JOEL S. SOKOL

EMPLOYMENT

Assistant Professor	Georgia Institute of Technology (Industrial and Systems Engineering)	1999 – present
Research Assistant	Massachusetts Institute of Technology (Operations Research Center)	1994 – 1999
Teaching Assistant	Massachusetts Institute of Technology (Sloan School of Management)	1996 – 1999
Applied Research Intern	Bellcore (Bell Communications Research)	1996 – 1997

EDUCATION

Ph.D.	Massachusetts Institute of Technology (Operations Research)	June 1999
B.S.	Rutgers University (Applied Sciences in Engineering)	May 1994
B.A.	Rutgers University (Mathematics, Computer Science)	May 1994

PUBLICATIONS

"Virtual Path Design in Service-Specific ATM Networks," *Journal of Heuristics* **6** (2000), pp. 65-83. (With I. Saniee)

"Telecommunication Link Restoration Planning with Multiple Facility Types," *Annals of Operations Research* **106** (2001), pp. 127-154. (With A. Balakrishnan, T.L. Magnanti, Y. Wang)

"The Asia Pacific Air Cargo System," TLI-AP White Paper (2001). (With M. Bazaraa, E.P. Chew, H.C. Huang, J.D. Hurley, E.L. Johnson, I. Mok, G.L. Nemhauser, K.C. Tan, C.P. Teo, I-L. Wang)

"Spare Capacity Assignment for Line Restoration Using a Single Facility Type," *Operations Research* **50** (2002), pp. 617-635. (With A. Balakrishnan, T.L. Magnanti, Y. Wang)

"Management of Railroad Impedances for Shortest Path-based Routing," *Electronic Notes in Theoretical Computer Science* **66** (2002). (With J. Day, G.L. Nemhauser)

"An Optimization Approach to the Correlated Storage Assignment Problem," *Proceedings of the 12th Annual Industrial Engineering Research Conference* (2003). (With M. Garfinkel, G. Sharp)

"Engineering Workplace Communication," in *Introduction to Engineering Through Case Studies*, P.K. Raju, C. Sankar, eds. (2003). (With G. Forehand, P. McGuire, J.S. Norback)

"A Robust Heuristic for Batting Order Optimization Under Uncertainty," *Journal of Heuristics* **9** (2003), pp. 353-370.

"Heuristics for the Correlated Storage Assignment Problem," *Proceedings of the 13th Annual Industrial Engineering Research Conference* (2004). (With M. Garfinkel, G. Sharp)

"Engineering Workplace Communication," *Proceedings of the 2004 American Society of Engineering Education Annual Conference and Exposition* (2004). (With G.A. Forehand, P.J. McGuire, J.S. Norback)

"Teaching Statistics With Sports Examples," *Informs Transactions on Education*, to appear. (With P.H. Kvam)

"Optimal Protein Structure Alignment Using Maximum Cliques," *Operations Research*, to appear. (With D.M. Strickland, E.R. Barnes)

"An Intuitive Markov Chain Lesson From Baseball," *Informs Transactions on Education*, to appear.

PAPERS IN SUBMISSION/REVISION

"New Multiple Shortest Paths Algorithms" (With I-L. Wang, E.L. Johnson). Submitted to *Operations Research Letters*.

"Short Term Booking of Air Cargo Space" (With E.P. Chew, H.C. Huang, E.L. Johnson, C.H. Leong, G.L. Nemhauser). Submitted to *European Journal on Operational Research*.

"Algorithms for Paint Blocking in an Automobile Assembly Line" (With T.L. Magnanti). Submitted to *Operations Research*.

"Planning the Supply Chain Network for New Products: A Case Study" (With R.J. Butler, J.C. Ammons). Submitted to *Engineering Management Journal*.

"An Optimization Approach for Planning Daily Drayage Operations" (with Y. Ileri, M. Bazaraa, T. Gifford, G. Nemhauser, E. Wikum). Submitted to *Central European Journal of Operational Research*

"A Least-Squares Network Flow Algorithm" (With B. Gopalakrishnan, E. Barnes, E.L. Johnson). In revision.

