Heather Masson-Forsythe

Ph.D. Biochemistry & Biophysics

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Key Skills

- Award-winning multimedia science communicator and storyteller with hundreds of viral articles and long and short form social media videos that have earned recognition in Forbes, NPR, and more, through strategic communication and creative leadership.
- Self-motivated and resourceful specialist in external affairs and creative, compelling storyteller of research, technology, innovation, and health frontiers.
- Expert science writer and editor for blog posts, science articles, research grants, policy briefs, Executive Branch research and development strategic plans, Congressional testimony, science policy and legislation, and research funding programs.
- Experienced director of research and communication teams for research coordination, article publication, podcast production, video editing, and media training.
- Skilled event planner, including coordination, planning, and execution of engagement and communications activities within the federal government framework
- Experienced on-camera presence, with experience growing digital audiences and expanding audience demographics from K12, teenage, and adult audiences.
- Confident and independent problem solver, and published research scientist with 10+ years of laboratory research and science communication experience.

Professional Experience

Science Analyst Aug 2024-Present
U.S. National Science Foundation (NSF) - Alexandria, VA

- **Activities:** conduct literature reviews, provide support to monitoring/evaluation efforts, conduct quantitative and qualitative analyses, contributed to agency processes and documents, participate in strategic planning, participate in grant review and management, develop press releases and other public information efforts, assist with preparation for congressional testimony, prepared remarks and questions for a congressional hearing, draft congressional testimony, draft briefing documents for higher-level officials, brief higher-level officials, organize conference attendance and workshops, develop and deliver training workshops, participate in the development of reports, participate in a partnership, and working groups with other agencies and non-U.S. government stakeholders, develop talking points, develop infographics

AAAS Science and Technology Policy Fellow Aug 2022-Aug 2024
U.S. National Science Foundation (NSF) - Alexandria, VA

- Lead computer science research impact analysis and communications, with consistent messaging and branding resulting in:

    - Developed 30+ presentations and accompanying clear, accessible talking points used by NSF Director and Assistant Director in regular speaking engagements.
    - Authored 5 NSF articles, including one of NSF's top performing media stories, "NSF gave Duolingo its wings!"
    - Coordination across research, data, and communications teams of 5+
    - Video Content for NSF YouTube Channel
    - Key contributor in the launch of NSF's impacts webpage
    - Advised leadership on internal and external communications and engagement strategies for public and government affairs
    - Measured research impact and created additional impact by bringing fresh communications ideas within a team, while working collaboratively in highly matrixed conditions with interdisciplinary colleagues.
    - Strategic budget and research area analysis over time to support persuasive story development
- Developed clear and persuasive written and oral testimony and preparatory background materials for Congressional hearings, including those used by NSF representatives at the Joint Research & Technology and Energy Subcommittees Hearing - Federal Science Agencies and the Promise of AI in Driving Scientific Discoveries
- Lead congressional communications and supported media inquiries for the Pilot Launch of NSF's National AI Research Resource (NAIRR), including development of computational, yet accessible, demonstrations of the NAIRR for a Hill event for Congressional staff and members to meet researchers and interact with AI systems.
- Co-author of *Innovating the Data Ecosystem: An Update of The Federal Big Data Research and Development Strategic Plan*, A Report by the Big Data Interagency Working Group, Networking and Information Technology Research and Development Subcommittee of the National Science and Technology Council (publication data TBD)
- Lead a team of 7 for NSF's Sponsorship of the Grace Hopper Celebration 2023 (GHC23) in Orlando, FL, the largest gathering for women in computing. Developed and edited and marketing video, created materials for an interactive booth, educational materials, and social media content, resulting in thousands of aspiring computer scientists visiting the booth.
- Co-Lead, AAAS Workshop, "Storytelling: A Way to Rebuild Science in the Public Mind". After writing a proposal accepted by AAAS, co-lead 60 participants through activities to write science-based stories for stage performances, and adapted for different audiences. Managed a budget of $5000.00 awarded from AAAS to fund speakers, catering, and materials for participants.
- White House Hallo-Read Halloween event: supporting the NSF booth at this White House outreach event
- Supported scientific research funding programs, including budget analysis, proposal evaluation, funds allocation, and program management: Design for Sustainable Computing; CISE Approaches to Research & Development Strategic Visioning (RDSV)

- Advisor and representative in inter-and-intra agency working groups: Bioeconomy Coordinating Committee, Big Data Interagency Working Group, Directorate for Technology, Innovation and Partnerships (TIP) Industry Convening
- Lead Biochemistry Judge, Alexandria Science Fair 2022

Executive Editor Jan 2023-June 2024
Sci on the Fly, the AAAS science and technology policy blog and podcast - Remote
- Creative director, focused on screening article pitches, community engagement for writer recruitment, copy editing, content creation
- Management of team of 5-8 editors through consensus decision making
- Understanding of the editorial process from conception to completion, and demonstrated ability to resolve technical, operational, and organizational problems.

