

**Colleen E. Bryan**

Research Biologist, Chemical Sciences Division, NIST

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Dr. Colleen Bryan is in the Inorganic Chemical Metrology Group at NIST Charleston, South Carolina. She began her career at NIST in 2003 as a graduate student receiving a M.S. from College of Charleston and Ph.D. from Medical University of South Carolina. Dr. Bryan's research focuses on the roles and impacts of toxic and nutritional trace elements in food and consumer product safety; marine animal health; and mercury metrology. She has extensive experience in method development and analysis of trace elements using ICP-MS, ICP-MS/MS, ID-CV-ICP-MS, and direct combustion AAS. Currently, Dr. Bryan is the inorganic lead for NIST Quality Assurance Programs (QAPs), the Inorganic Environmental Program Coordinator for reference materials, and the Quality Manager for the Inorganic Chemical Metrology Group.



**Carolyn Q. Burdette**

Research Chemist, Chemical Sciences Division, NIST  
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Carolyn has been a research chemist in the Chemical Sciences Division at the National Institute of Standards and Technology (NIST) since 2015. She has been involved in the value assignment of numerous clinical, food, and dietary supplement Standard Reference Materials (SRMs) and is a co-coordinator of the Dietary Supplement Laboratory Quality Assurance Program (DSQAP). Her research focuses on the development of analytical techniques (LC-UV, LC-MS and MS/MS) for the determination of marker compounds, vitamins, and vitamin metabolites in the clinical and food/dietary supplement areas, as well as value assignment of NIST Standard Reference Materials (SRMs). Her interests include improving the measurement capabilities of these communities by the use of reference materials and quality assurance programs, and expand into the analytical aspects of environmental and agricultural areas. Carolyn obtained a B.S. in Chemistry from Winthrop University under the guidance of Dr. Cliff Calloway. She was also a 4-year member of the Winthrop Women's Soccer Team. She then earned her Ph.D. in Analytical Chemistry from Clemson University, under Dr. Ken Marcus.



**W. Clay Davis**

Research Chemist, Chemical Sciences Division, NIST  
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Clay Davis received his B.S. in chemistry from Georgia Southern University and Ph.D. from Clemson University under the direction of Ken Marcus. Clay is currently a Research Chemist in the Biochemical and Exposure Science Group at the National Institute of Standards and Technology (NIST) in Charleston, SC. He first started at NIST as a National Research Council (NRC) Postdoctoral Fellow to develop novel techniques to measure small molecule organometallic species and metalloproteins using atomic and molecular mass spectrometry. Clay's current work sits broadly within analytical chemistry applied to investigating interesting biological questions utilizing elemental, isotopic, and multi-omic applications in proteomics, metabolomics and lipidomics.



**David L. (Dave) Duewer**

Research Chemist, Chemical Sciences Division, NIST

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Dave is a chemical metrologist experienced in chemometrics, experimental design, exploratory data analysis, graphical communications, interlaboratory comparisons, measurement uncertainty, and quality assurance/control. He is an advocate for R&D at interfaces of chemistry, biology, and measurement science. His current interests include better approaches to the: evaluation of chemical purity, demonstration of comparability among reference materials that nominally deliver the same measurands, and summarization of chemical data that have defined measurement uncertainties.



**Hugh V. Hayes**

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Hugh Hayes has been a Research Chemist at the National Institute of Standards and Technology since 2018 where he focuses on developing analytical methods and reference materials for botanical and vitamin-based dietary supplementation. He also co-leads the Dietary Supplement Laboratory Quality Assurance Program (DSQAP) which supports the measurement needs within the dietary supplement communities. Hugh has also developed multidimensional chromatographic methods for the detection and identification of polycyclic aromatic hydrocarbons (PAHs) in environmental samples. Hugh obtained a B.S. in Chemistry and a M.S. in Forensic Science from Stevenson University. He then obtained a M.S. and a Ph.D. in Chemistry from University of Central Florida. Hugh is also an Adjunct Professor in the Forensic Science graduate program at Stevenson University.



**Jenna R. Klingsick**

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Jenna received her B.S. in Marine Biology from Nova Southeastern University and her M.S. in Marine Biology from College of Charleston. Her graduate thesis, in collaboration with NOAA, evaluated metals concentrations in river otters and bottlenose dolphins to determine if river otters could be used as a sentinel species. Jenna has been working at NIST since 2022 as a research associate in the Inorganic Chemical Metrology Group. Her research focuses on analysis of toxic and nutritional elements in food and consumer products.



**John L. Molloy**

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John has been a research chemist in the Chemical Sciences Division at the National Institute of Standards and Technology (NIST) since 2007. He came to NIST after obtaining a B.S. in Chemistry from Southwestern University and a Ph.D. in Analytical Chemistry from The University of Texas at Austin. After coming to NIST John studied microheterogeneity in reference materials using microbeam XRF and laser ablation ICP-MS. John is currently serving as the deputy group leader for the Inorganic Chemical Metrology Group and is technical project leader for a wide variety of materials including single element solutions, water reference materials and liquid fuel reference materials.