"A Robust Optimization Approach for Strategic Production and Distribution Planning for a New Product" (With R.J. Butler, J.C. Ammons). In revision.

"Modeling Automobile Paint Blocking: A Time Window Traveling Salesman Problem" (With T.L. Magnanti). In revision.

WORKING PAPERS (IN PREPARATION)

"A Combined-Objective Least-Squares Method for Solving Linear Programming Problems" (With E. Barnes, B. Gopalakrishnan, E. Johnson)

"Modeling and Solving the ADM Selection and Routing Problem" (With A. Balakrishnan, T.L. Magnanti)

"A Logistic Regression/Markov Chain Model for College Basketball Rankings" (With P.H. Kvam)

"Solving the Inverse Shortest Path Length Problem for Bandwidth Pricing" (With C-H. Hung, S. Ahmed, O. Ergun)

"A New Linear Programming Approach to Maximum Cliques" (With K. Baaman, E.R. Barnes)

"A Strategic Production and Distribution Model for Financial Viability in New Product Supply Chains" (With R.J. Butler, J.C. Ammons)

INVITED SEMINARS

"Inverse Optimization for Network Pricing," INSEAD Singapore Campus, June 2004
"Heuristics for the Correlated Storage Assignment Problem," National University of Singapore (joint Industrial & Systems Engineering/TLI-AP seminar), June 2004
"Heuristics for the Correlated Storage Assignment Problem," University of Auckland Department of Engineering Science, May 2004
"Designing Robust Supply Chains for New Products," Lucent Technologies, Murray Hill, NJ, May 2004
"Optimal Protein Structure Alignment Using Maximum Cliques," National University of Singapore (joint Industrial & Systems Engineering/TLI-AP seminar), March 2004
"Maximum Cliques and Protein Structure Alignment," University of Michigan Department of Industrial and Operations Engineering seminar series, January 2003
"Optimizing Paint Blocking in Automobile Assembly," National University of Singapore, September 2000
"Actual and Potential Runs in Batting Order Optimization," RAND Corporation, February 1999
"Telecommunications: From Backbone to Back Door," California State University – Long Beach, Long Beach, CA, January 1999

CONFERENCE/WORKSHOP PRESENTATIONS

"A Markov Chain/Logistic Regression Model for Predicting NCAA Basketball Outcomes," INFORMS conference, Denver, CO, October 2004
"Teaching Markov Chains Using Baseball," INFORMS conference, Denver, CO, October 2004
"Sorry, Yogi: Good Pitching Does Beat Good Hitting," INFORMS conference, Atlanta, GA, October 2003
"Management of Railroad Impedances for Shortest Path-Based Routing," INFORMS conference, San Jose, CA, November 2002
"Inverse Shortest Path Length Problems," INFORMS conference, San Jose, CA, November 2002
"Management of Railroad Impedances for Shortest Path-based Routing," ATMOS workshop, July 2002
"The Distance-Specific Inverse Multicommodity Flow Problem," INFORMS conference, Miami, FL, November 2001
"ADM Selection and Routing in Ring Networks," INFORMS conference, Miami, FL, November 2001
"Air Cargo Load and Allocation Issues," INFORMS conference, Miami, FL, November 2001
"Coordinating Air Cargo Allocation Requests for HP in Singapore," TLI Leaders in Logistics meeting, Atlanta, GA, May 2001
"A Cutting-Plane Algorithm for HP-Lattice Protein Folding," INFORMS conference, San Antonio, TX, November 2000
"An Inverse Optimization Algorithm for Calibrating Railroad Block Impedances," International Symposium on Mathematical Programming, Atlanta, GA, August 2000

"Optimizing Paint Blocking in an Automobile Assembly Line: An Application of Specialized TSPs," INFORMS conference, Philadelphia, PA, October 1999
"Painting Cars and the TSP," INFORMS conference, Seattle, WA, October 1998
"Design of Virtual Paths in ATM Networks," INFORMS conference, San Diego, CA, May 1997

TELEVISION AND RADIO APPEARANCES

Fox5 News, March 24, 2004. Asked for expert predictions based on my logistic regression/Markov chain model of college basketball; predictions were correct.