Science Writer Dec 2023-Present
Surgical Data Science Collective - Remote/Freelance
- Setting creative direction for article development relevant to the surgical AI community
- Published 5+ articles that drive increasing numbers of readers to company site and regularly motivate surgeons to initiate partnerships, and receive millions in financial support from investors and philanthropists.

Contributing Writer Aug 2021-Oct 2022
American Society for Biochemistry and Molecular Biology's magazine - Remote
- Published 8 articles telling diverse and essential scientific stories, through carefully synthesizing research articles, and interviewing academic researchers and industry leaders at various career stages.

TikTok Creator Jan 2019-Present
TikTok - Remote
- With immense success, I have used TikTok trends including songs, memes, and dances to communicate science & scientist culture on the social media app, including COVID19 research, vaccine information, navigating graduate school, career options in STEM, new technologies, explaining research studies, and more.
- I have created hundreds of videos with tens of thousands-1M views, and accumulated >50K followers, and >1M likes through creative, fun, and accessible science communication . My account has been recognized in Forbes, International Business Times, and more.
- Negotiated sponsored brand deals, including from Twist Bioscience and MilliporeSigma

Research and Teaching Assistant Aug 2021-Oct 2022
Oregon State University - Corvallis, OR
- Led highly collaborative and interdisciplinary biochemistry and biophysics research projects, resulting in five research articles with research focus on viruses, COVID19,

cataracts, protein dynamics, protein structure and function relationships, intrinsically disordered proteins, nucleotide-protein binding interactions.
- Mentored 10+ undergraduate research projects who have all continued in research, Ph.D. programs, and M.D. programs. I additionally served as an advisor on undergraduate honors thesis committees.
- Coauthored and awarded National Science Foundation Division of Molecular and Cellular Biosciences EAGER grant MCB 2034446 to E.J.B.
- For three years, organized, developed curricula for, and lead, Biochemistry and Biophysics camp for 8th grade students. Participants learned about lab safety, DNA structure, transcription and translation, protein structure and function, microscopes, evolution, model organisms, etc, through hands-on activities, including lab experiments, outdoor activities, and crafts. Additionally, campers participate in activities designed to highlight the diverse backgrounds of scientists.
- Materials created and prepared for courses taught, including: Biology lab, Biochemistry for non-majors, Senior level Biochemistry Teaching Lab for Biochemistry and Bioengineering majors, Cell and Molecular Biology

Executive Producer, Editor and Co-host Sep 2018-Mar 2020
88.7 KBVR-FM Corvallis, "Inspiration Dissemination" (ID)
- Provided creative direction, schedule management, marketing, blog and audio editing for team of 6-10 co-hosts for production of a live radio show, podcast, and blog sharing research and personal stories of graduate students at Oregon State University
- Recruited and interviewed graduate researchers about their work and translated research into articles and scripts for a non-technical audience, producing new and diverse science stories each week.
- Directed media training for interviewers and interviewees, as well as for a TEDx-style event hosted in partnership with Oregon State University each year.
- Established sustainable systems of work division and succession, resulting in a platform that has sustained years beyond my exit.
- Lead writer for 10+ articles, and hosted 15+ live radio shows/podcasts

Research & Development Scientist Jan 2020-Dec 2020
Hewlett Packard - Corvallis, OR
- Led research project with a focus on product development and microfluidics in context of biomedical application. Work additionally included experiment design, impact communications, biotechnology global communications

Research Assistant June 2014-May 2016
Arkansas Children's Hospital - Little Rock, AR

- Advisor: Dr. Gulner Com, “Longitudinal Assessment of Fat Free Mass Index and its Impact on Clinical Outcome of Children with Cystic Fibrosis”

Additional Experience, Interests and Activities

Co-founder and CEO Sep 2023-Present
Communitique - Remote

- Communitique is a rapidly growing free platform for trading clothes locally, disrupting the negative environmental cost of fast fashion through textile reuse within a local community.
- Developed digital marketing strategies that resulted in thousands of users joining from all 50 United States, as well as from France, Canada, Mexico, United Kingdom, Rwanda, and more, all within Communitique’s first month post launch.
- Harnessed Adobe Creative Cloud tools for design and branding development, and set creative direction for user interface

Teaching & Study Abroad Sep 2023-Present
Science and Society - Rwanda

- Developed and taught science lessons for Rwandan primary schools, including a school for the deaf; Mountain Gorilla Trekking; Kanembwe village visit to learn pottery making and dance

