

# Hiroki Sayama, D.Sc.

佐山弘樹

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Professor, Department of Systems Science and Industrial Engineering  
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Binghamton University, State University of New York  
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Professor (non-tenure-track), Faculty of Commerce, Waseda University, Japan  
External Faculty, Vermont Complex Systems Center, University of Vermont, USA  
Visiting Professor, School of Sciences, Christ University Pune/Lavasa Campus, India  
Affiliate, New England Complex Systems Institute, USA

*Holds U.S. Citizenship*

## Education

B.Sc. Information Science, University of Tokyo, Japan (March 1994)

M.Sc. Information Science, University of Tokyo, Japan (March 1996)

D.Sc. Information Science, University of Tokyo, Japan (March 1999)

Dissertation title: “Constructing evolutionary systems on a simple deterministic cellular automata space”

Dissertation supervisor: Prof. Yoshio Oyanagi

## Professional Positions

1999-2002      Postdoctoral Fellow  
New England Complex Systems Institute, Cambridge, MA, USA

2000-2001      Associate in Research  
Edwin O. Reischauer Institute of Japanese Studies  
Harvard University, Cambridge, MA, USA

2002-2004      Assistant Professor  
Department of Human Communication  
University of Electro-Communications, Tokyo, Japan

2002-present    Affiliate  
New England Complex Systems Institute, Cambridge, MA, USA

2003-2005      Adjunct Assistant Professor  
Department of Complex Systems Science, Graduate School of Information Science  
Nagoya University, Nagoya, Japan

- 2004-2005 Associate Professor  
Department of Human Communication  
University of Electro-Communications, Tokyo, Japan
- 2006-2011 Assistant Professor  
Department of Bioengineering  
Department of Systems Science and Industrial Engineering (joint title 2010-2011)  
Binghamton University, State University of New York, USA
- 2012-2017 Associate Professor  
Department of Bioengineering (2012-2014)  
Department of Systems Science and Industrial Engineering (joint title 2012-2014)  
Binghamton University, State University of New York, USA
- 2014-2018 Visiting Research Professor  
Center for Complex Network Research (CCNR) / Department of Physics  
Northeastern University, Boston, USA
- 2017-2018 Associate Professor (non-tenure-track)  
Faculty of Commerce  
Waseda University, Tokyo, Japan
- 2017-present Professor  
Department of Systems Science and Industrial Engineering  
Binghamton University, State University of New York, USA
- 2018 Adjunct Professor  
Department of General Systems Studies, Graduate School of Arts and Sciences  
University of Tokyo, Tokyo, Japan
- 2018-present Professor (non-tenure-track)  
Faculty of Commerce  
Waseda University, Tokyo, Japan
- 2021-present External Faculty  
Vermont Complex Systems Center  
University of Vermont, USA
- 2024-present Visiting Professor  
School of Sciences  
Christ University Pune/Lavasa Campus, India

**Research Interests: “Complex Systems”*****Complex Dynamical Networks***

State-topology coevolution in adaptive networks, social network evolution, network analysis, modeling and simulation, graph product multilayer networks, network science and education

***Human and Social Dynamics***

Collective human decision making, team and organizational dynamics, opinion dynamics, evolutionary game theory, agent-based modeling and simulation

***Artificial Life/Chemistry***

Collective behavior of swarms, morphogenetic engineering, self-replication, self-repair, cellular automata, pattern formation, computational models of ecological and evolutionary dynamics, open-ended evolution, nature-inspired computing

***Interactive Systems***

Interactive evolutionary computation, interactive educational tools, interactive media art

**List of Publications and Other Achievements**

Continuously updated and available online at <https://bingdev.binghamton.edu/sayama/pub.html>

**Research and Educational Grants**

- |           |  |
|-----------|--|
| 1997-1999 | First-Class Scholarship<br>Japan Scholarship Foundation<br>Amount: JPY 2,688,000   |
| 1999-2001 | Overseas Scholarship<br>Murata Overseas Scholarship Foundation, Japan<br>Subject: Study on parallel computation models that utilize logical structures immanent in the complexity of cellular automata<br>Amount: JPY 3,350,000  |
| 2002      | Travel Award for Researchers Dispatched to International Conventions<br>Ministry of Education, Culture, Sports, Science and Technology (MEXT) of Japan<br>Subject: Von Neumann's machine in the shell: Enhancing the robustness of self-replication processes (Presentation at the Eighth International Conference on Artificial Life, Sydney, Australia)<br>Amount: JPY 184,280 |
| 2002-2003 | UEC Grant for the Promotion of Research and Education<br>University of Electro-Communications, Japan<br>Subject: Emergence and evolution of patterns in spatially distributed locally interacting populations<br>Amount: JPY 1,300,000<br>Role: PI   |
| 2003      | Visiting Researcher Support (as a host institution for short-term visit of Chris Salzberg)<br>International Information Science Foundation, Japan<br>Subject: Visualization and analysis of graph-based evolutionary dynamics<br>Amount: JPY 300,000   |
| 2003-2004 | Grant for Research on Human and Entertainment<br>Hayao Nakayama Foundation for Science, Technology and Culture, Japan<br>Subject: Basic study on the possibility of physical implementation of self-replicating toys<br>Amount: JPY 1,000,000  |

- Role: PI
- 2003-2004 Grant for Environmental Research  
Showa Shell Sekiyu Foundation for Promotion of Environmental Research, Japan  
Subject: Theoretical models and simulations of the effects of artificial modification of habitat structure on biodiversity  
Amount: JPY 500,000  
Role: PI
- 2005-2007 Grants-in-Aid for Scientific Research (KAKENHI)  
Ministry of Education, Culture, Sports, Science and Technology (MEXT) of Japan  
Subject: Developing a kinematic model of self-replicating universal constructors  
Amount: JPY 1,200,000  
(Project canceled due to moving of PI)  
Role: PI
- 2006-2007 Interdisciplinary Collaboration Grant  
Division of Research, Binghamton University  
Subject: Modeling judgment and decision making of collaborative teams working to satisfy variable requirements  
Amount: \$8,000  
Role: Co-PI (Collaboration with Shelley Dionne)
- 2006-2007 Mini-Grant for Short-Term Travel Support  
Division of Research, Binghamton University  
Amount: \$700
- 2007 Mini-Grant for Short-Term Travel Support  
Division of Research, Binghamton University  
Amount: \$1,000
- 2007 Individual Development Award  
Binghamton University / UUP  
Amount: \$1,000
- 2008 Individual Development Award  
Binghamton University / UUP  
Amount: \$1,000
- 2008-2010 Course, Curriculum, and Laboratory Improvement  
National Science Foundation (Award #: NSF DUE-0737313)  
Subject: Teaching Social Complexity and Multidisciplinary Team Building: An Experimental Engineering Approach  
Amount: \$149,955  
Role: Co-PI (Collaboration with Craig Laramee, Shelley Dionne and David Sloan Wilson)
- 2008-2010 Conrad and Virginia Klee Foundation  
Subject: Linking Youth and Community through Technology  
Amount: \$71,500  
Role: Co-PI (Collaboration with Pamela Mischen, Madhu Govindaraju and Kevin Heard)
- 2008-2012 Human and Social Dynamics

- National Science Foundation (Award #: NSF SES-0826711)  
Subject: Evolutionary Perspective on Collective Decision Making  
Amount: \$552,074  
Role: Main PI (Collaboration with Shelley Dionne, Craig Laramée, J. David Schaffer and Francis Yammarino)
- 2009 Mini-Grant for Short-Term Travel Support  
Division of Research, Binghamton University  
Amount: \$340
- 2009 Individual Development Award  
Binghamton University / UUP  
Amount: \$1,000
- 2010 Individual Development Award  
Binghamton University / UUP  
Amount: \$700
- 2010 Individual Development Award  
Binghamton University / UUP  
Amount: \$668
- 2010-2011 Interdisciplinary Collaboration Grant  
Division of Research, Binghamton University  
Subject: Modeling diffusion and adoption of innovation over space and time using automated model discovery techniques  
Amount: \$10,000  
Role: Main PI (Collaboration with Manoj Agarwal, Kenneth Chiu and Kevin Heard)
- 2010-2011 Interdisciplinary Collaboration Grant  
Division of Research, Binghamton University  
Subject: A system for individual-based modeling using graphics processing unit acceleration  
Amount: \$10,000  
Role: Co-PI (Collaboration with Kenneth Chiu and David Liu)
- 2010-2014 Cyber-enabled Discovery and Innovation Type-I  
National Science Foundation (Award #: NSF BCS-1027752)  
Subject: Modeling and Predicting State-Topology Coevolution of Complex Adaptive Networks  
Amount: \$412,189  
Role: PI (International collaboration with Thilo Gross)
- 2011 EvoS Small Grant  
EvoS Program, Binghamton University  
Subject: Emergence and Evolution of “Super-Organisms” in an Artificial Swarm via Transmission and Mutation of Behavioral Properties  
Amount: \$720  
Role: PI
- 2011-2012 Academic Programs and Faculty Development Fund  
Office of the Provost, Binghamton University  
Subject: New Interdisciplinary Graduate Concentration/Certificate Programs in Complex

