LUIS M. ROCHA

Thomas J. Watson College of Engineering and Applied Science, School of Systems Science and Industrial Engineering, Binghamton University (SUNY)

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PERSONAL DATA

Luis M. Rocha is the George J. Klir Professor of Systems Science. He is also director of the *Center for Social and Biomedical Complexity*, between Binghamton University and Indiana University, Bloomington. He has been the director of the *NSF-NRT Interdisciplinary Training Program in Complex Networks and Systems*, and Professor of Informatics in the Luddy School of Informatics, Computing, and Engineering at Indiana University, where he was a member of the advisory council of the *Indiana University Network Science Institute,* and core faculty of the *Cognitive Science Program* at Indiana University, Bloomington. Dr. Rocha is a *Fulbright Scholar* and is also a senior fellow at the *Instituto Gulbenkian da Ciencia*, and a founding partner of the international *Center for Excellence in Mental Health Sciences*. He also has been a Visiting Professor of the *Center for Theoretical Physics* at the *Aix-Marseille University*, France and the *Champalimaud Foundation*, and the *NOVA School of Business and Economics*, Portugal.

RESEARCH INTERESTS

Complex networks & systems*:* collective behavior, computational social science, control and redundancy in complex networks, discrete dynamical systems & automata, evolutionary systems & agent-based modeling, information theory, interdisciplinary and systems science.

Computational biology and biomedical informatics: control in systems biology, brain and ecological networks, dynamical models of biochemical regulation, electronic health records and multiomic health, genomic multivariate analysis, information extraction and automatic annotation, literature and social media mining, theoretical biology.

Computational intelligence: artificial intelligence, artificial life, bio-inspired computing, collective intelligence, data science, embodied cognition, evolutionary and adaptive systems, information retrieval, knowledge networks, machine learning, recommender systems, text mining, uncertainty modeling, web intelligence.

ACADEMIC EDUCATION

State University of New York, Binghamton, New York
PhD in Systems Science and *Computer Science* (1992-1997)
Thesis: "*Evidence Sets and Contextual Genetic Algorithms: Exploring Uncertainty, Context, and Embodiment in Cognitive and Evolutionary Systems*"

Instituto Superior Técnico, Lisbon, Portugal
Licentiate (5-year degree) in Mechanical and Systems Engineering (1985-1990)
Equivalent to bachelor's in mechanical engineering (1985-1988) and master's in systems engineering (1988-1990)

Professional Appointments

George J. Klir Professor of Systems Science, Binghamton University (SUNY), Thomas J. Watson College of Engineering and Applied Science, School of Systems Science and Industrial Engineering, *2021-present*

Visiting Professor and Era Chair, Católica Biomedical Research Center, Católica Médical School, Universidade Católica Portuguesa, 2024-Present,

Director of the Consortium for Social and Biomedical Complexity, Indiana University and Binghamton University, *2022-present*

Director of the Center for Social and Biomedical Complexity, 2019-2022, Indiana University, Bloomington.

Director of the NSF-NRT Interdisciplinary Training Program in Complex Networks and Systems, 2017-2022

Principal Investigator and Senior Fellow, *Instituto Gulbenkian de Ciencia, 2015-2024*

Full Professor, 2013-2022, Department of Informatics, Indiana University, Bloomington.

Director of Complex Networks & Systems PhD Track of Informatics PhD Program, Indiana University, 2008-2019

Associate Professor, 2004-2013; Tenured since 2007, Department of Informatics, Indiana University, Bloomington.

Director of Informatics Graduate Programs, Indiana University, *2007-2008*

Director of the FLAD Computational Biology Collaboratorium and in the direction of the associated PhD program in Computational Biology, http://bc.igc.gulbenkian.pt, *Instituto Gulbenkiand de Ciencia, April 2000-2015*

Invited Professor, NOVA School of Business and Economics, Carcavelos, Portugal, http://bc.igc.gulbenkian.pt, January *2019-2021*

Technical Staff Member and Leader of the *Complex Systems Team,* Los Alamos National Laboratory, Modeling, Algorithms, and Informatics Group, *February 1999 - July 2004*

Postdoctoral Associate, Los Alamos National Laboratory, Modeling, Algorithms, and Informatics Group, *September 1997 - January 1999*

Adjunct Professor, State University of New York at Binghamton, Dept. of Systems Science and Industrial Engineering, *1995-1997*

Research Assistant, State University of New York at Binghamton, Dept. of Systems Science and Industrial Engineering, *April 1996-January 1997; Teaching Assistant, Fall 1995, Spring 1996, and Spring 1997*; *Information Systems Manager, 1995-1997*

Graduate Researcher (full-time), Laboratório Nacional de Engenharia Civil (National Laboratory for Civil Engineering), Lisbon, Portugal, *January 1991 - November 1991*

Research Assistant (part-time), Laboratório Nacional de Engenharia Civil (National Laboratory for Civil Engineering), Lisbon, Portugal, *June 1990 - December 1990*

Professional Service

Editorial Boards

Biosemiotics, BMC Bioinformatics, Complexity, Journal of Computational Science, EmbodiedMind.org, Frontiers in Physics - Complex Systems section, Frontiers in Computational Intelligence, Immune Computation, International Journal of Natural Computing Research, International Journal of Semiotics and Visual Rhetoric, PLoS Complex Systems (section leader: complex systems in nature), PLoS ONE.

Advisory Boards and Councils

Elected member of the Binghamton University Faculty Senate (2026-2028), Computational Sciences and Deep Tech Technologies PhD Program (Collegio di Dottorato), at the Università degli Studi del Piemonte Orientale (Italy), Environmental Health Institute (Instituto de Saúde Ambiental da Faculdade) of the

University of Lisbon Medical School (2023-present), Center of Computing Sciences and Technology at the University of Minho (Portugal), Complex Systems Society Council (elected member 2021-2023), Indiana University Network Science Institute (2018-2021), International Forum of Portuguese Scientists, SilicoLife, Journal of Applied Systems Studies, *The Open Cybernetics and Systemics Journal, Portuguese Conference on Artificial Intelligence, Principia Cybernetica Project.*

Ad Hoc Editor

Artificial Life, Biosystems, *Communication and Cognition - Artificial Intelligence.*

Ad Hoc Reviewer

Adaptive Behavior, *Advances in Complex Systems*, *Artificial Intelligence*, *Artificial Life, Behavioral and Brain Sciences, Biosystems, BMC Bioinformatics, BMC Systems Biology, Clinical Chemistry, Cognitive Science, Complex Systems*, *Complexity*, *Constructivist Foundations*, *CPT: Pharmacometrics & Systems, Data & Knowledge Engineering journal, Data Mining & Knowledge Discovery, European Physics Journal, Foundations of Science, Genome Biology, IEEE/ACM Transactions on Computational Biology and Bioinformatics, IEEE Transactions on Evolutionary Computation, IEEE Transactions on Autonomous Mental Development, IEEE Transaction on Systems Man and Cybernetics*, *Information, Interacting with computers journal, International Journal of Human-Computer Studies*, *International Journal of General Systems*, *International Journal of Operations Research, International Journal of System of Systems Engineering, iScience, Journal of Artificial Societies and Social Simulation, Journal of Biomedical Informatics, Journal of Computational Science, Journal of Information Science and Engineering, Journal of Statistical Mechanics, Journal of Theoretical Biology, Mathematical Biosciences, Molecular Biosystems, Natural Computing, Nature Communications, Network Science, Nucleic Acids Research, PLOS Computational Biology, Proceedings of the National Academy of Sciences* (PNAS), *Physical Review E*, *Science Advances, Scientific Reports, Software: Practice and Experience*, *Systems Research, Tran. on Information Systems*.

Conference Organizing Committees

CCS 2026: *2026 Conference on Complex Systems.* October 12-16, 2026, Binghamton, NY, (Program Chair).

Complex Networks 2025: *14th Int. Conference on Complex Networks & Their Applications*, December 9-11 2025, Binghamton, NY, (Program Chair).

Eight *Northeast Regional Conference on Complex Systems* (NERCCS25). April 9-11, 2025. Binghamton, NY (General Co-Chair).

Complex Networks 2024: *13th Int. Conference on Complex Networks & Their Applications*, 10-12 December 2024, Istanbul, Turkey, (Program Chair).

Complex Networks 2023: *12th Int. Conference on Complex Networks & Their Applications*, 28 - 30 November 2023, Menton Riviera, France, (Program Chair).

Complex Networks 2022: *11th Int. Conference on Complex Networks & Their Applications*, Palermo, Italy, November 2022, (Program Chair).

Complex Networks 2021: *10th Int. Conference on Complex Networks & Their Applications*, Madrid, Spain, November 30 - December 2, 2021, (Program Chair).

Complex Networks 2020: *9th Int. Conference on Complex Networks & Their Applications*, Online, December 1-3, (Program Chair).

Complex Networks 2019: *8th Int. Conference on Complex Networks & Their Applications*, Lisbon, Portugal December 9- 12, (General Chair).

Charting interdisciplinary research opportunities between data and life sciences, Instituto Gulbenkian de Ciencia, Oeiras and ISI Foundation, Turin, March 6-7th, @019, Oeiras, Portugal (Workshop Chair).

Complex Networks 2018: *7th Int. Conference on Complex Networks & Their Applications*, Cambridge, UK December 11- 13, (Program Chair).

Interdisciplinarity, networks, data and complex systems: promise and challenges. Special Session at Ciência 2016: Encontro com a Ciência e Tecnologia em Portugal, July 4-6, Lisbon, Portugal.

The Gulbenkian Alan Turing Centenary Symposium, Dec. 11, 2012, Lisbon, Portugal (Program Chair).

RECOMB 2010: *14th Int. Conf. on Research in Computational Molecular Biology*, April 25-28, Lisbon, Portugal.

EPIA 2009: *14th Portuguese Conf. on Artificial Intelligence*, Aveiro, Portugal (Program Chair).

FIIP 2008: *Brain, Life, and Culture:* VI Fórum Int. de Invest. Portugueses, Lisbon, December 18-20, 2008.

ECAL 2007: *European Conference on Artificial Life*, September 2007, Lisbon, Portugal.

MA4CS07: *Multi-Agents for modelling Complex Systems*, track chair. Dresden, Germany, Oct. 1-6, 2007.

Artificial Life X: Bloomington, IN, June 3-7, 2006 (Chair of Organizing Committee)

Genetic Regulatory Networks: Theory and Practice workshop at CEC03, Canberra, Australia, Dec. 2003.

Int. interdisc. seminar on new robotics, evolution and embodied cognition, Lisbon, Portugal, Nov. 2002.

Conference Program Committees

#SMM4H-HeaRD 2026: 11th Social Media Mining for Health/Health Real-World Data Workshop and Shared Tasks. San Diego, CA. July 2 - 7, 2026.

ECCB 2026, 25th European Conference on Computational Biology. Geneva, Switzerland, Aug 31 – Sept 4.

CompleNet 2026, 17th International Conference on Complex Networks. Exeter, UK, Mar. 31-April 3, 2026.

NetSci-X 2026: Int. School & Conf. on Network Science, Auckland, New Zealand, February 17-20, 2026.

ALIFE 2025: Conference on Artificial Life. Kyoto, Japan, October 6-10, 2025.

CCS 2024, Conference on Complex Systems 2024, London and Exeter, U.K., Aug. 30 – Sep. 6, 2024.

NetSci-X 2024: Int. School and Conference on Network Science, Venice, Italy, January 22-25 2024.

NetSci 2023: International School and Conference on Network Science, Vienna, Austria, July 10-14, 2023.

CCS'22, Conference on Complex Systems 2022, Palma de Mallorca, Spain, October 17-21, 2022.

CCS'21, Conference on Complex Systems, Lyon, France, October 25-29, 2021.

ALIFE 2021: Int. Conf. on Synthesis & Simulation of Living Systems, Prague, Czech Rep., July 19-23.

IC2S2 2020: 6th Int. Conference on Computational Social Science, Cambridge, MA, July 17-20, 2020.

NetSci 2020: International School and Conference on Network Science, Rome, Italy, July 6-10, 2020.

ICCS 2020: International Conference on Computational Science, Amsterdam, Netherlands, Jun. 3-5, 2020.

CompleNet 2020, 11th International Conference on Complex Networks. Exeter, UK, Mar. 31-April 3, 2020.

CCS'19, Conference on Complex Systems, Singapore, September 30 - October 4, 2019.

NetSci 2019: Int. School and Conference on Network Science, Burlington, USA, May 27-30, 2019.

CCS'18, Conference on Complex Systems, Thessaloniki, Greece, 23-28 September 2018.

ALIFE 2018: Int. Conf. on Synthesis & Simulation of Living Systems, Tokyo, Japan, July 23-2, 2018.

NetSci 2018: International School and Conference on Network Science, Paris, France, June 11-15, 2018.

COMPLEX NETWORKS 2017, The 6th International Workshop on Complex Networks and their Applications, Lyon, France, November 29 - December 01, 2017.

IEEE ALIFE 2017: IEEE Symposium on Artificial Life Honolulu, Hawaii, November 27-December 1, 2017.

COMPLEX NETWORKS 2017, The 6th International Workshop on Complex Networks and their Applications, Lyon, France, November 29 - December 01, 2017.

CCS'17, Conference on Complex Systems 2017, Cancun, Mexico, September 17-22, 2017.

ECAL 2017: 14th European Conference on Artificial Life, Lyon, France, September 4-8, 2017.

COMPLEX NETWORKS 2016, The 5th International Workshop on Complex Networks and their Applications, Milan, Italy, November 30 - December 02, 2016.

