

CURRICULUM VITAE

Norberto M. Grzywacz

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Brief Biographical Sketch

Dr. Norberto Grzywacz is a scientist, engineer, professor, and higher-education administrator with forty years of experience. Born in Brazil, he completed his Ph.D. studies at the Hebrew University of Jerusalem. There, he began a highly interdisciplinary career, studying Physics, Mathematics, and Neuroscience. Afterwards, he moved to MIT, where he was first a postdoctoral fellow, and then a research faculty member in both the Artificial Intelligence Laboratory and the Department of Brain and Cognitive Sciences. After MIT, he worked at the Smith-Kettlewell Eye Research Institute, a non-profit organization devoted to the cure of blindness and low vision.

He later returned to academia, joining the University of Southern California as a Professor of Biomedical Engineering, Neuroscience, and Electrical Engineering. During his years at USC and beforehand, his research was at the interface between Computer Vision, Neuroengineering, and Visual Cognition in the brain. In parallel, he began at USC his higher-education administrative career. He founded and directed the Center for Visual Science and Technology and then directed the Neuroscience Graduate Program. Next, he became the Chair for the Department of Biomedical Engineering. During his time as Chair, he launched a new research focus, namely, Cellular-Molecular Bioengineering. In addition, he managed to increase the diversity of the Department significantly and was a member of the Advisory Board of the USC Center for Engineering Diversity.

From USC, he moved to Georgetown University, where he became the Dean of the Graduate School of Arts and Sciences, and Professor of Physics and Neuroscience. Besides managing the affairs of ten thousand graduate students and their training faculty, he spearheaded ten new master's programs and three new Ph.D. degrees. These student-centered programs were cross-school and interdisciplinary, focused on urgent and complex social problems, like addiction and environmental sustainability. He also set up a new fellowship to increase the diversity of the Georgetown Ph.D.-student population. He continued his efforts on diversity after becoming the Provost of Loyola University Chicago, and Professor of Psychology and Neuroscience. There, he set up the Institute for Racial Justice, the Anti-Racism Initiative, and began efforts to increase the hiring of faculty of color. He also continued to work on programs focused on urgent and complex social problems, helping to set up the School of Environmental Sustainability. More recently, he became the Special Advisor to the Dean at the Krieger School of Arts and Sciences at John Hopkins University. As the dean's advisor, he helps thinking about the Center for Humanization of AI, helping the collaboration between AI and other disciplines. In parallel, his research focus shifted after moving to Georgetown University. He became interested in valuation systems for decision-making in the brain and AI systems. An example of this research is decision-making through aesthetic values. His research teams have been highly interdisciplinary. These teams have included students of Engineering, Physics, Neuroscience, Psychology, Sociology, Architecture, Visual Arts, and Music.

Besides work, Norberto Grzywacz has an eclectic background. He has lived in six countries for a year or more, and as such, he speaks, reads, and writes in six languages. He is also an experienced meditator and loves soccer, films, visual art, and classical music.

General Information

Professional Career: Leadership Positions

2023-2025	Special Advisor to the Dean, Krieger School of Arts and Sciences (KSAS), Johns Hopkins University (JHU)
2020-2021	Provost and Chief Academic Officer, Loyola University Chicago (LUC)
2015-2019	Dean of the Graduate School of Arts and Sciences, Georgetown University (GU)
2011-2013	Secretary of the Council of Chairs of BME Departments
2010-2014	Dwight C. and Hildagarde E. Baum Chair of the Department of Biomedical Engineering (BME), Viterbi School of Engineering (VSoE) at the University of Southern California (USC)
2005-2010	Director of the Neuroscience Graduate Program (NGP), USC
2002-2014	Founding Director of the USC Center for Vision Science and Technology (CVST)

Professional Career: Faculty Positions

2023-2025	Visiting Professor, Department of Cognitive Science, JHU
2020-	Professor, Department of Psychology, College of Arts and Sciences, LUC
2020-2023	Professor, Department of Molecular Pharmacology and Neuroscience, Stritch School of Medicine, LUC
2015-2019	Professor, Department of Neuroscience, GU Medical Center
2015-2019	Professor, Department of Physics, Georgetown College, GU
2015-2019	Professor, Interdisciplinary Program in Neuroscience, GU
2012-2014	Professor, Longevity Institute, USC
2008-2014	Professor, Department of Electrical Engineering, VSoE, USC
2003-2004	Fellow of the USC Center for Interdisciplinary Research
2002-2014	Professor, Neuroscience Graduate Program, USC
2001-2014	Professor, BME Department, VSoE, USC

Professional Career: Research Positions

1994-2001	Senior Scientist at the Smith-Kettlewell Eye Research Institute (SKERI)
1993-1994	Scientist at SKERI
1991-1993	Associate Scientist at SKERI
1987-1990	Research Professor at the Artificial Intelligence (AI) Laboratory and the Center for Biological Information Processing of the Massachusetts Institute of Technology (MIT)
1985-1986	Postdoctoral fellow in Professor Tomaso Poggio's group at MIT

Education

- 1980-1984 Ph.D. in Neurobiology at the Hebrew University of Jerusalem: Thesis in biophysics of photoreceptors under the supervision of Professor Peter Hillman. The work was part of a program reserved to the 10% top undergraduate students at the university.
- 1975-1979 Bachelor of Science in Physics and Mathematics at the Hebrew University of Jerusalem (double major); received degree with honors.

Research Interests

- Role of Reinforcement Learning in Social Grouping and Polarization
- Computational Models Applied to Social Learning in the Brain and AI
- Computational Models Applied to Individual Learning in the Brain and AI
- Decision-Making in the Brain (Neuroeconomics)
- Cognitive Neuroscience of Aesthetic Emotions
- Neuroaesthetics of Art
- Encoding and Decoding of Visual Information in Retinal Ganglion Cells
- Cell-molecular Re-engineering of Retinas in Retinitis Pigmentosa
- Displays for Low Vision and Applications to Age-related Macular Degeneration
- Medical Imaging for Retinal Diseases and Applications to Diabetic Retinopathy
- Plasticity of Retinal Receptive Fields
- Optimal Processing Principles for Retinal Function
- Optimal Processing Principles in Visual Perception
- Computation and Psychophysics of Motion Perception
- Perceptual Learning

Sabbaticals

- 2022 Département D'Études Cognitives, École Normale Supérieure, Université Paris Sciences et Lettres, Paris, France
- 2007-2008 Facoltà di Ingegneria, Università degli Studi di Roma "La Sapienza," Rome, Italy
- 1994-1995 Departamento de Biotecnología, Universidad de Alicante, Alicante, Spain

Languages

- English (speaks, reads, and writes fluently)
- Spanish (speaks, reads, and writes fluently)
- Portuguese (speaks, reads, and writes fluently)
- Italian (speaks, reads, and writes fluently)
- Hebrew (speaks, reads, and writes fluently)
- French (speaks, reads, and writes fluently)

Leadership Work

2025-	Began process to create the Loyola University Program in Interdisciplinary Neuroscience (LUPIN), LUC
2023-2025	Worked to set up a community of scholars working on AI issues at the KSAS, JHU
2021	Began process to unify the libraries into a single system, LUC
2021	Launched the Office for Black Student Success, LUC
2021	Established the Racial Justice Institute, LUC
2021	Help to establish the School for Environmental Sustainability, LUC
2020-2021	Led the first highly diverse faculty recruitment in the history of LUC. Loyola had 917 faculty members during the 2020-2021 Academic Year, of which only 83 (9%) were Black or Hispanic. In the recruitment season in Fiscal Year 2020/2021, of the 39 new faculty members hired, 31 were people of color (79%). More impressively, 20 were either Black or Hispanic faculty (51%).
2020	Strengthened the Office of Enrollment Management with units for market research, marketing, and prospective-student outreach, LUC
2020	Established the Office for Graduate Education, LUC
2020	Established the Office for Global and Community Engagement, LUC
2020	Established the Office for Research, LUC
2020	Launched the Office of Student Success, LUC
2020	Launched the Center for Faculty Excellence, LUC
2020	Launched the Anti-racism Initiative, LUC
2020	Help to conduct a Racial Examen across LUC
2019	Member of the Leadership negotiating the Graduate Student Union at GU
2018	Represented GU at the Universia Meeting in Salamanca, Spain (https://www.universiasalamanca2018.com/)
2017-2019	Member of the Leadership Team Developing the Next GU Capital Campaign.
2017-2019	Ex-Officio Senator, Faculty Senate, GU
2017-2019	Established the Patrick Healy Graduate Fellowship. The purpose of this fellowship, named in honor of the 28th President of GU, the first African-American to earn a doctorate degree and the first to be president of GU, is to increase diversity in GU Ph.D. programs. We began awarding such twenty-five fellowships in the fall of 2017.
2016	Led the Entire Tenure-line Faculty of GU in the Writing and Approval of a New Constitution of the GU Graduate School of Arts and Sciences
2016-2017	Led the Twenty-two GU Ph.D. Programs in the Development of New Mechanism for the Allocation of GU Ph.D. Fellowships
2016-2017	Member of Search Committee for the New Dean of the Georgetown College, GU
2016-2019	Founding Director of the Georgetown-Santander Partnership on Social Economy funded by Bank Santander, Spain
2015	Reorganized the GU Graduate School of Arts and Sciences