WGCL 46 News, March 31, 2004. Asked for expert predictions based on my logistic regression/Markov chain model of college basketball; predictions were correct.

WGCL Final Four Preview Show, April 2, 2004. Predictions from March 31 repeated.

AM 750 Final Four Preview, April 2, 2004. Televised predictions from March 31 repeated.

WGCL 46 News, April 5, 2004. Asked for expert predictions based on my logistic regression/Markov chain model of college basketball; predictions were correct.

PHD THESES SUPERVISED (9)

Jeff Day, 2002
(G. Nemhauser, co-advisor)
Thesis Title: "An Inverse Optimization Approach to Railroad Block Impedances"
Current Position: Schneider National

Dawn M. Strickland, 2002
(E. Barnes, co-advisor)
Thesis Title: "Maximum Cliques with Application to Protein Structure Alignment"
Current Position: Assistant Professor, Department of Mathematics, Winthrop University

Renee Butler, 2003
(J. Ammons, co-advisor)
Thesis Title: "Supply Chain Design for New Products"
Current Position: Assistant Professor, Department of Industrial Engineering and Management Systems, University of Central Florida

Cheng-Huang Hung, 2003
Thesis Title: "On the Inverse Shortest Path Problem"
Current Position: Assistant Professor, Department of Management of Information Systems, National Taiwan University of Science and Technology

Maurice Garfinkel
(G. Sharp, co-advisor)
Thesis Title: "An Optimization Approach to the Correlated Storage Problem"

Hyun-suk Yoon
Thesis Topic: Optimization in Protein Folding

Kendra Taylor
(P. Griffin, co-advisor)
Thesis Topic: Multi-period Forward and Reverse Auctions

Yetkin Ileri
(G. Nemhauser, co-advisor)
Thesis Topic: Large-Scale Consolidation and Routing Problems in Trucking

Lori Norton
(O. Ergun, co-advisor)
Thesis Topic: Carrier Collaboration in Air Cargo Logistics

MASTERS THESES SUPERVISED (5)

Katharina Baaman (School of Mathematics), 2003 (E. Barnes, P. Mucha, co-advisors)
Thesis Title: "The Maximum Clique Problem – On Finding an Upper Bound with Application to Protein Structure Alignment"

Lloyd Zhilee Lim, 2003
Thesis Title: "Production Scheduling for Improved Logistics"

Yam Guan Goh, 2003 (Y. Wang, co-advisor)
Thesis Title: "Optimizing Supply Chain Logistics in China"

Leng Siang Lee, 2004
"Analysis of the Competitive Strength of Asia-Pacific Logistics Hubs"

Lily Suryana Indradjaja, 2004
"Network Design for Ericsson End-to-End Spare Parts Management System in Indonesia"

OTHER STUDENT RESEARCH/READINGS COURSES SUPERVISED

Ph.D. (20)