IBERAMIA 2016: 15th Ibero-American Conf. Artificial Intelligence. San Jose, Costa Rica, Nov. 23-25, 2016.
ALIFE 2016: the 15th Int. Conf. Synthesis & Simulation of Living Systems, Cancun, Mexico, July 4-8, 2016.
GLBIO 2016: Great Lakes Bioinformatics Conference, Toronto, Canada, May 16-19, 2015.
PSB 2016: 21st Pacific Symposium on Biocomputing, Big Island of Hawaii, January 4-8, 2016.
WCCI 2015: IEEE Symp. Series on Computational Intelligence, Cape Town, South Africa, Dec. 7-10, 2015.
IEEE ALIFE 2015: IEEE Symposium on Artificial Life, Cape Town, South Africa, December 7-10, 2015.
FCTA 2015: 7th Int. Conf. Fuzzy Computation Theory and Applications, Lisbon, Portugal, Nov. 12-14, 2015.
EPIA 2015: 17th Portuguese Conference on Artificial Intelligence, Coimbra, Portugal, Sep. 8-11, 2013.
ECAL 2015: 13th European Conference on Artificial Life, York, United Kingdom, July 20-24, 2015.
ICSI^3 2015: 1st International Congress on Systems Immunology, Immunoinformatics & Immune-Computation, Taormina, Italy, July 17-18, 2015.
PACBB'15: 9th Int. Conf. Practical Applications of Computational Biology & Bioinformatic. Salamanca, Spain, June 3-5, 2015.
GLBIO 2015: Great Lakes Bioinformatics Conference, West Lafayette, Indiana, May 18-20, 2015.
SSCI 2014: IEEE Symposium Series on Computational Intelligence, Orlando, USA, December 9-12, 2014.
BICT 2014: 8th International Conference on Bio-inspired Information and Communications Technologies, Boston, USA, December 1–3, 2014.
IBERAMIA 2014: 14th Ibero-American Conference on Artificial Intelligence, Santiago, Chile, November 24-27, 2014.
ALIFE 14: the 14th International Conference on the Synthesis & Simulation of Living Systems, New York City, USA July 30 – August 2, 2014.
BioLINK 2014: Supporting Bioscience through Text Mining, SIG at ISMB 2014, July 11-12.
PACBB'14: International Conference on Practical Applications of Computational Biology & Bioinformatics, University of Salamanca, Spain, June 4-6, 2014.
PSB 2014: Pacific Symposium on Biocomputing 2014, Big Island of Hawaii, January 3-7, 2014.
WI'13: 2013 IEEE/WIC/ACM International Conference on Web Intelligence, Atlanta, USA, November 17-20, 2013.
ECAL 2013: 12th European Conference on Artificial Life, Taormina, Italy, September 2-6, 2013.
EPIA 2013: 16th Portuguese Conference on Artificial Intelligence, Angra do Heroísmo, Azores, Portugal, September 9-1, 2013.
BioLINK 2013: Linking Literature, Information and Knowledge for Biology, SIG at ISMB/ECCB 2013, July 20, 2013.
Evolutionary Patterns: Horizontal and Vertical transmission and Micro- and Macro-evolutionary Patterns of Biological and Sociocultural Evolution, Lisbon, Portugal, May 27-29, 2013.
IEEE ALIFE 2013: The 2013 IEEE Symposium on Artificial Life, at the IEEE Symposium Series on Computational Intelligence 2013, Singapore, April 15-19, 2013.
IEEE Symposium Series on Computational Intelligence 2013, Singapore, April 15-19, 2013.
ICARIS 2012: 11th International Conference on Artificial Immune Systems, Sicily, Italy, Aug. 28-31, 2012.
IBERAMIA 2012: 13th Ibero-American Conference on Artificial Intelligence, Cartagena de Indias, Colombia, November 13-16, 2012.
GECCO 2012: Genetic and Evolutionary Computation Conference, Philadelphia, USA, July 7-11, 2012.
PACBB6: 6th International Conference on Practical Applications of Computational Biology & Bioinformatics, University of Salamanca, Spain, March 28-30, 2012.
EPIA 2011: 15th Portuguese Conference on Artificial Intelligence, Lisbon, Portugal, October 10-13, 2011.
ECAL 2011: European Conference on Artificial Life, Paris, France, August 2011.
GECCO 2011: Genetic and Evolutionary Computation Conference, Dublin, Ireland, July 12-16, 2011.
ICCS2011: Eighth International Conference on Complex Systems, Boston, MA, June 26 - July 1, 2011.

PACBB5: 5th International Workshop on Practical Applications of Computational Biology & Bioinformatics, University of Salamanca, Spain, April 6-8, 2011.

PAAMS11: 9th International Conference on Practical Applications of Agents and Multi-Agent Systems, University of Salamanca, Spain, April 6-8, 2011.

IEEE ALIFE 2011: The 2011 IEEE Symposium on Artificial Life, at the IEEE Symposium Series on Computational Intelligence 2011, Paris, France, April 11-15, 2011.

AAAI-08: The 24th National Conference on Artificial Intelligence, Atlanta, USA, July 11-15, 2010.

BIONETICS 2010: 5th International ICST Conference on Bio-Inspired Models of Network, Information, and Computing Systems, Boston, MA, December 1-3, 2010.

GECCO 2010: Genetic and Evolutionary Computation Conference, Portland, USA, July 7-11th, 2010.

BICS 2010: Brain Inspired Cognitive Systems, Madrid, Spain, 14-16 July 2010.

IWPACBB'09: 3rd International Workshop on Practical Applications of Computational Biology & Bioinformatics, University of Salamanca, Spain, June 10-12, 2009.

BioLINK 2009: Linking Literature, Information and Knowledge for Biology, SIG at ISMB 2009, July 18, 2007.

ISMB 2009: 17th Int. Conf. on Intelligent Systems for Molecular Biology, Stockholm, Sweden, June 27 - July 2, 2009.

GECCO 2009: Genetic and Evolutionary Computation Conference, Montreal, Canada, July 8-12, 2008.

IWPACBB'08: 2nd International Workshop on Practical Applications of Computational Biology & Bioinformatics, University of Salamanca, Spain, October 22-24, 2008

Alife XI: Artificial Life XI, University of Southampton, Winchester, UK, August 5-8, 2008.

ISMB 2008: 16th International Conference on Intelligent Systems for Molecular Biology, Toronto, Canada, July 17-23, 2008.

BioLINK 2008: Linking Literature, Information and Knowledge for Biology, SIG at ISMB 2008, July 18, 2008.

AAAI-08: The 23rd National Conference on Artificial Intelligence, Chicago, USA, July 13-17, 2008.

GECCO 2008: Genetic and Evolutionary Computation Conference, Atlanta, USA, July 12-16, 2008.

WI-08: 2008 IEEE World Congress on Computational Intelligence, Hong Kong, China, June 1-6, 2008.

Social Linking Track at HT2008: the Nineteenth ACM Conference on Hypertext and Hypermedia, Pittsburgh, USA, June 19-21, 2008.

EPIA 2007: 13th Portuguese Conference on Artificial Intelligence, Guimarães, Portugal, December 3-7, 2007.

WI-07: 2007 IEEE/WIC/ACM Int. Conference on Web Intelligence, Silicon Valley, USA, November 2-5, 2007.

AAAI-07: The 22nd National Conference on Artificial Intelligence, Vancouver, Canada, July 22-26, 2007.

BioLINK 2007: Linking Literature, Information and Knowledge for Biology, Vienna, Austria, SIG at ISMB 2007, July 19, 2007.

GECCO 2007: Genetic and Evolutionary Computation Conference, London, England, July 7-11, 2007.

KIMAS '07: International Conference Integration of Knowledge Intensive Multi-Agent Systems: Modeling, Evolution and Engineering, Waltham, Massachusetts, April 29 – May 3, 2007.

2006 IEEE/WIC/ACM International Conference on Web Intelligence (WI-06), Hong Kong, Dec. 18-22, 2006.

JBB06: The Joint BioLINK-BioOntologies Meeting, in association with the 14th International Conference on Intelligent Systems for Molecular Biology (ISMB'06), Fortaleza, Brazil, August 4-10, 2006.

GECCO 2006: Genetic and Evolutionary Computation Conference, Seattle, USA, July 8-12, 2006.

BioNLP06: Linking Natural Language Processing and Biology: Towards deeper biological literature exploitation. Special Workshop of the Human Language Technology conference - North American chapter of the Ass. for Computational Linguistics (HLT-NAACL06), New York City, USA, June 8, 2006.

Exploration vs. Exploitation in Naturally Inspired Search: Special workshop for the UK Society for the Study of Artificial Intelligence and Simulation of Behaviour Conference - AISB 2006, Bristol, England, April 5, 2006.

EPIA 2005: 12th Portuguese Conference on Artificial Intelligence, December 5-8, 2005, Covilhã, Portugal
ALEA05: Artificial Life and Evolutionary Algorithms - Special Workshop at EPIA '05.
IROBOT'05: 1st International Workshop on Intelligent Robotics. Special Workshop at EPIA '05.

ECAL 2005: European Conference on Artificial Life, University of Kent, UK, September 5-9, 2005.
Active agents and their environments as dynamical systems workshop - at ECAL 2005.

CEC 05: IEEE Congress on Evolutionary Computation, Edinburgh, UK, September 2-5, 2005.

GECCO 2005: Genetic and Evolutionary Computation Conference, Washington, D.C., June 25-29, 2005.

KIMAS 05: IEEE International Conference on Integration of Knowledge Intensive Multi-Agent Systems, Waltham, Massachusetts, April 18 - 21, 2005.

CEC 2004: Congress on Evolutionary Computation, Portland, Oregon, June 19-23, 2004.

Agent-Based Simulation 5, Lisbon, Portugal May 3-5, 2004.

CEC 2003: Congress on Evolutionary Computation, Canberra, Australia, December 2003.

KIMAS 03: IEEE Integration of Knowledge Intensive Multi-Agent Systems, Cambridge, MA, Oct. 1-3, 2003.

Oeiras Mathematical and Computational Biology Workshop, Oeiras, Portugal, June 20, 2003.

Autonomy, Delegation, and Control: From Inter-agent to Organizations and Institutions Workshop, 2nd Int. Conference on Autonomous Agents and Multi-Agent Systems, Melbourne, Australia, 2003.

EPIA'03: 11th Portuguese Conference on Artificial Intelligence -, December 4-7, 2003, Beja, Portugal.

Workshop on Distributed Computing Architectures for Digital Libraries, at the 31st International Conference on Parallel Processing ICPP 2002, Vancouver, Canada August 18-21, 2002.

CEC 2002: Congress on Evolutionary Computation, part of the IEEE World Congress on Computational Intelligence, Hawaii, 2002.

10th Mediterranean Conference on Control and Automation Med2002, Lisbon, Portugal, July 2002.

From Intelligent Networks to the Global Brain: Evolutionary Social Organization through Knowledge Technology, Brussels, July 3-5, 2001.

Complex Systems 2000, Dunedin, New Zealand, November 2000.

1998 Conference on Intelligent Systems and Semiotics, NIST, Gaithersburg, MD, Session Chair, 1998.

2nd International Symposium on Intelligent Manufacturing Systems, Sakarya, Turkey, August 1998.

Review Panels

National Institutes of Health (NIH), Health Services and Systems Review Branch, Clinical Data Management and Analysis (CDMA) study section, 2023; Clinical Informatics and Digital Health (CIDH) study section, 2021, 2023; Biomedical Computing and Health Informatics (BCHI) study section, 2020.

University of Michigan, Member of External Review Committee of the Center for the Study of Complex Systems in the College of Literature, Science, and the Arts, 2018.

J. William Fulbright Foreign Scholarship Board, Portugal PhD student proposal review board, 2017.

Michigan State University, Site Visit Committee of the Biocomputational Evolution in Action CONsortium (BEACON) NSF Science and Technology Center, 2014.

National Academy of sciences Keck Futures Initiative, Complex Systems Grants Review Panel, 2013.

National Science Foundation, Computer & Information Science & Engineering, 2006; Cyber-Enabled Discovery, 2008; IIS-Biomedical Career awards 2008; Computing and Communication Foundations (CCF): Core Programs 2010; Networks, Synthetic Biology and Evolution: Networks and Regulation Cluster, 2011; Science and Technology Centers: Directorate for Biological Sciences, 2014, 2018.

University of Nebraska at Omaha, Office of Research and Creative Activity, 2012.

Killam Research Fellowships, Canada Council for the Arts, 2012.

Royal Society of New Zealand, James Cook Research Fellowship Program, 2012.

Fundação para a Ciência e Tecnologia, Portugal. Computer Engineering, 2007; Ciencia Viva, 2008, Chair of Robotics, Intelligent and Information Systems Review Panel, 2000, 2003, 2004; Bilateral Scientific Cooperation Agreements, 2011.

Czech Science Foundation, Member of Computing Proposal Review Panel 2010.

Belgian Fund for Scientific Research, 2005 (Vrije Universiteit Brussels - VUB), 2004, 2005, 2006.

Los Alamos National Laboratory, Computer Science and Software Engineering internal proposal (LDRD) review committee, 1998-2000.

Science Foundation Ireland, President of Ireland Young Researcher Award, 2006.

UMCEES Review Panel, National Research Council, 2001.

Education and Training Activities

Undergraduate Research and Thesis Supervision

Thomas Parmer, Project co-advisor, Individualized Major Program (B.Sc. in Cognitive Science and B.A. in Biophysics), *Indiana University*, 2012. "Inducing Apoptosis: The Study of a Random Boolean Network Modelling Survival Signaling in T-LGL Leukemia."

Undergraduate students in research projects funded via Luddy School's *"Undergraduate Research Opportunities in Computing*" program, ongoing until 2021.

Undergraduate Summer School, Instituto Gulbenkian de Ciencia, Portugal, 2022-2024.

Robert Palermo, Artin Tonekaboni, fellows of the Binghamton University Projects for New Undergraduate Researchers (BUPNUR) program, 2024-2026.

