ANDREW GORDUS, PH.D.

Assistant Professor
Department of Biology
Johns Hopkins University

RESEARCH STATEMENT

Our lab is dedicated to understanding how neuromodulation organizes and encodes the internal states that influence behavior. We leverage the unique advantages of two model invertebrate systems for our research: the nematode *Caenorhabditis elegans*, and the orb-weaving spider *Uloborus diversus*. The condensed and completely mapped nervous system of *C. elegans*, combined with its genetic tractability, makes it an ideal system for associating the activities of specific neurons with specific and easily quantifiable behaviors. The complex yet easily quantifiable behavior of the spider's orb web provides us with a physical record of behavioral intent – a cognitive property that often must be inferred from an animal's actions, but which is explicitly recorded in the structure of the web. Distinct web structures are assembled using distinct behavioral strategies, which we are now associating with specific neurons and neuromodulatory pathways to ultimately understand how the physical structure of the web is encoded in the brain. Together, these invertebrate models provide us with exceptional behavioral and neuronal precision to understand how neuromodulation encodes behavioral states.

EDUCATION AND TRAINING

2008 – 2016 Postdoctoral research: State-dependent circuit dynamics of sensory perception in *C. elegans.*
Postdoc advisor: Cori Bargmann
The Rockefeller University, New York, NY

2001 – 2008 Ph.D., Biophysics
Doctoral research: The development of protein microarrays to probe Receptor Receptor Tyrosine Kinase protein interactions.
Thesis advisor: Gavin MacBeath
Department of Chemistry, Harvard University, Cambridge, MA
Current address: TScan Therapeutics, Waltham, MA

1997 – 2001 B.S., Biochemistry
University of California, Davis, CA
Research Advisor: Steven Theg

ACADEMIC APPOINTMENTS

07/2016 – Assistant Professor
Department of Biology, Krieger School of Arts and Sciences
Johns Hopkins University, Baltimore, MD

07/2016 – Assistant Professor
Solomon H. Snyder Department of Neuroscience, School of Medicine
Johns Hopkins University, Baltimore, MD

HONORS AND AWARDS

2023 Teaching Award, CMDB Graduate Program, Johns Hopkins University
2022 Catalyst Award, Johns Hopkins University
2009 Marie-Josée and Henry Kravis Postdoctoral Fellowship
2003 NSF Pre-doctoral Fellowship
2001 Department Citation for Excellence in Biochemistry

2000	James and Lela Fulmor Scholarship
2000	HHMI Undergraduate Teaching Program
2000	HHMI Summer Honors Advance Research Program
1999	NSF Undergraduate Research Program
1998	Joseph Bonnheim Scholarship
1997	Chancellor Scholarship

PUBLICATIONS

Google Scholar link.

Assistant Professor –Johns Hopkins University:

• Peer-Reviewed Research Papers:

1. Giraldo, D., Rankin-Turner, S., Corver, A., Tauxe, G.M., Gao, A.L., Jackson, D.M., Simubali, L., Book, C., Stevenson, J.C., Thuma, P.E., Gordus, A., Mburu, M.M., Simulundu, E., McMeniman, C.J. A semi-field system for quantifying *Anopheles gambiae* attraction to human scent. ***Current Biology*.** doi: 10.1016/j.cub.2023.04.050 (2023).
2. Miller, J., Zimin, A.V., Gordus, A. Chromosome-level genome and the identification of sex. chromosomes in *Uloborus diversus*. ***GigaScience*** doi: 10.1093/gigascience/giad002. (2023).
3. Corver, A., Wilkerson, N., Miller, J., Gordus, A. Distinct movement generate stages of spider web building. ***Current Biology***. 31(22): 4983 – 4997. (2021).
4. Acker, N., Smith, H., Devine, C., Oltjen, SL., Tsiropoulou, S., Smit-McBride, Z., Lange, K., Blacque, OE., Matsubara, JA., Gordus, A., Golden, A., Vogel, BE. A complement factor H homolog, heparan sulfation, and syndecan maintain inversin compartment boundaries in *C. elegans* cilia. ***Proc. Natl. Acad. Sci. USA***.. 118(16):e2016698118. (2021).
5. Viets, K, Sauria, M, Chernoff, C, Anderson, C, Tran, S, Dove, A, Goyal, R, Voortman, L, Gordus, A, Taylor, J, Johnston Jr., RJ. Characterization of Button Loci that Promote Homologous Chromosome Pairing and Cell-Type-Specific Interchromosomal Gene Regulation. ***Dev. Cell***.51(3):341-356.e7 (2019).

