Curriculum Vitae

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Thesis:

Sequential Predictor-Corrector Methods for Variable Regularization of Ill-Posed Volterra Problems.

Advisor: Patricia K. Lamm, Department of Mathematics, Michigan State University.

Research and Professional Interests:

- Sequential regularization of first-kind Volterra equations
- Solving (Fredholm) integral equations
- Numerical solutions of PDEs
- Signal processing
- Use of technology in the teaching of mathematics

Education:

- Ph.D., Applied Math, MSU . . . August, 1998
- M.S., (Pure) Mathematics, MSU . . . May, 1994
- B.A., Kalamazoo College . . . June, 1987

Employment History:

- Assistant Professor (1999-present), Department of Mathematics, the University of Michigan–Flint. Specific duties include teaching courses (see list below), serving on the search committee for a new faculty member, participation in the life of the department.

- Assistant Professor (1998-99), Department of Mathematics and Statistics, Calvin College. Specific duties include teaching courses, service on the colloquium committee, participation in the life of the department.

- Graduate Teaching Assistant (1992-98), Department of Mathematics, Michigan State University. Specific duties include teaching courses, holding office hours, tutoring students in the Mathmatics Dept. Help Center.

- Computer Programmer/System Designer (1989-92), Master Signal, Inc., Lapeer, MI. I designed a customized business software package, written in the Clipper programming language, an object-oriented xBASE language.

- Mathematics Teacher (1987-89), Forest Hills High School, Grand Rapids, MI. I taught algebra and computer programming courses, receiving tenure at the end of my second year.

Honors and Honorary Societies:

- Named a Lead Teaching Assistant during 4 semesters in the MSU Department of Mathematics. Duties included observing and evaluating the teaching of other graduate TAs, writing uniform homework assignments for all sections of College Algebra, and supervising the grading of that homework.

- Received the Excellence in Teaching Award, MSU Mathematics Department, 1994.

- Received an MSU College of Natural Science Recruiting Fellowship, 1992, one of only two given out to incoming mathematics graduate students that year.

- Phi Beta Kappa, Kalamazoo College chapter, 1987.

- Received the Clarke Benedict Williams Award as the most outstanding mathematics student in the graduating class of 1987, Kalamazoo College.

- Received the Cooper Prize in Physics for excellence in the first year's work in physics, Kalamazoo College, 1984.

Professional Societies: MAA

College-Level Courses Taught:

- Discrete Structures: *Discrete Mathematics and Its Applications, 4th Ed.,* Kenneth H. Rosen. The course is taken almost exclusively by computer science majors.

- Applied Linear Algebra: *Introduction to Linear Algebra, 2nd Ed.,* Gilbert Strang. Focus in the course was both on the theory and upon numerically efficient algorithms.

- Ordinary Differential Equations: *Differential Equations with Computer Lab Experiments, 2nd Ed.,* Dennis G. Zill, *Elementary Differential Equations, 6th Ed.,* Boyce and DiPrima. Most recently I have been requiring a fair amount of numerical work using *Maple*, along with projects that simulate real-life problems.

- Multivariable Calculus: *Calculus, Part II, 9th Ed.,* Thomas and Finney. At the time I required use of Winplot, a 3-D plotter for Windows.

- First-year Calculus: texts include ones by J. Stewart, Berkey and Blanchard, and Hughes-Hallett, Gleason, et. al. I have modified several of the *Mathematica* labs used at Calvin to *Maple* for use in courses this year. This semester I have required students to pass Gateway exams in limits and derivatives.

- Liberal-Arts Math courses: *Excursions in Modern Mathematics, 3rd Ed.,* Tannenbaum and Arnold (Spring 1999) and *Faces of Mathematics, 3rd Ed.,* A. Wayne Roberts.

- Trigonometry: *Trigonometry, A Graphing Approach,* Larson, Hostetler and Edwards.

- College Algebra: *College Algebra, A Graphing Approach, 2nd Ed.,* Larson, Hostetler and Edwards.