Graduate Student Supervision

Johan Bollen, Ph.D. Thesis co-advisor, *Free University of Brussels*, Belgium (2001). "A cognitive model of adaptive web design and navigation." Current position: Professor, University of Amsterdam and Indiana University,.

Andreas Rechtsteiner, Ph.D. Thesis co-advisor, *Portland State University* (2004). "Multivariate Analysis of Gene Expression Data and Functional Information: Automated Methods for Functional Genomics." Current Position: Associate Staff Scientist, Bioinformatics, MCD Biology, University of California, Santa Cruz, USA.

Jasleen Kaur, M.S. Advisor, *Indiana University* (2007). "Agent-based model of RNA Editing." Current Position: Data Scientist at Philips Lighting, USA.

Humberto Santos, Ph.D. Thesis co-advisor, *Universidade da Beira Interior*, Portugal (2008). "Análise e Simulação do Processo da Inovação Segundo uma Perspectiva Evolucionária." Current Position: deceased.

Alaa Abi-Haidar, Ph.D. (Informatics Program, Complex Systems Track) Thesis advisor, *Indiana University* (2011). "An adaptive document classifier inspired by T-Cell cross-regulation in the immune system." Current Position: Senior Data Scientist at SNIPS, France.

Marcio Mourão, Ph.D. (Informatics Program, Complex Systems Track) Thesis co-advisor, *Indiana University* (2011). "Reverse Engineering the Mechanisms and the Dynamical Behavior of Complex Biochemical Pathways." Current Position: Data Science Consultant for the Consulting for Statistics, Computing & Analytics Research (CSCAR) center at the University of Michigan, USA.

Tiago Simas, Ph.D. (Cognitive Science Program) Thesis advisor, *Indiana University* (2012). "Stochastic Models and Transitivity in Complex Networks." Current Position: Associate Professor, Universidade Lusofona, Portugal.

Zhiping Wang, Ph.D. (Computer Science Program) Thesis advisor, *Indiana University* (2012). "Biomedical Literature Mining for Pharmacokinetics Numerical Parameter Collection." Current Position: Director of Bioinformatics Core at University of Pennsylvania, USA.

Artemy Kolchinsky, Ph.D. (Informatics Program, Complex Systems Track), Thesis advisor, *Indiana University* (2015). "Measuring Scales: Integration and Modularity in Complex Systems." Current Position: Marie Curie Fellow at the Pompeu Fabra University in Barcelona.

Alexander Gates, double-major Ph.D. (Informatics Program, Complex Systems Track and Cognitive Science Program), Thesis co-advisor, *Indiana University* (2017). "The anatomical and effective structure of complex systems." Current Position: Assistant Professor, University of Virginia, USA.

Santosh Manicka, Ph.D. (Informatics Program, Complex Systems Track), Thesis advisor, *Indiana University* (2017). "The Role of Canalization in the Spreading of Perturbations in Boolean Networks." Current Position: Postdoctoral fellow at Michael Levin's lab, Biology Department, Tufts University, USA.

Rion Brattig Correia, Ph.D. (Informatics Program, Complex Systems Track), Thesis advisor, *Indiana University* (2019). "Prediction of Drug Interaction and Adverse Reactions, with data from Electronic Health Records, Clinical Reporting, Scientific Literature, and Social Media, using Complexity Science Methods." Current Position: Principal Data Scientist at *NielsenIQ*, LLC.

Steven Williams, double-major Ph.D. (Informatics Program, Complex Systems Track and Cognitive Science Program), Thesis co-advisor, *Indiana University* (2019). "Neural Correlates of Adaptive Behavior: Structure, Dynamics, and Information Processing." Current position, Software Developer, The National Institute for Occupational Safety and Health (NIOSH), Centers for Disease Control and Prevention.

Sikander Khare, M.S. Advisor, *Indiana University* (2020). "Canalization in Stochastic Boolean Networks." Current Position: PhD student University of Florida, USA.

Kelly McClinton, Ph.D. (NSF-NRT Interdisciplinary training in Complex networks and Systems.) Thesis co-Advisor, *Indiana University* (2021). "Computationally Modeling Roman Domestic Art and Architecture". Current Position: Research fellow, Oxford University, U.K..

Austin Marcus, M.S. Co-Advisor, *Binghamton University* (2022). "Symmetry in Canalizing Functions of Boolean Networks." Current Position: PhD student UC Irvine, USA.

Ian Wood, Ph.D. Thesis Advisor, *Indiana University* (2023). "Time-series analysis of sentiment in social media can predict individual and collective behavior of public health significance". Current Position: Senior Software Engineer at LinkedIn.

Miguel Bernardo Pereira, M.S. Advisor, *Instituto Superior Tecnico (University of Lisbon)* (2023). "Distance Backbones of Weighted Graphs." Current Position: PhD Student at the University of Turin, Italy.

Felipe Xavier Costa, Ph.D. Thesis Advisor, *University at Albany (SUNY)* (2024). "Leveraging Redundancy As A Link Between Spreading Dynamics On And Of Networks". Current Position: Postdoctoral Fellow, Católica Biomedical Research Center, Portugal.

Currently supervising seven PhD students: Xuan Wang and Herbert Sizek, Indiana University; Ziqi Guo, Srikanth Iyer, Shayan Esfarayeni, Yoshiaki Fujita, Akshay Gangadhar, at Binghamton University.

PhD and MS Committee Member or Project Supervisor at Binghamton University: Neda Amirirad, Annajirao Challa, Mario Franco Mendez, Eric Fiolkoski, Grant Generaux, Alice Gittler, Duxiao Hao, Amahury Jafet Lopez, Kevin Stoltz, Xin Vision Wang.

External PhD Committee participation: Marta Liber (ITQB/IGC, Nova University of Lisbon, Portugal, Current), Ali Yassin (Université de Bourgogne, France 2026), Luis H.M. Torres (U. Coimbra, Portugal, 2025), Silvia Rognone (Queen Mary University of London, 2024), Stephany Rajeh (Université de Bourgogne, France 2023), Duilio Balsamo (U.Turin, Italy 2022), Gongbo Zhang (U. Delaware, 2021, USA), Tiago Baptista (U. Coimbra, Portugal, 2012), Dario Nardi (Binghamton University, USA, 2010), Yuliang Liu (Computer Science Department at the University of Alabama, 2008), James Watson (U. Quensland, Australia, 2006), Miguel Rocha (U. Minho, Portugal, 2004), Kepa Ruiz-Mirazo (Department of Logic and Philosophy of Science of the Basque Country in Spain, 2003). On PhD (M.S.) committee of over 20 (6) students at Indiana university and Binghamton University.

Postdoctoral Fellow Supervision

Chien-feng Huang, 2011-2004, Los Alamos National Laboratory
Ana Maguitman, 2005-2006, Indiana University
Manuel Marques-Pita, 2007-2016, Indiana University and Instituto Gulbenkian de Ciencia
Andreia Sofia Teixeira, 2019- 2021, Indiana University
Rion Brattig Correia, 2019-2022, Indiana University and Instituto Gulbenkian de Ciencia
Jordan Rozum, 2022-2024, Binghamton University (SUNY)
David Soriano-Panos, 2023-2024, Instituto Gulbenkian de Ciencia
Jon Sanchez-Valle, 2023-present, Barcelona Supercomputing Center and Católica Biomedical Research Center.
Felipe Xavier Costa, 2024-present, Católica Biomedical Research Center.
Kyu-Hyong Park, 2026-present, Católica Biomedical Research Center.
Andres Aldana, 2026-present, Católica Biomedical Research Center.
Andrea Falcon, 2026-present, Católica Biomedical Research Center.

Courses Developed and Taught

SSIE-440/501 - Introduction to Systems Science, 2022-26, *Binghamton University* (SUNY)
SSIE-483/583 – Biologically inspired Computing end Evolutionary Systems, 2022-26, *Binghamton University* (SUNY)
I609 - Complex Systems Seminar I, 2012-2020, *Indiana University*
I501 - Intro to Informatics, 2008, 2014-2017, *Indiana University*
I485/I585 - Bio-inspired Computing, 2005-2015, *Indiana University*
I601 - Intro to Complex Systems, 2010-2012, *Indiana University*
I709 - Complex Systems Seminar II, 2008, 2011, *Indiana University*
I101 - Introduction to Informatics, 2005-2007, *Indiana University*
Brief introduction to bioinformatics and computational biology, 2001, 2002, 2006*, Instituto Gulbenkian de Ciencia*.
SSIE 580 - Evolutionary Systems and Artificial Life, 1995-1997, *SUNY Binghamton*.

Details and Syllabi: https://casci.binghamton.edu/academics/classes.php

Teaching Awards

Indiana University, School of Informatics & Computing, Trustees Award for Teaching Excellence 2015
Indiana University, School of Informatics, Teaching Excellence Award, 2006

PUBLICATIONS

Volumes

Cherifi, H., Rocha, L.M., Cherifi, C., Ertem, M.Z. (Eds.) [2026]. Complex Networks & Their Applications XIV: Proceedings of The Fourteenth International Conference on Complex Networks and their Applications: COMPLEX NETWORKS 2025. Studies in Computational Intelligence Series. Springer. Volumes 1-4. DOI: 10.1007/978-3-032-16645-6, 978-3-032-16723-1, 978-3-032-16719-4.
Cherifi, H., Donduran, M., Rocha, L.M., Cherifi, C., Varol, O. (Eds.) [2025]. Complex Networks & Their Applications XIII: Proceedings of The Thirteenth International Conference on Complex Networks and their Applications: COMPLEX NETWORKS 2024. Studies in Computational Intelligence Series. Springer.

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Cherifi, H., Rocha, L.M., Cherifi, C., Donduran, M. (Eds.) [2024]. Proceedings of The Twelfth International Conference on Complex Networks and their Applications: COMPLEX NETWORKS 2023. Studies in Computational Intelligence Series. Springer. Volumes 1-4. DOI: 10.1007/ 978-3-031-53468-3, 978-3-031-53499-7, 978-3-031-53472-0, 978-3-031-53503-1.

Cherifi, H., Mantegna, R.N., Rocha, L.M., Cherifi, C., Miccichè, S. (Eds.) [2023]. Complex Networks and Their Applications X: Proceedings The 11th International Conference on Complex Networks and Their Applications COMPLEX NETWORKS 2022. Studies in Computational Intelligence Series. Springer. DOI: 10.1007/978-3-031-21127-0.

Benito, R.M., Cherifi, C., Cherifi, H., Moro E., Rocha, L.M., Sales-Pardo, M. (Eds.) [2022]. Complex Networks and Their Applications X: Proceedings The 10th International Conference on Complex Networks and Their Applications COMPLEX NETWORKS 2021. Studies in Computational Intelligence Series. Vol. I and II. Springer. DOI: 10.1007/978-3-030-93409-5 and 10.1007/978-3-030-93413-2. (Two Volumes)

Benito, R.M., Cherifi, C., Cherifi, H., Moro E., Rocha, L.M., Sales-Pardo, M. (Eds.) [2021] Complex Networks and Their Applications IX: Proceedings The 9th International Conference on Complex Networks and Their Applications COMPLEX NETWORKS 2020. Studies in Computational Intelligence Series. Vol. 943-944. Springer. DOI: 10.1007/978-3-030-65347-7 and 10.1007/978-3-030-65351-4. (Two Volumes)

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Aiello, L.M., Cherifi, C., Cherifi, H., Lambiotte, R., Lio, P., Rocha, L.M. (Eds.) [2019]. Complex Networks and Their Applications VII: Proceedings The 7th International Conference on Complex Networks and Their Applications COMPLEX NETWORKS 2018. Studies in Computational Intelligence Series. Vol. 812-3. Springer. DOI: 10.1007/978-3-030-05411-3.

Bento dos Santos, L., N. Crato, A. Coutinho, J. Caraça, L.M. Rocha (Eds.) [2010]. Everything is Connected. Verbo.

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L.M. Rocha (Ed.) [1995]. Self-Reference in Biological and Cognitive Systems. Communication and Cognition - Artificial Intelligence. Vol. 12, nos. 1-2.

L.M. Rocha [1997a]. Evidence Sets and Contextual Genetic Algorithms: Exploring Uncertainty, Context, and Embodiment in Cognitive and Biological Systems. PhD Dissertation. State University of New York at Binghamton.

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J. Sánchez-Valle, C. Zambrana, A. Navarro-Martínez, F.X. Costa, L.M. Rocha, D. Cirillo, C. Violán, A. Valencia [2026]. "The biological clock of multimorbidity: temporal dynamics of disease co-occurrence in primary care". *medRxiv*. DOI: 10.64898/2026.06.15.26355655.

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M. Ginda, K. Börner, O. Scrivner, W. Trochim, L.M. Rocha, Selma Šabanović. [2026] "Preparing the next generation of complex networks and systems scientists: Evaluation results for the complex networks and systems NSF research training program at Indiana University". *PLOS On*e. **21**(1): e0334779. DOI: 10.1371/journal.pone.0334779. PMCID: PMC12843521.

J. Sánchez-Valle, M. Flores-Rodero, F.X. Costa, J. Carbonell-Caballero, I. Núñez-Carpintero, R. Tabarés-Seisdedos, L.M. Rocha, D. Cirillo, A. Valencia [2026]. "Sex-specific transcriptome similarity networks elucidate comorbidity relationships." *Communications Medicine*, **6**: 61. DOI: 10.1038/s43856-025-01329-0. PMCID: PMC12847782.

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J. Sánchez-Valle, R.B. Correia, M. Camacho-Artacho, R. Lepore, M.M. Mattos, L. M. Rocha, A. Valencia [2024]. "Prevalence and differences in the co-administration of drugs known to interact: an analysis of three distinct and large populations." *BMC Medicine*. **22**: 166. DOI: 10.1186/s12916-024-03384-1. PMC11027217.