- Systems Science and Engineering  
Amount: \$10,000  
Role: Main PI (Collaboration with six other Binghamton faculty members)
- 2011-2012 Academic Programs and Faculty Development Fund  
Office of the Provost, Binghamton University  
Subject: Automated Model Discovery: A New Mode of Scientific Inquiry for the Coming Century  
Amount: \$10,000  
Role: Co-PI (Collaboration with Kenneth Chiu and five other Binghamton faculty members)
- 2011-2012 Academic Programs and Faculty Development Fund  
Office of the Provost, Binghamton University  
Subject: Virtual Communities for Neighborhood Modeling and Computational Thinking  
Amount: \$17,700  
Role: Co-PI (Collaboration with Pam Mischen, Madhu Govindaraju and Kevin Heard)
- 2011-2012 Corporate Donation  
BAE Systems  
Subject: NetSci High 2012: The Second International High School Student Poster Competition on Network Science  
Amount: \$2,325  
Role: PI
- 2011 Mini-Grant for Short-Term Travel Support  
Division of Research, Binghamton University  
Amount: \$500
- 2012 Research & Development Contract  
Defence Research & Development Canada -- Centre for Operational Research and Analysis  
Subject: Generative Network Automata-Based Modeling and Analysis of Dynamical Operational Networks with Embedded Heterogeneous Agents  
Amount: \$25,000  
Role: PI
- 2012-2015 Innovative Technology Experiences for Students and Teachers (ITEST)  
National Science Foundation (Award #: NSF DRL- 1139478)  
Subject: Network Science for the Next Generation  
Amount: \$24,000  
Role: Individual consultant to the New York Hall of Science (Collaboration with Stephen Uzzo, H. Eugene Stanley and Paul Trunfio)
- 2012 Mini-Grant for Short-Term Travel Support  
Division of Research, Binghamton University  
Amount: \$1,000
- 2013-2017 Robust Intelligence  
National Science Foundation (Award #: NSF IIS-1319152)  
Subject: Robustness and Adaptation in Morphogenetic Collective Systems  
Amount: \$374,811 (+ \$1,756 as supplemental funding)  
Role: PI

- 2014-2015      Research Grant  
Telecommunications Advancement Foundation, Japan  
Subject: Studying online users' cooperative mechanisms using evolutionary games  
Amount: JPY 1,110,000  
Role: Co-PI (Collaboration with Genki Ichinose)
- 2014-2015      Interdisciplinary Collaboration Grant  
Division of Research, Binghamton University  
Subject: A machine learning-based approach for optimizing the discovery of brain-based risk markers for psychiatric illness  
Amount: \$20,000  
Role: Co-PI (Collaboration with Vladimir Miskovic, Brandon Gibb and Chun-An Chou)
- 2014-2015      Authorship Grant  
Open SUNY Textbooks, Milne Library, SUNY College at Geneseo  
Subject: Introduction to the Modeling and Analysis of Complex Systems  
Amount: \$3,000  
Role: PI (single author of the textbook)
- 2014-2015      Individual Development Award  
Binghamton University / UUP  
Amount: \$1,000
- 2015              Conference Support Grant  
US Army Research Office  
Subject: CompleNet 2015: The Sixth International Workshop on Complex Networks  
Amount: \$14,962  
Role: PI
- 2015-2016      Interdisciplinary Collaboration Grant  
Division of Research, Binghamton University  
Subject: Using Network Analysis to Explore the Temporal Dynamics of Emotion in Schizophrenia  
Amount: \$10,000  
Role: Co-PI (Collaboration with Gregory Strauss)
- 2015-2016      Health Sciences Transdisciplinary Area of Excellence (TAE) Grant  
Division of Research, Binghamton University  
Subject: Predicting Conversion to Psychosis in At-Risk Youth: The Role of Stress-Inflammation Interactions  
Amount: \$20,000  
Role: Co-PI (Collaboration with Gregory Strauss, Terrence Deak and Gary James)
- 2015-2020      Organized Research Center Support  
Division of Research, Binghamton University  
Subject: Establishment of the Center for Collective Dynamics of Complex Systems  
Amount: \$60,000  
Role: Main PI (Collaboration with a number of CoCo faculty members)
- 2016              Individual Development Award  
Binghamton University / UUP  
Amount: \$910.60

- 2016-2017      Conference Support Grant  
US Army Research Office  
Subject: Workshop Support: Network Science and Education  
Amount: \$20,000  
Role: Main PI (Collaboration with Raluca Gera and Lori Sheetz)
- 2016-2018      Grants-in-Aid for Scientific Research (KAKENHI)  
Ministry of Education, Culture, Sports, Science and Technology (MEXT) of Japan  
Subject: The Impact of Technological Relatedness on Firm Performance after Acquisitions  
Amount: JPY 3,250,000  
Role: Co-PI (Collaboration with Junichi Yamanoi)
- 2017            Individual Development Award  
Binghamton University / UUP  
Amount: \$1,000
- 2017-2021      Research Grant  
US Army Research Institute for the Behavioral and Social Sciences  
Subject: Collective Planning and Leadership for the U.S. Army  
Amount: \$639,219 (Binghamton portion: \$395,322)  
Role: Co-PI (Collaboration with Francis Yammarino, Michael Mumford, Shelley Dionne and Shane Connelly)
- 2017-2020      Research Grant  
National Institute of Mental Health, National Institutes of Health  
Subject: Modeling Anhedonia in Schizophrenia: A Stochastic Dynamical Systems Approach  
Amount: \$417,456 (Binghamton portion: \$132,995)  
Role: Co-PI (Collaboration with Gregory Strauss and Brett Clementz)
- 2017-2021      Science of Organizations  
National Science Foundation (Award #: NSF SES-1734147)  
Subject: Diversity, Network Structure, and the Effectiveness of Collective Design and Innovation  
Amount: \$441,000  
Role: Main PI (Collaboration with Shelley Dionne and Francis Yammarino)
- 2017-2018      Conference Grant  
SUNY Conversations in the Disciplines program  
Subject: First Northeast Regional Conference on Complex Systems  
Amount: \$3,000  
Role: Main PI (Collaboration with CoCo ORC faculty)
- 2017-2018      Data Science Transdisciplinary Area of Excellence (TAE) Working Group Seed Grant  
Division of Research, Binghamton University  
Subject: Adaptive Network Modeling of Real-World Temporal Social Networks  
Amount: \$3,000  
Role: Main PI (Collaboration with Qi Wang, Xingye Qiao and Zhongfei (Mark) Zhang)
- 2018            Conference Grant  
National Science Foundation  
Subject: NERCCS 2018: First Northeast Regional Conference on Complex Systems



- Amount: \$4,836  
Role: Main PI (Collaboration with Changqing Cheng and Shelley Dionne)
- 2018-2019      Research Grant  
Waseda University Research Promotion Division  
Subject: Can Diversity Help Us Connected? Adaptive Network Model of Rapid Social Evolution Under Intensified Interactions Among Constituents  
Amount: JPY 500,000  
Role: Main PI (Collaboration with Junichi Yamanoi)
- 2019            Individual Development Award  
Binghamton University / UUP  
Amount: \$900
- 2019-2021     Research Grant  
National Institute of Mental Health, National Institutes of Health  
Subject: Mechanisms Underlying Emotion Regulation Abnormalities in Youth at Clinical High-Risk for Psychosis  
Amount: \$3,000  
Role: Individual consultant to the University of Georgia (Collaboration with Gregory Strauss)
- 2019-2023     Grants-in-Aid for Scientific Research (KAKENHI)  
Ministry of Education, Culture, Sports, Science and Technology (MEXT) of Japan  
Subject: How Does Diversity of Individuals Affect the Structure of Society?: A Constructive Approach Using Adaptive Networks  
Amount: JPY 12,740,000  
Role: Main PI (Collaboration with Junichi Yamanoi)
- 2019-2023     Grants-in-Aid for Scientific Research (KAKENHI)  
Ministry of Education, Culture, Sports, Science and Technology (MEXT) of Japan  
Subject: Spontaneous Ideological Escalation without Leaders As a Distributed Socio-Dynamical Process  
Amount: JPY 6,370,000  
Role: PI
- 2019-2022     Grants-in-Aid for Scientific Research (KAKENHI)  
Ministry of Education, Culture, Sports, Science and Technology (MEXT) of Japan  
Subject: Integrating Crowd-Sourced Online Experiments and Agent-Based Modeling to Study Fluctuating Social Dilemma  
Amount: JPY 4,420,000  
Role: Co-PI (Collaboration with Genki Ichinose and Hiromu Ito)
- 2020            Individual Development Award  
Binghamton University / UUP  
Amount: \$783
- 2020            SUNY COVID Seed Grant Program  
State University of New York  
Subject: How to Resume and Maintain Economic Activities in the COVID-19 Era: An Adaptive Social Distancing Approach  
Amount: \$7,500  
Role: Main PI (Collaboration with Shelley Dionne and Francis Yammarino)

