

# Wireless Foundations

## Wireless Foundations

### Open House and Poster Session

February 21, 2008

2:00 – 5:00 PM

264 Cory Hall, UC Berkeley

**Please join us for light refreshments and drinks!**

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#### About Us:

At Wireless Foundations our goal as a research center is to advance the foundations of communication systems with a specific focus on determining the architectural principles for next generation wireless technologies. We believe highly inter-disciplinary research across signal processing, communications, game theory, and networking will result in innovative solutions in the future. In our search for fundamental insights and better theories for wireless systems, we encounter many previously formulated open problems in network information theory (e.g. non-degraded broadcast channels, relay channels, two-way channels, etc.) that have evaded the community's grasp. By taking a fresh perspective on problems and formulating them in a different way, it is possible to get further understanding while increasing the relevance of the results to real wireless systems.

Intellectually, we serve as the "theory and algorithms" foundry for the work that occurs at the Berkeley Wireless Research Center and maintain synergistic relationships with CITRIS and the system-level wireless projects on campus. We also have a close collaboration with the faculty at Boalt law school regarding regulatory and policy issues. The center is comprised of 6 core faculty members: Venkat Anantharam, Michael Gastpar, Kannan Ramchandran, Anant Sahai, David Tse and Martin Wainwright, 23 graduate students, and 3 postdocs in the EECS Department at UC Berkeley whose interests include information theory, communications, signal processing, and coding theory. For more information visit us at [wifo.eecs.berkeley.edu](http://wifo.eecs.berkeley.edu)

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### Featured Posters

1. **“A Deterministic Approach to Wireless Network Information Theory”**, Salman Avestimehr and David Tse
2. **“Interference Alignment on the Signal Scale”**, Guy Bresler and David Tse
3. **“Distributed Codes for Storage in Data Centers”**, Alex Dimakis, Kannan Ramchandran, and Martin Wainwright
4. **“Bits through ARQs: Peaceful Coexistence between Cognitive Radios and Legacy Systems”**, Krish Eswaran, Michael Gastpar and Kannan Ramchandran
5. **“Information-Theoretic Key Agreement of Multiple Terminals”**, Amin Aminzadeh Gohari and Venkat Anantharam
6. **“Spectrum Sharing between Wireless Networks”**, Lenny Grokop and David Tse
7. **“‘Waterslide Curves’ for Power Efficient Communication”**, Pulkit Grover and Anant Sahai
8. **“Improving WLAN throughput via Probability of Collision Estimation and Link Adaptation”**, Michael Krishnan and Avideh Zakhor
9. **“Compute-and-Forward: A New Relaying Strategy for Wireless Networks”**, Bobak Nazer and Michael Gastpar
10. **“Compression Of Picky Sources”**, Hari Palaiyanur and Anant Sahai
11. **“Differences between Observation and Sampling Error in Sparse Signal Reconstruction”**, Galen Reeves and Michael Gastpar
12. **“Rateless Coding with Partial CSI at the Decoder”**, Anand D. Sarwate and Michael Gastpar
13. **“Fundamental Design Considerations for Cognitive Radio Systems”**, Rahul Tandra, Sridhar Mubaraq Mishra, and Pulkit Grover
14. **“Distributed Source Coding Based Robust Low-Latency Video Transmission”**, June Wang and Kannan Ramchandran
15. **“Utilizing Helpers in Peer-to-Peer Content Distribution”**, June Wang and Kannan Ramchandran
16. **“Towards Anonymity in Networking”**, Parvathinathan Venkitasubramaniam, Venkat Anantharam, Lang Tong (Cornell) and Ting He (IBM-Research)
17. **“Robust Distributed Multi-View Video Compression for Wireless Camera Networks”**, Chuohao Yeo and Kannan Ramchandran