R.B. Correia, J.M. Almeida, Ma.J. Wyrwoll, I.Julca, D. Sobral, C.S. Misra, L.G. Guilgur, H.-C. Schuppe, N. Silva, P. Prudêncio, A. Nóvoa, A. S. Leocádio, J. Bom, M. Mallo, S. Kliesch, M. Mutwil, L.M. Rocha, F.Tüttelmann, J. D. Becker, P. Navarro-Costa [2024]. "The conserved transcriptional program of metazoan male germ cells uncovers ancient origins of human infertility". *eLife*. **13**: RP95774. doi: 10.7554/eLife.95774.3. PMC11466473.

A. Min, X. Wang, R.B. Correia, J. Rozum, W.R. Miller, and L.M. Rocha. [2024]. "Refinement of an Epilepsy Dictionary through Human Annotation of Health-related posts on Instagram."*arXiv*:2405.08784. DOI: 10.48550/arXiv.2405.08784.

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V. Dorsant-Ardon, A. B. Sanjay, L.M. Rocha, R.B. Correia, and L.G. Apostolova. [2023]. "Gene co-expression network analyses in mild cognitive impairment" *Alzheimer's & Dementia*. **19**: e082238. DOI: 10.1002/alz.082238

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A. Gates, Correia, R.B., X. Wang, L.M. Rocha [2021]. "The effective graph reveals redundancy, canalization, and control pathways in biochemical regulation and signaling." *Proceedings of the National Academy of Sciences*. **118**. DOI:10.1073/pnas.2022598118. PMCID: PMC8000424

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R.B. Correia, I.B Wood, J. Bollen, L.M. Rocha [2020]. "Mining social media data for biomedical signals and health-related behavior". *Annual Review of Biomedical Data Science, **3**:1.* DOI:10.1146/annurev-biodatasci-030320-040844. PMC7299233.

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Correia, R.B, L.P. de Araújo, M.M. Mattos and L.M. Rocha [2019]. "City-wide Analysis of Electronic Health Records Reveals Gender and Age Biases in the Administration of Known Drug-Drug Interactions." *NPJ Digital Medicine*. **2**:74. DOI:10.1038/s41746-019-0141-x.

Correia, R.B., A. Gates, X. Wang, L.M. Rocha [2018]. "CANA: A python package for quantifying control and canalization in Boolean Networks." *Frontiers in Physiology: Systems Biology*. **9**: 1046. DOI: 10.3389/fphys.2018.01046.

I.B. Wood, P.L. Varela, J. Bollen, L.M.Rocha, and M.J. Sá [2017] "Human Sexual Behavior is driven by culture and collective moods." *Scientific reports* **7** (1): 17973.

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A. Kolchinsky, A. Gates and L.M. Rocha. [2015] "Modularity and the spread of perturbations in complex dynamical systems." *Phys. Rev. E Rapid Communications*. **92**, 060801. PMCID: PMC7869827.

G.L. Ciampaglia, P. Shiralkar, L.M. Rocha, J. Bollen, F. Menczer, A. Flammini [2015]. “Computational fact checking from knowledge networks.” *PloS ONE*. **10**(6): e0128193. DOI:10.1371/journal.pone.0128193.

A. Kolchinsky, A. Lourenço, H. Wu, L. Li, and L.M. Rocha.[2015] “Extraction of Pharmacokinetic Evidence of Drug-drug Interactions from the literature.” *PLoS ONE* **10**(5): e0122199. DOI:10.1371/journal.pone.0122199.

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Fundação para a Ciência e Tecnologia, Portugal, 2022.09122.PTDC (2023-2026) *Redundancy effects on spread and control in network dynamics: applications in computational biomedicine.*
PI, Catolica Biomedical research Center, €250K.

National Science Foundation, Research Traineeship Program, September 2017-August 2023, NSF-1735095: Interdisciplinary Training in Complex Networks and Systems. https://cns-nrt.indiana.edu/
PI, $2,997K.

National Institutes of Health, National Library of Medicine Program, October 2018-May 2023, 1R01LM012832-01 *myAURA: Personalized Web Service for Epilepsy Management.* http://bit.ly/MyAuraR01
PI with co-PIs Katy Borner and Wendy Miller, $1,446K.

Scientific Research and Technological Development in Data Science and Artificial Intelligence in Public Administration, Fundação para a Ciência e Tecnologia, Portugal, DSAIPA/DS/0102/2019-2023 *Factors to Promote Healthy Dialogue and Behaviours in Online School Communities.*
Co-PI with PI Manuel Marques-Pita, Instituto Gulbenkian de Ciencia , €222K.

Prepared for Environmental Change (PfEC) Grand Challenge initiative, Indiana University, 2019-2021, PR-IUB: *A River Runs Through It: Restoring Biodiversity and Empowering Resilient Community-Environment Interactions in Urban Waterways*.
Co-PI, $208K.

Scientific Research and Technological Development in Data Science and Artificial Intelligence in Public Administration, Fundação para a Ciência e Tecnologia, Portugal, DSAIPA/AI/0087/2018-2021, *Identification and Forecasting Hospital Emergency Demand.*
Co-I with PI Joana Sa, Instituto Gulbenkian de Ciencia, €283K.

Fundação para a Ciência e Tecnologia, Portugal, PTDC/MEC-AND/30221/2017, 2018-2021, *The sperm cell core genetic program: combined clinical and research approach to the diagnosis of male infertility.*
Co-PI with PI Paulo Navarro e Costa, Instituto Gulbenkian de Ciencia , €300K.

National Science Foundation, Division of Environmental Biology (DEB), February 2018/February 2019, NSF - 1754207: *OPUS: Synthesizing Ecology with Ecological Networks.* https://cns-nrt.indiana.edu/
Co-PI with PI Neo Martinez, $170K.

National Institutes of Health, National Library of Medicine Program, October 2014/September 2019, R01LM011945-01 *BLR: Evidence-based Drug-Interaction Discovery: In-Vivo, In-Vitro and Clinical.* http://bit.ly/DDIR01
PI with co-PIs Lang Li and Hagit Shatkay, $ 1,771K.

Precision Health Initiative, Indiana University, 2017-2019, Population Health and Data and Informatics Clusters, Indiana Cohort Enhancement Study (4K Hoosiers).
Member of Person to Person Team, $120K.

Fundação Luso-Americana para o Desenvolvimento (Portugal), Program with National Science Foundation (USA), Proj 276/2016, 2017-2018 *Large-scale analysis of social network data for detecting drug-interaction via population behavior.*
PI with Co-PI Johan Bollen, IU, $30K.

Complex Systems & Health Project Development Team, Indiana Clinical Translational Sciences Institute (ICTSI) NIH/NCRR UL1TR001108. August 2016 - February 2018 *Sudden Unexpected Death in Epilepsy: Identifying Risk Factors with Social Media Mining.*
PI with Co-PI Wendy Renee Miller, $15K.

Fulbright US Scholar grant, J. William Fulbright Foreign Scholarship Board (FFSB), 2016-2017, *Fellowship.*
PI, $12K.

Persistent Systems, Ltd., 2014-2017, *Large-Scale Text and Social Data Analytics for Health.*
PI, $70K.

Intelligence Advanced Research Projects Activity (IARPA), Open-Source Indicators, 2012-2015, *EMBERS: Early Model-Based Event Recognition using Surrogates.* with Virginia Tech, U. of Maryland, Harvard U., Cornell U.
Co-PI with Johan Bollen, $671K.

Indiana University Collaborative Research Grants fund (IUCRG), 2013-2014, *Social SLAM: Creating Dynamical Socio-Environmental Models for Mobile Robots.*
Co-PI with Selma Sabanovic, $70K.

CareerBuilder.com, 2013-2014, *Recommendation Systems for Job Applications.*
PI, $50K.

Fundação Luso-Americana para o Desenvolvimento (Portugal) and National Science Foundation (USA), 2012-2014, Proj. FLAD/NSF (171/2011), *Network Mining for Gene Regulation and Biochemical Signaling.*
Co-PI with Predrag Radivojac, IU, $35K.

Indiana University Collaborative Research Grants fund (IUCRG), 2011-2012, *Drug-Drug Interaction Prediction from Large-scale Mining of Literature and Patient Records.*
Collaborator with Indiana University Medical School, IUPUI, $56,159.

Fundação para a Ciência e Tecnologia, PTDC/EIA-CCO/114108, 2011-2014, *Collective Computation and Control in Complex Biochemical Systems.*
PI, Instituto Gulbenkian de Ciencia and Universidade do Minho, €148K.

Fundação para a Ciência e Tecnologia, FCT/SFRH/BCC/33823, 2009-2010, *Complex Systems methods for computational biology.*
PI, Instituto Gulbenkian de Ciencia, €32K.

Camera Municipal de Oeiras, Bolsas Científicas de Oeiras -Professor António Xavier 2009-2010, *Automata models of complex biochemical networks.*
PI, Instituto Gulbenkian de Ciencia , €36K.

National Science Foundation, IGERT, 2009-2013, *The Dynamics of Brain-Body-Environment Systems in Behavior and Cognition.*
Training Program Faculty with PI Randall Beer.

Siemens Academic/FCT/ FLAD/Gulbenkian Foundation. 2004-2012, *Director, Computational Biology PhD Program and Collaboratorium.* http://bc.igc.gulbenkian.pt/)http://arp.lanl.gov
Yearly Budget ~€1,300K.

National Science Foundation, Human and Social Dynamics Program, October 2005/September 2008, *DHB: Dynamics of Information Flow and Decisions in Social Networks.*
Co-PI with Eliot Smith, Robert Goldstone, Hugh Kelly, $530K.

Department of Energy/Los Alamos National Laboratory, ldrd-dr, 2002-2005, *Structural Bioinformatics: Inferring protein function from sequence and structure on a genomic scale.* Investigate literature mining techniques to discover protein functions associated with known protein structures.
Co-PI responsible for a budget of $309K.

Department of energy/Los Alamos National Laboratory, Research Library, 1998-2004, *Research and Development of Active Recommendations Systems for the Library Without Walls Project. D*evelop the next generation of recommendation systems for distributed information systems. http://arp.lanl.gov
PI, $2,100K.

Department of Energy/Los Alamos National Laboratory - LDRD-ER, 2001-2004, *Identification of Interests, Trends and Dynamics in Document Networks.* Investigate the metric behavior of distance functions on document graphs as a predictor and identifier of semantic relationships.
http://www.c3.lanl.gov/~rocha/lww.
Budget $315K.

Department of Energy/Los Alamos National Laboratory - LDRD- DR, 2002, *Discovering Signatures of Human Infection by Biothreat Agents with Application to Bioterrorism Countermeasures– Literature Analysis Component. T*o produce text mining techniques to discover novel relationships among components of the immune system.
PI, $20K.

Department of Energy/Los Alamos National Laboratory - LDRD- DR, 2002, *Advanced Knowledge Integration in Assessing Terrorist Threats – Network Analysis Component.* Network analysis methods to discover implicit relationships in databases of documents.
PI, $50K.

Department of Energy/Los Alamos National Laboratory, 1998-2001, *Gene Expression Array Analysis as Part of the Functional Genomics Research Program.* Investigate data-mining techniques to discover hidden relationships in gene expression data. http://informatics.indiana.edu/rocha/fungen
Project Leader.

XEROX Corporation/Department of Energy/Los Alamos National Laboratory, 2000-2001, *Knowledge Management* Investigate adaptive recommendation systems for distributed information systems.
http://www.c3.lanl.gov/~josyln/xerox
Co-PI of a team of 8 researchers. Budget $1,000K.

Physical Science Laboratory at New Mexico State University (NMSU), 1998-2000, *Agent-based modeling of socio-technical organizations.* Lead the Los Alamos National Laboratory component of a multi-institution project. http://www.c3.lanl.gov/~joslyn/nmsu
Co-PI, $600K.

U.S. NAVY (CINCLANFLT) and Research Foundation of the State Univeristy of New York at Binghamton, 1996-1997, *Model design of budget and fleet readiness requirements and Simulation of Port Operations.* Research Assistant in a project of seven researchers. Actively participated in project proposal writing. Project leader Prof. Donald Gause.

NATO Int. Scientific Exchange Programmes, England-The Netherlands- Portugal, 1990-1992, *Research Assistant, Investigation of Inference Mechanisms in Artificial Intelligence.* Developed fuzzy logic and approximate reasoning mathematical structures and algorithms. Published in Rocha [1991], Medina-Martins and Rocha [1992], and Medina-Martins et al [1993, 1994]. Project Directors: Prof. Gordon Pask; Prof. Gerard de Zeeuw, U of Amsterdam, and Prof. Pedro Medina-Martins, I.S.T., Portugal.

