vice Chair Elissa Sterry*
9:00 – 9:15 am	**Complex Systems, Network Science and Computation Overview** *Lance Collins, Joseph Silbert Dean of Engineering*
9:15 – 10:15 am	**Complex Systems, Network Science and Computation** *Moderated by Greg Galvin, MS '82, PhD '84, MBA '93; Chair, Engineering College Council* - *David Shmoys, Laibe/Acheson Professor of Business Management & Leadership Studies; Director, School of Operations Research and Information Engineering; Associate Director, Institute for Computational Sustainability* - *Steven Strogatz, Jacob Gould Schurman Professor of Applied Mathematics, Department of Mathematics* - *Kavita Bala, Professor, Computer Science Department and Program of Computer Graphics*

10:15 – 10:30 am	**Break**
10:45 – 11:45 am	**Panel Discussion with faculty regarding future of Complex Systems, Network Science and Computation** *Moderated by Greg Galvin, MS '82, PhD '84, MBA '93; Chair, Engineering College Council* - *Carla Gomes, Professor, Computer Science Department and Director, Institute for Computational Sustainability* - *Roseanna Zia, Assistant Professor and James C. and Rebecca Q. Morgan Sesquicentennial Faculty Fellow, Robert Frederick Smith School of Chemical and Biomolecular Engineering* - *Eilyan Bitar, Assistant Professor, School of Electrical and Computer Engineering and David D. Croll Sesquicentennial Faculty Fellow*
12:00 – 1:00 p.m.	**Lunch with select PhD students from Complex Systems, Network Science and Computation** **Location:** Taylor Room, Statler Hotel *Moderated by Elissa Sterry '79, MS '80; Vice-Chair, Engineering College Council*
1:15 – 1:45 pm	**PhD student Poster Session** **Location:** Rowe Room, Statler Hotel
1:45 – 2:00 pm	**Break**
2:00 – 3:00 pm	**Interaction with Engineering Leadership/ Breakout Sessions** **Location:** Cornell campus, 423 ILR Conference Room *Do you recognize Cornell as having strength in this area?* *How do we strengthen our brand?* *How do you brand something when it is excellent, but diffuse?* *How do we leverage Cornell Tech in this regard?*
3:00 – 3:45 pm	**Report out and Discussion** *ECC Chair Greg Galvin and Vice Chair Elissa Sterry*
3:45 – 4:00 pm	**Closing** *ECC Chair Greg Galvin and Vice Chair Elissa Sterry*

Future ECC Meeting Dates

Day One: Reception and Dinner, 5:30 p.m. – 8:30 p.m.
Day Two: ECC Meeting, 8:00 am – 4:00 p.m.

<u>Fall 2016</u>
October 20-21, 2016

<u>Spring 2017</u>
March 30-31, 2017

<u>Fall 2017 - NYC</u>
October 26-27, 2017

<u>Spring 2018</u>
April 12-13, 2018

<u>Fall 2018</u>
October 25-26, 2018
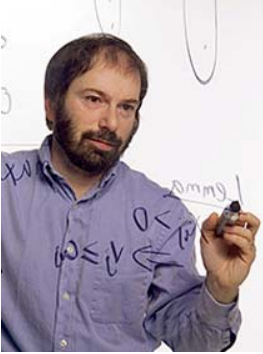
<u>Spring 2019</u>
March 28-29, 2019

<u>Fall 2019</u>
October 24-25, 2019

Spring 2016 Speaker Bios

David Shmoys
Laibe/Acheson Professor of Business Management & Leadership Studies
Director, School of Operations Research and Information Engineering
Associate Director, Institute for Computational Sustainability

David Shmoys obtained his Ph.D. in Computer Science from the University of California at Berkeley in 1984. He has faculty appointments in both the School of Operations Research and Information Engineering and the Department of Computer Science. Shmoys' research has focused on the design and analysis of efficient algorithms for discrete optimization problems. His work has highlighted the central role that linear programming plays in the design of approximation algorithms for NP-hard problems. His current work includes the application of discrete optimization techniques to several issues in computational sustainability, as well as in the development of approximation algorithms for stochastic models of clustering, inventory, and related problems in logistics.