- 2015-2019 Dean of the Graduate School of Arts and Sciences, GU. In this role, I was responsible for the management of the affairs of more than 7,000 graduate students in 22 Ph.D., 65 Master's, 42 Dual and Joint, and 20 Accelerated Programs. For this purpose, I led about 800 tenure-line faculty members. I was also responsible for the management of the budget of the school, which was over \$ 36-million.
- 2013-2014 USC Stem Cell Executive Committee
- 2011-2014 Membership in the Center for Engineering Diversity Faculty Advisory Board, USC. The goal of the Center was to increase the number of under-represented minority students in engineering.
- 2011, 2012 Participated in two VSoE Delegations to Brazil. Helped to develop an agreement with the Universidade de São Paulo, São Paulo, Brazil.
- 2011-2014 Member of the Ph.D. Council, VSoE
- 2011 ABET Accreditation of the BME Department, USC
- 2010-2014 Increased of Gender Diversity of the BME Department, USC. Part of this work involved working with the USC Women in Science and Engineering program. When I began as Chair, we only had one female faculty member in the Department. Now, it has seven. One of them is an African American woman, the first such hire in the history of the USC School of Engineering.
- 2010-2014 Dwight C. and Hildagarde E. Baum Chair of the BME Department, USC
- 2009-2014 Director of Education & Outreach, USC Engineering Research Center from the National Science Foundation "An Engineering Research Center for Biomimetic MicroElectronic Systems"
- 2008-2010 Chair of the Deans and Provost Neuroscience Advisory Group, USC
- 2008 Accreditation of the NGP, USC
- 2005-2010 Director of NGP, USC
- 2003-2014 Director of the CVST, USC
- 2002-2010 Executive Committee, NGP, USC
- 2002-2005 Chair of the Curriculum Committee, NGP, USC
- 1992-1995 Chair of the Colloquia Committee of SKERI
- 1992-1993 Chair of the Central-Computer Committee of SKERI
- 1991-2001 Chair of the Library Committee of SKERI

Educational Work

Large Academic Units Spearheaded and Developed

- 2025- Began process to launch LUPIN, LUC
- 2021 Began process to launch the Institute for Advanced Pedagogy, LUC
- 2021 Began process to launch the One-Loyola Network for Transdisciplinary Human-centered Elucidation of Complex and Urgent Social Problems, LUC
- 2021 Helped to launch the Rule of Law Institute, School of Law, LUC
- 2021 Launched the Institute for Racial Justice, LUC
- 2021 Helped to launch the School of Environmental Sustainability, LUC

Graduate Programs Spearheaded and Developed

2025-	LUPIN, LUC
2019	Ph.D. in Applied Mathematics, GU
2019	Master of Arts in Public and Engaged Humanities, GU
2018	Master of Science in Global Infectious Diseases, GU
2017	Master of Science in Epidemiology (with a Concentration in Health Disparities), GU
2017	Master of Science in Health and the Public Interest, GU
2017	Master of Science in Data Science for Public Policy, GU
2017	Master of Science in Aging and Health, GU
2017	Master of Science in Environmental Metrology and Policy, GU
2016	Master of Arts in Educational Transformation, GU
2016	Master of Arts in Learning, Design and Technology, GU
2016	Ph.D. in Biostatistics, GU
2015	Ph.D. Concentration in Cognitive Science, GU
2015	Master of Science in Data Science and Analytics, GU
2012	Co-developer of Neuroengineering Track of the Master of Science in BME, USC

Curricula Developed

2020-2021	Began process to develop the new LUC Core Curriculum
2006	New curriculum of the USC Neuroscience Graduate Program including the following courses: • Advanced Overview of Neuroscience • Systems and Behavioral Neurobiology • Molecular and Cellular Neurobiology • Brain and Artificial Intelligence • Cognitive Neuroscience • Computational Neuroengineering • Neurobiology of Disease • Hearing and Communication Neuroscience • Neuroscience Ethics and Professionalization • Seminar in Neurobiology

Courses

2026	Developer and Lecturer of the undergraduate course “Science and Society” HONR 204, LUC
2025	Developer and Lecturer of the undergraduate course “Computational Modeling of the Brain” PSYC 384 and COMP 389, LUC
2025	Developer and Lecturer of the undergraduate course “Methods in Computational Neuroscience” PSYC 383 and COMP 386, LUC

2024-	Lecturer of the undergraduate course "Seminar in Behavioral and Cognitive Neuroscience" PSYC 387, LUC
2024	Lecturer of the undergraduate course "Computational Neuroscience" PSYC 383 and COMP 386, LUC
2023-	Developer and Lecturer of the undergraduate course "What is Beauty?," PSYC 386, LUC
2023	Lecturer at the graduate course "Systems Neurobiology," BMSC 414, LUC
2023	Lecturer at the graduate course "Cellular and Molecular Neurobiology," NRSC 410, LUC
2017-2019	Developer of and Lecturer at the undergraduate course "The Brain and the Experience of Beauty in Art," Villa Le Balze, Florence, GU
2016-2019	Lecturer at the graduate course "Cognitive Science Research Seminar," ICOS 710, GU
2011-2014	Lecturer of the undergraduate course "Introduction to Biomaterials and Tissue Engineering," BME 410, at the BME Department, USC
2008-2010	Developer and Coordinator of the graduate course "Systems and Behavioral Neurobiology," NEUR 532, at the NGP, USC
2006	Developer and Lecturer of the graduate course "Neuroscience Ethics and Professionalization" at the NGP, USC
2006-2011	Lecturer at the graduate course "Advanced Overview of Neuroscience" at the NGP, USC
2006-2014	Developer and Lecturer of the graduate course "Computational Neuroengineering," BME 575, at the BME Department, USC
2006	Lecturer of the graduate course "Advanced Neurosciences II" at the NGP, USC
2005-2010	Developer of and Lecturer at the graduate course "Visual Plasticity" at the University of Alicante, Alicante, Spain
2004	Guest Lecturer at the course "Perceptual Learning" organized by Dr. Zhong-Lin Lu, of the USC Department of Psychology
2004	Guest Lecturer at the course on "Visions of Medieval Saints" organized by Dr. Lisa Bitel of the USC Department of History
2004-2014	Developer and Coordinator of "Late Visual Processes" at the BME Department, USC
2004-2014	Developer and Coordinator of the graduate course "Early Visual Processes" at the BME Department, USC
2003, 2005	Lecturer at the graduate course "Advanced Studies of the Nervous System" at the BME Department, USC
2003	Lecturer at the undergraduate course "Control and Communication in the Nervous System" at the BME Department, USC
2002-2003	Coordinator of the Neurolunch, a graduate seminar of the NGP at USC
2002-2005	Developer of and Lecturer at the graduate course "Computational Vision" at the BME Department, USC
1999-2001	Lecturer at the doctorate course "Neurobiology and Neurotechnology" at the University of Alicante, Alicante, Spain
1999-2001	Lecturer at the doctorate course "The Neurobiology of Vision" at the University of Alicante, Alicante, Spain

- 1999 Lecturer at the course “Visual Neuroscience” at the Gulbenkian Institute, Oeiras, Portugal
- 1997-1998 Lecturer at the summer course "The Physics of Light and the Evolution of the Eye" at the University of Alicante, Alicante, Spain
- 1996 Invited Lecturer at the "Seminar of Introduction to Neurotecnology," Universidad de Murcia, Cartagena, Spain
- 1995-1996 Lecturer at the summer course "Vision in Brains and Computers" at the University of Alicante, Alicante, Spain
- 1994-1995 Lecturer of the summer course "Models of Retinal Function" at the University of Alicante, Alicante, Spain
- 1992-2001 Organizer of the “Wet” Neuroscience Journal Club at SKERI
- 1990 Invited lecturer in the summer course “Methods in Computational Neuroscience” at the Marine Biological Laboratories in Woods Hole
- 1989 Invited lecturer in the Cold Spring Harbor Summer Course in Computational Neuroscience at the Cold Spring Harbor Biological Laboratories
- 1989 Coordinator of the activity “The Electric Head: From Proteins to EEG” of the Independent Activities Period of MIT
- 1987-1990 Developer and Lecturer at the course “Vision in Brains and Computers” of the Harvard University Extension School
- 1987-1990 Organizer of the weekly seminar of MIT's Center for Biological Information Processing
- 1985-1986 Invited lecturer at the Neurobiology course of the Harvard University Extension School
- 1980-1984 Instructor at the following courses of The Hebrew University of Jerusalem:
 - Electronics for biologists
 - Statistics for biologists
 - General Physiology
 - Sensory Physiology