Invited Talks and Conference Appearances

EMBO Workshop on Computational models of life: bridging digital twins with Generative AI, Barcelona, Spain, November 15-20, 2027.
Featured Speaker: "Towards Digital Twins for Precision Medicine from a Complex Systems Perspective"~

Planetary Health Doctoral Program, Universidade de Lisboa, Seminar Series "Planetary Health: Connecting Perspectives, Research and Action". Lisbon, Portugal. October 30, 2026.
Invited Speaker: "Complex Systems for Planetary Health"

Institute Pascal, Workshop "Building the Inflammation Digital Twin". Paris, France. October 19-23, 2026.
Invited Speaker: "Towards Digital Twins for Precision Medicine from a Complex Systems Perspective"
Artificial Life (ALIFE 2026) and Applied Mathematics, Modeling and Computational Science (AMMCS) Convention, Waterloo, Ontario, Canada, August 17-21, 2026.
Keynote Speaker: "Canalizing Dynamics as a Network Mechanism for Collective Decision, Control, Modularity, and Abstraction in Living Systems"
26th Int. Conference on Computational Science (ICCS), Hamburg, Germany, June 29 - July 1, 2026.
Keynote Speaker: "Towards Digital Twins for Precision Medicine from a Complex Systems Perspective"
CBeRa Forum: Complex Networks, Systems & Art in Biomedicine, Lisbon, Portugal, June 22-24, 2026.
Invited Speaker: "Towards Digital Twins for Precision Medicine from a Complex Systems Perspective"
Catolica Biomedical Research Center, Colloquium Series, Oeiras, Portugal, June 9, 2026
Colloquium Speaker: "Redundancy shapes the dynamical modularity of biochemical regulation."
National Institute for Theory and Mathematics in Biology (NITMB), Workshop on "Modularity in Biological Systems", Chicago, IL, USA, April 13-17, 2026.
Invited Speaker: "Redundancy shapes the dynamical modularity of biochemical regulation"
Te Ao Mārama: Centre for Fundamental Inquiry, University of Auckland, Auckland, New Zealand, February 16, 2026.
Invited Speaker: "canalizing dynamics as a network mechanism for collective decision and emergence in living systems."
Santa Fe Institute, Working Group: "Navigating the space of collective transitions in biology and society", Santa Fe, NM, USA, January 7–9, 2026.
Invited Speaker: "canalizing dynamics as a network mechanism for transition control, collective decision, and emergence."
Ancient History Faculty Seminar: AI and Classics, University of Oxford, UK, October 21, 2025
Invited Speaker: "From cybernetics to the global brain: symbolic control in art and creativity."
Charting Complexity: Celebrating the 60th Birthday of Alex Vespignani, London, U.K., June 10-12, 2025
Invited Speaker: "Complex Systems Approach to Explainable Artificial Intelligence."
NetBioMed 2025: Network Science, Biology, and Medicine, Satellite Symposium at the International School and Conference on Network Science, Maastricht, the Netherlands, June 2-6, 2025
Keynote Speaker: "Towards Digital Twins from a Network Science Perspective: Understanding multiscale factors in disease."
MOGA Caparica Music Festival, Caparica, Portugal May 28, 2025
Invited Speaker: "AI: How it's Shaping the World of Creativity"
Catolica Biomedical Research Center, Colloquium Series, Oeiras, Portugal, May 27, 2025
Colloquium Speaker: "Towards Extraction of Multiscale Factors via Redundancy Removal from the Structure and Dynamics of Complex Networks."
Hospital da Luz Research Congress, Lisbon, Portugal, May 26, 2025
Invited Speaker: "myAURA: a personalized health library for epilepsy management via knowledge graph sparsification and visualization."
Oeiras Valley Science Festival, TagusPark, Oeiras, Portugal May 24-25, 2025
Keynote Speaker: "From cybernetics to the global brain: the challenge of complex systems"
Clinical Information Systems Working Group at the American Medical Informatics Association (AMIA). April 4, 2025
Colloquium Speaker: "myAURA: a personalized health library for epilepsy management via knowledge graph sparsification and visualization."
Department of Mathematics and Computer Science, University of Catania, Italy, March 7, 2025

Colloquium Speaker: "Towards Extraction of Multiscale Factors via Redundancy Removal from the Structure and Dynamics of Complex Networks."

Center for Cell Analysis and Modeling, University of Connecticut School of Medicine, Farmington, CT, February 27, 2025
Colloquium Speaker: "Multilayer network inference via redundancy removal: linking the exposome to multiomics in human health."

Católica Biomedical Research Day, Católica Medical School, Sintra, Portugal, November 14, 2024
Invited Speaker: "Understanding multiscale complexity."

Complex networks: from socio-economic systems to biology and the brain, Lipari Workshop and Summer School, Lipari, Italy, July 1-7, 2024
Invited Speaker: "Multilayer network inference via redundancy removal: linking the exposome to multiomics in human health."

Instituto Gulbenkian de Ciencia, Oeiras, Portugal, June 18, 2024
Colloquium Speaker: "Humans as their own model organism: network science towards digital twins."

Purdue Systems Collaboratory Summit, Purdue University, West Lafayette, IN, USA, April 29, 2024
Colloquium Speaker: "Redundancy in the Structure and Dynamics of Complex Networks," and *roundtable session chair*: "Systems Thinking in Interdisciplinary Graduate Education."

Physics Department, SUNY Albany, NY, USA, April 12, 2024
Colloquium Speaker: "Redundancy in the Structure and Dynamics of Complex Networks."

Data Science Program, Indiana University, Bloomington, IN, USA, March 29, 2024
Colloquium Speaker: "Network science to characterize health vulnerabilities and biases."

Department di Scienze ed Innovazione Tecnologica, Università degli Studi del Piemonte Orientale "A. Avogadro," Italy, November 27, 2023
Colloquium Speaker: "Redundancy in the Structure and Dynamics of Complex Networks."

Social Media Mining for Health 2023 (#SMM4H). Workshop at AMIA 2023 Annual Symposium, New Orleans, LA, USA, November 11, 2023
Keynote Speaker: "Network science to characterize health vulnerabilities and biases."

Data and Healthcare Systems, University of Texas at El Paso and Binghamton University NSF IUSE, USA, September 13, 2023
Colloquium Speaker: "Bringing Social Context to Health Care."

Multiscale & Integrative Complex Networks: Experiments & Theories (MIX-NEXT), Satellite Symposium at the International School and Conference on Network Science, Vienna, Austria, July 10, 2023
Keynote Speaker: "Redundancy in the Structure and Dynamics of Complex Networks."

Network Science for The Sustainable Development Goals, Satellite Symposium at the International School and Conference on Network Science, Vienna, Austria, July 11, 2023
Keynote Speaker: "Network science to characterize health vulnerabilities and biases: from building an epilepsy knowledge graph to population-level analysis of drug interactions."

Instituto de Sistemas e Robotica, Instituto Superior Tecnico, Lisbon, Portugal, June 26, 2023
Colloquium Speaker: "Redundancy in the Structure and Causal Logic of Interactions Shapes the Dynamics of Social and Biochemical Networks."

The Centre for Urban Mental Health, University of Amsterdam, Netherlands, April 12, 2023
Invited Discussant: "Unraveling new pathways to improve mental health: from complexity to action."

Meeting the Needs of Diverse Populations Through Tailored Personal Health Informatics Workshop, National Institutes of Health, National Library of Medicine, USA, February 22, 2023
Invited Participant: "Bringing Social Context to Health Care."

Instituto Gulbenkian de Ciencia, Oeiras, Portugal, December 16, 2022

Colloquium Speaker: "Leveraging data and network science for understanding drug interactions and causal mechanisms in drug response."

Cells, Computers & Clinics [3C]: A transdisciplinary symposium towards understanding human health, Oeiras Portugal, October 26-28, 2022
Invited Speaker: "The future of interdisciplinary biomedical research."

The future of Complex Systems Science, Doctoral Programme in Complexity Sciences, ISCTE-IUL/FCUL, Lisbon, Portugal, October 24-25, 2022
Invited Speaker: "Training for Interdisciplinary Science with Systems Thinking."

Boolean networks and related modeling frameworks Symposium at the European Conference on Mathematical and Theoretical Biology 2022, Heidelberg, Germany, September 19-23, 2022
Invited Speaker: "The effective graph: a weighted graph that captures nonlinear canalization in biochemical systems."

School of Pharmacy and Pharmaceutical Sciences, Binghamton University, Johnson City, NY, September 9, 2022
Invited Speaker: "Towards understanding biomedical complexity with actionable models."

Complex networks: from socio-economic systems to biology and brain, Lipari Workshop and Summer School, Lipari, Italy, July 12-18, 2022
Invited Speaker: "Redundancy in the Structure and Dynamics of Complex Systems."

Hospital da Luz Learning Health, Artificial Intelligence in Healthcare Seminar Series, Lisbon, Portugal, July 5, 2022
Colloquium Speaker: "Towards understanding biomedical complexity with actionable models."

Northwestern Institute on Complex Systems Seminar Series, Northwestern University, USA, May 11, 2022
Colloquium Speaker: "Redundancy in the Structure and Dynamics of Complex Systems."

Network Science for Fluid Mechanics Seminar Series, March 11, 2022
Invited Speaker: "The effective graph: a weighted graph that captures nonlinear logical redundancy in biochemical systems."

NetSCiX 2022: Int. School and Conference on Network Science, Porto, Portugal, February 8-11, 2022
Session Chair

Complex Networks 2021, Madrid, Spain, November 30-December 2, 2021
Program Chair, Session Chair

Center for Collective Dynamics of Complex Systems, Binghamton University, New York, October 3, 2021
Colloquium Speaker: "Towards Causal Explanation and Control of Complex (Biochemical) Systems."

Scuola Internazionale Superiore di Studi Avanzati, the PhD programme in Physics and Chemistry of Biological Systems, July 28, 2021, Trieste, Italy.
Colloquium Speaker: "Redundancy in the Structure and Dynamics of Complex Systems."

International Conference on Robot Ethics and Standards series, Data Analytics, a tool for Development: Technical, Ethical, and Legal Complexities Session. Troy, New York, USA, July 26-27, 2021.
Invited Speaker: "Bias as a limitation of modeling the World."

Instituto Gulbenkian de Ciencia, April 20, 2021, Oeiras, Portugal
Colloquium Speaker: "Redundancy in the Structure and Dynamics of Biomedical Complexity."

Gender Bias in Artificial Intelligence and Health: Building a Future for Equality, Barcelona Supercomputing Center, Spain, April 14, 2021
keynote Speaker: "Sex and Gender perspective in the future of Personalized Medicine."

NERCCS 2021: 4th Northeast Regional Conference on Complex Systems, Online, March 31-April 2, 2021
Keynote Speaker: "Redundancy in Structure and Dynamics of Complex Systems."

Complex Networks 2020, Madrid, Spain, December 1-3, 2020
Program Chair, session Chair

5th European Conference on Translational Bioinformatics: Biomedical Big Data Supporting Precision Medicine, Spanish National Cancer Research Center, Madrid, Spain, November 30-December 1, 2020
Keynote Speaker

CISE NRT Writing a Winning Proposal Workshop, National Science Foundation, USA. September 18th 2020
Invited Speaker: "Writing an Interdisciplinary Training Grant with Systems Thinking."

Artificial Intelligence Talk Series, Indiana University, Bloomington, USA. July 14, 2020
Invited Speaker: "Actionable Models of Control in Complex Systems for the Biomedical Domain."

Department of Systems Science and Industrial Engineering, Binghamton University, Binghamton, New York, February 3, 2020
Colloquium Speaker: "Complex Systems Science Modeling in the XXI Century."

Artificial Intelligence, HPC and Biomedicine: implicit biases, scientific, technical and ethical challenges, Barcelona Supercomputing Center, Spain, January 22-24, 2020
Keynote Speaker: "Actionable models of control in complex systems for the biomedical domain."

Complex Networks 2019, Lisbon, Portugal, December 10-12, 2019
General Chair, Session Chair, and Opening Speaker

Data and Network Science for Social Good, Complex Networks Satellite 2019, Carcavelos, Portugal, December 9, 2019
Keynote Speaker: "Towards understanding biosocial complexity of human health with actionable models."

Instituto Gulbenkian de Ciencia, December 3, 2019, Oeiras, Portugal
Colloquium Speaker: "Actionable models of control in complex biochemical systems."

1st Workshop on Modeling Complex Systems. Post-graduate program in complex systems modeling (PPG-SCX), University of São Paulo, Brasil, October 21-25, 2019
Distinguished Lecture Series Speaker: "Interdisciplinarity, Data Science and Complex Systems."

Conference on Complex Systems 2019, Singapore, September 30 - October 4, 2019
Session Chair and Speaker: "Biological & Biomedical Complexity."

Schréder Hyperion inauguration ceremony, Nova School of Business and Economics (Nova SBE), Carcavelos, Portugal September 12, 2019
Invited Speaker: "Smart cities ecosystem in a changing environment."

Joint Sorbonne Université and Indiana University Symposium on A.I. (SUIUAI19), Sorbonne Université, Paris, Campus Pierre et Marie Curie, June 24- 26, 2019
Invited Speaker: "Towards understanding biosocial complexity of human health with network and data science."

How systems learn, change, and self-organize: Insights from network science workshop, Indiana University, Bloomington, Indiana, USA May 17-18, 2019
Invited Speaker: "Redundancy in Complex Brain Networks."

Complex Systems @ Purdue, Purdue University, West Laffayete, Indiana, USA May 13-16, 2019
Invited Speaker: "Representation and measurement of complex systems."

Nova School of Business and Economics Executive Education, Carcavelos, Portugal, March 7, 2019
Panel Speaker: "AI, Society and Organizations."

Charting interdisciplinary research opportunities between data and life sciences, Instituto Gulbenkian de Ciencia, Oeiras, Portugal March 6-7, 2019
Invited Speaker: "Exploring Redundancy in Biochemical Networks."

Complex Networks 2018, Cambridge, U.K., December 13, 2018
Program Chair and Panel Speaker: "Multiomic Social and Biomedical Complexity."

Indiana University complex Networks & Systems NSF-NRT Colloquium Series, Bloomington, IN, November 28, 2018

Colloquium Speaker: “Redundancy in Social Contact Networks for Epidemic Spread Models and in the Control of Biochemical Regulation.”

Universidad Nacional del Sur, Bahia Blanca, Argentina, November 20-22, 2018
Lecture Series Speaker: “Complex Systems from Cybernetics to Network Science: Modeling Multilevel Human Complexity.”

Nova School of Business and Economics, Carcavelos, Portugal, October 24, 2018
Colloquium Speaker: “Complex Networks and Systems: using data-driven and interdisciplinary nonlinear thinking for decision making.”