• Invited Reviews:

1. Ding, S.S., Fox, J., Gordus, A., Joshi, A., Liao, J.C., Scholz, M. Fantastic beasts and how to study them: rethinking experimental animal behavior. ***J. of Experimental Biology.*** 227(4): jeb247003. (2024).
2. Flavell, SW. & Gordus, A. Dynamic functional connectivity in the static connectome of *Caenorhabditis elegans*. ***Curr Opin Neurobiol***. 73:102515 (2022).
3. Gordus, A. Social behavior: Using visual cues to guide dancing on the fly. ***Current Biology*.** 32(6):R284-R287(2021).

• Preprints, in preparation, review, or revision (Assistant Professor):

1. Margolis, A. & Gordus, A. A stochastic explanation for observed local-to-global foraging states in Caenorhabditis elegans. arXiv. 10.48550/arXiv.2309.15174. (*in revision at* ***Biology Letters***).
2. Parker, A., Mullins, J., Corver, A., Miller, A., Mosley, I., Gordus, A. An optogenetic assay for the dauer decision in C. elegans. MS ID BIORXIV2024589657. 2024.
3. Artiushin, G., Pollack, L., Gordus, A. The Brain Anatomy of *Uloborus diversus*. (*in preparation*, preprint will be posted in June 2024).

Post-doctoral Fellow – The Rockefeller University, Cori Bargmann's Lab – all publications:

1. Dana, H., Mohar, B., Sun, Y., Narayan, S., Gordus, A., Hasseman, JP., Tsegaye, G., Holt, GT., Hu, A., Walpita, D., Patel, R., Macklin, JJ., Bargmann, CI., Ahrens, MB., Schreiter, ER., Jayaraman, V., Looger, LL., Svoboda, K., Kim, DS. Sensitive red protein calcium indicators for imaging neural activity. ***eLife***. e12727 (2016).
2. Larsch, J., Flavell, SW., Liu, Q., Gordus, A., Albrecht, DR., Bargmann, CI. A circuit for gradient climbing in *C. elegans* chemotaxis. ***Cell Reports***. 12(11):1748-60 (2015).
3. Gordus, A., Pokala, N., Levy, S., Flavell, SW., Bargmann, CI. Feedback from network states generates variability in a probabilistic olfactory circuit. ***Cell***. 161(2), 215-27 (2015).
4. Pokala, N., Liu, Q., Gordus, A., Bargmann, CI. Inducible and titratable silencing of Caenorhabditis elegans neurons in vivo with histamine-gated chloride channels. ***Proc. Natl. Acad. Sci. USA***., 111(7), 2770-5 (2014).
5. Akerboom, J., Carreras Calderón, N., Tian, L., Wabnig, S., Prigge, M., Tolö, J., Gordus, A., Orger, M.B., Severi, K.E., Macklin, J.J., Patel, R., Pulver, S.R., Wardill, T.J., Fischer, E., Schüler, C., Chen, T.W., Sarkisyan, K.S., Marvin, J.S., Bargmann, C.I., Kim, D.S., Kügler, S., Lagnado, L., Hegemann, P., Gottschalk, A., Schreiter, E.R., Looger, L.L. Genetically encoded calcium indicators for multi-color neural activity imaging and combination with optogenetics. ***Front. Mol. Neurosci***. 6(2), 1-29 (2013).
6. Marvin, J.S., Borghuis, B.G., Tian, L., Cichon, J., Harnett, M.T., Akerboom, J., Gordus, A., Renninger, S.L., Chen, T.W., Bargmann, C.I., Orger, M.B., Schreiter, E.R., Demb, J.B., Gan, W.B., Hires, S.A., Looger, L.L. An optimized fluorescent probe for visualizing glutamate neurotransmission. ***Nat. Methods***., 10(2), 162-70 (2013).
7. Akerboom, J., Chen, T.W., Wardill, T.J., Tian, L., Marvin, J.S., Mutlu, S., Calderón, N.C., Esposti, F., Borghuis, B.G., Sun, X.R., Gordus, A., Orger, M.B., Portugues, R., Engert, F., Macklin, J.J., Filosa, A., Aggarwal, A., Kerr, R.A., Takagi, R., Kracun, S., Shigetomi, E., Khakh, B.S., Baier, H., Lagnado, L., Wang, S.S., Bargmann, C.I., Kimmel, B.E., Jayaraman, V., Svoboda, K., Kim, D.S., Schreiter, E.R., Looger, L.L. Optimization of a GCaMP calcium indicator for neural activity imaging. ***J. Neurosci***., 32(40), 13819-40 (2012).

