Allison C. Aiken

Senior Scientist and Co-Director of the Center for Aerosol Forensic Experiments (CAFE)

Earth & Environmental Sciences Division, Los Alamos National Laboratory (LANL)

Allison C. Aiken is a senior scientist with a PhD in analytical chemistry from CU-Boulder who has been at LANL since 2010. Her expertise is in developing new measurement techniques and analytical methods for particles sampled in and collected from complex environments like the atmosphere as well as conducting controlled laboratory and field experiments for model validation. She is the co-founder and co-Director of the Center for Aerosol and Trace Gas Forensics (CAFE) at LANL and is the point of contact for U.S. DOE Atmospheric Systems Research (ASR) at LANL.

Aiken is interested in exploring how to apply and develop new capabilities for high-fidelity particle collection and chemical composition. Her research focuses on the dynamic nature of aerosols to understand changes in chemistry, optical properties, water uptake, and the physical properties that drive particulate transport, growth, cloud processing, and atmospheric lifetimes. She is experienced in leading bulk and single-particle aerosol analysis of wildfire events, wildfire urban interface (WUI) controlled experiments, and detonations. She is currently leading and developing new bulk and single-particle analysis of detonation soot for forensics. Some of her previous work includes the development of an innovative elemental analysis method for aerosol mass spectrometry that enabled the first high-time-resolution, online, in situ measurements of oxygen-to-carbon (O:C) ratios in atmospheric particles. This method has since been widely adopted and applied by the community.

Aiken has two LANL Large Team Distinguished Performance Awards, >16,000 peer-reviewed citations, and has served on numerous advisory boards, including Chair of the U.S. DOE Atmospheric Radiation Measurement User Executive Committee (2021-2022), Board of Directors for the American Association for Aerosol Research (2019-2022), and University of Colorado's Materials Science & Engineering Executive Advisory Board (2024-present).

Two things I wish I knew when I was a Graduate Student / Post Doc

- Time management and communication skills are important; and you can't build these things without practice!

- You don't have to know your whole career path at every step
    - Make sure to bounce ideas off of colleagues and mentors
    - Utilize your support network when needed (early and often)

Biography

The Dow Chemical Company
2211 H. H. Dow Way
Midland, MI

Greg Bunker
Senior Global Business Director, Functional Polymers & High-Pressure Envelope Packaging and Specialty Plastics

Greg Bunker is the Senior Global Business Director for Functional Polymers & High-Pressure Envelope, Packaging & Specialty Plastics. Greg leads the development and execution of the earnings growth strategy for Functional Polymers and the High-Pressure Envelope. This portfolio represents a broad range of performance products targeted at a variety of markets including infrastructure, power and telecommunications, mobility, as well as flexible and medical packaging applications.

During his career at Dow, Bunker has worked in a variety of roles in the Dow Plastics businesses, including process automation, manufacturing, TS&D (Technical Service and Development), marketing, as well as business leadership in across Polyethylene, Specialty Plastics, and Packaging Adhesives.

Bunker came to Dow after graduating from the University of Colorado at Boulder in 1995 with a Bachelor of Science degree in Chemical Engineering. He has also completed the Transition to General Management program at INSEAD (2013).

He is holder of 6 U.S. patents, Six Sigma Black Belt certified, Global Co-Leader of the Dow, Inc. Veterans Network (VetNet), Michigan Home State Committee Chair for DowPAC, Board Chairman of the Greater Midland Tennis Center operating board, and is Chair of the University of Colorado at Boulder Materials Science and Engineering Program External Advisory Board.

Two Things I Wish I Knew When I Was an (Undergrad)

1) **Take the Assignments No One Wants**
   I attribute a lot of my success to volunteering for difficult, un-sexy, and often, troubled, assignments and jobs. It might be as small as making a spreadsheet to make a task faster or easier, or as large as selling a business that no one thinks you can sell.
   When your leader asks a group of people for "who would like to take this on"…be the person that raises there hand, especially when you see everyone else in the room trying to shrink into their seats (or if a Zoom call, trying to get off-camera as fast as possible).
   Why does this matter? If you can make a difference on the hard things, leaders get comfortable that you can deliver on the bigger things.