- 2020-2021      Research Grant  
College of Community and Public Affairs & Division of Research, Binghamton University  
Subject: Examining Psychological Safety in Cancer Care Systems Serving Rural and Low-  
Income Populations Pre- and Post- COVID-19  
Amount: \$13,500  
Role: Co-PI (Collaboration with Kim Brimhall, Shelley Dionne, Rory Eckardt and Joey Tsai)
- 2022-2023      Interdisciplinary Collaboration Grant  
Division of Research, Binghamton University  
Subject: Modeling the Emergence of Collective Action in Human Evolution  
Amount: \$9,953.54  
Role: Co-PI (Collaboration with Carl Lipo, Andreas Pape and Robert DiNapoli)
- 2022-2026      Grants-in-Aid for Scientific Research (KAKENHI)  
Ministry of Education, Culture, Sports, Science and Technology (MEXT) of Japan  
Subject: Does Sharing Goals Allow People to Overcome the Social Dilemma of Vaccination?  
Amount: JPY 17,160,000  
Role: Co-PI (Collaboration with Genki Ichinose and Hiromu Ito)
- 2022-2023      Data Science Transdisciplinary Area of Excellence (TAE) Grant  
Division of Research, Binghamton University  
Subject: A Multimodal Data-Driven Approach to Improving the Effectiveness of Virtual  
Group Collaborations for Entrepreneurship Development  
Amount: \$6,714  
Role: Co-PI (Collaboration with Chou-Yu (Joey) Tsai and Cynthia Maupin)
- 2022            Open Education Resources (OER) Grant  
Center for Learning and Teaching, Binghamton University  
Subject: Updating the Open SUNY Textbook “Introduction to the Modeling and Analysis of  
Complex Systems” to 2nd Edition  
Amount: \$2,000  
Role: PI (single author of the textbook)
- 2023-2027      Grants-in-Aid for Scientific Research (KAKENHI)  
Ministry of Education, Culture, Sports, Science and Technology (MEXT) of Japan  
Subject: Automatic Derivation of Dynamical Models from Temporal Network Data Using a  
Graph Rewriting System  
Amount: JPY 18,200,000  
Role: Main PI (Collaboration with Naoki Masuda)
- 2023-2024      Higher Education Research Funding Grant  
Federal Emergency Management Agency (FEMA)  
Subject: Binghamton Two Degrees: What Will Binghamton Look Like Under Two Degrees of  
Warming and What Can We Do Now to Prepare?  
Amount: \$10,000  
Role: Co-PI (Collaboration with Andreas Pape and others)
- 2023-2024      Research Grant  
Waseda University Research Promotion Division  
Subject: Exploration for Artificial Intelligence and Artificial Life That Realize Endless  
Dynamic Processes

Amount: JPY 300,000  
Role: Sole PI

2024 Individual Development Award  
Binghamton University / UUP  
Amount: \$2,000

### Keynote/Invited Talks Delivered

- 2008 Invited Speaker  
Institute Colloquium, Max Planck Institute for the Physics of Complex Systems  
Held in Dresden, Germany
- 2008 Invited Speaker  
The 2007/2008 Dean's Distinguished Lecture Series  
University of Vermont College of Engineering and Mathematical Sciences  
Held in Burlington, VT
- 2010 Invited Speaker  
School of Technology and Design, New York City College of Technology  
Held in New York, NY
- 2010 Keynote Speaker  
The 2010 Japanese Society for Evolutionary Computation Symposium  
Held in Fukuoka, Japan
- 2011 Invited Speaker  
Table ronde à la Cité des sciences: "Les machines peuvent-elles imiter le cerveau humain?"  
Cité des Sciences et de l'Industrie  
Held in Paris, France
- 2011 Keynote Speaker  
The Fourth International Workshop on Guided Self-Organization (GSO 4)  
Held in Hatfield, UK
- 2011 Invited Speaker  
Chief of Naval Operations (CNO) Strategic Studies Group  
Held in Newport, RI
- 2012 Invited Speaker  
Raytheon BBN Technologies  
Held in Cambridge, MA
- 2012 Invited Speaker  
Xerox Research Center  
Held in Webster, NY
- 2014 Invited Speaker  
Complex Systems Group Seminar, Universidad Politecnica de Madrid  
Held in Madrid, Spain

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- 2015      Invited Speaker  
Collective Behavior Study Group, Cornell University  
Held in Ithaca, NY
- 2016      Keynote Speaker  
Thirteenth NetEco Symposium  
Held in Kisarazu, Japan
- 2016      Invited Speaker  
Ocean Engineering Seminar, Texas A&M University  
Held in College Station, TX
- 2017      Invited Speaker  
Worcester Polytechnic Institute  
Held in Worcester, MA
- 2018      Invited Speaker  
Complexity Week, National Autonomous University of Mexico  
Held in Mexico City, Mexico
- 2018      Invited Speaker  
Computer Science Student Research Day, University of Vermont  
Held in Burlington, VT
- 2018      Invited Speaker  
Applied Mathematics Seminar, University at Buffalo  
Held in Buffalo, NY
- 2018      Invited Speaker  
APCTP International Workshop on Theoretical Perspectives in Network Science  
Held in Seoul, Korea
- 2019      Invited Speaker  
College of Integrative Sciences General Science Seminar, Wesleyan University  
Held in Middletown, CT
- 2019      Invited Speaker  
OER Professional Development Series, National Institute of Education  
Held in Singapore
- 2020      Invited Speaker  
CompleNet 2020: 11th International Conference on Complex Networks  
Held in Exeter, UK (conference postponed due to COVID-19)
- 2020      Keynote Speaker  
ACSOS 2020: First IEEE International Conference on Autonomic Computing and Self-Organizing Systems  
Held online
- 2021      Invited Speaker  
Clarkson Center for Complex Systems Science Seminar Series, Clarkson University  
Held online

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- 2021      Keynote Speaker  
DB3D 2021: Don Bosco-Binghamton Big Data Online Conference  
Held online
- 2022      Invited Speaker  
Complex Systems & Data Science Seminar Series  
Vermont Complex Systems Center, University of Vermont  
Held in Burlington, VT
- 2022      Keynote Speaker  
Monash Prato Dialogue: AI Summit  
Held in Prato, Italy
- 2023      Invited Speaker  
SUNY Sullivan Healthcare Conference  
Held in Sullivan, NY
- 2023      Keynote Speaker  
Monash Prato Dialogue: AI Summit  
Held in Prato, Italy
- 2023      Semi-Plenary Speaker  
The VI AMMCS International Conference  
Held in Waterloo, Ontario, Canada
- 2023      Invited Speaker  
Santa Fe Institute Seminar  
Held in Santa Fe, New Mexico
- 2023      Invited Speaker  
Applied and Computational Mathematics Seminar, Dartmouth College  
Held in Hanover, NH
- 2023      Keynote Speaker  
International Conference on Artificial Intelligence, Communication, IoT, Data Engineering  
and Security (IACIDS 2023)  
Held in Pune/Lavasa, India (hybrid)
- 2023      Keynote Speaker  
The 22<sup>nd</sup> International Symposium on Knowledge and Systems Sciences (KSS 2023)  
Held in Guangzhou, China
- 2023      Keynote Speaker  
International Conference on Mathematical Modelling and Computational Intelligence  
(ICMMCI 2023)  
Held in Chennai, India
- 2024      Invited Speaker  
The 8th International Vision Seminar on Artificial Intelligence  
Held in Kolkata, India