Graduate Student – Harvard University, Gavin MacBeath's Lab – all publications:

1. Koytiger, G., Kaushansky, A., Gordus, A., Rush, J., Sorger, P.K., Macbeath, G. Phosphotyrosine Signaling Proteins that Drive Oncogenesis Tend to be Highly Interconnected. ***Mol. Cell. Proteomics***., 12(5), 1204-13 (2013).
2. Mehlitz, A., Banhart, S., Mäurer, A.P., Kaushansky, A., Gordus, A., Zielecki, J., Macbeath, G., Meyer, T.F. Tarp regulates early Chlamydia-induced host cell survival through interactions with the human adaptor protein SHC1. ***J. Cell. Biol***., 190(1), 143-57 (2010).
3. Kaushansky, A., Allen, J.E., Gordus, A., Stiffler, M., Karp, E.S., Chang, B.H., MacBeath, G. Quantifying protein-protein interactions in high throughput using protein domain microarrays. ***Nature Protocols***, 5(4), 773-790 (2010).
4. Gordus, A.†, Krall, J.A.†, Beyer, E.†, Kaushansky, A., Wolf-Yadlin, A., Sevecka, M., Chang, B., MacBeath, G. Linear combinations of docking affinities explain quantitative differences in RTK signaling. ***Mol. Syst. Biol***., 5(235), 1-10 (2008).
5. Kaushansky, A., Gordus, A., Budnik, B.A., Lane, W.S., Rush, J., and MacBeath, G. System-Wide Investigation of ErbB4 Reveals that it is Substantially More Selective than the Other ErbB Receptors. ***Chem. Biol***.,15(8), 808-817 (2008).
6. Kaushansky, A., Gordus, A., Chang, B., Rush J., MacBeath, G. A Quantitative Study of the

Recruitment Potential of all Intracellular Tyrosine Residues on EGFR, FGFR1 and IGF1R. ***Mol. BioSys***., 4, 1-10 (2008).

7. Gordus, A., MacBeath, G. Circumventing the Problems Caused by Protein Diversity in Microarrays: Implications for Protein Interaction Networks. ***JACS***, 128(42), 13668-13669 (2006).
8. Jones, R.B.†, Gordus, A.†, Krall, J.A., MacBeath, G. A Quantitative Protein Interaction Network for the ErbB Receptors Using Protein Microarrays. ***Nature***, 439, 168-174 (2006). († - co-first authors)

Graduate Student – Harvard University, Xiaowei Zhuang's Lab – all publications:

1. Bokinsky, G., Rueda, D., Misra, V.K., Rhodes, M.M., Gordus, A., Babcock, H.P., Walter, N.G., Zhuang, X. Single-Molecule Transition-State Analysis of RNA Folding. ***Proc. Natl. Acad. Sci. USA***., 100(16), 9302-9307 (2003).

EXTERNAL FUNDING

Current Funding:

Sponsor: **NIH R35 GM124883**
Role: Principal Investigator
Project Period: 01/01/23 – 12/31/28 • $270,000 direct costs/year
Title: The influence of neuronal states on perception and behavior.
Goals: Define behavioral states in organisms as direct functions of neuromodulation.

Sponsor: **NSF Division of Physics 2310707**
Role: Co-Principal Investigator
Title: How Orb-Weaver Spiders Use Leg posture to Modulate Vibration Sensing of Prey on Webs.
Project Period: 07/1/23 – 6/30/26 • $203,765 direct costs/year
Goals: Define how the physics of leg posture dynamically contributes to behavioral discrimination of vibrational frequencies on the web.

Completed Research Support:

Sponsor: Catalyst Award: Johns Hopkins University
Role: Principal Investigator
Title: The Neuronal Encoding of Animal Architecture.
Project Period: 1/1/22 – 12/31/23
Goals: Develop biological assays to perturb neuronal function in spiders.