Cheng-Huang Hung, "Toward Solving the HP-Lattice Model of Protein Folding," Spring 2001
Kai Huang, "The Inverse Shortest Path Length Problem" (with S. Ahmed), Summer 2001 – Summer 2002
Hyun-suk Yoon, "The Schoolbus Routing Problem," Summer 2001
Joe Hurley, "Multiple Pickup/Delivery Routing with Time Windows and Pool Points," Fall 2001
Yetkin Ileri, "Modeling Air Cargo Routing Decision Making" (with G. Nemhauser), Spring 2002
Hyun-suk Yoon, "Minimum 2-Digit Code Generators," Spring 2002
Anthony Hillman, "Computational Optimization," Spring 2002
Martin Smith, "Contract Structure and Investment" (with S. Hackman), Summer 2002
Thomas Cooper, "Maximum Cliques and Protein Structure Alignment," Fall 2002
Rebeca Sandino, "Primal-Dual Algorithms," Fall 2002
Gonzalo Cordova, "How to Read and Do Proofs," Summer 2003
Marcia Archibald, "Readings in Optimization," Fall 2003
Doug Altner, "ADM Selection and Routing Algorithms," Fall 2003
Tsung-Lin Wu, "Lower Bounds for Maximum Cliques in CMO Graphs," Fall 2003
Marcia Archibald, "How to Read and Do Proofs," Spring 2004
Gonzalo Cordova, "Readings in Analysis," Summer 2004
Monika Szymczak, "Optimization in Protein Structure Comparison," Summer 2004
Monika Szymczak, "Optimization in Protein Structure Comparison, part II," Fall 2004
Yao-Hsuan Chen, "Network Optimization and Lagrangean Relaxation," Fall 2004
Jose Antonio Carbajal, "General Network Optimization and Currency Arbitrage," Fall 2004

Masters (24)

Kenda Armstrong, “HP-Lattice Protein Folding,” Spring 2000
Jane Burkett, “HP-Lattice Protein Folding,” Summer 2000
Christian Bezzi, “Constructing an Excel Model for Route Matching in Trucking,” Spring 2001
Nelman Sabillon, “The Logistics of Trucking,” Spring 2001
Rebeca Sandino, “Algorithms for Protein Contact Map Overlap Maximization,” Fall 2001 – Spring 2002 (This research led to her winning an NSF Graduate Fellowship.)
Anup Mehendale, “Automatic Data Collection Systems in Logistics” (with A. Kleywegt), Fall 2001
Siddharth Shah, “A Case Study in Automobile Spare Parts Distributuion” (with A. Kleywegt), Fall 2001 – Spring 2002
Anar Jafarov, “Notes in Deterministic Optimization,” Spring 2002
Yong Jung, Sameer Savant, “Optimization in Protein Folding,” Spring 2002
Devasia Karimpanal, Ashish Labroo, Karthik Lakshman, Rikta Nagrani, “Solving Logistics Problems in Java,” Spring 2002
Cindy Rim, “Computational Optimization,” Spring 2002
Yolanda Alexander, Zahed Khan, Winny Leowarin, Oran Kittithreerapronchai, “Dynamic Programming Applied to Quiddler,” Summer 2002
Oliver Grimm, “Maximum Profit Cycle Covers for Air Cargo Scheduling,” Summer 2002
Sam Potter, “A Manual for Optimization Using AMPL,” Summer 2002
LaKeya DeWalt, Shashank Gupta, Kim Thompson, “Maximum Profit Cycle Covers for Air Cargo Scheduling,” Fall 2002
Senthil Kumar Arumugam, Om Prakash Chellakkani, “Reverse-Engineering Protein Contact Maps,” Fall 2002
Garrett Cole, “Cycle Covers for Maximum Profit,” Spring 2003
Vikram Subramanian, “The Railroad Logistics Industry” (with A. Kleywegt), Spring 2003
Chanika Angchaisuksiri, Mo-Han Hsieh, “Multilane Product Optimization and Quiddler,” Spring 2003
Jenny Xiaomeng Yin, “The Chinese Postman Challenge,” Spring 2003
Joseph Harris, John Hong, Michael Manning, “Heterogeneous Self-Organizing Workers,” Summer 2003
Soonhui Lee, “Network Optimization,” Spring 2004
Besarion Lordkaprinze, “A Study of Financial Optimization Software,” Summer 2004
Jud Savelle, “Collaboration by Air Passenger Carriers,” Summer 2004

Undergraduate (22)