Instituto Gulbenkian de Ciencia, October 23, 2018, Oeiras, Portugal
Colloquium Speaker: “Redundancy in Social Contact Networks for Epidemic Spread Models and in the Control of Biochemical Regulation.”

Instituto de Sistemas e Robotica, Instituto Superior Tecnico, Lisbon, Portugal, July 4, 2018
Colloquium Speaker: “Redundancy in the Structure and Dynamics of Complex Networks.”

Nova School of Business and Economics, Lisbon, Portugal, June 28, 2018
Colloquium Speaker: “Towards understanding biosocial complexity in human health with network & data science.”

Frontières du Vivant PhD program Sorbonne Paris University Retreat, Sesimbra, Portugal, June 23, 2018
Keynote Speaker: “Towards understanding biosocial complexity in human health: from biochemical control to social factors in DDI and reproduction.”

Network Medicine (NetMed18): Personalized Medicine in the Era of Big Data. NetSci 2018 Satellite symposium. Paris, France. June 11, 2018.
Keynote Speaker: “Towards understanding biosocial complexity in human health: from control of biochemical regulation of disease to social factors in drug-interaction and human reproduction.”

Fundação Champalimaud, April 19, 2018, Lisboa, Portugal
Clinical Seminar Speaker: “Towards understanding the multi-level complexity of human health: from control of biochemical regulation of disease to social factors in drug-interaction.”

Intelligent & Interactive Systems Talk Series, Indiana University, Bloomington, USA. February 12, 2018
Invited Speaker: “Towards understanding the multi-level complexity of human health: from drug-interaction to human reproduction cycles.”

2nd Week of Complexity Sciences, Centro de Ciencias de la Complejidad C3, Universidad Nacional Autonoma de México, Mexico City, Mexico, January 31 - February 2, 2018
Keynote Speaker: “Towards understanding the multi-level complexity of human health: from drug-interaction to human reproduction cycles.”

COMPLEX NETWORKS 2017, The 6th International Workshop on Complex Networks and their Applications, Lyon, France, November 29 - December 01, 2017
Session Chair: “Resilience, Control & Synchronisation.”

Instituto Gulbenkian de Ciencia, October 31, 2017, Oeiras, Portugal
Colloquium Speaker: “City-wide and social media analysis of drug-drug-interactions: towards understanding the multi-level complexity of human health.”

Jardins de Verão, Fundação Gulbenkian, Lisbon, Portugal, July 15, 2017
Keynote Speaker: “From social networks to biological behaviours.”

Controlling Complex Systems. NetSci2017 Satellite. Indianapolis, Indiana. June 19-20, 2017
Invited Speaker: “Canalization in the dynamics of complex networks drives dynamics, criticality and control.”

Instituto de Sistemas e Robotica, Instituto Superior Tecnico, Lisbon, Portugal, February 22, 2017

Colloquium Speaker: “Structure and Dynamics of Complex Systems: from social media mining to control of biochemical networks.”

Emerging Activity. Relating Things. Hermann von Helmholtz-Zentrum für Kulturtechnik, Humboldt-Universität zu Berlin, Germany, February 17, 2017
Keynote Speaker: “Material Turing Machines: The Active and Passive Modes of Information in Life and Collective Intelligence.”

Antecipar o Futuro: 10 Tecnologias que podem mudar as nossas vidas, Public debate Sponsored by the EU Commissioner for Research, Science and Innovation, Universidade de Lisboa, Lisbon, Portugal, January 6, 2017.
Discussant: “The impact of automation and online technologies in society.”

Mathematics of Complex Systems: from precision medicine to smart cities. Collaboratory for Emerging Technologies, UT Austin | Portugal Program, Coimbra, Portugal, December 5-6, 2016
Plenary Speaker: “Structure and Dynamics of Complex Systems: from social media mining to control of biochemical networks.”

COMPLEX NETWORKS 2016, The 5th International Workshop on Complex Networks and their Applications, Milan, Italy, November 30 - December 02, 2016
Session Chair: “Resilience, Control & Synchronisation.”

ISI Foundation, Institute for Scientific Interchange, Turin, Italy, November 29, 2016
Colloquium Speaker: “Social media mining for public health monitoring in precision medicine.”

The 6th Translational Bioinformatics Conference (TCB 2016), Jeju Island, Korea, October 15-17, 2016
Highlight Speaker: “Public health monitoring of drug interactions, patient cohorts, and behavioral outcomes via network analysis of Instagram and Twitter user timelines.”

À Conversa com Cientistas, Open day, Instituto Gulbenkian de Ciencia, Oeiras, Portugal, October 1, 2016
Public Debate and Q&A: “The Science of Behavior: from the Biology to Social Networks.”

Instituto Gulbenkian de Ciencia, Oeiras, Portugal, September 13, 2016
Colloquium Speaker: “The effective structure of complex networks drives dynamics, criticality and control.”

Interdisciplinarity, networks, data and complex systems: promise and challenges. Special Session at Ciência 2016: Encontro com a Ciência e Tecnologia em Portugal, Lisbon, Portugal, July 4-6, 2016
Chair and Invited Speaker: “The challenge and promise of a two-dimensional science.”

2016 Summer Solstice: 8th International Conference on Discrete Models of Complex Systems, Aveiro Portugal, June 20-22, 2016
Invited Speaker: “Redundancy and control in complex networks.”

Control and Observability of Network Dynamics, Mathematical Biosciences Institute workshop, Columbus, OH, April 11-15, 2016.
Invited Speaker: “Redundancy and control in complex networks.”

Fundação Champalimaud, Lisboa, Portugal, March 3, 2016
Clinical Seminar Speaker: “Social Media Mining for Precision Medicine.”

Inference on Networks: Algorithms, Phase Transitions, New Models and New Data, Santa Fe Institute workshop, Santa Fe, NM, December 14-18, 2015
Invited Speaker: “Redundancy and control in complex networks.”

Translational Bioinformatics Conference (TCB 2015), Tokyo, Japan, November 7-9, 2015
Highlight Speaker: “Extraction of pharmacokinetic evidence of drug Interactions in literature and social media.”

University of Tokyo, Computer Science Department Colloquium, November 6th 2015, Tokyo, Japan
Invited Speaker: "Genes, Computers, and Collective Behavior."

Fundação Champalimaud, July 9, 2015, Lisboa, Portugal
Seminar Speaker: “Structure and Dynamics on Networks: from fact-checking to biochemical control.”

Instituto Gulbenkian de Ciencia, July 7th 2015, Oeiras, Portugal
Colloquium Speaker: “Network Science Delivers: from fact-checking to understanding biochemical control and collective behavior in human pathology.”

12th Annual National Academies Keck Futures Initiative (NAKFI) Conference: Collective Behavior: From Cells to Societies, Irvine, California, November 12-15, 2014
Invited Participant

Fundação Champalimaud, deliberation conference, October 25, 2014, Lisboa, Portugal
Plenary Speaker: “Collective decision in the global brain: science and policy”

Fundação Champalimaud, October 21, 2014, Lisboa, Portugal
Colloquium Speaker: “Collective behavior and control of network dynamics.”

Networks and Complex Systems Talk Series, Indiana University, October 13, 2014, Bloomington, IN, USA
Invited Speaker: “Redundancy, control and collective computation in network dynamics.”

European Conference on Complex Systems 2014, Dynamics On and Of Complex Networks VII workshop September 24, 2014, Lucca, Italy
Invited Speaker: “Redundancy, control and collective computation in network dynamics.”

ALIFE 14: the 14th International Conference on the Synthesis & Simulation of Living Systems, July 30 - August 2, 2014, New York City, USA.
Best paper award committee chair *and* Boolean and Neural Network session chair

Instituto Gulbenkian de Ciencia, July 17, 2014, Oeiras, Portugal
Colloquium Speaker: “Collective behavior on networks: models and big data analysis.”

Fundação Calouste Gulbenkian, Lisbon, October 5, 2013
Art/Science installation: “Musical Morphogenesis.”

GreenFest, Banco Santander Totta workshop on Cooperative Networks, Estoril, Portugal Oct. 3, 2013
Keynote Speaker: “Um passeio no Jardim de caminhos que se bifurcam: Informação, Controlo, Cooperação e Redundância na Inteligência Colectiva.”

Instituto Gulbenkian de Ciencia, 2 July 2013, Oeiras, Portugal
Colloquium Speaker: “Genes, Computers, and Collective Behavior: A personal tour on the garden of forking paths.”

International Conference on Evolutionary Patterns: Horizontal and Vertical Transmission and Micro- and Macro-evolutionary Patterns of Biological and Sociocultural Evolution, May 27-29, 2013, Lisbon, Portugal
Invited Speaker: “The Evolutionary Biosemiotics of Turing’s Tape.”

ImmunoComplexiT Network: Understanding the complexity of the immune system, Institut des Systèmes Complexes Paris (ISC-PIF), April 8-9, 2013, Paris, France
Invited Speaker: “Turing's Tape and Immunocomplexity.”

The Gulbenkian Alan Turing Centenary Symposium, December 11, 2012, Lisbon, Portugal
Invited Speaker: “Turing’s Tape and the Cybernetics of Biocomplexity.”

Instituto Gulbenkian de Ciencia, July 31, 2012, Oeiras, Portugal
Colloquium Speaker: “Semi-metric topology and collective computation in complex networks.”

Aalto Complex Networks Factory, Aalto University, June 4-8, 2012, Finland
Invited Speaker *and* session chair: “Semi-metric topology and collective computation in complex networks.”

Turing Symposium: A celebration of Alan Turing's centenary, Indiana University, May 8, 2012
Invited Speaker: “Turing's Tape and the Cybernetics of Biocomplexity.”

AMS Sectional Meeting, Session on Discrete Methods and Models in Biomathematics, University of Nebraska at Lincoln, October 16, 2011
Invited Speaker: "Collective Computation in Biochemical Networks: Canalization, Control and Modularity."

Networks and Complex Systems Talk Series, Indiana University, March 7, 2011, Bloomington, IN, USA
Invited Speaker: “Text Classification of the Biomedical Literature.”

Cognitive Science Program, Indiana University, March 2, 2011, Bloomington, IN, USA
Invited Speaker: “Schema Redescription in Automata Networks: Revisiting Emergence in Complex Systems”.

Instituto Gulbenkian de Ciencia, February 8, 2011, Oeiras, Portugal
Colloquium Speaker: “The complex systems approach to modeling biochemical regulation and organization”

Theoretical Biology Seminar series of the CREA-CNRS, November 18, 2010, Paris, France
Colloquium Speaker: “Reality is stranger than fiction: Exploring the Evolutionary Role of RNA Editing with Computational Models”

Workshop on Emergence, Complex Systems Institute, November 17, 2010, Paris, France
Invited Speaker: “Emergent Computation in Biochemical Networks: what material representations tell us about autonomy”

Lehigh University, Department of Biological Sciences, September 30, 2010, Bethlehem, Pennsylvania
Colloquium Speaker: “Exploring the Evolutionary Role of RNA Editing with Computational Models”

Columbia University, The Barnard Interdisciplinary Workshop on Embodiment, July 22-24, 2010, New York, NY
Invited Speaker: “Semiotic Closure: material symbols in evolution”

Carnegie Mellon University, XI Annual Portuguese American Post-Graduate Society (PAPS) Forum 2010, April 10, 2010, Pittsburgh
Invited Panelist

Estudos Avançados de oeiras, Instituto Gulbenkian de Ciencia, November 3, 2009, Oeiras, Portugal
Invited Speaker: “Studying the Evolutionary Rationale of RNA Editing with Agent-Based Simulations.”

BioCreative II.5 Workshop 2009: Madrid, Spain, October 8, 2009
High-ranked team invited presentation: “Classification of protein-protein interaction documents using text and citation network features”

Everything Is Connected Conference, Estoril, Portugal, September 18, 2009
Invited Speaker: “Dynamics in Complex Networks: Preserving robustness in a hyper-connected World”

Networks and Complex Systems Talk Series, Indiana University, Bloomington, April 20, 2009
Invited Speaker: “Computation and Control in Complex Networks"

Data and Search Institute, Indiana University, March 25, 2009, Bloomington, Indiana, USA
Invited Speaker: “Bibliome Informatics in Computational Biology”

Das Sociedades Humanas às Sociedades Artificiais Series, Lisbon, Portugal, March 3, 2009
Invited Speaker: “Darwinian Natural Selection and self-organization in biological and social heterarchies”

Indiana University Purdue University Indianapolis, School of Informatics, January 23, 2009
Colloquium Speaker: "Bibliome Informatics and Complex Networks in Proteomics and Systems Biology”

Brain, Life, and Culture: VI Encontro do Fórum Internacional de Investigadores Portugueses, Lisbon, December 18-20, 2008
Invited Participant.

6th Annual National Academies Keck Futures Initiative (NAKFI) Conference: Complex Systems, Irvine, California, November 13-15, 2008
Invited Participant.