2) **Learn the Secret of Small Talk**
   You are going to find yourself in situations with high level leaders, or customers, or just networking opportunities.

   People develop impressions of you based on how you respond, and how you think…and the kinds of things you talk about when there's no agenda.

   So how do you come across as engaging? Simple…be curious about THEM! Don't try to think about how you can talk about what you want. Ask questions about them. Be CURIOUS about them. Visualize sitting 1:1 with the person and finding out everything there is to know about them.

   You'll create the impression that you're engaging, smart, and intelligent.

Paul Lichty

CEO

Forge Nano

BIO:

Paul Lichty is the CEO and Co-Founder of Forge Nano. Paul received his PhD in Chemical Engineering and BS in Mechanical Engineering from the University of Colorado. His broad technical background allowed him to help found several high-tech companies in the energy and surface science fields. These companies have raised more than $300M in equity funding from seed to series D. Paul has managed several research and development groups and has extensive experience leading these teams from idea conception to commercial production. Paul's leadership and organizational experience has helped him to grow FN's operations from 2 to 120 employes. He is a motivated entrepreneur and is dedicated to commercializing high-tech manufacturing solutions.

Two things I wish I knew when I was a Graduate Student / Post Doc:

Patents and inventions are a small part of building a business. Don't get too hung up on the value of those ideas in the context of building a company

Always figure out the reasoning behind a "no". There may be barriers that are easy to remove to get to a "yes".

Name, Title, Affiliation:

Ron Sinton
President and Senior Scientist
Sinton Instruments

Bio:

Ron Sinton is President and Senior Scientist of Sinton Instruments, in Boulder, CO USA.

He graduated with a B.S. in Engineering Physics from CU Boulder in 1981 followed by an M.S. and PhD in Applied Physics from Stanford University. His PhD was on the design, fabrication, and measurement of high-efficiency silicon solar cells based on silicon integrated-circuit technology to test the upper bounds of what could be achieved. After the demonstration of 28% efficient solar cells, Ron was a founding member of SunPower, a silicon-valley startup working to commercialize this technology.

In 1992, he founded Sinton Instruments. This company developed measurement and analysis methods for solar-cell research and manufacturing with over 2000 instruments in use worldwide. Despite taking the for-profit rather than academic route, Ron has over 10,000 citations for publications on silicon-solar-cell device physics. He was honored with the Cherry Award for technical contributions in photovoltaics in 2014.

More recently, Ron has also become involved as a pro-bono expert witness in utility regulatory hearings on integrating high levels of renewable energy onto the electricity grid. He has 7 patents, about 200 publications, and has been involved in the annual conference organization for 4 of the major international PV conferences. He is an associate editor of

the Journal of Photovoltaics and has served on advisory boards for an NSF/DOE center and a California Energy Commission research program on long-duration energy storage.

Two things I wish I knew when I was a Graduate Student / Post Doc:

- The colleagues that you meet and collaborate with during graduate school will be with you with parallel careers for years to come. Take the time to be curious and knowledgeable about what everyone in your group and nearby groups are working on. This could form the basis for a diverse international peer group for your entire career as people scatter into their own directions giving you contacts in the most amazing places.
- Just about every scientist or engineer is excited to tell you what they are or have been working on. It is easy to meet anyone, including the very senior figures in your field, if you look at their work in detail and ask them questions out of genuine curiosity. This is how people get to know you. It facilitates subsequent interactions for a very long time.