Graduate Students and Postdoctoral Fellows Supervised

- 2023-2025 Ms. Yewon Rhee, Master’s Student at LUC
- 2021-2023 Dr. Hassan Aleem, postdoctoral fellow at LUC
- 2015-2021 Dr. Hassan Aleem, Ph.D. Student at GU
- 2015-2019 Dr. Iván Correa, postdoctoral fellow at GU
- 2016-2018 Dr. Scott Miles, Ph.D. at GU
- 2010-2014 Dr. Wan-Qing Yu, Ph.D. at USC
- 2009-2014 Dr. Yerina Ji, Ph.D. at USC
- 2009-2014 Dr. Arvind Iyer, Ph.D. at USC
- 2008-2014 Dr. Nadav Ivzan, Ph.D. at USC
- 2007-2010 Dr. Valentina Russo, Ph.D. at the University of Rome, “La Sapienza,” Italy
- 2007 Ms. Daniela Giannini, Master’s at the University of Rome, “La Sapienza,” Italy
- 2006 Dr. Murat Surucu, Co-chair of Doctorate Committee at USC
- 2005-2012 Dr. Junkwan Lee, Ph.D. at USC
- 2005-2009 Dr. Xiwu Cao, Ph.D. student at USC

2004-2006	Dr. Yolanda Segovia Huertas, Ph.D. at the University of Alicante, Spain
2004-2005	Dr. Adam Jacobs, postdoctoral fellow at USC and UCLA
2004-2006	Dr. Eun-Jin Lee, postdoctoral fellow
2004-2008	Dr. Susmita Chatterjee, Ph.D. student at USC
2004-2005	Mr. Manoj Raghuraman, Master's student at USC
2003-2007	Dr. Mónica Padilla, postdoctoral fellow at USC
2003-2008	Dr. Jeff Wurfel, Ph.D. student at USC
2003-2010	Dr. Joaquín Rapela, Ph.D. student at USC
2001-2007	Dr. David Merwine, postdoctoral fellow at SKERI and Research Assistant Professor at USC
2003-2004	Mr. Jeff Wurfel, Master's student at USC
2002-2003	Dr. José Barraza, postdoctoral fellow
2000-2003	Dr. Rosario Balboa, postdoctoral fellow
1997-2001	Dr. Lynette Nguyen, postdoctoral fellow
1996-2000	Dr. David Ascher, postdoctoral fellow
1997-2000	Dr. Preeti Verghese, postdoctoral fellow
1996-1997	Dr. Mark Pettet, postdoctoral fellow
1995-1997	Dr. Rosario Balboa, Ph.D. at the University of Alicante, Spain
1995-1997	Dr. José Vicente Guardiola, Ph.D. at the University of Alicante, Spain
1994-1998	Dr. Julie Harris, postdoctoral fellow
1992-1995	Dr. Pierre-Yves Burgi, postdoctoral fellow
1992-1994	Dr. Evelyn Sernagor, postdoctoral fellow
1991-1995	Mr. Jim Smith, Ph.D. student at MIT
1989-1995	Dr. Lyle Borg-Graham, Ph.D. at MIT

Orals and Dissertation Committees

2022	Pierre Lelièvre, Chair of Doctorate Committee at the École Normale Supérieure, Université Paris Sciences et Lettres, Paris, France
2015	Bassima Boughlala, Chair of Doctorate Committee at the University of Alicante, Spain
2015	Noemí Martínez Ruiz, Chair of Doctorate Committee at the University of Alicante, Spain
2014-	Nan Wang, Doctorate Committee at USC
2014	Vandana Suresh, Doctorate Committee at USC
2014	Viviane Ghaderi, Doctorate Committee at USC
2014	Roman Sandler, Doctorate Committee at USC
2014	Xiaoyang Yao, Doctorate Committee at USC
2014	Steffen Eikenberry, Doctorate Committee at USC
2014	David Herman, Doctorate Committee at USC
2012	Daniel Parks, Doctorate Committee at USC
2012	Sungshin Kim, Doctorate Committee at USC
2012	Amarpreet Bains, Doctorate Committee at USC
2011	Yukai Zhao, Doctorate Committee at USC
2011	Jae Yong Suk, Doctorate Committee at USC

2010-2012	Przemyslaw Nowak, Doctorate Committee at the University of Alabama at Birmingham
2010	Anustup Choudhury, Doctorate Committee at USC
2010	Jin Ho Oh, Doctorate Committee at USC
2010	Jonathan Joshi, Doctorate Committee at USC
2010	Pinglei Bao, Doctorate Committee at USC
2010	Rishabh Jain, Doctorate Committee at USC
2010	Arthi Srinivasan, Doctorate Committee at USC
2010-	Dan Parks, Doctorate Committee at USC
2010-	Chao Huang, Doctorate Committee at USC
2010-	Jiye Kim, Doctorate Committee at USC
2010-	Vishal Vaigankar, Doctorate Committee at USC
2009-2010	Vivek Pradeep, Doctorate Committee at USC
2009-	Christian Gutierrez, Doctorate Committee at USC
2009-2010	Anirvan Nandy, Doctorate Committee at USC
2009-	Jiajuan Liu, Doctorate Committee at USC
2009-2010	Monika Jadi, Doctorate Committee at USC
2008-	Benjamin Files, Doctorate Committee at USC
2008	Jennifer Lee, Master's Committee at USC
2008-	Farhan Baluch, Doctorate Committee at USC
2008-	Bardia Behabadi, Doctorate Committee at USC
2007-	Yichun Wei, Doctorate Committee at USC
2007-2009	Leanne Chan, Doctorate Committee at USC
2007	Ronalee Lo, Doctorate Committee at USC
2006-2010	Cyrus Arman, Doctorate Committee at USC
2006-2010	Joshua Miyagishima, Doctorate Committee at USC
2006	Alan Horsager, Doctorate Committee at USC
2005	Seong-Taek Jeon, Doctorate Committee at USC
2005	Witaya Sungkarat, Doctorate Committee at USC
2005	Carlos Cabrera; Doctorate Committee at USC
2004	Justin Aronoff; Doctorate Committee at USC
2003	Dong Song; Doctorate Committee at USC
2003	Ran Carmi; Doctorate Committee at USC
2003	Mircea Nicolescu; Doctorate Committee at USC
2003	Echo Wei; Doctorate Committee at USC
2002	Eric Ortega; Doctorate Committee at USC
2002	Chunhong Zhou; Doctorate Committee at USC
1998	Davis Barch; Orals at University of California at Berkeley
1998	Dr. José Vicente Guardiola; Chair of Doctorate Committee at the University of Alicante, Spain
1997	Dr. David Ascher; Doctorate Committee at Brown University at Providence, Rhode Island
1997	Dr. Rosario Balboa; Chair of Doctorate Committee at the University of Alicante, Spain
1994	Dr. Magdalena Garcia; Doctorate Committee at the University of Alicante, Spain

