JONATHAN K. SIMON

Brief CV
February, 2021

Professor Emeritus
Department of Mathematics, University of Iowa
Iowa City, IA 52242
Phone (319) 321-1644 [Department (319) 335-0694]
E-mail jonathan-simon@uiowa.edu

EDUCATION:

Ph.D.	University of Wisconsin (Madison)	Mathematics: Topology	1969
AB	Columbia College (New York)	Mathematics	1964

EMPLOYMENT SUMMARY

Office of Financial Research U.S. Treasury	Research Principal	Sept. 2016 – Sept. 2017
	Professor, Mathematics (Emeritus Fall 2013)	1980 - present
	Project Director, NSF VIGRE Grant ($3MM)	Fall 2006 – Spring 2012
University of Iowa	Department Chair, Computer Science	1990-93
	Assoc. Chair, Mathematics	1996 - 2000
	Undergraduate Program	1989-90,
	Graduate Program	
	Associate Professor	1974 - 80
	Assistant Professor	1969 - 74

International Appointments:
Kwansei Gakuin University, Nishinomiya, Japan.
York University, Toronto, Ontario,Canada
Instituto de Matematicas, UNAM, Mexico Cit

ACTIVITIES AND RESPONSIBILITIES

Office of Financial Research
Collaborated with OFR researchers on developing complexity measures for financial networks. Collaboration continued resulting in publication, conference/seminar talks, and continued current research.

Department of Mathematics
University of Iowa

RESEARCH in pure and applied mathematics:

- 40+ publications on topological/geometric complexity (knotting and tangling), emphasizing new applications to physical systems.
- Over 400 citations, 90 national and international conference and colloquium talks.
- As Principal Investigator, obtained and managed $1.3M in NSF and ONR research funding.
- Most recent research is in mathematical finance (networks):
    - M. Flood, D. Kenett, R. Lumsdaine*, J. Simon, *The complexity of bank holding companies: a topological approach,* Journal of Banking and Finance 118 (2020), 94 pp
      Presentations by MF, RL at national and international conferences.
      Talk by JS at Fields Inst. Toronto June 2017.
    - *Measures of financial network complexity: A topological Approach* (Mark Flood*, Jonathan Simon, Mathew Timm). Presentations by MF and JS at OFR seminar 2017; presentations by MF at several conferences incl. Banco de Mexico / CEMLA / U. Zurich / J. Financial Stability Nov 2015; presentation by JS at AMS Oct 2016.
    - Mathematics Keynote Speaker: *How Topology Sees Data*. International Mathematical Finance Conference, Coral Gables FL., March 2014. (joint work with P. Horvath and M. Timm)

TEACHING AND DEPARTMENT/COLLEGE/UNIVERSITY ACTIVITIES

- Taught a wide range of undergraduate and graduate courses, including finite mathematics, calculus, linear algebra, multi-variable calculus, differential equations, discrete models, and topology; graduate courses in geometric and algebraic topology; individual reading courses, supervising Ph.D. theses.
- Supervised and mentored graduate teaching assistants.
- Mentored junior faculty and post-doctoral associates. Provided guidance to solve curricular or personnel problems.
- Evaluated applicants for faculty positions. Evaluated graduate student applications.
- Chaired department committees. Developed curriculum for individual courses and for department-wide programs.
- Represented the department to external constituencies. Collaborated with faculty in other departments to develop interdisciplinary programs. Provided guidance to faculty and staff advisors in other departments regarding mathematics courses and programs.
- Evaluated faculty for promotion and tenure (department and college level).
- Served on University committees for appointing administrators, awarding research funds, advising on program initiatives.
- Served as Presiding Officer of Faculty Judicial Commission: appointed mediators and faculty panels to hear grievances between faculty and University; communicated frequently with faculty, attorneys, and Investigating Officer to provided information and guidance.

Project Director and co-PI, NSF VIGRE Grant

- Developed and managed detailed $3M budget for 5 year grant, part of NSF's EMSW21 program (*Enhancing the Mathematical Sciences Workforce in the 21st Century*). Provided working direction of the program that supported 7 post-doctoral associates, 48 graduate students, 26 undergraduate research students, and 90 undergraduate summer REU students.
- Supervised Program Assistant.
- Chaired department VIGRE Steering Committee.
- Chaired process of selecting graduate students for support.
- Mentored post-doctoral associates
- Directed summer program for undergraduates: For each of 5 summers, led recruiting/hiring of faculty, graduate assistants, and selecting undergraduates for the 8-week program. Provided day-to-day supervision of the program, in cooperation with the department's EMSW21-Alliance program for minority students, which funded additional faculty, graduate assistants, and undergraduate participants, all incorporated into the one summer program. Jointly recruited senior faculty leading individual research groups, 9 per summer, with whom I regularly consulted to monitor student progress or concerns.
- Co-developed, and chaired, the department's "Heartland Mathematics Partnership", a consortium with 12 area colleges. Developed and supervised programs, chaired annual HMP faculty meetings.

Department Chair – Computer Science Department
University of Iowa

- Led substantial change of culture in the department, with stronger emphasis on research, graduate education, external funding, faculty strength and diversity, efficient and effective communication with other parts of the University, and effective shared governance within the department.
- Exercised departmental executive officer functions, in consultation with Dean and department faculty and staff:
    - Negotiated and managed department budgets;
    - Led and negotiated faculty recruiting and hiring;
    - Supervised support staff, including program assistant, secretaries, and computer support personnel;
    - Supervised faculty assignments;
    - Conducted faculty reviews and recommendations for tenure and promotion;
    - Represented the department to other groups in the University, other schools, and local industry.