2024 Keynote Speaker  
The 5th World Conference on Complex Systems (WCCS 2024)  
Held in Casablanca, Morocco

### Honors and Awards

1996 Best Presentation Award  
Fujitsu Fifth Parallel Computing Workshop (PCW'95 Japan)

2008 Guest Scientist  
Max Planck Institute for the Physics of Complex Systems, Dresden, Germany

2010 Best Presentation Award  
IPJS SIG-Mathematical Modeling and Problem Solving Meeting #81  
Fukuoka, Japan

2011 Guest Scientist  
Max Planck Institute for the Physics of Complex Systems, Dresden, Germany

2011 Best Poster Award  
Eleventh European Conference on Artificial Life (ECAL 11)  
Held in Paris, France

2015 Best Contributed Talk  
NetSci 2015 Satellite Symposium on Controlling Complex Networks  
Held in Zaragoza, Spain

2015 Guest Scientist  
Max Planck Institute for the Physics of Complex Systems, Dresden, Germany

2016 Chancellor's Award for Excellence in Teaching  
State University of New York  
Amount: \$1,000

2016 Lois B. DeFleur Faculty Prize for Academic Achievement  
Binghamton University  
Amount: \$10,000

2016 ISAL Exceptional Service Award  
International Society for Artificial Life

2016-2017 Guest Scientist  
Max Planck Institute for the Physics of Complex Systems, Dresden, Germany

2017 First Place, "Imagining Science" category  
The Art of Science competition  
(Work title: "Visualized for the Blind")  
Binghamton University

2017 Best Poster Award (lead student author: Benjamin James Bush)  
The 2017 International School and Conference on Network Science (NetSci 2017)

	Held in Indianapolis, IN
2018	ISAL Outstanding Paper of the Decade (2003-2013) Award (Swarm Chemistry, Artificial Life 15(1), 105-114, 2009) International Society for Artificial Life
2019-2020	Guest Scientist Max Planck Institute for the Physics of Complex Systems, Dresden, Germany
2021	Recognition Award for Outstanding Faculty Service Thomas J. Watson College of Engineering and Applied Science Binghamton University
2022	Outstanding Graduate Director Award Binghamton University
2022	Chancellor's Award for Excellence in Faculty Service State University of New York
2024	Lyceum Binghamton University Faculty Award Lyceum Life-Long Learning Institute Binghamton University
2024-2025	Guest Scientist Max Planck Institute for the Physics of Complex Systems, Dresden, Germany

### Academic Memberships

ISAL (International Society for Artificial Life)  
 CSS (Complex Systems Society) & CSS US Northeast Chapter  
 NetSci (Network Science Society)  
 IEEE (Institute of Electrical and Electronics Engineers)  
 IEEE Computational Intelligence Society  
 IEEE Systems, Man, & Cybernetics Society

### Teaching

1999 -2002	Teaching Assistant at several NECSI Courses and Advanced Training Programs New England Complex Systems Institute
2002-2005	Course development and instruction for undergraduate and graduate programs Department of Human Communication, UEC
	<ul style="list-style-type: none"> <li>- Algorithms and Data Structures (for sophomores)</li> <li>- Graphs and Dynamical Networks (for sophomores and international students in English)</li> <li>- Introduction to Computer Science (for sophomores and juniors)</li> <li>- Introduction to Information Theory (for juniors)</li> <li>- Mathematical Modeling and Simulation (for juniors)</li> <li>- Advanced Lectures on Emergent Communication Systems Design (for graduates and international students in English)</li> </ul>

- Other courses co-taught with other faculty
  - Introductory Seminar on Human Communication (for freshmen)
  - Topics on Modern Science and Technology (for sophomores)
  - Academic Reading in English (for juniors)
  - Fundamentals of Media Communication (for graduates)

Senior thesis project supervision for nineteen undergraduate students  
Department of Human Communication, UEC

Master thesis project supervision for three graduate students  
Department of Human Communication, UEC

Master thesis project remote supervision for two graduate students  
Section Computational Science, University of Amsterdam, the Netherlands

Research supervision for one visiting researcher  
Department of Human Communication, UEC

- 2003-2005 Part-time Lecturer  
Intensive Course on Complex Systems Science II: Invitation to Self-Replication Studies  
Department of Complex Systems Science  
Graduate School of Information Science, Nagoya University, Japan
- 2003 Program Coordinator  
An Intersection between Machines and Life -- Creating Artificial Systems That Exhibit Lifelike Behavior  
UEC Open Lecture Series, UEC, Japan
- 2006-present Course development and instruction for undergraduate and graduate programs  
Departments of Bioengineering/Systems Science and Industrial Engineering, Binghamton University, SUNY, USA
- BE-201/BIOL-333: Self-Organizing Systems (for sophomores)
  - BE-410/BME-515: Complexity in Biological Systems (for seniors and graduates)
  - BE-461: Exploring Social Dynamics (for juniors and seniors)
  - BME-510: Modeling Complex Biological Systems (for graduates)
  - BME-523: Dynamics of Complex Networks (for graduates)
  - SSIE/BME-524: Graduate Seminar in Complex Systems Science (for graduates)
  - SSIE-523: Collective Dynamics of Complex Systems (for graduates)
  - SSIE-500: Computational Tools (for graduates)
  - SSIE-641: Advanced Topics in Network Science (for advanced graduates)
- PhD/Master thesis project supervision for a number of graduate students  
Departments of Bioengineering & Systems Science and Industrial Engineering,  
Binghamton University, SUNY, USA
- 2008-2020 Instructor  
New England Complex Systems Institute Summer/Winter Schools  
Cambridge, MA
- CX-201: Complex Physical, Biological and Social Systems (2009-)



- CX-102: Complex Systems and Computer Programming (2010-)
- CX-202: Complex Systems Modeling and Networks (2008-)
- CX-203: Methods for the Study of Complex Systems (2008-2009)
- Introduction to Nonlinear Dynamics and Spatial Pattern Formation (2014)

- 2008      Invited Lecturer  
 Second Annual French Complex Systems Summer School  
 Complex Systems Institute Paris Ile-de-France (ISC-PIF), Paris, France
- Continuous space, lattices and swarms: Pattern formation in complex systems
- 2010-2015      Co-Organizer and Research Supervisor  
 NetSci High: High School Student Research on Network Science
- Collaboration with Stephen Uzzo, Tara Chudoba and Catherine Cramer (New York Hall of Science), H. Eugene Stanley and Paul Trunfio (Boston University), Lori Sheetz (USMA West Point)
  - Supervision of student projects at Maine-Endwell High School, Endwell, NY, and Vestal High School, Vestal, NY
  - Introductory lectures and labs on network modeling and analysis for high school students and teachers at NetSci High Summer Camp
- 2011      Invited Lecturer  
 First NWO (Netherlands Organization for Scientific Research) Complexity Winter School  
 Zandvoort, the Netherlands
- Introduction to complex systems, nonlinear dynamics and chaos
  - Complex systems modeling and simulation in Python
- 2015-2017      Organizer and Research Supervisor  
 Computational Understanding of Living Systems (COULS) Program
- Supervision of student projects at Vestal High School, Vestal, NY
- 2016      Invited Lecturer  
 Intensive Course of Network and Agent-Based Modeling  
 Waseda University, Tokyo, Japan
- 2017-2022      Course development and instruction for undergraduate, graduate and international programs  
 Computational Approaches to Complex Systems and Networks with Python  
 School of Commerce, Waseda University, Tokyo, Japan
- 2018      Invited Lecturer  
 Self-Organizing Artifacts: Artificial Chemistry, Artificial Life, and Morphogenetic Engineering  
 University of Tokyo, Japan
- 2018-present      Course development and instruction  
 Introduction to Python Programming (one-day/online continuing education course)  
 Watson Office of Industrial Outreach  
 Thomas J. Watson School of Engineering and Applied Science  
 Binghamton University

2019-2020 Course development and instruction for freshmen  
UNIV 101R: Complex Networks Around Us  
Binghamton University

## Student Advising

Continuously updated and available online at <https://bingdev.binghamton.edu/sayama/#members>

## Academic Services

1998-2005 Seminar Series Organizer  
Artificial Life Independent Seminar in Tokyo / Ad-hoc Learning Initiative on Systems and Theories (ALIST)

1999 Meeting Organizer  
“What’s Been Done, What’s Not Yet, and What Comes Next in Artificial Life”  
ALIREN + ALIST Joint Meeting  
Held at University of Tokyo, Japan

