

# BI-CO MATHEMATICS COLLOQUIUM

David E. Benson  
NetJets Inc.

*“An Aircraft Crew Scheduling  
Problem that Satisfies Company and  
Employee Preferences Modeled and  
Solved as a Mixed-Integer Program”*

**Monday, November 5, 2012**

Talk at 4:00 – Park 338  
Tea at 3:30 – Park 355, Math Lounge

## Abstract:

NetJets operates 400 private aircraft in its fractional business in the US with approximately 2,500 pilots. Roughly 40% of these pilots work an 18 work day schedule; the work schedule is created by the 15<sup>th</sup> of each month for the next month of operation. Pilots express preferences for a number of preferences, specific days off, tour length, weekends off, etc... NetJets demand varies considerably by day and therefore it's need for pilots; we developed an optimization program that balances the pilot preferences and company requirements. The problem is modeled as a Mixed-Integer Program (MIP); implemented and solved using ILOG/OPL Studio. We will review the modeling of the schedule rules, preferences, and company requirements and discuss how the software seeks near optimal solutions.

**BRYN MAWR COLLEGE**