Kris Thunhorst
Senior Division Scientist
3M Company

Bio:

Kris is a Senior Division Scientist in the Automotive Aftermarket Division in the Safety and Industrial Business Group at 3M. She received her Chemical Engineering B.S. degree from Purdue University and her Ph.D. from the University of Colorado with a focus on photopolymerization. During her 27 years with 3M, she's held positions in all three Business Groups and in the Corporate Research Lab as well. She has distinguished herself as a company leader in new product development from inception through commercialization. In collaboration with exceptional cross-functional teams, she discovers and brings to life new technologies to improve 3M processes, and products to boost customers' productivity and profitability.

Her work has been recognized with numerous leadership and technical awards, most recently her induction into the prestigious 3M Carlton Society, and notably including the National AIChE Industrial Research and Development Award, University of Colorado Distinguished Engineering Alumni Award, Purdue Outstanding Chemical Engineer Award, National Science Foundation Fellowship, 2 Corporate Circle of Technical Excellence and Innovation Awards, PSI Leadership award, and Best Overall Technical Paper Award. Her teams have been responsible for significant financial contributions to 3M.

She supports and develops the next generation of scientists and leaders through extensive mentoring, including serving as a mentor for the Discovery Education 3M Young Scientist Challenge for many years, serving on the Industrial Advisory Board for Purdue's Chemical Engineering Department, and the External Advisory Board for the Material Science and Engineering Department for the University of Colorado.

Two things I wish I knew when I was a Graduate Student / Post Doc:

- In industrial Research and Development, almost everything relies on the magic that happens at the interfaces of team members' cross-functional expertise and varied perspectives. Your

investment to develop teams and leadership skills will pay dividends in the form of more successful and timely conversion of ideas to products, and a greater sense of community and satisfaction for your teammates.

- To reach stakeholders and decision-makers in industry today, messages must be crystallized so they can be successfully ingested and understood. Three well-defined bullet points are likely to get your message read and acted upon, whereas the one-page email full of fantastic and fascinating details probably won't.

Tirrell Bio

Matthew Tirrell is the D. Gale Johnson Distinguished Service Professor Emeritus of Molecular Engineering at the University of Chicago, and senior scientist at the Argonne National Laboratory. From 2011 to 2023 he was the Founding Dean of the Pritzker School of Molecular Engineering. He also served as Deputy Laboratory Director for Science at Argonne from 2015-2018 and from 2022-2023. From 2009-2011, he was Professor and Chair of Bioengineering at the University of California, Berkeley. Professor Tirrell was Dean of Engineering at the University of California, Santa Barbara from 1999-2009. From 1977-1999, he was on the faculty of Chemical Engineering and Materials Science at the University of Minnesota, where he served as Head from 1995-1999. Professor Tirrell returned to the University of Minnesota in a part-time honorary position as Amundson Distinguished Professor in 2023.

Professor Tirrell is a member of the National Academy of Sciences, the National Academy of Engineering, the American Academy of Arts & Sciences and the Indian National Academy of Engineering. He is a Fellow of the American Association for the Advancement of Science, the American Institute of Medical and Biological Engineers and the American Physical Society.

Tirrell's work is in self-assembly and interfacial phenomena in organic material systems. Molecular-level forces such as hydrophobic, electrostatic, hydrogen bonding and others are deployed to create complexes and micellar nanoparticles, interfacially active materials, and hydrogels. This work has uncovered new physics of phase transitions and leads to development of new materials, especially new self-assembled hydrogels. In the realm of micellar nanoparticles, we design and synthesize self-assembling molecules that can organize into multifunctional, multivalent objects with targeting, image contrast and therapeutic capabilities. Recent areas of concentration have been on complexes that target vulnerable atherosclerotic plaque, that disrupt intracellular protein-protein interactions and that package nucleic acids for targeted and efficient delivery.

Two things...

I did not fully appreciate the luxury of time I had as a graduate student to engage in creative thought, to develop new ideas, to plan for the future. I thought I was busy. Little did I know.

My thesis advisor was a great teacher but not much for raising research money. I had to scrouge and scavenge for supplies and materials to do the experimental work I wanted to do. I thought he had the wrong priorities. I have come to appreciate deeply both how profoundly teaching underpins every aspect of successful professional life, whether industrial or academic, as well as the creativity that comes from having to develop your own solutions for what you need.