First Portuguese Forum on Computational Biology, Oeiras, Portugal, July 10-12, 2008
Invited Speaker: "Complex Networks and Bibliome Informatics: Applications to Computational Biology"
University of the Basque Country, San Sebastian, Spain, June 23-24, 2008
Invited Speaker: "Complex Systems Approaches to Theoretical Biology"
Systems Biology in Medicine Workshop, University of Barcelona, Hospital Clinic, May 8-10, 2008
Invited Speaker: "Complex Networks and Bibliome Informatics: Applications to Computational Biology"
Social Data Mining and Knowledge Building Workshop, Institute for Pure & Applied Mathematics, University of California at Los Angeles, November 5-9, 2007
Invited Speaker: "Semi-metric Knowledge Networks: Applications to Information Retrieval and Social Data mining"
Computer Science and Informatics Honors Seminar, Indiana University, October 29, 2007
Invited Speaker: "A Computational Model of RNA Editing and the Evolution of Regulation and Memory in Dynamic Environments"
European Conference on Artificial Life, Lisbon, Portugal, September 10-15, 2007
Invited Discussant: "Reality is Stranger than Fiction: What to do in Artificial Life About Advances in Biology?"
Instituto Gulbenkian de Ciencia, Oeiras, Portugal, July, 2007
Invited Speaker: "The emergence of regulation in artificial models of genotype editing"
International Workshop on Practical Applications of Computational Biology and Bioinformatics, Ourense, Spain, June 20-22, 2007
Invited Speaker: "Uncovering Protein-Protein Interactions in the Bibliome"
Mathematics Department, University of Seville, Seville, Spain, June 13, 2007
Invited Speaker: "Transitivity in weighted graphs: effects on network topology"
Computer Science Department, New University of Lisbon, Lisbon, Portugal, June 4, 2007
Invited Speaker: "Complex Adaptive Systems and Computational Intelligence"
Second BioCreAtIvE Challenge Workshop: Critical Assessment of Information Extraction in Molecular Biology, Madrid, Spain, April 23-25, 2007
Session Chair
Data and Search Institute, Indiana University, Bloomington, USA, January 31, 2007
Invited Speaker: "Bibliome Informatics: uncovering inferences by literature mining"
Forum Internacional de Investigadores Portugueses, Biomedicina: Investigacao, Ensino e Impacto na Sociedade, Porto, Portugal, September 21-23, 2006
Invited Speaker: "Knowledge Integration in Biomedicine"
Joint Statistical Meetings, complex networks session, Seattle, WA, August 6-20, 2006
Invited Speaker: "Effects of Transitive and Metric Closure on Weighted Graphs"
Instituto Superior Tecnico, Instituto de Sistemas e Robotica, June 19-20, 2006
Invited Lecturer: two-day course "Brief Introduction to Bioinformatics and Computational Biology"
Instituto Gulbenkian de Ciencia, Oeiras, Portugal, April 3, 2006
Invited Lecturer: "Bibliome Informatics"
University of Braga, Doctoral Symposium, Braga, Portugal, February 2006
Invited Speaker: "Bibliome Informatics"

National Science Foundation: workshop on Dynamic Data-Driven Applications Systems, Arlington, VA, January 19-20, 2006
Invited Participant
University of Indiana, Bloomington, Cognitive Science Program Seminar Series, November 16, 2005
Invited Speaker: "The Emergence of Representations"
IEEE/WIC/ACM International Conference on Web Intelligence and Intelligent Agent Technology, Compiegne, France, September 19-22, 2005
Session Chair: "Intelligent E-Technology"
University of Indiana, Bloomington, Biocomplexity Institute Seminar Series, April 16, 2005
Invited Speaker: "Artificial Life Models of Genotype Editing"
University of Indiana, Bloomington, Networks Science Seminar, January 24, 2005
Invited Speaker: “Proximity Networks and Semi-Metric Behavior"
Universidade Nova de Lisboa, Lisbon, Portugal, December, 10, 2004
Invited Speaker: "Proximity Networks and Fuzzy Graphs”
Instituto Gulbenkian de Ciencia, Lisbon, Portugal, December, 22, 2004
Invited Speaker: "Mathematical and Computational Biology”
University of Illinois at Urbana-Champaign, Nonlinear Dynamics and Complex Systems Seminar, October 29, 2004
Invited Speaker: "Extraction and Semi-metric Analysis of Social and Biological Networks"
University of Indiana, Bloomington, School of Informatics and Computer Science Department Colloquium, October 8, 2004
Invited Speaker: "From Document Networks to the Adaptive Web"
Cognitive Systems: Human Cognitive Models in System Design. Santa Fe, NM, June 30, 2004
Invited Speaker: "Evidence sets: Using uncertainty as an engine for adaptive recommendation"
Indiana University, Bloomington, School of Informatics, February 16, 2004
Invited Speaker
Genetic Regulatory Networks: Theory and Practice, Canberra, Australia, 8-12 December 2003
Co-Chair: http://www.itee.uq.edu.au/~complexity/CEC_Special_Session/
Oeiras Mathematical and Computational Biology Workshop, Oeiras, Portugal, June 20, 2003
Co-Chair: http://informatics.indiana.edu/rocha/cbigc
Information Science and Technology Colloquium, NASA Goddard Space Flight Center, January 29, 2003
Featured Speaker
Center for the Study of Complex Systems, University of Michigan, Ann Arbor, December 5, 2002
Invited Speaker
Entrepreneurship in Biotechnology, Venturing Ideas Across the Atlantic Workshop, Newark, NJ, January 31, 2003
Invited Speaker
International interdisciplinary seminar on new robotics, evolution and embodied cognition, Lisbon, Portugal, November 12-15, 2002
Co-Chair *and* Invited Speaker: http://wwwinformatics.indiana.edu/rocha/embrob
2002 Innovative Studies Research Program Workshop, Santa Fe, NM October 15, 2002
Invited Speaker
Workshop on Enabling Concepts in Biosystems Analysis, Santa Fe, NM, September 19-20, 2002
Invited Speaker
Critical Studies Workshop, Stanford University, May 8, 2002
Invited Speaker
Workshop of the Systems Theory of Bio-Informatics and Its Extension towards Engineering Design Theory Project, Graduate School of Engineering, Kyoto University, Kyoto, Japan, November 2001

Invited Speaker

1st Portuguese Meeting on Theoretical and Computational Biology, Instituto Gulbenkian de Ciencia, Oeiras, Portugal, October 23-26, 2001
Invited Speaker

NATO Advanced Research Workshop on Systematic Organisation of Information using Fuzzy Systems, Vila Real, Portugal, October 24-26, 2001
Invited Speaker

From Intelligent Networks to the Global Brain: Evolutionary Social Organization through Knowledge Technology, Brussels, July 3-5, 2001
Invited Speaker

III Encontro do Forum Internacional de Investigadores Portugueses, Faro, Portugal, April 7-10, 2001
Invited Speaker *in* Computer Science Session

Instituto Gulbenkian da Ciencia, Lisbon Portugal, March 2001
Invited Speaker

Gordon Research Conference on RNA editing, Ventura, CA, January 21-26, 2001
Keynote Session Speaker

Heterarchies: Distributed Intelligence and the Organization of Diversity, Santa Fe Institute workshop, Santa Fe, NM, October 13-14, 2000
Invited Speaker

Instituto de Sistemas e Robotica, Instituto Superior Tecnico, Lisbon, Portugal, August 2000 and September 2001
Invited Speaker

Xerox Parc, Palo Alto, June 2000
Invited Speaker *at the* User-Interaction Group

Design Principles for the Immune System and Other Distributed Autonomous Systems, Santa Fe Institute, New Mexico, July 1999
Invited Speaker

International Meeting on Emergent Organizations and Their Dynamics, University of Ghent, Belgium, May 1999
Invited Speaker

ISIC/CIRA/ISAS '98: IEEE International Symposium on Intelligent Control (ISIC), International Symposium on Computational Intelligence in Robotics and Automation (CIRA), Intelligent Systems and Semiotics (ISAS), September 1998, Gaithersburg, Maryland U.S.A.
Session Co-Chair: “Semiotics of Autonomous Information Systems”

Workshop on Emergent Semantic and Computational Processes in Distributed Information Systems, Los Alamos, New Mexico, August 1998
Co-organizer (http://www.c3.lanl.gov/~joslyn/pcp/workshop98.html)

2nd International Symposium on Intelligent Manufacturing Systems, Sakarya, Turkey, August 1998
Session Chair: “Emergent Computation and Intelligent Manufacturing Systems” *and* Program Committee Member

The Philosophy of Artificial Life, Christ Church, Oxford, United Kingdom, March 1997
Invited Participant

Workshop on Control Mechanisms for Complex Systems, U.S. Air Force Base, Las Cruces, New Mexico, December 1996
Invited Speaker

The Los Alamos National Laboratory, (CNLS/XCM), Los Alamos, New Mexico, August 1996
Invited Speaker

The Santa Fe Institute, Santa Fe, New Mexico, August 1996

Invited Speaker

Washignton Evolutionary Systems Society, Washington D.C., September 21, 1995
Invited Speaker

International Meeting on Evolving Systems, Konrad Lorenz Institute, Vienna, Austria, March 1995
Invited Speaker

Joint Conference of the North American Fuzzy Information Processing Society (NAFIPS), International Federation of Information Systems (IFIS), and North American Space Agency (NASA): NAFIPS/IFIS/NASA'94, San Antonio, Texas, December 1994
Session Chair

Artificial Life: A bridge towards a New Artificial Intelligence, San Sebastian, Spain, December 1993
Invited Participant

Principia Cybernetica Conference, Free University of Brussels, Brussels, June 1991
Invited Speaker

Scholarships, Awards, and Media Coverage

Lois B. DeFleur Prize for Academic Achievement 2025 , Binghamton University.

Sapo.pt. "A medicina conta com mais dados do que nunca: como os vai usar?" July 6, 2026.

TUN, Lab Worldwide, BingUNews . June 2, 2026. "AI without hallucinations: Binghamton University researchers develop new way to reduce troublesome fake info".

ICT&Health. "Seven-AI voting system reduces medical hallucinations". *May 26, 2026.*

Times Higher Education. "Using Complex Systems to Predict Disease Progression". November 12, 2025.

Alto Adige, Italy. "The new generation of digital twins is ready". January 21, 2025.

PYMNTS (online). "Making Sense of Spatial Computing and Digital Twins for Industry". January 17, 2025.

Público, Portugal, "Oito equipas garantem 20 milhões de euros para alavancar ciência portuguesa", by Tiago Ramalho. December 2nd, 2024.

Complexity Thoughts. "AI, Cybernetics, and Complexity: unpacking the 2024 Nobel Prizes". Also available as podcast. October 14th, 2024.

*Magazine Digest for eLife. "*How to build a sperm cell". October 10th, 2024.

National Weather Desk: "Love is in the Air Pressure". Off the Radar Podcast. February 14th, 2024.

The New Scientist. "Life may be less chaotic than we thought, say physicists". By Karmela Padavic-Callaghan. December 15th, 2023.

The Atlantic: "The Calendar of Human Fertility Is Changing", by Katherine Wu. September 22nd, 2023.

Radio Observador - Programa Contra-Corrente, "10 de Junho: elogios, emigrantes e exageros". Interview regarding Portuguese emigration and related article. Portugal, June 9th, 2023.

laSexta, Spain. Cómo rastrear y frenar la propagación de enfermedades infecciosas. March 6th, 2023.

Expresso, Portugal, March 3rd, 2023. Esqueleto de salvação.

The Print, Technology Networks, Reporter Health, MedicalXpress, EurekaAlert, etc. February 24-27th, 2023. A simpler way to track the spread of infectious diseases.

Coverage of our *Epilepsy & Behavior* paper, March 1, 2022, *National Geographic, CNN Portugal, Observador, RTP,Jornal Online, etc.*

Coverage of our PNAS paper and cover : Publico, Sabado, Jornal Economico, *Sol, Expresso,* etc. March 16, 2021. Press Release: "Uncovering the 'master switches' of biochemical networks can explain the effects of drugs in the destruction of cancer cells".

Binghamton News: "Binghamton University. Named Professorship at Watson College Honors Systems Science Pioneer: Luis Rocha, PhD '97, to start next fall as first George Klir Professor in Systems Science" October 23, 2020.

Coverage of our paper "City-wide Analysis of Electronic Health Records Reveals Gender and Age Biases in the Administration of Known Drug-Drug Interactions." August - November 2019. Paper was covered widely, especially in portuguese-speaking media: *Globo News, Futirity, Lusa Agency, Observador, TSF, Medical X Press, Diario de Noticias, SIC Noticias, Medical News, Noticias ao Minuto, Sapo, Newswire, SO*L, etc.

Indianapolis Business Journal, Innovation Issue, "Universities focus on training students in AI" May 31, 2019.

School of Informatics, Computing, and Engineering Research Award, April 2019. In recognition of the NSF Research Traineeship (NRT) and NIH NLM Awards.

Reuters: December 21, 2018. "More Google Searches for Sexual Harassment Facts since #Metoo."

Vice News: December 20, 2018. "Broadly: Why Do the Holidays Make Us So Horny?"

Publico: December 16, 2018. "Pesquisas por pornografia aumentam no Natal. Há uma alegria no ar"

EurekAlert, NewsWise: October 17-19, 2018. "NIH awards $1.55 million to Indiana University to improve chronic-disease management." https://www.eurekalert.org/pub_releases/2018-10/iu-na101818.php

COMPLEX Systems Society Council, Elected member of the society's governing council, 2018-Present

Radiodifusão Portuguesa (RDP): April 18, 2018. Antena Aberta: "Inteligência Artificial. Prof. Luis Rocha talks about Artificial Intelligence."

Viral Coverage of our paper "Human Sexual Cycles are Driven by Culture and Match Collective Moods." December21-30, 2017, Covered around the globe in many venues such as *The Independent, Time, Publico, Health, GizModo, ScienceDaily, Phys.org, The National Post, DailyMail, The Hindustan Times, Men's Fitness, Mother Jones, IndyStar, The Times, ArsTechnica, Newsweek, The Sun, Drive with Yasmeen Khan*, etc. Discussion of the paper was a top trending topic on Reddit. https://www.altmetric.com/details/30751199/news

COMPLEX NETWORKS 2017, The 6th International Workshop on Complex Networks and their Applications, Lyon, France, November 29 - December 01, 2017
Special Recognition Award for Service to the Conference

Indiana Business Insider, IU News, August 23, 2017. "NSF awards IU $3 million to train researchers 'fluent' in complex networks and data." Reported by: http://bit.ly/2vtpN7q, http://bit.ly/2vtpkSV

Fulbright Scholar 2016-2017: Information Sciences/ Systems Science and Theory. The J. William Fulbright Foreign Scholarship Board, Washington, D.C.