1999-2005 Board Member  
ALIREN, Japan

2000 Meeting Co-Organizer  
The 20th SIG Meeting on System Engineering: New Trends in Artificial Life  
Society of Instrument and Control Engineers  
Held at Nagoya University, Japan

2001 Reviewer  
ECAL 2001: The Sixth European Conference on Artificial Life  
Held in Prague, Czech Republic

2002-present Affiliate  
New England Complex Systems Institute

2002-2003 Guest Editor (with Dan Braha, Mark Klein, and Yaneer Bar-Yam)  
Concurrent Engineering: Research and Application (CERA) Journal Special Issue:  
“A Complex Systems Perspective on Concurrent Engineering”

2003 Program Committee Member  
The 2003 Annual Conference of the Japanese Cognitive Science Society  
Held at UEC, Japan

2004 Program Committee Member  
ICCS 2004: The Fifth International Conference on Complex Systems  
Held in Boston, MA

2004 Meeting Organizer  
“Emergent Evolution in Artificial Life”  
A workshop in the Sixth Annual Meeting of the Society of Evolutionary Studies, Japan  
Held at University of Tokyo, Japan

- 2004 Program Committee Member  
ALIFE IX: The Ninth International Conference on the Simulation and Synthesis of Living Systems  
Held in Boston, MA
- 2004 Program Committee Member  
ACA 2004: A Workshop on Artificial Chemistry and Its Applications  
Part of ALIFE IX: The Ninth International Conference on the Simulation and Synthesis of Living Systems  
Held in Boston, MA
- 2005 Program Committee Member  
Special Session on Artificial Life in the 2005 IEEE Congress on Evolutionary Computation (CEC 2005)  
Held in Edinburgh, UK
- 2005 Program Committee Member  
ACA 2005: A Workshop on Artificial Chemistry and Its Applications  
Part of ECAL 2005: The Eighth European Conference on Artificial Life  
Held in Kent, UK
- 2006 Program Committee Member  
Workshop on Artificial Chemistries and Artificial Life  
Part of AISB'06: Adaptation in Artificial and Biological Systems  
Planned to be held in Bristol, UK (cancelled)
- 2006 Scientific Committee Member  
Workshop on Machine Self-Replication  
Part of ALIFE X: The Tenth International Conference on the Simulation and Synthesis of Living Systems  
Held in Bloomington, IN
- 2006 Program Committee Member  
GECCO 2006: The 2006 Genetic and Evolutionary Computation Conference (Artificial Life, Evolutionary Robotics, Adaptive Behavior Track)  
Held in Seattle, WA
- 2006 Program Committee Member  
ICCS 2006: The Sixth International Conference on Complex Systems  
Held in Boston, MA
- 2006-2011 Technical Committee Member  
Technical Committee on Complex System Empowered Biological Networking  
IEICE Communications Society, Japan
- 2006-2007 Reviewer  
The First IEEE Symposium on Artificial Life (IEEE ALIFE '07)  
Held in Honolulu, HI
- 2007 Reviewer  
The 2007 IEEE Congress on Evolutionary Computation (CEC 2007)

- Held in Singapore
- 2007 Co-chair  
Workshop on Machine Epigenesis  
Part of ECAL 2007: The Ninth European Conference on Artificial Life  
Planned to be held in Lisbon, Portugal (cancelled)
- 2007 Special Sessions Chair and Executive Committee Member  
ICCS 2007: The Seventh International Conference on Complex Systems  
Held in Boston, MA
- 2007 Program Committee Member  
The Second International Workshop on Natural Computing  
Held in Nagoya, Japan
- 2007 Scientific Advisory Board Member  
Lifeboat Foundation
- 2008 Program Committee Member  
ALIFE XI: The Eleventh International Conference on the Simulation and Synthesis of Living  
Systems  
Held in Winchester, UK
- 2008 Technical Committee Member  
The 2008 IEEE Congress on Evolutionary Computation (CEC 2008)  
Part of WCCI 2008: The 2008 IEEE World Congress on Computational Intelligence  
Held in Hong Kong, China
- 2008 Reviewer  
The 18th International Conference on Artificial Neural Networks in Engineering (ANNIE  
2008)  
Held in St. Louis, MO
- 2008 Program Committee Member  
The Third International Workshop on Natural Computing  
Held in Yokohama, Japan
- 2008-2009 Co-Editor (with Thilo Gross)  
Adaptive Networks: Theory, Models and Applications  
Springer/NECSI Studies on Complexity Series  
Published in 2009
- 2008-2009 Program Committee Member  
The Second IEEE Symposium on Artificial Life (IEEE ALIFE '09)  
Held in Nashville, TN
- 2008-2012 Editor  
IPSI Transactions on Mathematical Modeling and Its Applications
- 2008 Academic Editorial Board Member  
Journal of the Evolutionary Studies Consortium (EvoS Journal)

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- 2009 Program Committee Member  
The 2009 IEEE Congress on Evolutionary Computation (CEC 2009)  
Held in Trondheim, Norway
- 2009 Co-Organizer  
The First International Workshop on Morphogenetic Engineering (MEW 2009)  
Held in Paris, France
- 2009 Program Committee Member  
The Fourth International Workshop on Natural Computing  
Held in Himeji, Japan
- 2009 Program Committee Member  
International Workshop on Complex Collective Systems  
Part of the Eighth International Conference on Parallel Processing and Applied Mathematics (PPAM 2009)  
Held in Wroclaw, Poland
- 2009-2012 Co-Editor (with Rene Doursat and Olivier Michel)  
Morphogenetic Engineering: Toward Programmable Complex Systems  
Springer/NECSI Studies on Complexity Series  
Published in December 2012
- 2009-2010 Special Sessions Chair  
Special Session on Morphogenetic Engineering  
Part of ANTS 2010: Seventh International Conference on Swarm Intelligence  
Held in Brussels, Belgium
- 2009-present Occasional Proposal Reviewer  
National Science Foundation
- 2010 Evaluation Committee Member  
Evolutionary Art Competition  
GECCO 2010: The 2010 Genetic and Evolutionary Computation Conference  
Held in Portland, OR
- 2010 Reviewer/Program Committee Member  
The 2010 IEEE Congress on Evolutionary Computation (CEC 2010) and  
Special Session on Bio-Inspired Self-Organizing Multi-Agent Systems  
Part of WCCI 2010: The 2010 IEEE World Congress on Computational Intelligence  
Held in Barcelona, Spain
- 2010 Program Committee Member  
ALIFE XII: The 12th International Conference on the Synthesis and Simulation of Living  
Systems  
Held in Odense, Denmark
- 2010 Program Committee Member/Special Track Chair  
The Fifth International Conference on Bio-Inspired Models of Network, Information and  
Computing Systems (BIONETICS 2010) and  
Special Track on State-Topology Coevolution in Adaptive Networks (STCAN 2010)  
Special Track on Bioinformatics

- Held in Boston, MA
- 2010-2011 Technical Program Committee Member  
International Workshop on Self-Organizing Systems (IWSOS)  
Held in Karlsruhe, Germany
- 2010-2011 Co-Chair  
The Third IEEE Symposium on Artificial Life (IEEE ALIFE 2011)  
Held in Paris, France
- 2010-2011 Co-Organizer (with Stephen Uzzo and Tara Chudoba)  
NetSci-High: International High School Student Poster Competition on Network Science  
Part of NetSci 2011: International School and Conference on Network Science  
Held in Budapest, Hungary
- 2010-2011 Program Chair  
ICCS 2011: The Eighth International Conference on Complex Systems  
Held in Boston, MA
- 2010-2011 Program Committee Member  
The Fifth Australian Conference on Artificial Life (ACAL 2011)  
Held in Perth, Australia
- 2010-2011 Program Committee Member  
Second International Workshop on Complex Collective Systems  
Part of the Ninth International Conference on Parallel Processing and Applied Mathematics  
(PPAM 2011)  
Held in Torun, Poland
- 2011 Program Committee Member  
Tutorial Organizer, Artificial Chemical Computing Systems  
Workshop Organizer, 3rd Morphogenetic Engineering Workshop  
Eleventh European Conference on Artificial Life (ECAL 11)  
Held in Paris, France
- 2011 Program Committee Member  
Fifth IEEE International Conference on Self-Adaptive and Self-Organizing Systems (SASO  
2011)  
Held in Ann Arbor, MI
- 2011-present Proposal Review Panel Member  
National Science Foundation
- 2011 Program Committee Member  
International Conference on Advanced Computer Science and Information Systems 2011  
(ICACSIS 2011)  
Held in Jakarta, Indonesia
- 2011-2015 Elected Member, Board of Directors  
International Society for Artificial Life (ISAL)
- 2011-2012 Technical Program Committee Member

