

Kenneth Morgan Golden

Education

- 1980 B.A. Dartmouth College, Mathematics and Physics
- 1983 M.S. New York University, Mathematics
- 1984 Ph.D. New York University, Mathematics

Employment

- 1984-87 NSF Mathematical Sciences Postdoctoral Fellow, Rutgers University
- 1987-91 Assistant Professor of Mathematics, Princeton University
- 1991-96 Associate Professor of Mathematics, University of Utah
- 1996- Professor of Mathematics, University of Utah
- 2007- Adjunct Professor of Bioengineering, University of Utah

Professional Summary

- Research interests: composite materials; percolation theory; fluid, thermal, and electromagnetic transport in sea ice; diffusion processes; statistical mechanics of phase transitions; inverse problems.
- Visiting positions held at Institut des Hautes Etudes Scientifiques, Stanford University, Universita di Roma 1, Universita di Napoli, Moscow Civil Engineering Institute, Universite de Provence Aix-Marseille 1, Univesidade de Sao Paulo, Hong Kong University of Science and Technology, and Universite de Paris Nord.
- Member of scientific expeditions studying Antarctic sea ice:
 - 1980 summer voyage (January - March) aboard the US Coast Guard Icebreaker *Polar Sea* into the multiyear pack ice in the western Weddell Sea.
 - 1994 Antarctic Zone Flux Experiment (ANZFLUX), winter voyage (July-August) aboard the icebreaker *Nathaniel B. Palmer* into the eastern Weddell Sea.
 - 1998 Mertz Glacier Polynya Experiment, winter voyage (July) aboard the icebreaker *Aurora Australis* -- expedition terminated after one week due to engine room fire.
 - 1999 Mertz Glacier Polynya Experiment, winter voyage (July-August) aboard

the icebreaker *Aurora Australis*, in and near the [polynya off Mertz Glacier, Buchanan Bay](#), Antarctica.

- 2007 Sea Ice Physics and Ecosystem Experiment ([SIPEX](#)), early spring voyage (September-October) aboard the icebreaker *Aurora Australis*, into the first year pack ice and fast ice off Wilkes Land, Antarctica - Math student Adam Gully assisted in the experiments.
- Studied sea ice in the Arctic Ocean off Barrow, Alaska in 2000, 2001, 2002, 2003, 2004 and 2007. Since 2003, six undergraduates have gone on six Arctic field trips.
- Served as Modeling Coordinator for the Office of Naval Research Accelerated Research Initiative on Sea Ice Electromagnetics 1992-98, involving over 60 researchers at 20 institutions.
- Served as reviewer for journals in mathematics, physics, engineering, and geophysics; reviewed proposals for NSF and other agencies in US and abroad; served on panels and site reviews for NSF.
- Served on the Editorial Boards of *SIAM Journal on Applied Mathematics*, 1996-99 and *Applicable Analysis*, 2004-.
- Service to the U. of Utah Math Department: Executive Committee (1992-96, 2002-04), Faculty Hiring Committees (1991-93, 1999-2001), Director of Undergraduate Studies (2002-), Research Experiences for Undergraduates (REU) Program Coordinator (2003-07), Coordinator for Calculus classes (2003-05), Coordinator for Engineering Math classes (1996-98).
- Service to U. of Utah: Member, University of Utah Academic Senate (2000-03), Academic Senate Executive Committee (2000-02); Member, College of Science Dean's "Kitchen Cabinet" (2007-).
- Presented my sea ice work and its ramifications for understanding climate change in the US Congress, on behalf of the American Mathematical Society in June 2003 ([AMS Exhibitor](#) at the Coalition for National Science Funding Exhibition and Reception) and in November 2007 (see Lectures - [AMS Congressional Luncheon Briefing](#)).
- Member, Electromagnetics Academy 1996-; Faculty Fellow Award, University of Utah, 1994; Hertz Fellow, NYU, 1981-84.
- 2007 University [Distinguished Teaching Award](#), University of Utah ([citation](#)); Excellence in Teaching Award, Princeton University, 1989.

Organizing Activities

- 1993 Session on Composites and Inhomogeneous Media, AMS Meeting, Salt Lake City
- 1994 Workshop on Modeling the Electromagnetic Properties of Sea Ice, Hanover, NH
- 1994 Session on Percolation Problems, SIAM Materials Meeting, Pittsburgh
- 1995 Workshop on Disordered Media and Percolation, Institute for Mathematics and its Applications (IMA), Minneapolis
- 1996 Workshop on Sea Ice Electromagnetics, Salt Lake City
- 1997 Session on Inverse Problems for Composite Media, SIAM Materials Meeting, Philadelphia
- 1999 Session on EM Inverse Problems, Fourth International Congress on Industrial and Applied Mathematics, Edinburgh
- 2002 Sixth International Conference on the Electrical Transport and Optical Properties of Inhomogeneous Materials (ETOPIM6), Snowbird, UT, Co-Chair
- 2003 Random Phenomena in Applied Mathematics, Conference in Honor of George Papanicolaou's 60th Birthday, Stanford
- 2003 Session on Electrorheological Fluids, European (EMS) and French Mathematical Societies (SMAI - SMF), Nice
- 2006 International Organizing Committee for ETOPIM7, Sydney
- 2009 International Organizing Committee for ETOPIM8, Crete

Grants

Since 1992, Principal Investigator on 10 research grants to the University of Utah from the National Science Foundation and the Office of Naval Research, and 3 supplemental research and education grants for graduate and undergraduate students, totalling \$2.5M in funding. Senior personnel on NSF Grant DMS-0602219, EMSW21-VIGRE: Vertical Integration in Mathematics at the University of Utah, 2006-12, primarily responsible for the undergraduate component.

Two recent awards:

- 2002-06 NSF Grant DAS-0222171, U. of Utah and U. of Alaska, Collaborations in Mathematical Geosciences (CMG): "Microstructural Controls on Transport Processes in Geophysical Systems," PI: K. M. Golden, coPI: H. Eicken, U. of Alaska, Fairbanks, along with a Research Experiences for Undergraduates (REU) Supplement.

- 2005-09 NSF Grant DMS-0537015, U. of Utah, "Analysis and Computation of Electromagnetic Transport in Composite Materials," PI: K. M. Golden, coPI: D. Dobson, along with a Research Experiences for Undergraduates (REU) Supplement.