1993 Julie Scott; Orals at University of California at Berkeley

Research Work

Publications in Peer-reviewed Journals

- Grzywacz, N.M. (2026) The Objectivity of Subjectivity: A Model of the Brain's Valuation System. *Scientific Reports*. **In Press**.
- Rhee, Y., H. Aleem, K.B. Mather, and N.M. Grzywacz (2026) Social Conformity of Aesthetic Values. *Psychology of Aesthetics, Creativity, and the Arts*. <https://dx.doi.org/10.1037/aca0000862>.
- Grzywacz, N.M. (2026) General Bayesian Reinforcement Learning and Associated Differential Approximations. *Neurocomputing*. 133445.
- Berquet, S. and N.M. Grzywacz (2026) Perceived Complexity as Normalized, Integrated, Localized Shannon Entropy. *Entropy*. **28**, 279.
- Grzywacz, N.M. (2026) Social Polarization Has Cognitive Roots But Is Not a Lost Cause. *Science Politics*. <https://sciencepolitics.org/2026/02/04/social-polarization-has-cognitive-roots-but-is-not-a-lost-cause/>
- Grzywacz, N.M. (2025) Social-Influence Models for Grouping and Polarization of Aesthetic Values. *Neurocomputing*. 130870.
- Grzywacz, D.M. and N.M. Grzywacz (2025) Inferring Cinematic Aesthetic Biases from the Statistics of Early Movies. *Entropy*. **27**, 707.
- Grzywacz, N.M. (2025) Balance and Mechanisms of Shared and Individual Aesthetic Values. *Journal of Experimental Psychology: Human Perception and Performance*. **51**, 424-427.
- Grzywacz, N.M. (2025) Perceptual Complexity as Normalized Shannon Entropy. *Entropy*. **27**, 166.
- Grzywacz, N.M. (2025) A Computational Analysis of the Effect of Hard Choices on the Individuation of Values. *Brain Sciences*. **15**, 131.
- Berquet, S., H. Aleem, and N.M. Grzywacz (2024) A Fisher Information Theory of Aesthetic Preference for Complexity. *Entropy*. **26**, 901.
- Grzywacz, N.M., C.M. Correa, and I. Correa-Herran (2024) Domain-specific Aesthetic Values: A Comparison of Paintings and Architecture. *Psychology of Aesthetics, Creativity, and the Arts*. <https://dx.doi.org/10.1037/aca0000718>.
- Mather, K.B., H. Aleem, Y. Rhee, and N.M. Grzywacz (2023) Social Groups and Polarization of Aesthetic Values for Symmetry and Complexity. *Scientific Reports*. **13**, 21507.
- Pombo, M., H. Aleem, and N.M. Grzywacz (2023) Multiple Axes of Visual Symmetry: Detection and Aesthetic Preference. *Symmetry*. **15**, 1568.
- Aleem, H. and N.M. Grzywacz (2023) The Temporal Instability of Aesthetic Preferences. *Psychology of Aesthetics Creativity and Arts*. <https://dx.doi.org/10.1037/aca0000543>.
- Mansuri, J., H. Aleem, and N.M. Grzywacz (2022) Systematic Errors in the Perception of Rhythm. *Frontiers in Human Neuroscience*. **16**, 1009219.

- Miles, S.A., D.S. Rosen, and N.M. Grzywacz (2022) Behavioral Evidence of a Harmonic Surprise Effect on Preference in Popular Music. *Current Research in Behavioral Sciences*. **3**, 100080.
- Grzywacz, N.M., and H. Aleem (2022) Does Amount of Information Support Aesthetic Values? *Frontiers in Neuroscience*. **16**, 805658.
- Miles, S.A., D.S. Rosen, S. Barry, D. Grunberg, and N. Grzywacz (2021) What to Expect When the Unexpected Becomes Expected: Harmonic Surprise and Preference Over Time in Popular Music. *Frontiers in Human Neuroscience*. **15**, 201.
- Grzywacz, N.M. (2021) Stochasticity, Nonlinear Value Functions, and Update Rules in Learning Aesthetic Biases. *Frontiers in Human Neuroscience*. **15**, 210.
- Aleem, H., I. Correa-Herran, and N.M. Grzywacz (2020) A Theoretical Framework for How We Learn Aesthetic Values. *Frontiers in Human Neuroscience*. **14**, 345.
- Correa-Herran, I., H. Aleem, and N.M. Grzywacz (2020) Evolution of Neuroaesthetic Variables in Portraits Paintings throughout the Renaissance. *Entropy*. **22**, 146-167.
- Miles, S.A., D.S. Rosen, and N.M. Grzywacz (2017) A Statistical Analysis of the Relationship Between Harmonic Surprise and Preference in Popular Music. *Frontiers in Human Neuroscience*. **11**, 263.
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Book Chapters

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- Grzywacz, N.M. (1986) Properties of Generalized Minimal Mapping Theories for Apparent Motion. *J. Opt. Soc. Am. A* **3**, P72.
- Grzywacz, N.M., C. Koch, and L.A. Mistler (1986) A Comparison of the Nonlinear Properties of the Shunting Inhibition and the Threshold Models for Direction Selectivity in the Retina. *Soc. Neurosci. Abst.* **12**, 114.1.
- Grzywacz, N.M., and E.C. Hildreth (1985) Recovering Three-Dimensional Structure from Motion Using Positions vs. Velocities. *Technical Digest of the Optical Society of America Meeting*, 61.
- Grzywacz, N.M., and C. Koch (1985) The Use of Volterra Series Expansion to Characterize Direction Selectivity. *Soc. Neurosci. Abst.* **11**, 103.1
- Grzywacz, N.M., P. Hillman, and B.W. Knight (1985) A Study of the Bump-Rate Transfer Function in *Limulus* Ventral Photoreceptors. *Invest. Ophthalmol. Vis. Sci.* **26**, 113.

Honors

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|-----------|---|
| 2025 | Inducted as a Member of Sigma Xi, The Scientific Research Honor Society |
| 2020 | Inducted as an Honorary Member of the Alpha Sigma Nu Society |
| 2013-2018 | Named to the Advisory Board of the BME Department, Florida International University |
| 2013 | Northrup-Grumman Excellence in Teaching Award of the VSoE, USC |
| 2011-2013 | Elected Secretary of the Council of Chairs of BME Departments |

2010	Faculty of the Year of the USC Neuroscience Graduate Program
2008	Elected to the College of Fellows of the American Institute for Medical and Biological Engineering
1994	Kettlewell Chair of the Smith-Kettlewell Eye Research Institute
1988	Honorable Mention for the Marr Prize of the International Conference on Computer Vision

In the News

2026	PsyPost (USA); “New study suggests the brain applies different standards of beauty to paintings and architecture” Eric Dolan, May 31, 2026; https://www.psypost.org/new-study-suggests-the-brain-applies-different-standards-of-beauty-to-paintings-and-architecture/
2026	Sueddeutsche Zeitung (Germany); “Wie find’ ich das?” Sebastian Herrmann, May 8, 2026; https://www.sueddeutsche.de/wissen/kunst-london-lichtinstallation-expertenurteile-eigene-ueberzeugung-aesthetik-li.3475622
2026	New York Times (USA); “Professors Are Changing What They Teach, Even Far From Trump’s Gaze” Alan Blinder, March 16, 2026; https://www.nytimes.com/2026/03/16/us/professors-change-teaching-trump.html?unlocked_article_code=1.TlA.ic7r.zPTH9-vpVgz0&smid=nytcore-ios-share
2026	Science Politics (USA); “OPINION” Editorial Board, February 9, 2026; https://sciencepolitics.org/category/topics/opinion/page/3/?_gl=1%2A7rdpm%2A_ga%2AMTM2NzI2ODUzNS4xNzc4Mjc2Njk3%2A_ga_RET1ZHRWJX%2AczE3NzgyNzY2OTYkbzEkZzEkdDE3NzgyNzc0NDQkajYwJGwWJGgw
2025	The Loyola Phoenix (USA); “Dean of University Libraries To Step Down, Begin New Library Role” Justin Peabody, February 5, 2025; https://loyolaphoenix.com/2025/02/dean-of-university-libraries-steps-down-begins-new-library-role/
2023	Daily Mail (UK); “Why has Mr Brightside stood the test of time?” Fiona Jackson, April 26, 2023; https://www.dailymail.com/sciencetech/article-12011239/Why-Mr-Brightside-endured-test-time-science-Killers-hit.html
2022	Daily Mail (UK); “The evolution of the pop hit: Number 1 singles are shorter and slower now than they were 70 years ago - while key changes have almost disappeared, study reveals” Fiona Jackson, November 14, 2022; https://www.dailymail.com/sciencetech/article-11425131/Number-1-singles-shorter-slower-70-years-ago-study-reveals.html
2021	Chicago Sun-Times (USA); “Loyola to require students to be vaccinated before returning to campus in the fall” Zinya Salfiti, April 23, 2021; https://chicago.suntimes.com/coronavirus/2021/4/23/22399545/loyola-require-students-returning-to-fall-to-be-vaccinated-covid-19