- Sixth International Workshop on Self-Organizing Systems (IWSOS 2012)  
Held in Delft, the Netherlands
- 2012 Program Committee Member  
GECCO 2012: The 2012 Genetic and Evolutionary Computation Conference  
(Generative and Developmental Systems Track)  
Held in Philadelphia, PA
- 2012 Program Committee Member  
Sixth IEEE International Conference on Self-Adaptive and Self-Organizing Systems (SASO 2012)  
Held in Lyon, France
- 2012 Co-Organizer  
NetSciEd: Satellite Symposium on Education “Infuse Network Science into K-12 and Undergraduate Education”  
Part of the 2012 International School and Conference on Network Science  
Held in Evanston, IL
- 2012 Program Committee Member  
Thirteenth International Conference on the Simulation and Synthesis of Living Systems (ALIFE 13)  
Held in East Lansing, MI
- 2012-present Vice Chair  
IEEE CIS Artificial Life and Complex Adaptive Systems Task Force
- 2012-2013 Co-Chair  
The Fourth IEEE Symposium on Artificial Life (IEEE ALIFE 2013)  
Held in Singapore
- 2012-2020 Assistant Editor  
Complex Adaptive Systems Modeling (SpringerOpen)
- 2012-2021 Review Editor  
Frontiers in Computational Physics
- 2012-2014 External Consultant  
Science and Technology Foresight Center  
National Institute of Science and Technology Policy  
Ministry of Education, Culture, Sports, Science and Technology (MEXT), Japan
- 2012-2013 Technical Program Committee Member  
Seventh International Workshop on Self-Organizing Systems (IWSOS 2013)  
Held in Palma de Mallorca, Spain
- 2012-2013 Program Committee Member  
The Seventh International Workshop on Natural Computing  
Held in Tokyo, Japan
- 2013 Co-Chair

- NetSci 2013 Satellite Symposium on State-Topology Coevolution in Adaptive Networks (STCAN 2013)  
Part of the 2013 International School and Conference on Network Science (NetSci 2013)  
Held in Copenhagen, Denmark
- 2013 Co-Organizer  
Second Network Science In Education Satellite Symposium (NetSciEd2)  
Part of the 2013 International School and Conference on Network Science (NetSci 2013)  
Held in Copenhagen, Denmark
- 2013 Program Committee Member  
GECCO 2013: The 2013 Genetic and Evolutionary Computation Conference  
(Generative and Developmental Systems Track)  
Held in Amsterdam, The Netherlands
- 2013 Program Committee Member  
Third International Workshop on Complex Collective Systems  
Part of the Tenth International Conference on Parallel Processing and Applied Mathematics (PPAM 2013)  
Held in Warsaw, Poland
- 2013 Technical Program Committee Member  
The 2013 IEEE Congress on Evolutionary Computation (IEEE CEC 2013)  
Program Committee Member  
CEC 2013 Special Session on Design, Programming and Learning of Complex Systems  
Held in Cancun, Mexico
- 2013 Program Committee Member  
Twelfth European Conference on Artificial Life (ECAL 2013)  
Held in Taormina, Italy
- 2014 Co-Organizer  
Third Network Science In Education Satellite Symposium (NetSciEd3)  
Part of the 2014 International School and Conference on Network Science (NetSci 2014)  
Held in Berkeley, CA
- 2013-2014 Program Chair  
Fourteenth International Conference on the Synthesis and Simulation of Living Systems (ALIFE 14)  
Held in New York, NY
- 2014 Co-Chair  
Fourth International Morphogenetic Engineering Workshop (MEW 2014)  
Part of the Fourteenth International Conference on the Synthesis and Simulation of Living Systems (ALIFE 14)  
Held in New York, NY
- 2014 Program Committee Vice Chair  
Eighth International Conference on Bio-inspired Information and Communications Technologies  
Held in Boston, MA



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- 2014 Program Committee Member  
Workshop on Massive Data Flow: Understanding the Complex Dynamics of the Web  
Part of the ACM Web Science Conference 2014 (WebSci14)  
Held in Bloomington, IN
- 2014 Program Committee Member  
Quantifying Success 2.0 Workshop  
Part of the 2014 European Conference on Complex Systems (ECCS '14)  
Held in Lucca, Italy
- 2014 Scientific Committee Member  
Emergence in Chemical Systems 4.0 Conference  
Held in Anchorage, AK
- 2014-2015 Review Editor  
Frontiers in Robotics and AI / Computational Intelligence
- 2014-2015 Co-Organizer  
Fourth Network Science In Education Satellite Symposium (NetSciEd4)  
Part of the 2015 International School and Conference on Network Science (NetSci 2015)  
Held in Zaragoza, Spain
- 2014-2015 Program Committee Member  
Co-Chair, Special Session on Morphogenetic Engineering  
ECAL 2015: The 2015 European Conference on Artificial Life  
Held in York, UK
- 2014-2016 Guest Editor  
Artificial Life  
The Artificial Life 14 Conference Special Issue
- 2015 Reviewer  
The 2015 IEEE Congress on Evolutionary Computation (IEEE CEC 2015)  
Held in Sendai, Japan
- 2015 Program Committee Member  
Fourth International Workshop on Complex Collective Systems  
Part of the Eleventh International Conference on Parallel Processing and Applied Mathematics (PPAM 2015)  
Held in Krakow, Poland
- 2015 Co-Chair  
The Fifth IEEE Symposium on Artificial Life (IEEE ALIFE 2015)  
Held in Cape Town, South Africa
- 2015-2023 Editorial Board Member  
International Journal of Parallel, Emergent and Distributed Systems (Taylor & Francis)
- 2015-2024 Editorial Board Member  
Applied Network Science (SpringerOpen)
- 2015-present Committee Member

- IEEE CIS Task Force on Bio-Inspired Self-Organizing Collective Systems
- 2015-present Editorial Board Member  
Complex & Intelligent Systems (SpringerOpen)
- 2015-2016 Reviewer  
The 2016 IEEE Congress on Evolutionary Computation (IEEE CEC 2016)  
Held in Vancouver, Canada
- 2015-2016 Co-Organizer  
Co-Chair, Workshop on Morphogenetic Engineering  
Program Committee Member, Workshop on Guided Self-Organization  
Fifteenth International Conference on the Synthesis and Simulation of Living Systems  
(ALIFE XV)  
Held in Cancun, Mexico
- 2015-2021 Elected Council Member  
Complex Systems Society (CSS)
- 2016 Program Committee Member  
CCS'16: The 2016 Conference on Complex Systems  
Held in Amsterdam, the Netherlands
- 2016 Co-Organizer  
Fifth NetSci Satellite Symposium on Network Science and Education (NetSciEd5)  
Part of the 2016 International School and Conference on Network Science (NetSci 2016)  
Held in Seoul, Korea
- 2016 Program Committee Member  
First International Workshop on Self-Organising Construction  
Part of the 10th IEEE International Conference on Self-Adaptive and Self-Organizing Systems  
(SASO 2016)  
Held in Augsburg, Germany
- 2016-present Associate Editor  
Artificial Life (MIT Press)
- 2016 Program Committee Member  
Fifth International Workshop on Complex Networks and Their Applications  
Held in Milan, Italy
- 2016-2022 Elected Executive Committee Member  
Complex Systems Society (CSS)
- 2017 Co-Organizer  
Sixth NetSci Satellite Symposium on Network Science and Education (NetSciEd6)  
Part of the 2017 International School and Conference on Network Science (NetSci 2017)  
Held in Indianapolis, IN
- 2017 Program Committee Member  
ECAL 2017: The 2017 European Conference on Artificial Life  
Held in Lyon, France