Sponsor: Buck Institute
Role: Principal Investigator
Title: scRNA sequencing of neuronal tissue from *Uloborus diversus*.
Project Period: 9/1/22 – 8/31/23
Goals: Develop a cell-type atlas for the brain of *Uloborus diversus*.

Sponsor: NIH R35 GM124883
Role: Principal Investigator
Title: The influence of neuronal variability on perception and behavior.
Project Period: 7/1/17 – 6/30/22
Goals: Characterize sources of neuronal circuit variability.

Sponsor: Whitehall Foundation
Role: Principal Investigator
Title: The influence of neuronal variability on perception and behavior.

Project Period: 1/1/17 – 12/31/20
Goals: Characterize sources of neuronal circuit variability.

PRESENTATIONS

Invited talks:

2024 New York University: Neuroscience Institute
2024 The International Behavioural and Neural Genetics Society
2024 University of Wisconsin, Madison: Department of Integrative Biology
2024 Massachusetts Institute of Technology: Picower Institute
2023 École Polytechnique Fédérale de Lausanne
2023 Max Planck Institute for Neurobiology of Behavior
2023 Max Planck Institute for Brain Research
2023 Max Planck Institute for Biological Intelligence
2023 Oxford University: Department of Biology
2023 Johns Hopkins University: Department of Mechanical Engineering
2023 University of Illinois, Chicago: Department of Biological Sciences
2022 Cornell University: Department of Neurobiology and Behavior
2022 University of Texas, Arlington: Department of Biology
2022 Kavli Institute of Theoretical Physics: The Neurophysics of Locomotion
2022 Rockefeller University: Kavli Symposium on Non-Model Organisms
2021 Mid-Atlantic Society for Developmental Biology
2021 Towson University: American Society of Biochemistry and Molecular Biology (ASBMB)
2021 HHMI Janelia Research Campus
2021 Science Museum of Virginia
2021 Princeton University: Center for the Physics of Biological Functions
2021 State University of New York at Geneseo: Department of Biology
2020 Johns Hopkins University: Department of Biology, Ru Chih Huang Symposium
2020 University of Rochester: Department of Biology
2020 World Wide Neuro: Invertebrate Neuroecology
2020 Brandeis University – Department of Biology
2020 Florida Atlantic University – Institute for Human Health & Disease Intervention
2020 University of Southern California – Division of Molecular and Computational Biology
2019 Harvard University – Museum of Comparative Zoology
2019 University of Maryland, Baltimore County – Department of Biology
2019 University of Akron – Department of Biology
2019 University of Michigan – Molecular, Cellular, and Developmental Biology Department
2019 University of Würzburg - Behavioral Physiology and Sociobiology
2018 Kavli Institute for Theoretical Physics –Workshop Speaker: Neural computations for sensory navigation
2017 Harvard University – Biophysics 242r guest lecturer
2017 University of Pennsylvania – Philadelphia Area Worm Meeting
2017 Carnegie Institution for Science - Department of Embryology
2017 University of California, Santa Cruz - Department of Electrical Engineering
2017 The George Washington University – Department of Biology
2017 Johns Hopkins University - Krieger Mind/Brain Institute

Meeting Platform Presentations:

2023 Society for Integrative and Comparative Biology, Austin, TX

2022 Society for Neuroscience, San Diego, CA
2022 American Association of Arachnology, Davis, CA
2021 Society for Integrative and Comparative Biology
2019 International Congress of Arachnology, New Zealand
2019 American Association of Arachnology, Lexington, VA
2016 Society for Neuroscience, Washington D.C.

Meeting organizer:

2023 Organizing Committee for the International C. elegans Conference
2023 Session Chair: Society for Neuroscience.
2021 Session Chair: Society for Integrative and Comparative Biology
2022 Abstract Review Committee: COSYNE
2018 Abstract Review Committee: COSYNE
2019 Abstract Review Committee: COSYNE

Selected presentations at national or international meetings by Gordus lab members:

2024: Society for Integrative and Comparative Biology – Darya Task (parallel session talk)
2023: 24th International *C. elegans* Meeting; Glasgow, Scotland – Rebekka Paisner (parallel session talk)
2023: 24th International *C. elegans* Meeting; Glasgow, Scotland – Amanda Ray
2023: Society for Neuroscience – Hsin-Yi Hung (parallel session talk)
2023: Society for Neuroscience – Gregory Artiushin (parallel session talk)
2023: American Arachnological Society – Hsin-Yi Hung (parallel session talk)
2023: American Arachnological Society – Darya Task (parallel session talk)
2023: American Arachnological Society – Abel Corver (parallel session talk)
2023: American Arachnological Society – Gregory Artiushin (parallel session talk)
2023: Gordon Research Conference – Hsin-Yi Hung
2022: American Physical Society – Hsin-Yi Hung
2022: American Physical Society – Abel Corver (parallel session talk)
2021: American Arachnological Society – Hsin-Yi Hung
2021: Society for Neuroscience – Abel Corver (parallel session talk)
2020: American Arachnological Society – Abel Corver (parallel session talk – Student Award for Best Presentation)
2020: Plant & Animal Genome Conference – Jeremiah Miller
2019: American Arachnological Society – Abel Corver (parallel session talk)
2019: American Arachnological Society – Jeremiah Miller (parallel session talk)
2019: Cold Spring Harbor Meeting on Genome Informatics – Jeremiah Miller
2019: Society for Neuroscience – Ariel Parker
2018: Janelia: New Genetic Tools for Nonmodel Organisms – Jeremiah Miller (parallel session talk)

PROFESSIONAL ACTIVITIES

Grant Reviews:

2024 External reviewer. NSF: IOS Neural Systems Cluster
2023 *Ad hoc* reviewer. NIH NMB Study Section
2023 *Ad hoc* reviewer. NSF Post-Doctoral Research Fellowships
2023 *Ad hoc* reviewer. NSF: IOS Neural Systems Cluster – Modulation

2021 *Ad hoc* reviewer. NSF: IOS Neural Systems Cluster – Modulation
2018 External reviewer. NSF: IOS Neural Systems Cluster
2017 External reviewer. NSF: IOS Neural Systems Cluster
2016 External reviewer. NSF: IOS Neural Systems Cluster

Journal Reviews:
BMC Biology, Current Biology, eLife, EMBO Molecular Systems Biology, G3, GigaScience, Journal of Insect Science, Nature Communications, , Neuron, Royal Society, Science Advances, Scientific Data.

TRAINEES

Postdoctoral Fellows (2):

2020 – present Gregory Artiushin, NSF Postdoctoral Fellow
2021 – present Darya Task

Graduate Students mentored in the Gordus Lab (8):

2023 – present Calvin Runnels, NSF Predoctoral Fellow
2021 – present James Mullin
2020 – present Hsin-Yi Hung
2019 – present Rebekka Paisner, Graduate Student Teaching Award
2018 – present Amanda Ray
2018 – 2023 Abel Corver, Kavli Predoctoral Fellow
2017 – 2023 Jeremiah Miller, NSF Predoctoral Fellow
2017 – 2022 Ariel Parker, Nathaniel Boggs, Jr. Ph.D. Scholar, Society for Neuroscience Scholar

Undergraduate Students mentored in the Gordus Lab (30):

2024 – present Ronolla Joseph
2024 – present Prarthana Daswani
2023 – present Seyram Gafrey
2023 – present Ysa Hernandez
2023, summer Vashanti Presley (Amgen Scholar)
2023 Evan Liang
2022 – present Matt Bekele
2022 – present Anthony Rabinovich
2022 – 2023 Natalie Pardo
2022 – 2023 Lia Kim
2022 – 2023 Camille Torrico
2021 – 2022 Temi Kilawole
2021 Mahnoor Abid
2020 – 2022 Talal Widatalla
2020 – 2022 Lucas Polack
2020 Meron Teklu
2019 – 2021 Fiona Sweeney
2019 – 2020 Amanda Rodriguez Orengo
2019 – 2020 Rebecca Foertsch
2019, summer Lindsay Anderson (REU Scholar)
2018 – 2022 Andrew Margolis
2018 – 2022 Jeffrey Zhou

2018	Michelle Zhang
2018, summer	Brandon Trejo (REU Scholar)
2018 – 2020	Zachary Hsu
2018 – 2020	Andrew Massoud
2018 – 2020	Joaquin Reategui
2017 – 2019	Anastasia Miller
2017	Leah Evans
2016 – 2017	Nicolas Wilkerson

TEACHING

Teaching at Johns Hopkins University:

2020 – 2024 Course director , *Quantitative Biology and Biophysics Lab* (AS.250.618). Core Graduate course. I taught the entire course.