Speaking and performance engagements

- **YouTube Host**: NSF [Quantum Computing] Unlocking the Power and NSF EXPLAINED series: “What is Science Communication?” (Publication TBD)
- **Comic Con Panelist** and NSF Science Stage performer, Awesome Con 2023 & 2024
    - 10+ live science experiment stage performances, each attended by 200-300 audience members;
    - hands-on demos of multidisciplinary science experiments for youth at NSF-sponsored booth.
    - Panelist: “Welcome to the land of the DNAosaurs: an exploration of the future of bioengineering”
- **Dancer,** AVA Dance Company with The Funky Bunch at The National Cherry Blossom Parade, Washington D.C. 2024
- **Dancer,** AVA Dance Company, Washington Wizards Halftime Show, Washington D.C. 2022
- **Speaker**, AmeriGEO Week 2023, San José, Costa Rica. Presentation: “A Solution to International Transdisciplinary Funding Opportunities: Belmont Forum - NSF” / “Funding Computing-driven Solutions for a Sustainable Planet”
- **Keynote Speaker**, Girls' Empowerment, Engineering, and Outreach; Oregon State University, May 2023
- **Keynote Speaker**, Girls of Promise Conference, is a free opportunity for 8th-grade girls across Arkansas to be introduced to opportunities, careers, and mentors in the fields of Science, Technology, Engineering, Arts, and Math (STEAM), Women’s Foundation of Arkansas, 31 Mar 2022

- **Science Pub Speaker**, "*Investigating How COVID-19 Proteins Stick to Viral RNA & Taking Research from the Lab to the Dance Floor*." Mar 2022
- **Speaker**, "*A Dancing Duplex: The SARS-CoV-2 Nucleocapsid Phosphoprotein's Multivalent Binding to RNA*." The Protein Society Annual Symposium, July 2021
- **Invited Speaker**, "*Multivalent binding of the partially disordered SARS-CoV-2 nucleocapsid phosphoprotein dimer to RNA*" 2021 IDPSIG Symposium, 3 June 2020
- **Presenter**, "*#DancingInSTEM: TikToking Covid19 Research*" Science Talk, March 2021
- **Speaker**, "Mulivalency and protein disorder in virus protein interactions: Common themes among Rabies virus and SARS-CoV-2" 9 January 2021 RECORDING
- **GRAD Inspire MC**: Ideas in Action, 2019-2021. Nominated graduate students to give a short talk in the style of TEDx talks and coached selected students to formulate a unique, short, and impactful story. Attending GRAD Inspire (formally GRADx) planning meetings with the graduate school, coordinating event space, nominations, coaching selected students through developing their talks, and MC of event. PODCAST & TRANSCRIPT
- **Presenter,** "*Crystallin in motion: Deamidation Resulting in Global Changes in Protein Dynamics*" The Protein Society Annual Symposium, June 2019
- **Presenter**, "*Effects of Surface Deamidation on the Backbone Dynamics and Solvent Accessibility of Cataracts-Associated gS-crystallin*" Experimental Nuclear Magnetic Resonance Conference, April 2019
- **Presenter**, "*Effects of Surface Deamidation on the Backbone Dynamics and Solvent Accessibility of Cataracts-Associated Protein, gS-crystallin*" Center for Genome Research and Biocomputing Fall Conference Sep 2019 & 2019 Diversity STEMposium
- **Presenter**, "Science Outreach through College Radio". Science Talk 2019.

Research Publications

- **Forsythe, H. M.**, Galvan, J. R., Yu, Z., Pinckney, S., Reardon, P., Cooley, R. B., ... & Barbar, E. (2021). Multivalent binding of the partially disordered SARS-CoV-2 nucleocapsid phosphoprotein dimer to RNA. Biophysical Journal.
- **Forsythe, H.M** & Barbar E (2021). The Role of Dancing Duplexes in Biology and Disease. Progress in Molecular Biology and Translational Science.
- **Forsythe, H. M.**, Vetter, C. J., Jara, K. A., Reardon, P. N., David, L. L., Barbar, E. J., & Lampi, K. J. (2019). Altered protein dynamics and increased aggregation in human γS-crystallin due to cataract-associated deamidations. Biochemistry.
- Estelle, A. B., **Forsythe, H. M.**, Yu, Z., Hughes, K., Lasher, B., Allen, P., ... & Barbar, E. J. (2023). RNA structure and multiple weak interactions balance the interplay between RNA binding and phase separation of SARS-CoV-2 nucleocapsid. PNAS nexus, 2(10), pgad333.
- Galvan, J.R., Donner, B., Veseley, C.H., Reardon, P., **Forsythe, H. M.**, Howe, J., Fujimura, G., & Barbar, E. (2021). Human Parainfluenza Virus 3 Phosphoprotein Is a Tetramer and Shares Structural and Interaction Features with Ebola Phosphoprotein VP35. Biomolecules.

Achievement Awards

- AAAS STPF 2024 Affinity Group Special Event proposal acceptance
- **Moth StorySLAM Champion**, Washington D.C., 2023
- AAAS Science & Technology Policy Fellowship class of 2022-2024
- College of Science Inclusive Excellence Award, 2021

- International **"Dance Your Ph.D." COVID-19 Category Winner**, 2021
- Anniversary Award Winner – The Protein Society, 2021
- Hewlett Packard InternSteller Customer Impact Award, runner-up, 2020
- Finn Wold Travel Award – The Protein Society, 2019
- KEVIN'S CHOICE AWARD 2019 "NMR is GOOD" SciArt Contest, 2019
- Schedler Honors College Research Travel Award, 2014 & 2015

Education

Ph.D.	Biochemistry & Biophysics	Oregon State University
B.S.	Biology	University of Central Arkansas