- 2021 Chicago Tribune (USA); “Illinois universities aim to reopen completely this fall. Is that a post-pandemic pipe dream or a realistic goal?” Elyssa Cherney, March 17, 2021; <https://www.chicagotribune.com/2021/03/17/illinois-universities-aim-to-reopen-completely-this-fall-is-that-a-post-pandemic-pipe-dream-or-a-realistic-goal/>
- 2021 USC Viterbi Magazine (USA); “Trojan Leaders in Academia” Cheyenne Gaima; https://www.case.org/system/files/media/file/USC_Viterbi_FA21.pdf
- 2020 Focus Junior (Italy); “La formula scientifica dei tormentoni musicali” Ilaria Infante, July 15, 2020; <https://www.focusjunior.it/news/formula-scientifica-dei-tormentoni/>
- 2020 Chicago Sun-Times (USA); “Loyola scales back plans for reopening campus this fall, will move most classes online” Clare Spaulding, July 13, 2020; <https://chicago.suntimes.com/education/2020/7/13/21322941/loyola-university-chicago-online-remote-learning-coronavirus-fall-semester>
- 2020 Chicago Tribune (USA); “Loyola University Chicago announces fall classes will be mostly online as coronavirus cases continue to rise” Kelli Smith, July 13, 2020; <https://www.chicagotribune.com/2020/07/13/loyola-university-chicago-announces-fall-classes-will-be-mostly-online-as-coronavirus-cases-continue-to-rise/>
- 2020 CBS News (USA); “Loyola University To Shift Most Classes Online For Fall” July 13, 2020; <https://www.cbsnews.com/chicago/news/loyola-university-to-shift-most-classes-online-for-fall/>
- 2020 Cardinal News (USA); “Loyola University To Hold Most Classes Online For Fall 2020” July 13, 2020; <https://www.arlingtoncardinal.com/2020/07/loyola-university-to-hold-most-classes-online-for-fall-2020/>
- 2020 Chicago Sun-Times (USA); “Coronavirus live blog, May 15: DePaul, Loyola releases plans for fall semester” May 15, 2020; <https://chicago.suntimes.com/essential-coronavirus-news/2020/5/15/21259782/latest-coronavirus-news-live-updates-chicago-illinois-2020>
- 2020 National Catholic Reporter (USA); “Loyola Chicago climate conference upended by coronavirus precautions” Brian Roewe, March 17, 2020; <https://www.ncronline.org/news/loyola-chicago-climate-conference-upended-coronavirus-precautions>
- 2019 Chronicle of Higher Education (USA); “Transitions: U. of Mobile Makes Interim President Permanent, New Provost at Rhodes College” Julia Piper, December 4, 2019; <https://www.chronicle.com/article/transitions-u-of-mobile-makes-interim-president-permanent-new-provost-at-rhodes-college/>
- 2019 The Hoya (USA); “Graduate School Dean to Serve as Loyola University Chicago Provost” Grace Buono, December 1, 2019; <https://thehoya.com/news/news-top/graduate-school-dean-to-serve-as-loyola-university-chicago-provost/>

- 2019 Our Parish Times (USA); “Oakcrest Teacher Receives Dissertation Award from Georgetown” May, 2019; <http://www.parishtimes.com/uploads/8/3/6/6/8366083/may2019.pdf>
- 2019 NPR – Science Friday (USA); “USF Presidential Search Moves To Next Stage” Mark Schreiner, March 17, 2019; <https://www.wusf.org/university-beat/2019-03-17/usf-presidential-search-moves-to-next-stage>
- 2018 Discover (magazine) (USA); “What We Can Learn From the Science of Music” Jonathon Keats, June 30, 2018; <https://www.discovermagazine.com/science-of-music-1170>
- 2018 The Georgetown Voice (USA); “GAGE and university agree to union election” Lilah Burke, April 2, 2018; <https://georgetownvoice.com/2018/04/02/gage-and-university-agree-to-union-election/>.
- 2018 PR Newswire (USA); “The Georgetown University/Santander Social Economy Partnership Hosts Seminar On Financial Inclusion” March 28, 2018; <https://www.prnewswire.com/news-releases/the-georgetown-universitysantander-social-economy-partnership-hosts-seminar-on-financial-inclusion-300621152.html>
- 2017 Earth.com (USA); “Why we like some songs and dislike others” Eric Ralls, August 25, 2017; <https://www.earth.com/news/like-songs-dislike-others/>
- 2017 Daily Mail (UK); “The secret to the perfect pop song: Chart toppers like The Beatles' Penny Lane feature a sudden chord change that lights up the brain's reward centre” Victoria Allen, August 24, 2017; <https://www.dailymail.com/sciencetech/article-4817054/The-secret-perfect-pop-song-revealed.html>
- 2017 McCartney Times (UK); “Songs with chord changes light up brain’s reward centre” Martin Nethercutt, August 24, 2017; <https://www.dailymail.com/sciencetech/article-4817054/The-secret-perfect-pop-song-revealed.html>
- 2017 доровье (Russia); “Нейробиологи раскрыли главный секрет поп-музыки” August 24, 2017; <https://health.mail.ru/news/319781-neyrobiologi-raskryli-glavnyy-sekret-popmuzyki/>
- 2017 ScienceDaily (USA); “A song's structure can be linked to its popularity” August 23, 2017; <https://www.sciencedaily.com/releases/2017/08/170823094104.htm>
- 2017 Neuroscience News (USA); “A Song’s Structure Can Be Linked to Its Popularity” August 23, 2017; <https://neurosciencenews.com/song-structure-popularity-7357/>
- 2017 The Georgetown Voice (USA); “Graduate Students Continue Push to Unionize” Jake Maher, February 2, 2017; <https://georgetownvoice.com/2017/02/02/graduate-students-continue-push-to-unionize/>
- 2017 The Hoya (USA); “University Completes Two-Year Renovation of Car Barn First Floor” Andrew Wallender, January 31, 2017; <https://thehoya.com/news/news-top/university-completes-two-year-renovation-of-car-barn-first-floor/>

- 2016 The Georgetown Voice (USA); “Dialogue between doctoral students and administration grows as petition circulates” Jake Maher, April 21, 2016; <https://georgetownvoice.com/2016/04/21/82128/>
- 2016 The Georgetown Voice (USA); “Doctoral students confront increased work hours, no proportional rise in pay” Jake Maher, April 14, 2016; <https://georgetownvoice.com/2016/04/14/doctoral-students-confront-increased-work-hours-no-proportional-rise-in-pay/>
- 2015 The Hoya (USA); “Santander Endows \$2M Initiative” Andrew Wallender, April 17, 2015; <https://thehoya.com/news/news-top/santander-endows-2m-initiative/>
- 2014 The Hoya (USA); “Academic Leadership Shifts Over the Summer” Kshithij Shrinath, August 26, 2014; <https://thehoya.com/news/news-top/academic-leadership-shifts-over-the-summer/>
- 2012 The Daily Trojan (USA); “Manbir Singh, a biomedical professor, dies at 67” Chloe Stepney, January 10, 2012; <https://dailytrojan.com/2012/01/10/manbir-singh-a-biomedical-professor-dies-at-63/>
- 2012 Trojan Family Magazine (USA); “Reaching Toward the Biomedical Future” Erik Mankin and Leslie Ridgeway, Spring 2011; https://issuu.com/uscedu/docs/tfm_2011_1_spring/25
- 2011 PR Newswire (USA); “USC and Coulter Foundation Partner to Invest \$5M in Breakthrough Innovation in Biomedical Engineering” Apr 26, 2011; <https://www.prnewswire.com/news-releases/usc-and-coulter-foundation-partner-to-invest-5m-in-breakthrough-innovation-in-biomedical-engineering-120727349.html>
- 2011 Annenberg TV News (USA); “Students Sacrifice for Weekender” Madeline Segura, October 13, 2011; <https://www.atvn.org/news/2011/10/students-forced-choose-between-business-and-pleasure.html>
- 2010 OCT News (USA); “Statistics of Optical Coherence Tomography Data From Human Retina” March 29, 2010; <https://octnews.org/authors/norberto-m-grzywacz/>.
- 2009 USC Engineer Magazine (USA); “Brain, Vision, Hearing, Speech and Neuro-Rehabilitation”; Spring 2009; <https://viterbischool.usc.edu/wp-content/uploads/2016/12/spring2009.pdf>
- 2008 Healio (USA); “Low vision patients present unique challenge to Medicare system” Matt Hasson, January 25, 2008; <https://www.healio.com/news/ophthalmology/20120331/low-vision-patients-present-unique-challenge-to-medicare-system>
- 2003 GTPlanet (USA); “Speed Issue between Japanese and UK versions” July 26, 2003; <https://www.gtplanet.net/forum/threads/speed-issue-between-japanese-and-uk-versions.26955/>
- 2002 USC Engineer Magazine (USA); “USC Vision Symposium”; Fall 2002; <https://viterbischool.usc.edu/wp-content/uploads/2016/12/fall2002-2.pdf>