**Bailey Moritz**

Program Officer, Seaweed and Shellfish Farming, World Wildlife Foundation

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As the Program Officer for Seaweed and Shellfish Farming on the WWF-US Aquaculture team, Bailey supports the seaweed industry in reducing barriers to growth and advancement for climate gains. Her current region of focus is the Eastern Pacific to the North Atlantic. She oversees grants to community organizations and research institutes focused on projects ranging from the ecosystem services of seaweed and shellfish farming to installing demonstration farms in new communities. She develops workshops aimed at driving new markets for seaweed, including as a livestock feed and alternative packaging material, bringing together stakeholders across the respective value chains.

Bailey brings 10 years of marine science, education, and aquaculture experience. Prior to WWF, Bailey ran a commercial kelp nursery and a research-scale scallop farm in Maine. She has worked on seaweed farming projects in coastal communities in Madagascar and Belize as part of her graduate studies. Her research centered on a women's association developing new seaweed-based products. She holds a BA in Earth & Oceanographic Science from Bowdoin College and a Professional Science Masters in Ocean Food Systems from the University of New England.





**Melissa M. Phillips**

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Melissa has been a research chemist in the Chemical Sciences Division at the National Institute of Standards and Technology (NIST) since 2008. She has been involved in the value assignment of numerous food and dietary supplement Standard Reference Materials (SRMs) and is a co-coordinator of the Food Nutrition and Safety Measurements Quality Assurance Program (FNSQAP), the Food Reference Materials Program, and the NIST Food Safety Program. Her interests include development of new analytical methods for the determination of marker compounds, vitamins, and contaminants in foods and dietary supplements, and improving the measurement capabilities of the food and dietary supplement communities using reference materials and quality assurance programs. Melissa obtained a B.S. in Chemistry, an M.S. in Forensic Chemistry, and a Ph.D. in Analytical Chemistry from Michigan State University. Melissa is chair of the AOAC INTERNATIONAL Official Methods Board and is a fellow of AOAC INTERNATIONAL.



**Catherine (Kate) Rimmer**

Organic Chemical Metrology Group Leader, Chemical Sciences Division, NIST

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Kate Rimmer received her B.A. in Chemistry and Anthropology at the University of Vermont and her Ph.D. in Analytical Chemistry from Florida State University. She joined NIST as a National Research Council Postdoctoral Fellow. Kate has spent her career working to improve analytical separations, designing and characterizing reference materials, and running interlaboratory testing. She also has a passion for chemical education and science policy. Currently Kate serves as the group leader for the Organic Chemical Metrology Group in the Chemical Sciences Division at NIST.



**Michael R. Winchester**

Inorganic Chemical Metrology Group Leader, Chemical Sciences Division, NIST

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Dr. Michael Winchester currently leads the Inorganic Chemical Metrology Group in the Chemical Sciences Division of the National Institute of Standards and Technology (NIST), having been at NIST for more than 30 years. This group is responsible for around 700 Standard Reference Materials (SRMs) that are critical to industry, science, and technology. The group also has vigorous research efforts in measurement approaches for nanoparticles, isotopes, and chemical oceanographic parameters. He is also the current Chair of the Inorganic Analysis Working Group (IAWG) of the international Consultative Committee for Amount of Substance in Chemistry and Biology (CCQM) located at the International Bureau of Weights and Measures in Paris (BIPM). Finally, he serves as the Convenor of Working Group 10 (Terminology) of ISO/TC334 Reference Materials.



**Charles Yarish**

Prof. Emeritus, University of Connecticut; Science Advisor, World Wildlife Foundation

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Charles Yarish is a Prof. Emeritus at the University of Connecticut. He has worked in advancing the global seaweed farming industry and spearheaded the developing kelp industry in Long Island Sound, funded in large part the CT and the National Sea Grant Programs. He has an extensive publication record that spans decades, actively serves as a speaker and consultant, and has been on the cutting edge of research and development initiatives. He is credited for developing the global and North American regenerative seaweed aquaculture industries including Integrated Multi-Trophic Aquaculture & nutrient bioextraction. He has been a national lecturer, secretary, a member of the Phycological of America's Executive Committee and President (2001). In 2019 he received the Phycological Society of America's Award of Excellence for his sustained scholarly contributions in, and impact, on the field of phycology over his career. He is a visiting scientist at The Woods Hole Oceanographic Institution and chief scientist for the GreenWave Organization.



**Lee L. Yu**

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Lee joined the Inorganic Chemical Metrology Group of the National Institute of Standards and Technology in Gaithersburg, Maryland after obtaining a Ph.D. in Chemistry from the University of Missouri under the guidance of S. Roy Koirtyohann. He is experienced with trace-level elemental metrology. His research interests include high-accuracy chemical metrology and hyphenated techniques, especially separation and elemental detection techniques, for health markers in specimens of environmental and biological importance. He is the technical project leader for the development of several critical clinical and environmental standard reference materials (SRM) including SRM 3232 Kelp Powder (*Thallus laminariae*).