Name, Title, Affiliation:

Camila Uzcategui, PhD

CEO
Manifest Technologies

Dr. Camila Uzcategui is the Co-Founder and Chief Executive Officer of Manifest Technologies, a Boulder, Colorado-based company developing volumetric additive manufacturing as a cornerstone technology for next-generation industrialization. She earned her B.S. in Physics and B.A. in Anthropology from Florida International University and her Ph.D. in Materials Science and Engineering from the University of Colorado Boulder.

With over nine years of experience in light-based additive manufacturing, Dr. Uzcategui brings deep expertise in translating advanced technologies into industrial applications. She co-founded Manifest Technologies (formerly Vitro3D) in 2020 to commercialize a proprietary process that cures three-dimensional sections of material simultaneously—enabling designs previously impossible with molding, overprinting around embedded structures, and supporting high-mix manufacturing. By reducing or eliminating process steps such as bonding and adhesion, Manifest's platform simplifies production workflows and accelerates delivery across industries.

Dr. Uzcategui was selected as a member of the Activate Fellowship Cohort 2024, a two-year program supporting entrepreneurial scientists and engineers advancing transformative technologies. She was also named one of BizWest's 40 Under Forty for the Boulder Valley region, recognizing her leadership and contributions to Colorado's

innovation ecosystem. She currently serves as Vice-Chair of the University of Colorado Boulder Materials Science and Engineering Program External Advisory Board.

Two things I wish I knew when I was a Graduate Student / Post Doc

1. Get Comfortable with the Unknown by Taking Action

In startups and R&D, you're never going to have all the answers. Waiting around for perfect information just stalls progress. Instead, focus on the next best step you can take right now. Even if it's small, moving forward builds momentum and gives you more data to work with. Over time, you get better at navigating ambiguity, and your team learns they can trust you to make clear calls when things feel uncertain.

Why this matters: People look for direction when things are unclear. Acting decisively - even with incomplete information - keeps everyone moving and keeps projects from getting stuck.

2. Treat Challenges Like Experiments, Not Roadblocks

Things will go wrong - a prototype fails, a market shifts, a key hire leaves. Instead of getting bogged down, reframe it: What is this teaching us? What assumptions are we testing right now?

Seeing problems as experiments takes the sting out of failure and helps you (and your team) move quickly. It also makes it easier to decide what's worth pushing on and what to cut loose.

Why this matters: Resilience isn't just about pushing through; it's about learning fast and using failure to get better. When you model this, you create a culture where unknowns feel less scary and innovation can actually thrive.

Sunny Ye
Material Scientist
Meta

Bio:

Sunny is a material scientist and tech-lead manager in Reality Lab Research in Meta. She is passionate to innovate breakthrough material for AR/VR and robotics to open the design space for the applications through internal research and external partnership. Sunny obtained her Ph.D. degree of chemical engineering in University of Colorado in Boulder in Chris Bowman's team in 2011 with the focus of photopolymerization. Same year, she joined 3M Corporate Research Process Lab continue photo-curing related projects. In 2016, Sunny shifted from research lab to Automotive Aftermarket Division inside 3M to pursue the research to product path. In 2019, Sunny joined Meta (previous Oculus, Facebook) for novel material research to resolve optical problems, thermal, and weight challenges in AR/VR and robotics space. She and her team are pursuing AI/ML material discovery incorporated with in-house bench work and external scaleup to accelerate new material commercialization.

Two things I wish I knew when I was a Graduate Student / Post Doc **Please use no more than 2 sentences per item.** :

- The importance of critical thinking though fundamentals. With AI and machine learning tool developing and influencing industries, independent critical thinking in both research and product development becomes way important than ever.
- Communications (emails, presentations, meetings, chats, etc.) is audience orientated. Developing different communication styles and being able to change the style flexibly based on the audience is the key for efficient communication.