1014-49-772   **Kristin P Bennett*** (`bennek@rpi.edu`), Dept of Math Sciences, AE 327, Rensselaer Polytechnic Institute, 110 8th Street, Troy, NY 12180. *Optimization Challenges in Capacity Control.*

In this talk, we examine different strategies for capacity control in learning and the optimization challenges that they present. Capacity control in learning is essential for good generalization. Support vector machines and related approaches use penalty terms to control capacity. But we must not forget the lessons learned from neural networks, namely that dimensionality reduction and early stopping can successfully control capacity as well. We discuss strategies for approaching the optimization problems that arise for different forms of capacity control. (Received September 23, 2005)