

## Mathematical Challenges in Graphical Models and Message-Passing Algorithms

### Monday January 23, 2012

- 8:00–8:55 *Check-In/Light Breakfast (Hosted by IPAM)*
- 8:55–9:00 *Welcome and Opening Remarks*
- 9:00–9:50 **Amir Globerson** (Hebrew University)  
*What Cannot be Learned with Bethe Approximations*
- 10:00–10:30 *Break*
- 10:30–11:20 **Tamir Hazan** (Toyota Technological Institute at Chicago)
- 11:30–1:30 *Lunch (on your own)*
- 1:30–2:20 **Dimitris Achlioptas** (COMPUTER TECHNOLOGY INSTITUTE & PRESS “DIOPHANTUS” (CTI))
- 2:30–3:00 *Break*
- 3:00–3:50 **Cristopher Moore** (University of New Mexico)  
*Message-passing algorithms for network analysis*
- 4:00–5:30 *Poster Session & Reception (Hosted by IPAM)*

### Tuesday January 24, 2012

- 8:00–9:00 *Continental Breakfast*
- 9:00–9:50 **Elitza Maneva** (University of Barcelona)  
*Iterative algorithms and Sherali-Adams linear programming relaxations of graph isomorphism*
- 10:00–10:30 *Break*
- 10:30–11:20 **Lenka Zdeborová** (Commissariat à l'Énergie Atomique (CEA))  
*Phase transitions and algorithmic barriers in inference problems*
- 11:30–1:30 *Lunch (on your own)*
- 1:30–2:20 **Mohsen Bayati** (Stanford University)
- 2:30–3:00 *Break*
- 3:00–3:50 **Sewoong Oh** (Massachusetts Institute of Technology)  
*Message-passing algorithms for approximate singular vector computation*



## Wednesday January 25, 2012

- 8:00–9:00 *Continental Breakfast*
- 9:00–9:50 **Tom Richardson** (Qualcomm)
- 10:00–10:30 *Break*
- 10:30–11:20 **Yi Lu** (University of Illinois at Urbana-Champaign)
- 11:30–1:30 *Lunch (on your own)*
- 1:30–2:20 **Alex Dimakis** (University of Southern California (USC))
- 2:30–3:00 *Break*
- 3:00–3:50 **Kavita Ramanan** (Brown University)  
*Avatars of the Hard Core Model and their Applications*

## Thursday January 26, 2012

- 8:00–9:00 *Continental Breakfast*
- 9:00–9:50 **Sebastien Roch** (University of California, Los Angeles (UCLA))  
*Relating Combinatorial and Variational Distances Between Trees*
- 10:00–10:30 *Break*
- 10:30–11:20 **Silvio Franz** (Université Paris-Sud 11)  
*Fluctuations close to dynamical transitions in physics and computer science*
- 11:30–1:30 *Lunch (on your own)*
- 1:30–2:20 **Francesco Guerra** (Università di Roma “La Sapienza”)  
*Spontaneous replica symmetry breaking in mean field spin glasses and neural networks*
- 2:30–3:00 *Break*
- 3:00–3:50 **Shannon Starr** (University of Rochester)  
*Bounds for the antiferromagnetic Erdos-Renyi Potts model*
- 4:00–4:15 *Break*
- 4:15–4:40 **Sidhant Misra** (Massachusetts Institute of Technology)
- 4:40–5:05 **Linji Yang** (Georgia Institute of Technology)

## Friday January 27, 2012

- 8:00–9:00 *Continental Breakfast*
- 9:00–9:50 **Louis-Pierre Arguin** (University of Montreal)  
*On the number of ground states of the Edwards-Anderson spin glass model*
- 10:00–10:30 *Break*
- 10:30–11:20 **Amir Dembo** (Stanford University)  
*Factor models on locally tree-like graphs*
- 11:30–1:30 *Lunch (on your own)*
- 1:30–2:20 **Allan Sly** (University of California, Berkeley (UC Berkeley))  
*The complexity of counting for anti-ferromagnetic 2-spin systems*