Meeti Shah, “The Logistics of Trucking,” Spring 2001
Joseph Harris, “An Interactive Traveling Salesman Learning Tool,” Summer 2001
Robby Espinoza, “Multiple Pickup/Delivery Routing with Time Windows and Pool Points,” Fall 2001
Dimitris Athanassopoulos, “The Contact Map Overlap Problem in Protein Comparison,” Spring 2002
Keisha Carter, “Scheduling Boarding and De-icing at Airports,” Spring 2002
Alicia Patrick, “Valid Inequalities for Coloring Extension LP’s,” Summer 2002
Eric Orrington, Nadya Ramel, “A Scientific Visualization Tool for Protein Structure Alignment” (with E. Barnes), Summer 2002 (This research was selected for presentation at the National Society of Black Engineers conference.)
Alicia Patrick, “Reverse-Engineering Protein Contact Maps,” Fall 2002
Eric Orrington, Nadya Ramel, “Topics in Discrete Mathematics” (with E. Barnes), Fall 2002
Yao-Hsuan Chen, “Linear and Network Optimization,” Fall 2002
Candy Leung, Daniel Mo, “Hard and Stochastic Versions of Basic Logistics Models,” Spring 2003
Juan Martinez, “The Facility Location Challenge,” Spring 2003

Eric Orrington, *Nadya Ramel, “A Visualization Tool for Branch-and-Bound” (with E. Barnes), Spring 2003
Javier Estrella, “Topics in Optimization,” Spring 2003
Holly Matera, Jared Norton, Katie Whitehead, “A Probability-Based Model of NCAA Basketball,” Summer 2003
Nikhil Chaturvedi, “Model Selection in ISyE,” Summer 2003
Daphne Lai, “Efficient Transportation Simplex Code in Excel,” Summer 2003
Sebastian Urbina, “Nonlinear Optimization Models in Finance” (with F. Al-Khayyal), Fall 2003
Peter Choi, David Dirring, “Analyzing a Self-Organizing System Using Simulation,” Spring 2004
Urvi Kapadia, “A Dynamic Programming Model for Strategic Polling,” Spring 2004
Ty Walker, “Collaboration by Air Passenger Carriers,” Summer 2004
Vernet Lasadro, “A Two-Stage Probabilistic Model for Pitcher Success,” Fall 2004

Doctoral Thesis Committees (15)

Luis Gonzalez (Math), 2000
Jill Hardin, 2001
Lisa Evans, 2002
Milind Sohoni, 2002
Balaji Gopalakrishnan, 2002
Kelly Easton, 2002
Jeff Weir, 2002
I-Lin Wang, 2003
Haijun Shen (Aerospace Engineering), 2003
Stephen Mulva (Civil Engineering), Expected 2004
Yen-Tai Wan, Expected 2004
Yudi Pranoto, Expected 2005
Yong-Hee Han, Expected 2005
Kai Huang, Expected 2005
Hee Jung Sim, Expected 2005

ADDITIONAL TEACHING ACTIVITIES

Communications Instruction. ISyE workplace communications initiative to train students in business communications, including writing and presentation skills. Instruction is integrated into ISyE 4104/5, Senior Design. This work has also lead to the publication of a book chapter and a paper. (With F. Al-Khayyal, J. Norback)

New Course Development: Financial Optimization (elective in the Master’s program in Quantitative and Computational Finance, jointly administered by ISyE, Math, and Management). Created course syllabus, lecture materials, projects, etc. for ISyE 6673. (With S. Ahmed, F. Al-Khayyal, E. Barnes, S. Deng, S. Hackman)

New Course Development: Honors Operations Research Modeling (undergraduate honors topics course). Developed mathematical modeling course to be offered in Spring 2005. The goal of the course is to teach engineering students to become more proficient and more comfortable creating and using mathematical models in their analyses.

New Course Development: COE 1361, Computing for Engineers. Created lecture and project material for College of Engineering pilot course.

Laboratory Material Development for ISyE 3101 (now 3103), Introduction to Supply Chain Modeling: Logistics, and ISyE 6203, Transportation and Supply Chain Systems. Developed and created complete set of laboratory materials, including many with significant computer-based and

web-based components. The laboratory component was eliminated from the undergraduate course after Fall 2001; many subsequent instructors have used the materials as student projects in ISyE 3103, ISyE 6203, ISyE 4231, and ISyE 6669.

