

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

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

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

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

Research funding (Principal Investigator unless noted)

NSF Grant, 2019–2025 (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)

65 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*

71 conference papers

Recent and upcoming invited lectures at meetings

Joint Meeting, American, Australian, and New Zealand Mathematical Societies, 2024

NSF-CBMS Research Conference on Algorithmic Fractal Dimensions, 2024 (ten lectures)

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

Hugh D. Potter, 2022
 Dawn Nye, 2022, now Visiting Assistant Professor, Grinnell College
 Andrei N. Migunov, 2022, now Assistant Professor, Drake Univ.
 Xiang Huang, 2020, now Assistant Professor, Univ. Illinois–Springfield
 Donald M. Stull, 2017, now L.E. Dickson Instructor, University of Chicago
 Adam Case, 2016, now Associate Professor, Drake Univ.
 Titus Klinge (two advisers), 2016, now Software Engineer, Third Wave Automation
 Divita Mathur (two advisers), 2016, now Assistant Professor, Case Western Reserve Univ.
 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 Principal Staff Software Engineer, LinkedIn
 Satyadev Nandakumar, 2009, now Associate Professor, IIT–Kanpur, India
 David S. Doty (two advisers), 2009, now Associate 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 Associate Dean, 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)
 Thirteen Ph.D. "grandchildren"
 Currently supervising four Ph.D. students at Iowa State University

Conference program committee memberships

Intl. Conf. on Computability, Complexity, and Randomness (CCR) 2023, 2016, 2010,
 2008
 Intl. Conf. on Computability and Complexity in Analysis (CCA) 2021, 2012, 2008, 2005
 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. Computing and Combinatorics Conf. (COCOON) 2011
 IEEE Conference on Computational Complexity (CCC) 2007, 1996, 1993
 Symp. on Theoretical Aspects of Computer Science (STACS) 1998