

## Jack H. Lutz - Short CV

**Current position:** Professor of Computer Science, Iowa State University  
(Assistant Professor 1987-1992; Associate Professor 1992-1996; Professor 1996-present)  
Professor of Mathematics  
Faculty Member in Bioinformatics and Computational Biology

### Visiting positions

Visiting Associate, Caltech, 2020  
Visitor, University of Oxford, 2017  
Visitor, University of Wisconsin, 2017  
Visiting Associate, Caltech, 2017  
Visiting Fellow, University of Cambridge, 2012  
Visiting Associate, Caltech, 2012  
Visiting Professor, University of Wisconsin, 2006  
Visiting Scientist, NEC Research Institute, 2001  
Visiting Professor, Cornell University, 1997  
DIMACS Visiting Fellow, Rutgers University, 1990

### Research areas

Molecular Programming and DNA Nanotechnology: universality, robustness, dynamics, specification, and verification of programmable self-assembling nanosystems.

Algorithmic Information and Randomness: algorithmic dimensions, Kolmogorov complexity, randomness, prediction, finite-state dimension, and algorithmic fractal geometry.

Computational Complexity: complexity in analysis, structure of complexity classes, and resource-bounded measure and dimension.

### Research funding (Principal Investigator unless noted)

NSF Grant, 2019–2023 (coPI)	NSF Grant, 1997–2000
NSF Grant, 2015–2021 (coPI)	NSF Presidential Young Investigator Award, 1991–1997
NSF Grant, 2012–2017	Rockwell International, 1991–1996
NSF Grant, 2011–2013	Amoco Foundation, 1993–1995
NSF Grant, 2007–2012	Microware Systems Corporation, 1992–1996
NSF Grant, 2007–2010	Hughes Aircraft Company 1990–1991
NSF Grant, 2003–2006	NSF Grant, 1988–1991
NSF Grant, 2000–2004	

### Publications (authored and co-authored)

60 journal papers, principally in *SIAM Journal on Computing, Information and Computation, Theoretical Computer Science, Journal of Computer and System Sciences*, and *Theory of Computing Systems*

68 conference papers

### Recent and upcoming invited lectures at meetings

Conference on Computability, Complexity, and Randomness, 2022  
Minisymposium on Applications of Stochastic Reaction Networks, SIAM-DS 2021  
Algorithmic Randomness Workshop, American Institute of Mathematics, 2020

AMS-ASL Special Session: Logic Facing Outward, Joint Mathematics Meetings, 2020  
ASL North American Annual Meeting, New York, 2019 (two-hour tutorial)  
Equidistribution: Arithmetic, Computational and Probabilistic Aspects, NUS IMS, 2019  
Computability Workshop, Oberwolfach Mathematics Research Institute, 2018  
Midwest Computability Seminar, Chicago, 2017  
NZMRI Workshop and Summer School, Napier, NZ, 2017 (three lectures)  
Workshop on Normal Numbers, Erwin Schrödinger Institute, 2016  
AMS Special Session on Effective Mathematics in Discrete and Continuous Worlds, 2016  
Conference on Computability, Complexity, and Randomness (CCR), 2015  
Computability Special Session, ASL North American Annual Meeting, 2015  
Midwest Computability Seminar, Chicago, 2014  
AMS-ASL Special Session on Logic and Probability, Joint Math Meetings, 2014  
Natural Algorithms and the Sciences Workshop, Princeton, 2013  
Intl. Conference on Unconventional Computation and Natural Computing (UCNC), 2012  
Conference on Computability, Complexity, and Randomness (CCR), 2012  
Logic, Dynamics, and their Interactions (celebrating work of Dan Mauldin), 2012  
Intl. Conference on Languages and Automata Theory and Applications (LAA), 2012  
Conference on DNA Computing and Molecular Programming (DNA), 2011  
Conference on Computability in Europe (CiE), 2011 (three-hour tutorial)  
AMS-ASL Special Session on Logic and Analysis, Joint Math Meetings, 2011  
Conference on Computability, Complexity, and Randomness (CCR), 2010  
CiE Special Session on Algorithmic Randomness, 2009  
Workshop on Fractals and Tilings, 2009  
Conference on Logic, Computability, and Randomness, 2009

## **Education**

Ph.D., Mathematics, Caltech, 1987 (Adviser: Alexander S. Kechris)  
M.S., Computer Science, Univ. Kansas, 1981  
M.A., Mathematics, Univ. Kansas, 1979  
B.G.S., Mathematics, Univ. Kansas, 1976

## **Ph.D. Degrees Supervised**

Xiang Huang, 2020, now Assistant Professor, Univ. Illinois–Springfield  
Donald M. Stull, 2017, now Lecturer, Iowa State University  
Adam Case, 2016, now Assistant Professor, Drake Univ.  
Titus Klinge (two advisers), 2016, now Assistant Professor, Drake Univ.  
Divita Mathur (two advisers), 2016, now Postdoctoral Fellow, U.S. Naval Research Lab  
Brian Patterson (two advisers), 2011, now Associate Professor, Oglethorpe Univ.  
Scott M. Summers, 2010, now Associate Professor, Univ. Wisconsin–Oshkosh  
Matthew J. Patitz, 2010, now Associate Professor, Univ. Arkansas  
Xiaoyang Gu, 2009, now Head of Data Engineering, BorderX Lab  
Satyadev Nandakumar, 2009, now Associate Professor, IIT–Kanpur, India  
David S. Doty (two advisers), 2009, now Assistant Professor, Univ. California–Davis  
John M. Hitchcock, 2003, now Professor, Univ. Wyoming

Jack J. Dai (two advisers), 2001, now Postdoctoral Fellow, Fudan University, China

James I. Lathrop, 1997, now Assistant Professor, Iowa State Univ.

Josef M. Breutzmann, 1996, now Professor Emeritus, Wartburg College

David W. Juedes, 1994, now Professor and Chair, Ohio Univ.

External committee member for Ph.D. students at U. Zaragoza (2011), U. Illinois (2005), U. Amsterdam (1998), Heidelberg U. (1996), Rutgers U. (1995), and Polytech. U. Catalonia (1994)

Currently supervising four Ph.D. students at Iowa State University

### **Conference program committee memberships**

Intl. Conf. on Computability, Complexity, and Randomness (CCR) 2022, 2016, 2010, 2008

ACM Intl. Conf. on Nanoscale Computing and Communication (NanoCom) 2016

Conference on Computability in Europe (CiE) 2015

Intl. Conf. on Languages and Automata Theory and Applications (LATA) 2014, 2013

Intl. Conf. on Computability and Complexity in Analysis (CCA) 2012, 2008, 2005

Intl. Computing and Combinatorics Conf. (COCOON) 2011

IEEE Conference on Computational Complexity (CCC) 2007, 1996, 1993

Symp. on Theoretical Aspects of Computer Science (STACS) 1998