Other Teaching Activities:

- Virtual classroom. At Calvin I used Blackboard, a Web-based classroom management system allowing paper submissions, bulletin boards, grade-checking, etc. Though not available at UM–Flint, I continue to post syllabus, assignments and other pertinent course information on the Web.

- On-Line Intermediate Algebra Course. I was part of an initial team developing a World Wide Web course, set to be used at MSU for the first time in the spring semester, 1998. We wrote the text (Web pages) for the course incorporating interactive MathView Notebooks into the pages.

- Math Enrichment Program (1993). I taught College Algebra in this program, which is targeted at several classifications of students, particularly ethnic minorities. Students were required to meet for 7 hours a week for lectures, recitations and group work. My duties included lectures, conducting recitations and writing exams.

- Math Departmental Help Center. I participated in this tutoring room for help with all undergraduate mathematics courses on campus during the six years of graduate work at MSU.

- High School Teaching (1987-89). I taught mathematics and computer courses, having all responsibilities for my classes except for textbook selection. I received tenure at the end of my second year.

Participation in Seminars, Workshops and Colloquia:

- Undergraduate colloquium talk (Fall, 1999): "Mathematics and Digital Audio", given at the University of Michigan – Dearborn and at Calvin College.

- Project NExT (1999-2000 Fellow). This is a unique experience offered jointly by the MAA and the Exxon Corporation. Participants attend national meetings, hear established mathematicians speak on issues from assessment practices to obtaining external funding for research, have small-group discussions, and get to know a good number of colleagues at similar stages in their careers. The biggest difference since attending the first session has been my use of project-based learning.

- Participant in the STATS (**S**tatistical **T**hinking with **A**ctive **T**eaching **S**trategies) '99 Workshop at Hope College in June, 1999. The purpose of the workshop was to provide mathematicians who have little background in statistics with some training in methods arising from statistics instructional reform. I look forward to the chance to teach statistics in this vein.
- 9th Inverse Problems in Engineering Seminar (June, 1998): I gave talk on my doctoral thesis material.
- Inverse Problems (1997-98): spoke frequently (approximately 2 times per month) in this weekly research seminar, Math Dept., MSU.
- Inverse Problems/Superconductivity Seminar (1996-97): The precursor of the seminar above – I spoke about once per month in this weekly seminar, Mathematics Dept., MSU.
- Inverse Problems in Science, Medicine and Engineering (1996-98): Participated regularly in these campus-wide, interdiscipinary seminars, MSU.
- Campus Theory Seminars: Often participated in these campus-wide, interdisciplinary scientific seminars at MSU.
- IMA (University of Minnesota) Workshop in Computational Radiology and Imaging: Therapy and Diagnosis. I was an invited participant.

Computer Experience:

I have taken a courses in C^{++} and Pascal, and have written programs in Fortran. I have been a professional programmer, writing in Clipper, an object-oriented language like C^{++}, and have also written in HTML, *Maple*, *Mathematica* and *Matlab*.

Service:

- at UM-Flint:
  - Serving on the search committee to fill a new position in the department.
- at Calvin College:
  - Served on the Math Department Colloquium Committee, 1998-99.
- to the College of Natural Science at MSU
  - Dean's Student Advisory Council, 1995-96 academic year.
  - Faculty Advisory Committee to the Dean, graduate representative, 1995-96 academic year.

Miscellaneous Service Activities

- A co-editor of the IPNET, an electronic network for Inverse and Ill-Posed Problems, which currently has over 500 international members; 1997-98 academic year.
- Reviewer for the Journal of Applied Mechanics (ASME).

Publications:

Predictor-Corrector Methods for Variable Regularization of Ill-Posed Volterra Problems, to appear in Inverse Problems.

Local Regularization Methods for the Stabilization of Ill-Posed Volterra Problems, to be submitted shortly to the Journal of Mathematical Analysis & Applications.