On-line Tutorial Design. Created multimedia web-based linear and integer programming tutorial, including instructional material. (With K. Croxton, T.L. Magnanti, Y. Wang)

Educational Software Development. Designed interactive capacitated network design and traveling salesman problem applications. (With K. Croxton, T.L. Magnanti, Y. Wang) Recently was sole supervisor of the creation of an updated and improved version.

AMPL Tutorial. Supervised the development of an AMPL tutorial for introductory optimization students. The tutorial is now in use at Georgia Tech (ISyE 6201, ISyE 4231, ISyE 6669), Penn State (BA 512, BA 544), and Brigham Young University (MBA 530, MBA 531).

PROFESSIONAL POSITIONS

Associate Editor, *INFORMS Journal on Computing* special issue on computation in music
Editor, *OR/MS Today* "Issues in Education" column, Oct. 2003 – present
Chair, INFORMS Student Affairs Committee, 2005 – present; committee member since 2003
Vice-Chair of Programs, INFORMS Section on OR in Sports, 2004 – present
Invited Sessions Chair, INFORMS 2003 General Meeting
Co-founder, INFORMS Junior Faculty Interest Group, 2002
INFORMS Subcommittee on Student Chapters, 1999 – 2002
Local Committee, International Symposium on Mathematical Programming, 2000
Referee for *Operations Research, INFORMS Journal on Computing, Networks, Telecommunications Systems, Naval Logistics Quarterly, Annals of Operations Research, Operations Research Letters, Transportation Science, European Journal of Operational Research, Asia-Pacific Journal of Operational Research*

PROFESSIONAL MEMBERSHIPS

Institute for Operations Research and Management Science (INFORMS)
Mathematical Programming Society
Tau Beta Pi
Golden Key

CAMPUS CONTRIBUTIONS

Departmental Activities

Chair, ISyE Undergraduate Committee, Fall 2003 – present; Member, Fall 2002 – present
ISyE Information Technology Committee, Fall 2004 – present
College of Engineering Freshman Pilot Mentoring Program, 2001 – 2002
ISyE Comprehensive Examination Committee (Optimization), Spring 2000 – Spring 2001 and Fall 2002 – Spring 2003
ISyE Space Planning Committee, Spring 2001 – Fall 2003
Organized Ph.D. seminar on combinatorial auctions, 2002 (With O. Ergun, P. Keskinocak)
Coordinator, MIT Operations Research Center Seminar Series, Spring 1997
President, MIT Operations Research Center Student INFORMS Chapter, Fall 1996 – Spring 1997
MIT Operations Research Center Unix/Linux Workstation Administrator, Spring 1996 – Spring 1999

Other Activities

Georgia Tech Executive Round Table (ERT), 2003 – present
Director, MIT Marching Band, 1996 – 1998
Taught IAP Workshop "Mathematics and Baseball," 1995

GRANTS AND CONTRACTS

Awarded (5)

"Developing a Backhaul Load-Matching Tool," Ryder Logistics Network, $5,549

"The Asia Pacific Air Cargo System," TLI-AP, $673,660 over 4 years (With J. Banks (1 year), O. Ergun (2 years), E.L. Johnson, G.L. Nemhauser (1 year))

"Railroad Impedance Calibration and Absolute Candidate Elimination," Norfolk Southern Railroad (TLI Leader in Logistics), $50,000 per year for 2 years (With G.L. Nemhauser)

"Adaptable Supply Chain Design for Product Spin-Offs," Eastman Kodak (TLI Leader in Logistics), $50,000 per year for 2 years (With J. Ammons)

"Optimizing Drayage Operations," Schneider National, $376,000 over 3 years (With M. Bazaraa, G.L. Nemhauser)

Pending (2)

"Inverse Optimal Value Problems: Theory, Applications, and Algorithms," National Science Foundation, $231,803 (with S. Ahmed)

"Inverse Optimal Value Problems: Theory, Applications, and Algorithms," Office of Naval Research, $231,803 (with S. Ahmed)