Awards and Grants Received

2016-2019	Principal Investigator of the “Rebuild Paraguay Higher Education Project” funded by the Ministries of Planning and Education of the Government of Paraguay. Total Direct Costs: \$850,000
2015-2019	Principal Investigator of the Georgetown-Santander Partnership on Social Economy funded by the Santander Group. Total Direct Costs: \$ 2,000,000
2015-2019	Graduate Research Fellowship Program, National Science Foundation
2011-2014	Principal Investigator of the Wallace H. Coulter Foundation Translational Research Partners Program. Total Direct Costs: \$ 5,200,000
2007-2014	Principal Investigator in a Bioengineering Research Partnership Grant from the National Eye Institute (R01 EY016093). Title: “Mid-level Vision Systems for Low Vision.” Total Direct Costs: \$ 5,816,040
2003-2014	Lead Investigator in an Engineering Research Center from the National Science Foundation (EEC-0310723 Humayun, PI). Title: “An Engineering Research Center for Biomimetic MicroElectronic Systems.” Total Direct Costs: \$ 17,000,000
2013	Northrup-Grumman Excellence in Teaching Award, VSoE, USC
2010	Faculty of the Year of the USC Neuroscience Graduate Program
2009	Elected Fellow of the American Institute for Medical and Biological Engineering (AIMBE).
1996-2008	Principal Investigator in a Grant from the National Eye Institute (R01 EY11170). Title: “Development of Complex Retinal Receptive Fields.” Total Direct Costs: \$ 1,026,167
1991-2008	Principal Investigator in a Grant from the National Eye Institute (R01 EY08921). Title from 1991 to 2001: “Facilitation and Inhibition in Directional Selectivity.” Title from 2001 to 2006: “Correlation Among Retinal Directionally Selective Cells.” Total Direct Costs: \$ 614,548 from 1991 to 1996, \$ 971,153 from 1996-2001, \$1,250,000 from 2001-2006
1994-2010	Travel Grants from the Generalitat Valenciana, Community of Valencia, Spain
2006-2007	Co-principal Investigator in a Grant from the Office of Naval Research (N00014-06-1-0746). Title: “Next-Generation Image and Sound Processing Strategies: Exploiting the Biological Model.” Total Direct Costs: \$ 900,000
2005	Grant from the Provost to conduct research on the biological and cultural mechanisms of religious visions (with Lisa Bitel from the Department of History), USC, \$ 50,000
2005	Grant from the Provost Advisory Neuroscience Graduate Committee, for the CVST, USC, \$ 70,000
2004	Grant from the Provost Advisory Neuroscience Graduate Committee, for the CVST, USC, \$ 75,000
2003	Faculty Fellowship from the Interdisciplinary Research Center, USC, \$ 50,000
1994	The Kettlewell Chair, SKERI, \$ 50,000

- 1992-1998 Co-Principal Investigator in a Grant from the Air Force Office of Scientific Research (F49620-95-1-0265). Title: "Visual Processing of Object Velocity and Acceleration." Total Direct Costs: \$ 301,818 from 1992-1995 and \$ 339,504 from 1995-1998
- 1990-1993 Sub-Contractor in a Grant from the Office of Naval Research (N00014-91-J-1280). Title: "Theoretical and Experimental Determination of the Robust Biological Mechanism of Retinal Directional Selectivity." Total Direct Costs: \$ 116,451
- 1988-1990 Principal Investigator in a Grant from the National Science Foundation (BNS-8809528). Title: "The Computation of Direction Selectivity in the Retina." Total Direct Costs: \$ 97,900
- 1987-1988 Fairchild Fellowship
- 1987-1989 Co-Principal Investigator in a Grant from the Sloan Foundation (87-1-19). Title: "Computation of Motion and Stereo: From Theory to Biophysics." Total Direct Costs: \$ 121,996
- 1986-1988 Co-Principal Investigator in an Equipment Grant from the Office of Naval Research (N00014-86-G-0152). Title: "Computation of Stereo, Motion, and Color." Total Direct Costs: \$ 205,576
- 1985-1986 Bantrell Postdoctoral Fellowship

Participation in Grant Reviewing Committees

- 2012 Reviewer for the Special Emphasis Panel/Scientific Review Group on Neurotechnology, National Institutes of Health
- 2011-2012 VA RR&D Sensory Systems/Communication Panel
- 2011 VA RR&D Career Development Program Panel
- 2011 Reviewer for the Special Emphasis Panel/Scientific Review Group 2011/08 ZRG1 BST-J (50) of the National Institutes of Health to Evaluate Technologies for Low Vision
- 2010 Reviewer for the Review Panel for the Research Centers in Minority Institutions and for the Centers of Biomedical Research Excellence, National Institutes of Health
- 2009-2012 Reviewer for the American Institute of Biological Sciences, Department of Defense Vision Research Program Review Panel
- 2005 Chair and External Reviewer for an External Panel of the Central Visual Processing Study Section, National Institutes of Health
- 2005 Ad Hoc Reviewer for the National Eye Institute, Central Visual Processing Study Section, National Institutes of Health
- 2004 Chair and External Reviewer for an External Panel of the Sensorimotor Integration Study Section, National Institutes of Health
- 2000-2004 Regular Reviewer for the National Eye Institute, Central Visual Processing Study Section, National Institutes of Health
- 1999 Ad Hoc Reviewer for the National Eye Institute, Visual Sciences B Study Section, National Institutes of Health
- 1996-1999 External Reviewer for the National Eye Institute, Visual Sciences B Study Section, National Institutes of Health

- 1993 External Reviewer for the National Institute of Mental Health, National Institutes of Health
- 1991 External Reviewer for the Basic Research Foundation of The Israel Academy of Sciences and Humanities
- 1990 Advisory Consultant to the National Institute of Neurological and Communicative Disorders and Stroke, National Institutes of Health
- 1989 External Reviewer for the National Science Foundation Program in Sensory Physiology and Perception

Editorial Boards

- 2026- Frontiers in Psychology
- 2024- Brain Sciences

Journal Refereeing

Applied Optics
 Biological Cybernetics
 Brain Sciences
 Cognition
 Computer
 European Journal of Neuroscience
 Experimental Brain Research
 Journal of Comparative Neurology
 Journal of European Neuroscience
 Journal of General Physiology
 Journal of Neurophysiology
 Journal of Neuroscience
 Journal of the Optical Society of America
 Journal of Physiology, London
 Journal of Vision
 Journal of Visual Communication and Image Representation
 Nature
 Nature Neuroscience
 Neural Computation
 Network: Computation in Neural Systems
 Neuron
 Perception
 Perception and Psychophysics
 Proceedings of the National Academy USA
 Psychological Review
 Psychology of Aesthetics, Creativity, and the Arts
 Science
 Spatial Vision
 Synapse
 Visual Neuroscience

Vision Research

Chairing and Organization of Scientific Meetings

- 2022 Organizer of the Workshop “Aesthetic Values and Decision-Making in the Brain,” Institut d’études avancées de Paris, Hôtel de Lauzun, Paris, France
- 2011-2014 Organizer of the Annual Grodins Graduate Student Symposium of BME, USC
- 2007 Member of Scientific Committee of the International Work-conference on the Interplay between Natural and Artificial Computation, Murcia, Spain
- 2006-2010 Co-Organizer of the Annual USC Neuroscience-student Symposium
- 2002-2014 Organizer of the Annual USC Vision Symposium
- 2002 Co-Organizer of the Fall Provost’s Neuroscience Symposium “The Perceiving Organism: Interdisciplinary Vistas in Vision,” USC
- 2000 Chairperson of the Directional Selectivity session at the FASEB meeting, Copper Mountain, Colorado
- 1998 Co-Organizer of the Workshop on Retinal Adaptation at SKERI
- 1997-1998 Co-Organizer of the Club HEBB, a discussion group for systems neurosciences co-sponsored by SKERI, Stanford University, and the University of California at San Francisco, Berkeley, and Davis
- 1997 Chairperson of the Cholinergic Amacrine Cells' session in the meeting of the Association for Research in Vision and Ophthalmology (ARVO)
- 1996 Chairperson of the Retinal Ganglion Cells' session in the meeting of the Association for Research in Vision and Ophthalmology (ARVO)
- 1996 Co-Organizer of the Workshop on Object Recognition at SKERI
- 1991 Organizer of the Workshop "Quantitative Models of Retinal Function" in the Third meeting of the International Brain Research Organization (IBRO)
- 1991 Chairperson of the Retinal Circuitry session in the meeting of the Association for Research in Vision and Ophthalmology (ARVO)

