

Steve Goldstein

- Summary** Mathematician and software professional with extensive experience in bioinformatics seeks challenging work in computational biology.
- Education** Ph.D. in mathematics: University of Wisconsin, 1988
Specialty in probability theory; minor in computer science and mechanical engineering.
AB: Brown University, 1976.
- Areas of expertise**
- **Bioinformatics:** Proven ability to develop novel algorithms and analyses; broad experience with sequence analysis tools; keen understanding of predominate algorithms and techniques; proficiency in automating mining of data from sequence databases.
 - **Software engineering:** Worked for seven years in commercial software companies; led team of developers and managed product release; contributed to design and coding of object-oriented application; developed and maintained automated testing tools for variety of software products; facilitated software development process improvement.
 - **Mathematics:** Developed calculation methods for stochastic model of carcinogenesis; research areas include population models and diffusion approximations of Markov processes.
 - **Teaching:** Taught and tutored college mathematics for ten years.

**Professional
experience**

2003 University of Wisconsin Madison, WI

Postdoctoral Fellow, Computation and Informatics in Biology and
Medicine Training Program

- David C. Schwartz and Michael Newton, Advisors
- Research Project: Computational methods for studying genomic variations via optical maps

2001-2002 DNASTAR, Inc. Madison, WI

Senior Software Developer

- Developed algorithmic improvements for genomic-scale sequence assembler.
- Contributed to object-oriented design and implementation (C++) of sequence assembler.

1995 – 2001 Genetics Computer Group (GCG) Madison, WI

Quality Assurance Manager (2000-2001)

- Coordinated testing for all software product lines.
- Led software process improvement projects.
- Assembled quality assurance team

Project Manager

- Led team of six software developers in bringing GCG's major product to production.

Project Coordinator

- Coordinated engineering, documentation, and production resources shared among several projects.

Quality Assurance Engineer (1995-1999)

- Tested software for correctness, robustness, and scientific validity.
- Maintained regression test suite (Shell scripts).
- Developed and maintained automated testing tool for web-based interface (Perl web client).
- Developed and maintained automated testing suite for database products (Perl and shell scripts).

1986 - 1990 Biostatistics Center, UW-Madison

Researcher

Mathematical modeling of cell dynamics and cancer chemotherapy

1976-79, 1981-86 Mathematics Department, UW-Madison

Teaching assistant

1979-80 Lawrence University Appleton, WI

Instructor in Mathematics

Publications

Multitype branching processes: diffusion approximations for critical decomposable processes. Ph.D. thesis. University of Wisconsin, Madison. (1988).

Computing with branching processes for cancer chemotherapy and carcinogenesis models. Biostatistics Technical Report No 50. Wisconsin Clinical Cancer Center. (1989).

WCCC tumor growth and chemotherapy model (with M. Gehring). Computer program implemented on the Wisconsin Clinical Cancer VAX system. (1987).

Selected Presentations

Improving assemblers with graph-based optimizations and heuristics. Second Annual RECOMB Satellite Meeting on DNA Sequencing and Characterization. Stanford University (May, 2002).

Singular value decomposition. Microarray journal club, Department of Statistics. University of Wisconsin-Madison (2000).

Strategies for testing a web-based application: Divide, automate, and conquer. 13th International Conference on Testing Computer Software. Washington, DC (1996).

Symposium on branching processes and time series. University of Quebec, Montreal (1990).

18th International Conference on Stochastic Processes and Applications. Madison, WI (1988).

**Selected
Workshops**

Mathematical Methods for Protein Structure Analysis and Design. *Centro Internazionale Matematico Estivo*, International Mathematical Summer Center. Martina Franca, Italy (July, 2000).

Mathematical Population Genetics. Institute of Mathematics and its Applications. University of Minnesota, Minneapolis (January, 1994).

Classical and Modern Branching Processes. Institute of Mathematics and its Applications. University of Minnesota, Minneapolis (June, 1994).

Scientific issues in Quantitative Cancer Risk Assessment. Snowbird, Utah (1988).