HONORS AND AWARDS

Sudler Award (with Atlanta Wind Symphony), 2003
ISyE Outstanding Professor, 2001
Alpha Kappa Psi Outstanding Professor, 2002, 2000 (one of several)
ISyE "Dr. Congeniality," 2000
National Science Foundation Graduate Research Fellowship, 1994 – 1997
INFORMS Doctoral Colloquium, 1999
NACDA/Sears Directors' Cup Postgraduate Scholarship (National Collegiate Scholar/Band Member of the Year), 1994
Rutgers University Outstanding Engineering Scholar (4.0 GPA), 1994

SUMMARY OF INSTRUCTION OPINION SURVEY

UNDERGRADUATE COURSES

				Interpolated Median Score (5.0 Scale)					
Semester/ Year	**Course Number/Name**	**# of Students**	**# of Responses**	**Teaching Effect.[1]**	**Valuable Course[2]**	**Instructor Support[3]**	**C1[4]**	**C2[5]**	**C3[6]**
Fall 1999	4231 B Engineering Optimization	15	9	4.9	4.8	4.8	4.9	4.8	4.6
Spring 2000	3101 A Supply Chain Modeling: Logistics	65	26	4.9	4.8	5.0	4.7	4.9	4.8
Fall 2000	3101 A Supply Chain Modeling: Logistics	70	41	4.9	4.8	4.9	4.8	4.9	4.6
Spring 2002	COE 1361 A Computing for Engineers	36	13	4.6	n/a	n/a	3.7*	4.5	3.9*
Fall 2002	4104 B Senior Design I	39	8	4.5	n/a	n/a	4.3	4.7	n/a
Fall 2002	3103 B Supply Chain Modeling: Logistics	35	11	4.9	n/a	n/a	4.9	4.9	4.9
Spring 2003	4105 B Senior Design II	39	16	4.8	n/a	n/a	4.6	4.8	n/a
Fall 2003	4104 A Senior Design I	34	14	4.8	n/a	n/a	4.7	4.9	n/a
Spring 2004	4105 A Senior Design II	34	11	4.6	n/a	n/a	4.5	4.7	n/a
Summer 2004	3103 RHK Supply Chain Modeling: Logistics	33	11	4.9	n/a	n/a	5.0	5.0	4.9
Fall 2004	4231 A Engineering Optimization	71	Course still in progress						
Fall 2004	4331 A Honors Optimization	17	Course still in progress						
ALL	**Undergraduate Average**	**40**	**16**	**4.8**	**4.8**	**4.9**	**4.6**	**4.8**	**4.6**

*The major components of these starred ratings were under the control of an external course coordinator.

GRADUATE COURSES

				Interpolated Median Score (5.0 Scale)					
Semester/ Year	**Course Number/Name**	**# of Students**	**# of Responses**	**Teaching Effect.**	**Valuable Course**	**Instructor Support**	**C1**	**C2**	**C3**
Spring 2001	6662 A Optimization II	29	12	4.9	4.9	5.0	4.7	4.8	4.2
Fall 2001	6669 A Deterministic Optimization	64	38	4.9	n/a	n/a	4.9	4.9	4.6
Spring 2004	6673 A Financial Optimization	33	15	4.9	n/a	n/a	4.8	4.9	4.7
ALL	**Graduate Average**	**42**	**22**	**4.9**	**4.9**	**5.0**	**4.8**	**4.9**	**4.5**

[1] How effective a teacher was this professor? (This is the primary measure of teaching effectiveness obtained from the student evaluations.)
[2] Was this a valuable course? (Discontinued after Spring 2001)
[3] Did the instructor provide support for learning? (Discontinued after Spring 2001)
[4] The C1 cluster of questions focuses on the organization of the course.
[5] The C2 cluster of questions focuses on the professor's approachability and ability to explain difficult concepts clearly.
[6] The C3 cluster of questions focuses on the amount and difficulty of assignments and exams.