COMPLEX NETWORKS 2016, The 5th International Workshop on Complex Networks and their Applications, Milan, Italy, November 30 - December 02, 2016
Special Mention Award for Service to Community

Top 30 paper (PMC4720984) in translational bioinformatics. Russ Altman 2016 year in review. http://bit.ly/1VhtgAP

PR Newswire. October 3, 2016. "Social Media is a Promising New Frontier for Insights into Large-scale Medical and Treatment Patterns". http://prn.to/2eYETuh and http://youtu.be/jygmNKYqHXI

Nature **522**, 395 (25 June 2015) doi:10.1038/522395f: "Computer fact-checker and news reader grab attention online." http://bit.ly/1HRQv9p

Público, Portugal, June 26, 2015: "Quando o computador consegue distinguir a verdade da mentira." http://bit.ly/1HRQUZr

WIRED, June 18, 2015: "Robot fact-checkers will soon be able to verify the web." http://bit.ly/1HRRmqK.

Computational Fact-Checking, June 2015: various news pieces at ACM Tech news, Deutschlandfunk, GCN, Pacific Standard, Phys.org, Scientific Computing, GizModo, Big Think, etc.

Indiana University, School of Informatics & Computing, Trustees Award for Teaching Excellence Award, April 2015.

Nova , Italy, "Il vero e il falso tweet" February 1, 2015. http://bit.ly/1BY2O0n

EuroScientist, "When Real Science Falls Short in Hollywood" January 28, 2015. http://bit.ly/1BY4Qh1

http://bit.ly/1shkl3U

Nautilus, USA, “Scientists Create Cybernetic Links Between People—by DJing” April 16, 2014. http://bit.ly/1shkl3U

RDP-Antena 2, Portugal: Three interviews devoted to Alan Turing and AI for *The Alan Turing Centenary Symposium*, December 24 (http://bit.ly/WPYgE2) and 31 (http://bit.ly/WBp23e), 2012; January 7 (http://bit.ly/V43LlQ), 2013 (in Portuguese).

Público, Portugal, “O cérebro é uma máquina de Turing? E os computadores ficarão inteligentes?” December 27, 2012. http://bit.ly/ZJVB1d

La RepubBlica, Italy: “L'Italia, un paese felice e lo scrive su Facebook” December 23, 2011. http://www.repubblica.it/tecnologia/2011/12/23/news/italia_felicit_facebook-27084219/

Best Paper Award of the *Programme Committee of the 9th International Conference on Artificial Immune Systems (ICARIS 2010)*, Edinburgh, U.K.*,* “Biomedical Article Classification Using an Agent-Based Model of T-Cell Cross-Regulation”, Abi-Haidar and Rocha, July 26-29, 2010.

Jornal de Letras, Portugal, Interview: “Somos todos Cyborgs” April 6, 2010. http://aeiou.visao.pt/somos-todos-cyborgs=f554308

RTP2, Bairro Alto, Portugal, Long interview to major Portuguese TV network, January 26, 2010. http://www.youtube.com/watch?v=iZ8D_NzFpJw

BBC Digital Planet, U.K.: Forthcoming World Service interview about immune-inspired spam-detection system. http://www.bbc.co.uk/worldservice/programmes/digital_planet.shtml

SIC News, Portugal: TV interview (leading 24-hour news channel in Portugal) about immune-inspired spam-detection system, http://sic.aeiou.pt/online/noticias

Rádio Renascença, Portugal: Radio interview about immune-inspired spam-detection system, October 5, 2008. http://www.rr.pt/

L'atelier, France: “Spams et bacteries : meme combat”, August 22, 2008. http://parentheses.atelier.fr/recherche/article/spams-et-bacteries-meme-combat

Tecnomania, Spain: “ Podemos hacer software que nazca a la vida?” August 12, 2008. http://www.tecnomania.com/?p=1065

Ciência Hoje, Portugal: “Cientistas portugueses criaram «aspirador» de lixo electronico” August 11, 2008. http://www.cienciahoje.pt/index.php?oid=27058&op=all

Portuguese Press, August 7, 2008: Correio da Manhã (p20), Diario de Notícias (p15), Jornal de Notícias (p5), Público (p8), etc.

http://www.tecnomania.com/?p=1065Silicon Republic, Ireland: “Fighting spam and thinking robots -- bio-inspired AI”, August 6, 2008. http://www.siliconrepublic.com/news/article/11162/randd/

The Daily Telegraph, U.K.: “Can we make software that comes to life?”, August 5, 2008. http://www.telegraph.co.uk/earth/main.jhtml?xml=/earth/2008/08/05/scicomputers.xml

Other International Press on August 5-6, 2008. ACM TechNews (USA), Innovation Report (Germany), Science Daily (USA), Slashdot (USA), AlphaGalileo (European Union), SiloBreaker (UK), etc.

NEW YORK TIMES. "On Facebook, Scholars Link Up with Data." December 17, 2007. Describes work with Elliot Smith on our DHB NSF grant. http://www.nytimes.com/2007/12/17/style/17facebook.html

Radio Televisão Portuguesa (RTP): Interview for 2010 program on Artificial Life. September 24, 2007.

JORNAL DA MADEIRA: "Computadores também sentem..." , Madeira, Portugal, September 22, 2007. http://www.jornaldamadeira.pt/not2008sup.php?Seccao=16&id=77737&sup=5&sdata=2007-09-22

Radiodifusão Portuguesa Antena 1: Interview for news service about Artificial Life, September 12, 2007, Portugal.

Radio Clube Português: Interview in "Janela Aberta", apresentado por Ana Sousa Dias, September 10, 2007, Portugal.

UNIVERSIA.PT WEB PORTAL: "IGC Organiza Ecal 2007 Em Lisboa" September 10, 2007, Portugal.

Fundação Calouste Gulbenkian Newsletter: “Tecendo Redes Para A Biologia Computacional” September 2007, Portugal. http://www.gulbenkian.pt/v1/newsletters/86.pdf

Ciência Hoje Web Portal: “Luis Rocha: FLAD and the Portuguese Scientists in America” October 1, 2006. http://www.cienciahoje.pt/index.php?oid=9116&op=all

Correio da Manhã Newspaper: “Aposta na investigação”, Portugal, June 22, 2006. http://www.correiomanha.pt/noticia.asp?id=205996&idCanal=10

Ciência Hoje Web Portal: “IGC e FLAD criam laboratório de biologia computacional” June 22, 2006. http://www.cienciahoje.pt/index.php?oid=3452&op=all

Lusa News Agency: “Biologia Computacional: Parceria luso-americana para co-laboratório” June 21, 2006. http://www.lusa.pt/print.asp?id=SIR-8102084

Complexity Digest Web Portal: Interview at the Alife X Conference, June 6, 2006. http://complexity.vub.ac.be/~comdig/ALifeX/

Indiana Daily Student: “IU to showcase AI technology” June 1, 2006. http://www.idsnews.com/news/story.php?id=36111&adid=news

deFrente Web Portal: “Luis Rocha” May 29, 2006. http://www.algebrica.pt/Arquivo/Newsletters/defrente/44/index.htm

The Indianapolis Star Newspaper: “Indiana noteworthy” May 22, 2006. http://www.indystar.com/apps/pbcs.dll/article?AID=/20060522/BUSINESS/605220344&SearchID=73245320450948

Indiana University, School of Informatics, *Teaching Excellence Award 2006*

Laboratorytalk Web Portal: “Integrating artificial life simulation with synthetic biology” May 22, 2006. http://www.laboratorytalk.com/news/iqd/iqd126.html

biohealthmathematics Web Portal: “Integrating artificial life simulation with synthetic biology” May 19, 2006. http://news.biohealthmatics.com/PressReleases/2006/05/20/000000004557.aspx

Techpoint Web Portal: “Scientists to Get ‘Alife’ at International Conference”, March 15, 2006. http://www.techpoint.org/pressreleasesdetails.aspx?id=293

Ciencia Hoje, Portugal, Web Portal: “Luís Rocha preside a conferência sobre duas décadas de Vida Artificial” March 15, 2006. http://www.cienciahoje.pt/index.php?oid=2703&op=all

Complexity Digest Web Portal: Interview at the Artificial Life 9 Conference, Boston, MA, September 14, 2004. http://complexity.vub.ac.be/~comdig/ALife9/Rocha.asf

University of California, Los Angeles, Institute for Pure and Applied Mathematics, *Fellowship, March-June 2004*, Program on “Proteomics: Sequence, Structure, Function.”

Interview with Expresso Newspaper (largest circulation in Portugal). N. 1653, July 2004.

Newspaper article "Web May Hold the Key to Achieving Artificial Intelligence" in *The Washington Post*, September 6, 2002; pp. A01. http://www.washingtonpost.com/wp-dyn/articles/A43363-2002Sep5.html. Also appeared at MSNBC: http://www.msnbc.com/news/804291.asp?0dm=C13KT.

Television Interview in *2010, Radiotelevisão Portuguesa* (RTP2) concerning new approaches to Artificial Intelligence and Robotics, November 2002. Http://informatics.indiana.edu/rocha/videos/2010rtp_high.rm

Newspaper article "Insetos, neurônios e sistema imunológico. Esses são os modelos das redes do futuro" in *Estado de São Paulo*, Brazil, September 16, 2002. http://www.estado.estadao.com.br/suplementos/info/2002/09/16/info041.html. As well as two other pieces including the translation of the Washington Post Article above.

Newspaper article "O Português de Los Alamos" in *Expresso* Newspaper, Portugal, August 31, 2002. http://semanal.expresso.pt/economia/artigos/interior.asp?edicao=1557&id_artigo=ES69166

Newspaper article "Nova robótica apresenta-se em Lisboa" in *Expresso* Newspaper, Portugal, August 17, 2002. http://semanal.expresso.pt/economia/artigos/interior.asp?edicao=1555&id_artigo=ES68023

Magazine Article: Informar Portugal - ICEP, Ano II, N. 7, pp. 13, September 2002.

MAGAZINE article "Evolution and scientific literature: towards a decentralized adaptive web" in *Nature: WebDebates*, 2001. http://www.nature.com/nature/debates/e-access/Articles/luce.htm

McDonnell-Pew Centre for Cognitive Neuroscience Graduate Student Bursary to attend the conference *The Philosophy of Artificial Life* at Christ Church, Oxford, March 1997.

Best Paper Award of the *Programme Committee of the Thirteenth European Meeting on Cybernetics and Systems Research*, for the entire meeting; Gordon Pask Memorial Award, for "*Language Theory: Consensual Selection of Dynamics", Henry, Charles and Luis Rocha* Vienna, April 1996.

PRAXIS XXI Program, Junta Nacional de Investigação Científica e Tecnológica, Portugal-European Union-USA,*PhD Scholarship, Fuzzy Logic and Adaptive* Systems, 1995-1996.

Best Paper Award *of the Twelfth European Meeting on Cybernetics and Systems Research*, Vienna, for the Symposium "Humanity, Architecture and Conceptualization" *contribution* "*Von Foerster's Cognitive Tiles: Semantically Closed Building Blocks for AI and Alife"*, April 1994.

CIENCIA Program (jointly funded by the Portuguese Government and the European Union), Junta Nacional de Investigção Científica e Tecnológica, Portugal-European Union-USA, *PhD Scholarship, Fuzzy Logic and Adaptive Systems*, 1992-1995.

ERASMUS Program Scholarship, European Union, Exchange Student in the Master's Program of Staffordshire University, Stafford, England, *Computer Integrated Manufacturing*, 1990.

Long Research Visits and Collaborations

Center for Excellence in Mental Health Sciences, Amsterdam UMC Department of Psychiatry, 1105AW Amsterdam, Distinguished Founding Member, April 2023 – present.

Data Science Knowledge Center, NOVA School of Business and Economics, Portugal, Visiting Professor, May 2019-May 2022

Center for Theoretical Physics, Centre National de la Recherche Scientifique (CNRS), Aix-Marseille, University, France, Collaboration in Complex Networks, Epidemic Models and Data Science with Dr. Alain Barrat, Visiting Professor, June 2017-2019

Fundação Champalimaud, Lisbon, Portugal, Visiting Professor, Collaboration in Neuroscience and Clinical Sciences, June 2016-2018

University of California, Los Angeles, Institute for Pure and Applied Mathematics, Fellowship appointment Program on Proteomics: Sequence, Structure, Function, March-June 2004

Instituto de Sistemas e Robotica, Instituto Superior Técnico, Lisbon Portugal, Collaboration with fellow faculty and graduate students on computational biology, Visiting Professor, September 2000-present

The Santa Fe Institute, Santa Fe, New Mexico, U.S.A., Member of Research Community, 1996-2004

The Principia Cybernetica Project, Associate, Since 1991

Computer-supported collaborative development of an evolutionary-systemic philosophy. This project has been at the forefront of the development hypertext technology and the World Wide Web since 1990

Fuzzy Sets and Systems Group, Department of Computer Science and Applied Mathematics, University of Ghent, Belgium, collaborated with Etienne Kerre and Bernard de Baets, Visiting Researcher, Summer 1993

Staffordshire University, M.Sc. Program in Computer Integrated Manufacturing, Stafford, U.K., Erasmus Exchange Student, January-June 1989

Short Degrees

Laboratório Nacional de Engenharia Civil (National Laboratory for Civil Engineering), Lisbon, Portugal, 4-month intensive post-graduate course (6 hours daily) on Digital Control Systems, 1991.

Instituto Superior Técnico, Lisbon, Portugal, 3-month intensive (6 hours daily) summer course, sponsored by the Social European Fund, on Computer Control of Noise Pollution, 1988.