Seminar Series of the

AFRL/VA and AFOSR

Collaborative Center of Control Science (CCCS)

Autonomy and Cooperation for Small UAVs

Prof. Randy Beard
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10:30a.m., August 6, 2003
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Abstract: The focus of this talk will be autonomous control technologies and cooperative control techniques for small (less than six foot wingspan) UAVs. An overview will be given of autopilot hardware and software developed at BYU, as well as successful flight demonstrations. Real-time path planning, trajectory generation, and tracking algorithms will be discussed. In addition, recent development of PDA and voice controlled interfaces will be discussed. Cooperative control techniques and their applicability to small UAVs, with a focus on application to cooperative timing, cooperative search, and multiple vehicle consensus will be presented.

Biography: Randy Beard received the B.S. degree in electrical engineering from the University of Utah, Salt Lake City, in 1991, the M.S. degree in electrical engineering in 1993, the M.S. degree in mathematics in 1994, and the Ph.D. degree in electrical engineering in 1995, all from Rensselaer Polytechnic Institute, Troy, N.Y. Since 1996, he has been with the Electrical and Computer Engineering Department at Brigham Young University, Provo, UT, where he is currently an associate professor. In 1997 and 1998, he was a Faculty Fellow at the Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA. His research interests include autonomous vehicles, coordinated control of multiple vehicle systems, and nonlinear control.