



Laura L. McConnell
Senior University and Scientific Society Engagement Lead
Bayer Crop Science

CREATE THE MOMENT

Careers in chemistry are shaped by moments of encouragement, mentoring, and connection. Drawing from experiences in academia, government, industry, and IUPAC, this article explores how mentors and global networks create opportunities for growth, amplify diverse voices, and strengthen scientific collaboration. These connections ultimately advance both leadership and the broader chemistry enterprise.

When I think about ‘mentors,’ my first mentor wasn’t a manager or a professor - it was my mom. Her message was, ‘You can be anything you want to be.’ And I start here because it’s a reminder that mentoring isn’t always about a detailed plan or a perfectly timed piece of advice. Sometimes mentoring is about helping someone see possibility - before they feel ready. That pattern - someone showing up with belief or encouragement at exactly the right time - repeats throughout my career. Recently I’ve taken on a huge project at home: digitizing and cataloging hundreds of old family photographs - boxes of images that could easily be lost to time if I don’t preserve them. And what surprised me is how much that project has changed

the way I’m thinking about my work - and about mentoring.

A single photo can capture a moment... for example, “Snapshot #1” is this photo of me at age 5 in Rock Hill, South Carolina (United States) (Fig. 1). But it’s only when you look across an entire photo collection that you really understand the moments that mattered. Examining the timeline - that’s when the story starts to emerge. In this article, I am sharing a few ‘snapshots’ from my personal journey - moments where someone showed up at just the right time - and what those moments taught me about mentors, networks, and professional growth. As a woman working across academia, government, and industry, these experiences also shaped my understanding of leadership and the importance of creating opportunities for others.

Our careers are not one continuous story, but are highly influenced by a series of key moments. For example, conversations between colleagues; decisions taken; opportunities offered. Small points in time that changed what came next. When I look at my own career, there are a few moments that really stand out. Times when I was asked to take on something I didn’t feel fully ready for. And in those moments, what made the difference wasn’t just the opportunity - it was someone saying, ‘You can do this.’

One of those people was my undergraduate advisor at the College of Charleston, Dr. Frank Kinard. Even after I spectacularly set my lab bench on fire, he believed I could be a research chemist and encouraged me to consider graduate school. Something I had never considered before.

“Snapshot #2” is a moment from graduate school days - when I realized I could become an environ-



Fig. 1 - Laura at five years old, 1970



Fig. 2 - Processing water samples aboard the US EPA Research Vessel Roger R. Simons, 1989

mental chemist. A single idea reframed what was possible, and suddenly the path in front of me looked different. My graduate advisor, Dr. Terry Bidleman, from University of South Carolina provided the opportunity to conduct research on the Great Lakes (Fig. 2). Collecting and processing water and air samples over several weeks on a research vessel was challenging, but I found it was an exciting way to do research. I could begin to envision a career as a research chemist. This is one of the ways mentors are critical: not only providing advice, but also exposure-someone showing you a new way of seeing the world. And that 'shift in perspective' can be the start of everything that comes next.

"Snapshot #3" is from the next phase of my career, when the work became more challenging. I found myself in a postdoctoral appointment at the US Department of Agriculture, Agricultural Research Service, in Beltsville, Maryland, conducting my own research projects, out in the field, and on research vessels in the Chesapeake Bay (Fig. 3). This is where confidence is built: not by being fully ready, but by pushing through something difficult with support. In this case, a mentor doesn't remove the challenge. They make it survivable-and meaningful. This was when I started to learn the difference between encouragement that feels nice... and encouragement that changes what you're willing to try.

I benefited from several mentors during my time at USDA. Some of the most important moments in my career were when I was asked to step into something I didn't feel fully ready for. And in those mo-

ments, what made the difference wasn't the task-it was a person. Someone who saw potential before I did, and gave me the confidence to take the step. "Snapshot #4": my colleague Dr. Kenneth Racke, Corteva Agriscience, here in the dark jacket (Fig. 4), invited me to join the International Union of Pure and Applied Chemistry (IUPAC) Subcommittee on Crop Protection Chemistry. This led to serving as co-chair of an international workshop in Rio de Janeiro [1]. I was later

elected to the IUPAC Division of Chemistry and the Environment. The opportunity extended by Dr. Racke allowed me to build an international network of colleagues and experience firsthand the power of scientists sharing ideas across cultures,