Steven Strogatz
Jacob Gould Schurman Professor of Applied Mathematics, Department of Mathematics

After receiving his bachelor's degree in mathematics from Princeton in 1980, Strogatz spent two years as a Marshall Scholar at Trinity College, Cambridge. He did his doctoral work in applied mathematics at Harvard, followed by a National Science Foundation postdoctoral fellowship at Harvard and Boston University. From 1989 to 1994, Strogatz taught in the Department of Mathematics at MIT, and then joined the Cornell faculty in 1994. Strogatz works in the areas of nonlinear dynamics and complex systems, often on topics inspired by

the curiosities of everyday life. He is perhaps best known for his 1998 Nature paper on "small-world" networks, co-authored with his former student Duncan Watts. As one measure of its impact it was the most highly cited paper about networks between 1998 and 2008, across all scientific disciplines, as well as the sixth most highly cited paper--on any topic--in all of physics.

Kativa Bala
Professor, Computer Science Department and Program of Computer Graphics

Kavita Bala received her S.M. and Ph.D. from the Massachusetts Institute of Technology (MIT), and her B.Tech. from the Indian Institute of Technology (IIT, Bombay). She was a visiting scientist at the MIT Graphics Group from 2010-2011. Bala specializes in computer graphics and computer vision, leading research projects in material perception, recognition, and acquisition; realistic rendering; perception; and computational lighting design .Bala is the Editor-in-Chief of Transactions on Graphics (TOG). She has also served on the Papers Advisory Board for SIGGRAPH and SIGGRAPH Asia, and as Associate Editor for TOG (Transactions on Graphics), TVCG (Transactions on Visualization and Computer Graphics) and CGF (Computer Graphics Forum). Her work on 3D Mandalas was featured at the Rubin Museum of Art, New York. Bala has received a Google Faculty Research Award, the NSF CAREER award, Cornell's College of Engineering Fiona Li and Donald Li Excellence in Teaching Award (2015), James and Mary Tien Excellence in Teaching Award (2006 and 2009), and the Affinito-Stewart award.
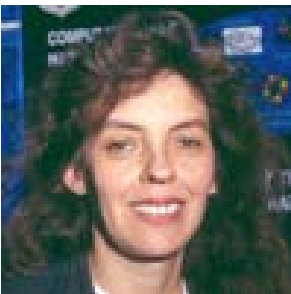
Carla Gomes
Professor, Computer Science Department and Director, Institute for Computational Sustainability

Carla Gomes obtained a Ph.D. in computer science in the area of artificial intelligence and operations research from the University of Edinburgh. She also holds an M.Sc. in applied

mathematics from the University of Lisbon. Her research has covered several areas in artificial intelligence and computer science, including the integration of constraint reasoning, operations research, and machine learning techniques for solving scale constraint reasoning and optimization problems, complete randomized search methods, and algorithm portfolios, planning and scheduling, and multi agent systems. More recently, Gomes has become deeply immersed in research in the new field of Computational Sustainability. Gomes is the Lead PI of an NSF Expeditions in Computing Award on Computational Sustainability and the director of the newly established Institute for Computational Sustainability at Cornell University. Gomes is a Fellow of the Association for the Advancement of Artificial Intelligence (AAAI) and a Fellow of American Association for the Advancement of Science.

Roseanna Zia
Assistant Professor and James C. and Rebecca Q. Morgan Sesquicentennial Faculty Fellow, Robert Frederick Smith School of Chemical and Biomolecular Engineering

Roseanna Zia received her Ph.D. at the California Institute of Technology for research with John F. Brady in Mechanical Engineering, with a minor in Chemical Engineering, in 2011. She received her bachelor's degree in mechanical engineering at the University of Missouri, and subsequently worked as a mechanical engineer in the automotive industry in Detroit, Michigan at General Motors Corporation and Delphi Automotive. During this time she also received a Master of Engineering degree at the University of Michigan. The Zia group develops predictive theory and computational models for the far-from equilibrium behavior of complex fluids and other soft matter undergoing low-Reynolds number flow. Zia's group's research focuses on three primary themes: structural evolution and particle transport in 3D micro-confined suspensions; slow evolution during and sudden release from kinetic arrest in colloidal gels and glasses; and development of a broad non-equilibrium "equation of state", a generalization of Einstein's equilibrium theory.

Eilyan Bitar
Assistant Professor, School of Electrical and Computer Engineering and David D. Croll Sesquicentennial Faculty Fellow

Eilyan Bitar is currently an Assistant Professor in the School of Electrical and Computer Engineering at Cornell University. Prior to joining Cornell in the Fall 2012, he was engaged as a Postdoctoral Fellow in the department of Computing + Mathematical Science (CMS) at the California Institute of Technology and at the University of California, Berkeley in Electrical Engineering and Computer Science during the 2011-12 academic year. A native Californian, he received both his Ph.D. (2011) and B.S. (2006) from the University of California, Berkeley. Bitar's research interests include modern power systems and electricity markets, stochastic control, and optimization.