2019 – present Course director (2024) and instructor (2020-2024) with Dr. Christian Kaiser and Dr. Vincent Hilser, *Quantitative Biology and Biophysics* (AS.020.674). Core graduate course. I taught ½ of the course in 2024, and 1/3 of the course 2020-2023.

2023 Course instructor with Dr. Emily Fisher, *Genetics* (AS.020.303). Core undergraduate course. I taught ½ of the course.

2019 – 2021 Course instructor with Dr. Emily Fisher, *Genetics* (AS.020.303). Core undergraduate course. I taught ½ of the course.

2020-2021 Course instructor with Dr. Gul Dolen, *Readings in Neuroscience* (ME.440.801). Core Graduate course. I taught ½ of the course.

2018 Course instructor, *Quantitative Methods in Biology* (AS.020.341). Elective Undergraduate course. I taught the entire course.

2019 – 2023 Guest lecturer, *Neuroscience Cognition* (ME.440.812), 1 lecture.

2019 – 2023 Guest lecturer, *The Biology of Disease* (AS.020.314), 2 lectures.

2017 Guest lecturer, *Genomes & Development* (AS.020.637), 1 lecture.

Teaching at Marine Biological Laboratory (Woods Hole, MA):

2023 Course instructor, *Biology of Aging.* 6 week intensive summer course of daily lectures and 12 hour/day laboratory training.

UNIVERSITY AND DEPARTMENTAL SERVICE

University Service (Johns Hopkins University):

2023 – present	Member, Undergraduate Neuroscience Program Committee
2021 – present	Member, University Expository Writing Program Advisory Board
2020 – present	Member, Johns Hopkins University Research Administration (JHURA) Advisory Council
2018 – present	PURA undergraduate proposal review committee, Johns Hopkins University

Department of Biology (Johns Hopkins):

2021– present Coordinator, Graduate Admissions Interviews

2020 – present Coordinator, Rotation Assignments
2018 – 2019 Member, Faculty Search Committee in Cell Biology
2017 – 2018 Member, Faculty Search Committee in Quantitative Biology
2016 – present Mentor, Graduate Rotation Students: 32 students
2016 – present Member, GBO/Preliminary Exam Committee: 24 students
2016 – present Member, Thesis Committee: 6 active; 12 total (excluding my students).

Solomon H. Snyder Department of Neuroscience (Johns Hopkins):
2022 – present Executive Committee for Diversity and Inclusion
2020 – present Member, Graduate Admissions Committee
2016 – present Mentor, Graduate Rotation Students: 4 students
2016 – present Member, GBO/Preliminary Exam Committee: 7 students
2016 – present Member, Thesis Committee: 1 active, 1 total.

Other Departments (Johns Hopkins):
2022 – present Physics: Member, GBO/Preliminary Exam Committee: 1 student
2022 – present Physics: Member, Thesis Committee: 1active, 1 total.
2022 – present Biomedical Engineering: Member, Thesis Committee: 1active, 1 total.
2020 – present Biophysics: Member, GBO/Preliminary Exam Committee: 2 students
2020 – present Chemistry: Member, GBO/Preliminary Exam Committee: 1 student

Other Institutions:
2020 – present UMBC, Biology: Member, Thesis Committee: 1 student

OTHER ACTIVITIES

Outreach:

2022 – present Spider Adventures: In collaboration with the Ingenuity Program, I host a small group of high school students who assist my lab with field sampling spiders and extracting DNA in the early autumn.
2022 – present FiGURE: Train and host under-represented minority (URM) freshmen for one semester in the lab to provide research experience.
2019 – 2022 INSPIReD: Founder of organization on campus to promote diversity and inclusion of under-represented minorities in the sciences at Johns Hopkins University.
2018 – present Ingenuity Program: Research mentor for 4 Baltimore Polytechnic Institute students.
2018 – present Roland Park Elementary and Middle School: Science Fair Judge.
2017 – 2021 Centro Sol: Research mentor for summer high school students from Baltimore Latino Community.

Media Engagement:

2022 – 2023 Moment of Um: Children's podcast guest.
2021 FunKids Radio (United Kingdom): Children's radio show guest.
2021 IEEE Soft Robotics: Science podcast guest.
2021 Public Broadcasting Service (PBS): Unpaid scientific consultant for *Elinor Wonders Why*.