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- 2017 Co-Chair, Workshop on Morphogenetic Engineering  
ECAL 2017: The 2017 European Conference on Artificial Life  
Held in Lyon, France
- 2017 Program Committee Member  
CCS'17: The 2017 Conference on Complex Systems  
Held in Cancun, Mexico
- 2017 Co-Chair  
Second CCS Satellite Symposium on Complex Systems and Education  
Part of CCS'17: The 2017 Conference on Complex Systems  
Held in Cancun, Mexico
- 2017 Program Committee Member  
Sixth International Workshop on Complex Networks and Their Applications  
Held in Lyon, France
- 2017 Program Committee Member  
Fifth International Workshop on Complex Collective Systems  
Part of the Twelfth International Conference on Parallel Processing and Applied Mathematics  
(PPAM 2017)  
Held in Lublin, Poland
- 2017 Co-Chair  
Sixth IEEE Symposium on Artificial Life (IEEE ALIFE 2017)  
Held in Honolulu, HI
- 2017-2018 General Chair  
First Northeast Regional Conference on Complex Systems (NERCCS 2018)  
Held in Binghamton, NY
- 2017-2018 Organizing Committee Member  
The 2018 International Conference on Artificial Life (ALIFE 2018)  
Held in Tokyo, Japan
- 2017-present Editorial Board Member  
Complexity (Wiley/Hindawi)
- 2017-present Editorial Board Member  
Complex Systems (Complex Systems Publications)
- 2018 Co-Organizer  
NetSciEd 2018: NetSci Satellite Symposium on Network Science and Education  
Part of the 2018 International School and Conference on Network Science (NetSci 2018)  
Held in Paris, France
- 2018 Co-Organizer  
Special session on Bridging Network Science and Graph Theory  
Part of the 2018 SIAM Conference on Applied Mathematics Education (ED18)  
Held in Portland, OR

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- 2018 Program Committee Member  
Co-Organizer, Complex Systems: Literacy and Learning Workshop  
ICCS 2018: The Ninth International Conference on Complex Systems  
Held in Cambridge, MA
- 2018 Program Committee Member  
Second International Workshop on Self-Organising Construction  
Part of the 12th IEEE International Conference on Self-Adaptive and Self-Organizing Systems (SASO 2018)  
Held in Treno, Italy
- 2018 Program Committee Member  
CCS'18: The 2018 Conference on Complex Systems  
Held in Thessaloniki, Greece
- 2018-2019 Program Committee Member  
CompleNet 2019: Tenth International Conference on Complex Networks  
Held in Tarragona, Spain
- 2018-2019 General Chair  
Second Northeast Regional Conference on Complex Systems (NERCCS 2019)  
Held in Binghamton, NY
- 2018-present Founding Member  
US Northeast Chapter of the Complex Systems Society
- 2018-2021 CCS Steering Committee Member  
Complex Systems Society (CSS)
- 2019 Co-Organizer  
NetSciEd 2019: NetSci Satellite Symposium on Network Science and Education  
Part of the 2019 International School and Conference on Network Science (NetSci 2019)  
Held in Burlington, VT
- 2019 Program Committee Member  
The 2019 Conference on Artificial Life (ALIFE 2019)  
Held in Newcastle upon Tyne, UK
- 2019 Co-Organizer  
Computational Approaches to Social Dynamics: Data, Modeling, Simulation, and Hybrids  
A Satellite Workshop of the 2019 Conference on Artificial Life (ALIFE 2019)  
Held in Newcastle upon Tyne, UK
- 2019-present Chief Editor  
Complexity (Wiley/Hindawi)
- 2019-present Founding Editor-in-Chief  
Northeast Journal of Complex Systems (CSS US Northeast Chapter / Binghamton University)
- 2019 Program Committee Member  
Third International Workshop on Self-Organising Construction  
Part of the 13th IEEE International Conference on Self-Adaptive and Self-Organizing Systems

- (SASO 2019)  
Held in Umeå, Sweden
- 2019 Program Committee Member  
Sixth International Workshop on Complex Collective Systems  
Part of the Thirteenth International Conference on Parallel Processing and Applied Mathematics (PPAM 2019)  
Held in Bialystok, Poland
- 2019 Guest Editor, Special Issue on Leadership in the Digital Era: Social Media, Big Data, Virtual Reality, Computational Methods, and Deep Learning  
Leadership Quarterly
- 2019-present Advisory Board Member  
Field of Excellence Complexity of Life in Basic Research and Innovation (COLIBRI)  
University of Graz, Austria
- 2019 Program Committee Member  
CCS 2019: The 2019 Conference on Complex Systems  
Held in Singapore
- 2019 Co-Organizer  
Fourth CCS Satellite Symposium on Complex Systems and Education: Applications in Language Pedagogy, Assessment, and Complexity Learning  
Part of CCS 2019: The 2019 Conference on Complex Systems  
Held in Singapore
- 2019-present Partner  
Alternative Machines, Inc.  
Tokyo, Japan
- 2019 General Chair  
Seventh IEEE Symposium on Artificial Life (IEEE ALIFE 2019)  
Held in Xiamen, China
- 2019-2020 General Chair  
NetSci-X 2020: International School and Conference on Network Science  
Held in Tokyo, Japan
- 2019-present Board Member  
Network Science Society
- 2019-2020 Senior Program Committee Member  
The 2020 Conference on Artificial Life (ALIFE 2020)  
Held online
- 2019-2020 Program Committee Member  
CompleNet 2020: 11th International Conference on Complex Networks  
Held in Exeter, UK
- 2019-2020 Communications Chair  
Third Northeast Regional Conference on Complex Systems (NERCCS 2020)

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	Held online
2019-present	Editorial Board Member International Journal of Complexity in Education (Mercy College)
2020	Executive Committee Member ICCS 2020: The Tenth International Conference on Complex Systems Held online
2020	Organizing Committee Member NetSci 2020: International School and Conference on Network Science Held online
2020	Co-Organizer NetSciEd 2020: Symposium on Network Science and Education Held online
2020	Organizing Committee Member CCS 2020: The Conference on Complex Systems 2020 Held online
2020	Program Committee Member Ninth International Conference on Complex Networks and Their Applications Held online
2020	Co-Chair Eighth IEEE Symposium on Artificial Life (IEEE ALIFE 2020) Held online
2020	Co-Organizer Fifth CCS Satellite Symposium on Complex Systems and Education: Research and Practice Part of CCS 2020: The 2020 Conference on Complex Systems Held online
2020-2021	General Chair Fourth Northeast Regional Conference on Complex Systems (NERCCS 2021) Held online
2020-2021	Scientific Committee Member CompleNet Live 2021: 12th International Conference on Complex Networks Held online
2020-2021	Senior Program Committee Member The 2021 Conference on Artificial Life (ALIFE 2021) Held online
2021-present	Board Member SIG Artificial Life Japanese Society for Artificial Intelligence
2021-2022	External Consultant Science and Technology Foresight Center

National Institute of Science and Technology Policy  
Ministry of Education, Culture, Sports, Science and Technology (MEXT), Japan

- 2021 Co-Organizer  
NetSciEd 2021: Satellite Symposium on Network Science and Education  
Part of Networks 2021: A Joint Sunbelt and NetSci Conference  
Held online
- 2021 Program Committee Member  
Tenth International Conference on Complex Networks and Their Applications  
Held in Madrid, Spain
- 2021 Program Committee Member  
CCS 2021: The Conference on Complex Systems 2021  
Held in Lyon, France
- 2021 Co-Organizer  
Sixth CCS Satellite Symposium on Complex Systems and Education: From Theory to Research to Practice  
Part of CCS 2021: The 2021 Conference on Complex Systems  
Held in Lyon, France
- 2021-2022 Communications Chair  
Fifth Northeast Regional Conference on Complex Systems (NERCCS 2022)  
Held in Buffalo, NY
- 2021-present Elected Member, Board of Directors  
International Society for Artificial Life (ISAL)
- 2021-2022 Program Committee Member  
NetSci-X 2022: International School and Conference on Network Science  
Held in Porto, Portugal
- 2021-2022 Special Sessions Chair  
The 2022 Conference on Artificial Life (ALIFE 2022)  
Held online / Trento, Italy
- 2022 Program Committee Member  
Seventh International Workshop on Complex Collective Systems  
Part of the Fourteenth International Conference on Parallel Processing and Applied Mathematics (PPAM 2022)  
Held in Gdansk, Poland
- 2022 Co-Chair  
Ninth IEEE Symposium on Artificial Life (IEEE ALIFE 2022)  
Held in Singapore
- 2022 Program Committee Member  
Eleventh International Conference on Complex Networks and Their Applications  
Held in Palermo, Italy
- 2022 Co-Organizer