Professional Meeting Refereeing

Neural Information Processing Systems: Natural and Synthetic

Affiliation in Professional Societies

American Institute for Medical and Biological Engineering
 The Israel Association for Eye Research
 The Association for Research in Vision and Ophthalmology
 The Society for Neuroscience
 Optical Society of America
 American Institute of Physics
 International Brain Research Organization
 Vision Science Society

Selected List of Invited Lectures

2025	Neuroscience Seminar, LUC, Chicago, IL
2025	Symposium on the Impact and Governance of AI. The Hopkins Bloomberg Center, Washington, DC
2025	Joint AI Symposia of the Krieger School of Arts and Sciences and Data Science and Artificial Intelligence Institute, JHU, Baltimore, MD
2024	Neuroscience Seminar, LUC, Chicago, IL
2024	Colloquium of the Department of Cognitive Science, JHU, Baltimore, MD
2024	Work in Progress Seminar of the Department of Philosophy, JHU, Baltimore, MD
2023	SublimAE Seminar, Institut Jean Nicod, École Normale Supérieure et École des Hautes Etudes en Sciences Sociales, Université Paris Sciences et Lettres, Paris, France
2023	Neuroscience Seminar, LUC, Chicago, IL
2022	Seminar of the Département D'Études Cognitives, École Normale Supérieure, Université Paris Sciences et Lettres, Paris, France
2022	Workshop "Aesthetic Values and Decision-Making in the Brain," Institut d'études avancées de Paris, Hôtel de Lauzun, Paris, France
2022	PLeaSe Workshop (Plasticity, Learning and the Sensory Brain), Centre Culturel Irlandais, Paris, France
2022	Colloquium Beautés Vitales; Pour une Approche Contemporaine de la Beauté, Centre Culturel International de Cerisy, Château de Cerisy-la-Salle, Normandy, France
2022	Seminar at the Institut de Recherche et Coordination Acoustique/Musique, Paris, France
2022	Seminar of the Département D'Études Cognitives, École Normale Supérieure, Université Paris Sciences et Lettres, Paris, France
2022	Seminar of the Max-Planck-Institut für Empirische Ästhetik, Frankfurt, Germany
2021	Friday Morning Seminar, Center for Urban Research and Learning, LUC, Chicago, IL
2020	Neuroscience Seminar, LUC, Chicago, IL
2019	19 th International Graphonomics Conference (IGS2019 – Your Brain on Art): Graphonomics and Your Brain on Art, Creativity, and Innovation, Cancún, Mexico
2018	D.C. Art Science Rendezvous, National Academy of Sciences, Washington, DC
2017	Workshop "Science, Art and Cognition" at the International Centre of Science in Cuernavaca, Mexico
2017	International Conference on Mobile Brain-Body Imaging (MoBI) and the Neuroscience of Art, Innovation and Creativity, Valencia, Spain
2016	Talk at the Meeting "Future STEM Leaders" organized by the University of Maryland, Washington, DC
2016	International Conference on Mobile Brain-Body Imaging (MoBI) and the Neuroscience of Art, Innovation and Creativity, Cancún, Mexico

- 2015 Talk at a Joint Physics and Neuroscience Seminar, GU
- 2013 Talk at the Series “What Matters to Me and Why?,” organized by the Dean of Religious Life, USC
- 2013 Talk at the Philosophy Club, USC
- 2013 Talk at the Shenzhen Institute of Biomedical Sciences, Shenzhen, China
- 2013 Talk at the School of Materials Science and Engineering, Xi’an Jiaotong University, Xi’an, China
- 2013 Talk at the BME Department, Northwestern University, Chicago, Illinois
- 2013 Talk at the Department of Computer Science, Universidad Autónoma de Manizales, Manizales, Colombia
- 2013 Talk at the Fundación Universitaria del Área Andina, Pereira, Colombia
- 2013 Talk at the Department of Biology, Universidad de Caldas, Manizales, Colombia
- 2013 Talk at the BME Department, University of California, Riverside, Riverside, California
- 2012 Talk at the Consejo Nacional de Biología, Bogotá, Colombia
- 2012 Talk at the BME Department, University of California at Irvine, Irvine, California
- 2012 Talk at the Department of Computer Science, Stanford University, Palo Alto, California
- 2011 Talk at the Department of Psychology, University of São Paulo, São Paulo, Brazil
- 2011 Talk at the Philosophy Club, USC
- 2010 Talk at the Seminar of the Departamento de Biotecnología, Universidad de Alicante, Spain
- 2009 Talk at the Southern California Joint Symposium on Neural Computation, USC
- 2009 Talk at the Graduate and Professional Student Senate Poster Symposium, USC
- 2008 Talk at the Weekly Seminar Series on Engineering Neuroscience & Health, BME Department, USC
- 2008 Talk at the Meeting “Reencuentro Iberoamericano 2008,” of the Ibero-American Network for Information and Communication Technologies Applied to Education, Hermosillo, México
- 2008 Talk at the International Conference and Research Center for Computer Science, “Statistical and Geometrical Approaches to Visual Motion Analysis,” Schloss Dagstuhl, Wadern, Germany
- 2008 Keynote speaker at the training-courses session of CREATE (Colour Research for European Advanced Technology Employment), Rheims, France
- 2007 Seminar at the Dipartimento di Informatica e Sistemistica “A. Ruberti,” Università degli Studi di Roma “La Sapienza,” Roma, Italy
- 2007 Seminar at the Facoltà di Psicologia, Dipartimento di Neuroscienze, Università Vita-Salute San Raffaele, Milano, Italy
- 2006 Keck Seminars, UCLA, Los Angeles, California
- 2006 Panelist at “Visualizing Science,” the third forum in the series “Technology enhanced Research and Learning at USC,” USC, Los Angeles, California

- 2006 Seminar at the lecture series "Media Production in the Digital Age," Occidental College, Los Angeles, California
- 2005 Seminar at the NGP, USC, Los Angeles, California
- 2005 Commentator at the "Visualizing Science Meeting," Organized by the USC Literary, Visual, and Material Culture Initiative, USC, Los Angeles, California
- 2004- Lectures at the Doctorate Program in Biotechnology, Department of Biotechnology, University of Alicante, Spain
- 2004 Lecture at the Meeting "Mind and Brain: Past, Present, and Future," Summer University Rafael Altamira, University of Alicante, Spain
- 2004 Seminar at the NGP, USC, Los Angeles, California
- 2004 Invited talk at the 29th Annual Interdisciplinary Conference, Jackson Hole, Wyoming
- 2003 Lecture at the Centro de Estudios Interdisciplinarios of the Universidad Nacional, Bogotá, Colombia
- 2002 Lecture at the Workshop on Advanced Methods of Physiological System Modeling, Marina del Rey, CA
- 2002 Lecture at the Gordon Conference on Coding and Natural Scenes, Mount Holyoke College, MA
- 2001 Seminar at the Department of Ophthalmology, The Mount Sinai School of Medicine, New York, New York
- 2000 Seminar at the Division of Biology, California Institute of Technology, Pasadena, California
- 2000 Seminar at the Department of Bioengineering at the University of Pennsylvania, Philadelphia, Pennsylvania
- 2000 Seminar at the BME Department at the USC, Los Angeles, California
- 2000 Seminar at the Department of Anatomy & Neurobiology, Boston University School of Medicine, Boston, Massachusetts
- 2000 Vision Seminar of the Department of Neuroscience, University of California at Davis, Davis, California
- 1999 Invited talk at the RINVA'99 meeting on Biotechnology, University of Valladolid, Valladolid, Spain
- 1999 Invited talk at the Conference of the Spanish Society of Histology, Alicante, Spain
- 1998 Invited talk at the FASEB meeting's session on Retinal Development, Falls River, Vermont
- 1998 Seminar at the Department of Anatomy and Neurobiology, Medical School, Saint Louis University, Saint Louis, Missouri
- 1998 Invited talk at the RINVA'98 meeting on Biotechnology, University of Valladolid, Valladolid, Spain
- 1997 Two Invited Talks at the Workshop "Machine Vision Meets Machine Learning" at the Newton Institute of Cambridge University, Cambridge, United Kingdom
- 1997 Seminar at the Department of Psychology, Nottingham University, Nottingham, United Kingdom

