

Eric L. Haseltine

CONTACT INFORMATION	Department of Chemical & Biological Engineering 1415 Engineering Dr. University of Wisconsin-Madison Madison, WI 53706-1607 USA	<i>Voice:</i> (608) 265-2378 <i>Fax:</i> (608) 265-8794 <i>E-mail:</i> haseltin@bevo.che.wisc.edu <i>WWW:</i> www.che.wisc.edu/~haseltin
RESEARCH INTERESTS	Modeling and control of biological systems, stochastic chemical kinetics models, population balance models, parameter estimation	
EDUCATION	University of Wisconsin-Madison , Madison, WI USA Ph.D. Candidate, Department of Chemical & Biological Engineering (expected graduation: Fall 2004)	August, 1999 - present
	<ul style="list-style-type: none">• GPA: 3.917/4.0• Dissertation Topic: "Systems Analysis of Stochastic and Population Balance Models for Chemical Reactions"• Advisor: James B. Rawlings	
	Clemson University , Clemson, South Carolina USA B.S., Chemical Engineering, May, 1999	August, 1995 - May, 1999
	<ul style="list-style-type: none">• GPA: 3.95/4.0• Graduated Summa Cum Laude with Departmental Honors	
HONORS AND AWARDS	<ul style="list-style-type: none">• Computation and Informatics in Biology and Medicine graduate research trainee, 2004• National Science Foundation Graduate Research Fellowship, 2000-2003• Western Sectional AIChE Award (awarded to the graduating senior ranked first in class), 1999• AIChE Donald F. Othmer Sophomore Academic Excellence Award, 1997• National Science Foundation Undergraduate Fellowship, 1995• The Drug, Chemical & Allied Trades Association Scholarship, 1995	
ACADEMIC EXPERIENCE	University of Wisconsin-Madison , Madison, Wisconsin USA <i>Teaching Assistant, Chemical Reaction Kinetics (ChE 430)</i>	January - May, 2002
	<ul style="list-style-type: none">• Assisted in teaching an experimental section that augmented traditional lectures with in-class computer calculations (each student was issued a laptop computer for the entire semester).• Responsible for weekly office hours, grading, and occasional lectures and discussion sections.• Wrote computational problems to be solved with the laptop for exams.• Wrote roughly one third of the solution manual for the class text, <i>Chemical Reactor Analysis and Design Fundamentals</i> (2002) by James Rawlings and John Ekerdt.	
	<i>Teaching Assistant, Process Dynamics and Control (ChE 470)</i>	September - December, 2000
	<ul style="list-style-type: none">• Led a weekly discussion section and laboratory (computer and experimental exercises) for the undergraduate process control course.• Shared responsibility for grading of exams and homework assignments.	
	Clemson University , Clemson, South Carolina USA <i>Undergraduate Honors Research</i>	May, 1998 - May, 1999
	<ul style="list-style-type: none">• Examined the elimination of organic contaminants from wastewater via ultrasonic oxidation.• Responsible for performing experiments, maintaining/modifying the experimental apparatus, analyzing samples via gas chromatography, and interpreting results.	

PROFESSIONAL
EXPERIENCE

Eastman Chemical Company, Summer Internship, Kingsport, Tennessee
Research: Polymer Process Technology Research Laboratory **May - August, 1999**

- Modeled polymer finishing reactors with Aspen Plus (emphasis on mass-transfer limitations).

Eastman Chemical Company, Cooperative Education Student, Kingsport, Tennessee
Process Engineering: Advanced Controls Technology **January - May, 1998**

- Simulated steady-state processes with Aspen Plus and in-house packages.
- Simulated dynamic model predictive control responses for process disturbances.
- Optimized proportional-integral-derivative control settings for acetate yarn division.

Technical Services: Specialty Plastics **May - August, 1997**

- Completed experiments statistically designed to determine optimal extrusion and thermoforming conditions for Eastman polymers.
- Obtained hands-on work in extrusion and thermoforming areas preparing samples and determining properties of Eastman polymers for experiments and customers.
- Started a database for tracking customers of Eastman polymers.

Research: Waterborne Technology Research Laboratory **August - December, 1996**

- Performed laboratory experiments to stabilize and optimize emulsion polymerization systems.

Midwest Technical Incorporated, Summer Internship, Kingsport, Tennessee
Engineering Trainee **May - August, 1996**

- Performed computer-aided drafting and process walk-downs for small capital projects.

COMPUTER SKILLS

Computer languages: C++, Fortran, MPI parallel processing library
Computer applications: Octave, Matlab, L^AT_EX, Concurrent Versions System, Make, Microsoft Office
Algorithms: Monte Carlo simulation of stochastic chemical kinetics, solution of differential-algebraic and partial differential equations, linear and nonlinear model predictive control, Monte Carlo estimation of Bayesian posterior distributions, linear/nonlinear optimization
Operating systems: Unix/Linux, Windows

SELECTED
PUBLICATIONS

E. L. Haseltine, J. B. Rawlings, and J. Yin. Dynamics of viral infections: Incorporating both the intracellular and extracellular levels. Accepted for publication in *Comput. Chem. Eng.*, 2004.

E. L. Haseltine and J. B. Rawlings. A critical evaluation of extended Kalman filtering and moving horizon estimation. Accepted for publication in *Ind. Eng. Chem. Res.*, 2004.

E. L. Haseltine, D. B. Patience, and J. B. Rawlings. On the stochastic simulation of particulate systems. Accepted for publication in *Chem. Eng. Sci.*, 2004.

E. L. Haseltine and J. B. Rawlings. Approximate simulation of coupled fast and slow reactions for stochastic chemical kinetics. *J. Chem. Phys.*, 117(15):6903-7390, October 2002.

CONFERENCE
PRESENTATIONS

E. L. Haseltine and J. B. Rawlings. 2003. Using Moving Horizon Estimation to Overcome Extended Kalman Filtering Failure. AIChE Annual Meeting, San Francisco, November, 2003.

ACTIVITIES

AIChE member, 2003
Mad City Church preschool teacher (2000-present)
Madison recreational league basketball, Famous Footwear team (2001-2002)