- NetSciEd 2022: Satellite Symposium on Network Science and Education  
Part of 2022 International School and Conference on Network Science (NetSci 2022)  
Held online
- 2022 Program Committee Member  
CCS 2022: The Conference on Complex Systems 2022  
Held in Palma de Mallorca, Spain
- 2022 Program Committee Member  
ComplexDataBlocks: Data Science and Complexity on the Blockchain Satellite Symposium  
In CCS 2022: The Conference on Complex Systems 2022  
Held in Palma de Mallorca, Spain
- 2022-present Finance Committee Co-Chair  
Network Science Society
- 2022-2023 Program Committee Member  
NetSci-X 2023: International School and Conference on Network Science  
Held in Buenos Aires, Argentina
- 2023 Co-Organizer  
NetSciEd 2023: Satellite Symposium on Network Science and Education  
Part of 2023 International School and Conference on Network Science (NetSci 2023)  
Held in Vienna, Austria
- 2023 Senior Program Committee Member  
The 2023 Conference on Artificial Life (ALIFE 2023)  
Held in Sapporo, Japan
- 2023 Co-Organizer  
The Distributed Ghost: Cellular Automata, Distributed Dynamical  
Systems, and Their Applications to Intelligence  
Workshop at the 2023 Conference on Artificial Life (ALIFE 2023)  
Held in Sapporo, Japan
- 2023 Scientific Committee Member  
The 2023 Conference on Complex Systems (CCS 2023)  
Held in Salvador, Brazil
- 2023 General Chair and Technical Committee Chair  
IDSCS 2023: International Conference on Data Science, Computation and Security  
Held online
- 2023-2024 Program Committee Member  
NetSci-X 2024: International School and Conference on Network Science  
Held in Venice, Italy
- 2023-2024 Reviewer  
CompleNet 2024: 15th International Conference on Complex Networks  
Held in Exeter, UK
- 2023-2024 Co-Organizer



- Special Session: Artificial Life  
In the IEEE World Congress on Computational Intelligence (WCCI) 2024  
Held in Yokohama, Japan
- 2023-2024 Technical Program Committee Reviewer  
The 2024 IEEE Congress on Evolutionary Computation (IEEE CEC 2024)  
In the IEEE World Congress on Computational Intelligence (WCCI) 2024  
Held in Yokohama, Japan
- 2023-present Advisory Group Member  
Complex Systems Theory  
Violence, Health, and Society (VISION) Consortium  
UK Prevention Research Partnership
- 2023-present Editorial Board Member  
npj Complexity (Nature Portfolio)
- 2023-present Elected Council Member  
Complex Systems Society (CSS)
- 2023-present Elected Executive Committee Member  
Complex Systems Society (CSS)
- 2023-2024 Program Committee Member  
Complex Systems Track  
Genetic and Evolutionary Computation Conference (GECCO-2024)  
Held in Melbourne, Australia and online
- 2024-2025 Advisory Board Member  
Department of Data Science  
Christ University, Pune/Lavasa, India
- 2024-present Advisory Board Member  
Complex Systems Program  
Portland State University, OR
- 2024-present CCS Steering Committee Member  
Complex Systems Society (CSS)
- 2024-present Vice President  
International Society for Artificial Life (ISAL)
- 2024 Program Committee Member  
The 2024 Conference on Artificial Life (ALIFE 2024)  
Held in Copenhagen, Denmark
- 2024 Co-Organizer  
The Distributed Viking: Cellular Automata, Distributed Dynamical  
Systems, and Their Applications to Intelligence  
Special Session at the 2024 Conference on Artificial Life (ALIFE 2024)  
Held in Copenhagen, Denmark

- 2024 Program Committee Member  
The 2024 Conference on Complex Systems (CCS 2024)  
Held in London/Exeter, UK
- 2024 Co-Organizer  
Satellite Symposium on Representation Learning for Complex Systems  
The 2024 Conference on Complex Systems (CCS 2024)  
Held in London/Exeter, UK
- 2024 Program Committee Member  
Eighth International Workshop on Complex Collective Systems  
Part of the Fifteenth International Conference on Parallel Processing and Applied  
Mathematics (PPAM 2024)  
Held in Ostrava, Czech Republic

Also serving as a reviewer for a number of scientific journals and conferences.

### Services for Institutes and Departments

- 1999-2002 System Administrator  
New England Complex Systems Institute
- 2002-2005 Special Admission Committee Member  
Faculty of Electro-Communications, UEC
- 2002-2005 Department Webpage Committee Member  
Department of Human Communication, UEC
- 2003-2004 Curriculum Development Working Group Member  
Department of Human Communication, UEC
- 2003-2005 General Admission Committee Member  
Faculty of Electro-Communications, UEC
- 2003-2005 Student Advisor  
Department of Human Communication, UEC
- 2004-2005 University Planning and Examining Committee Member  
UEC
- 2005 Master/Senior Thesis Projects Coordinator  
Department of Human Communication, UEC
- 2005 Information Processing Center Steering Committee Member  
UEC
- 2005 Faculty Reform Planning Working Group Member  
Faculty of Electro-Communications, UEC
- 2006-2010 Publications Committee Member  
Thomas J. Watson School of Engineering and Applied Science, Binghamton University

- 2006-2011 Undergraduate Program Committee Member  
Department of Bioengineering, Binghamton University
- 2006-2012 Research Committee Member  
Thomas J. Watson School of Engineering and Applied Science, Binghamton University
- 2007-2013 Department Webmaster  
Department of Bioengineering, Binghamton University
- 2007-2015 Director  
Collective Dynamics of Complex Systems (CoCo) Research Group  
Binghamton University
- 2007-present Steering Committee Member  
Evolutionary Studies Program (EvoS), Binghamton University
- 2007-2015 Advisory Board Member  
Center for Applied Community Research and Development (CACRD)  
Binghamton University
- 2008-present Faculty Fellow  
Center for Leadership Studies  
Binghamton University, State University of New York
- 2011-2012 Graduate Program Committee Member  
Department of Bioengineering, Binghamton University
- 2012-2013 Graduate Program Director  
Department of Bioengineering, Binghamton University
- 2012-2015 Research Fellow  
Center for Applied Community Research and Development (CACRD)  
Binghamton University
- 2013-present Founder and Program Director  
Advanced Graduate Certificate Program in Complex Systems Science and Engineering  
Binghamton University
- 2013-2015 Advisory Committee Member  
Advisory Committee on Scholarship and Research, Binghamton University
- 2013 Chair, Graduate Studies Committee  
Thomas J. Watson School of Engineering and Applied Science, Binghamton University
- 2014-2020 Affiliated Faculty Member  
Center for Affective Science, Binghamton University
- 2015-present Graduate Program Director and Watson Graduate Studies Committee Member  
Graduate Programs in Systems Science, Binghamton University
- 2015-present Director

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	Center for Collective Dynamics of Complex Systems (CoCo) (until June 2023) / Binghamton Center of Complex Systems (since July 2023), Binghamton University
2015-2017	Faculty Senate Binghamton University
2015-2018	Multilingual Faculty Volunteer Translator Translation and Interpretation Program Multicultural Resource Center, Binghamton University
2015-2016	Ad-Hoc Committee on Teaching Quality Enhancement Thomas J. Watson School of Engineering and Applied Science, Binghamton University
2016-present	Steering Committee Member Sustainable Communities Transdisciplinary Areas of Excellence (TAE) Binghamton University
2017-present	Calculus Advisory Committee Binghamton University
2017-2018	Data Science Initiative Special Committee Binghamton University
2018-2020	Steering Committee Member Data Science Transdisciplinary Areas of Excellence (TAE) Binghamton University
2018-present	Faculty Advisor Girls Who Code Binghamton University
2019	Joint Committee on Transdisciplinary and Interdisciplinary Issues Binghamton University
2019-2022	Diversity Committee Thomas J. Watson College of Engineering and Applied Science Binghamton University
2020-2022	Public Health Advisory Group in response to COVID-19 Binghamton University
2021-2023	Faculty Senate Binghamton University
2021-present	Chair (-2022)/Member, Diversity Committee Department of Systems Science and Industrial Engineering, Binghamton University
2021-present	Graduate Council Binghamton University
2022-present	Chair, Graduate Studies Committee Thomas J. Watson College of Engineering and Applied Science, Binghamton University

- 2023-present Co-Lead (together with Lijun Yin), Human-Centered AI & Systems Intelligence Thrust  
Watson Interdisciplinary Research Acceleration Initiative  
Thomas J. Watson College of Engineering and Applied Science, Binghamton University
- 2023-present Information and Educational Technology Committee  
Binghamton University
- 2024 Member, SUNY Strategic Research Investment (STRIVE) Artificial Intelligence Task Force  
(Research and Infrastructure Working Group)  
State University of New York

**Other Skills****Languages**

Programming languages: Python, Mathematica, Julia, Java, C/C++, MATLAB, R, NetLogo, JavaScript, Lisp/Scheme, etc.

Fluent in written and spoken English/Japanese