- 1997 Seminar at the Department of Languages and Information Systems, University of Alicante, Alicante, Spain
- 1996 Colloquium of the Department of Information Technology and Computation, University of Alicante, Alicante, Spain
- 1996 Neuroscience-Group Seminar, University of Newcastle Upon Tyne, Newcastle Upon Tyne, United Kingdom
- 1996 Vision Seminar of the Department of Neuroscience, University of California at Davis, Davis, California
- 1996 Talk at the Retinal Neuroanatomy Group, University of Pennsylvania, Philadelphia, Pennsylvania
- 1996 Colloquium of the Institute for Research in Cognitive Science at the University of Pennsylvania, Philadelphia, Pennsylvania
- 1996 Invited talk at the FASEB meeting's workshop on Computational Approaches to Retinal Research, Falls River, Vermont
- 1996 Seminar of the Stanford Associated Perception Students, Stanford University, Stanford, California
- 1996 Craik Club Seminar, Cambridge University, Cambridge, United Kingdom
- 1996 Rank Mini-Symposium on Visual Motion Analysis, Lake District, United Kingdom
- 1996 Oxyopia, University of California at Berkeley, Berkeley, California
- 1996 Seminar of the Neurobiology Research Center, University of Alabama at Birmingham, Birmingham, Alabama
- 1995 Invited Talk at the Conference of the Spanish Association of Artificial Intelligence, Alicante, Spain
- 1995 Seminar at the Institute of Neuroscience, School of Medicine, University of Alicante, Alicante, Spain
- 1995 Friday Seminar, Department of Molecular and Cell Biology, University of California at Berkeley, Berkeley, California
- 1995 Breakfast Seminar, Vision Group, School of Medicine, University of California at San Francisco, San Francisco, California
- 1994 Seminar to the Vision Group at the NASA-Ames Research Center, Moffett Field, California
- 1994 Seminar at the Department of Information Technology and Computation, University of Alicante, Alicante, Spain
- 1994 Seminar at the Institute of Neuroscience, School of Medicine, University of Alicante, Alicante, Spain
- 1993 Science Writer's Seminar for the 25th Anniversary of the National Eye Institute, Exploratorium, San Francisco, California
- 1993 Workshop on Dendritic Processing of Synaptic Information, Max-Planck-Institut für Biologische Kybernetik, Tübingen, Germany
- 1993 Seminar of the Department of Psychology, Stanford University, Stanford, California
- 1993 Seminar of the Neurobiology Research Center, University of Alabama at Birmingham, Birmingham, Alabama
- 1992 Seminar to the Vision Group at the NASA-Ames Research Center, Moffett Field, California

- 1991 Oxyopia, University of California at Berkeley, Berkeley, California
- 1991 Seminar of the BME Department, Boston University, Boston, Massachusetts
- 1990 Seminar at the Graduate Program of Neurobiology and Behavior, State University of New York at Stony Brook, Stony Brook, New York
- 1990 Seminar at the BME Department, Johns Hopkins University, Baltimore, Maryland
- 1990 Seminar at the Department of Psychology, University of California at San Diego, San Diego, California
- 1990 Seminar at the Department of Neuroscience, University of Pennsylvania, Philadelphia, Pennsylvania
- 1990 Thursday Colloquium, SKERI, San Francisco, California
- 1990 Friday Seminar, Biological Laboratories, Harvard University, Cambridge, Massachusetts
- 1990 Seminar of the Department of Biology, Brandeis University, Waltham, Massachusetts
- 1989 Cold Spring Harbor Workshop on Neural Computation, Co-Sponsored by ONR, Cold Spring Harbor, New York
- 1989 Neural Information Processing Seminar, Division of Applied Sciences, Harvard University, Cambridge, Massachusetts
- 1988 ONR Neural and Electronic Networks Workshop, Woods Hole, Massachusetts
- 1988 Thursday Colloquium, SKERI, San Francisco, California
- 1987 DARPA Neural Network Study, Bedford, Massachusetts
- 1987 Vision Seminar, Artificial Intelligence Laboratory, MIT, Cambridge, Massachusetts
- 1986 Meeting on Organization of Structure and Function in the Brain, Bad Homburg, Germany
- 1986 Friday Seminar, Biological Laboratories, Harvard University, Cambridge, Massachusetts
- 1986 Lunch Seminar, Whitaker College, MIT, Cambridge, Massachusetts
- 1985 Conference on Nonlinear Processes in Neurobiology, Weizmann Institute, Rehovot, Israel
- 1985 Lunch Seminar, Whitaker College, MIT, Cambridge, Massachusetts
- 1985 Workshop on Neurobiological Noise Analysis, The Neurosciences Institute, New York, New York
- 1984 "Nervous" Seminar, Department of Neurobiology, The Hebrew University of Jerusalem, Jerusalem, Israel
- 1984 "Nervous" Seminar, Department of Physiology, Tel Aviv University, Tel Aviv, Israel

Additional Service

Extra-institutional Work

- 2013-2018 Named to the Advisory Board of the BME Department, Florida International University
- 2011 Fellow Election Process, Physiology and Engineering Subcommittee, AIMBE

Institutional Work

- 2026- Academic Council, College of Arts and Sciences, LUC
- 2025- Member of the Strategic Planning Committee, Psychology Department, LUC
- 2025- Member of the Promotion and Tenure Committee, Psychology Department, LUC
- 2024- Mentoring of Assistant Professors in the years before promotion to tenure, Psychology Department, LUC
- 2024 Search Committee for the New Chair of the Department of Psychology, LUC
- 2024- College of Arts and Sciences Rank and Tenure Committee, LUC
- 2023-2025 Co-Director of Seed Grants from the Krieger School of Arts and Sciences and Data Science and Artificial Intelligence Institute, JHU, Baltimore, MD
- 2023-2025 Organizer of the Joint AI Symposia of the Krieger School of Arts and Sciences and Data Science and Artificial Intelligence Institute, JHU, Baltimore, MD
- 2023- Faculty Tenure and Promotion Evaluation Committee, (Regular Member), Psychology Department, LUC
- 2012-2014 Member of Search Committee for a New Faculty Member in Systems Cellular-molecular Bioengineering, BME Department, VSoE, USC
- 2011-2014 Ad Hoc Faculty Promotion Evaluation Committee, (Regular Member), Department of Biological Sciences, USC
- 2009-2010 Member of the Provost Task Force on USC Neurosciences
- 2009-2010 Faculty Tenure and Promotion Evaluation Committee, (Regular Member), BME Department, USC
- 2009-2011 Member of the Committee organizing the symposium on "Integrative Theoretical Neuroscience," College of Letters, Arts and Sciences, USC
- 2008-2010 Chair of Search Committee for a New Faculty Member, BME Department, USC
- 2008-2009 BME Liaison with the Provost's Office on the Issue of "Casting the Net Widely" in Faculty Searches, USC
- 2008 Junior Faculty Third-year Evaluation Committee, (Regular Member), Division of Biokinesiology and Physical Therapy, School of Dentistry, USC
- 2008 Faculty Tenure and Promotion Evaluation Committee, (Regular Member), BME Department

- 2008-2014 Member of Advisory Board in the Training Grant in Hearing & Communication Neuroscience, NGP, USC
- 2008 Chair of the Oral-presentations Evaluation Committee, Grodins Symposium, BME Department, USC
- 2008 Search Committee for a Director of the Zilkha Neurogenetic Institute, USC
- 2008 Dean's Committee for the Evaluation of Neuroscience at the College of Letters, Arts and Sciences, USC
- 2007 Panel Preparing the Academic Review Report of USC Neuroscience
- 2007 Faculty Promotion Evaluation Committees, (Two as Chair and One as Regular Member), BME Department
- 2006-2009 Committee on Faculty Recruitment and Retention, VSoE, USC
- 2006 Faculty Promotion Evaluation Committee, BME Department
- 2006 Oral-presentations Evaluation Committee, Grodins Symposium, BME Department, USC
- 2005 Chair of the Oral-presentations Evaluation Committee, Grodins Symposium, BME Department, USC
- 2005 USC Strategic-initiative Sub-committee for Matters of Interdisciplinary Research
- 2005 USC Strategic-initiative Sub-committee for Matters of Socially Relevant Research
- 2005 Junior-faculty Evaluation Committee, BME Department, USC
- 2005 Job-application Review Committee, BME Department, USC
- 2005 Reviewer of applications to the USC Center for Interdisciplinary Research
- 2004 Head of the Engineering Reviewing Panel for the Zumberge Awards, USC
- 2004-2008 University Research Committee, USC
- 2004 Chair of the Oral-presentations Evaluation Committee, Grodins Symposium, BME Department, USC
- 2003-2007 Chair of the Admissions Committee, BME Department, USC
- 2002 Research Committee, School of Engineering, USC