Fig. 3 - Oysters collected from the Choptank River by chemists Laura McConnell (left) and Jennifer Harman-Fetcho. Source: USDA-ARS Image Gallery, photo by Scott Bauer



Fig. 4 - Organizers of the 3rd IUPAC International Workshop on Crop Protection Chemistry in Latin America in 2009. From left to right, Dr. Pedro Luiz (Freitas Empresa Brasileira de Pesquisa Agropecuária), Dr. Irene Baptista (Alleluia, Instituto Nacional de Tecnologia), Dr. Laura McConnell (USDA-ARS), Dr. Kenneth Racke (Dow Agrosciences)

disciplines, and sectors. That's a key mentoring function: reducing the fear of growth—just enough that someone is willing to move beyond their comfort zone.

“Snapshot #5”: another key moment for me was when I left the USDA after a 20-year career and took on an industry role at Bayer Crop Science (Fig. 5). It was the encouragement of my colleague, Ellen Arthur, that gave me the confidence to make a major career change. I found that being in a new environment revealed unexpected avenues for growth in technical and communications skills.

“Snapshot #6”: while working at Bayer, I have remained active in IUPAC, and in 2017 I took on another growth opportunity by co-chairing the IUPAC100 committee with Prof. Mary Garson, University of Queensland (Fig. 6) celebrating the centenary of IUPAC throughout 2019 [2]. It was a complex job, carried out over two years. Numerous events were planned for IUPAC100 including one called the **Global Women's Breakfast** (GWB). In 2019, more than 250 breakfast events were held [3]. This annual event has continued with support from dedicated scientists and organizations. In 2026, more than 400 events were held around the world, demonstrating the continued growth of the initiative, including significant contributions from

the Consiglio Nazionale delle Ricerche, the Società Chimica Italiana, and several universities in Italy.

The GWB demonstrates how scientific organizations can strengthen leadership through connection. By bringing together participants from different countries, sectors, and career stages, the initiative helps women scientists find one another, share experiences, and build professional networks that extend far beyond a single event. These relationships create opportunities for mentoring, collaboration, and leadership development throughout the global chemistry community.

While IUPAC is best known as the source of chemical nomenclature and terminology, its contribution extends far beyond standards. It provides a trusted international platform where scientists from industry, academia, government, and

other sectors can address shared challenges and develop scientific consensus. The chemical industry benefits from this common language every day. There is no replacement for IUPAC's role in ensuring that chemists around the world can communicate clearly and collaborate effectively. The IUPAC



Fig. 5 - Bayer Crop Science Environmental Fate Team in Research Triangle Park, North Carolina, USA in approximately 2016. Top row left to right: Julie Haddix, Laura McConnell, Daniel Dyer, Ellen Arthur, and Tianbo Xu. Bottom row left to right: Emily Harmon, Randy Ripperger, Suman Shrestha, Fang Jia, and Suresh Mislanker





Fig. 6 - Meeting at the IUPAC secretariat in 2018 for IUPAC100 Celebration planning. From left to right, Mary Garson, University of Queensland, Gaby Brooks, Thee Design; Lynn Soby, IUPAC, and Laura McConnell, USDA-ARS

GWB has emerged as a respected platform in support of diversity in science.

One relationship between mentor and mentee can absolutely change a career. But what I've seen over time is that something even more powerful happens when those moments are happening across a network.

When people are encouraging each other... opening doors... sharing opportunities... that's when you start to change what's possible-not just for one person, but for everyone. Networks change what's possible. The difference is repetition. When encouragement happens once, it's a great story. When it happens routinely-across many people-it becomes culture. The IUPAC Global Women's Breakfast is a network that supports leadership development, personal growth and mentoring.

Here are three strategies that mentors can use to reliably create those moments that shape careers:

- See it - notice when someone is on the edge of readiness;
- Name it - say what you see: 'I think you're ready for X opportunity';
- Support it - help them step into a first action and reduce the friction: introduction, rehearsal, review, or simply being available after the first attempt.

Mentoring isn't only advice. It's building confidence and challenging self-imposed limitations.

Mentees have power here too. Three simple questions can lead to new opportunities:

- Ask for clarity: 'What would success look like?';

- Ask for the challenge: 'What's one project I could take on that would grow my skills?';
- Ask for connections: 'Who else should I meet to learn this faster?';

That last one is how mentees can expand one relationship into a network.

Think of one moment-conversation, decision, opportunity-that shaped your trajectory. Now consider: what's one moment you could create for a mentee in the next two weeks? It can be small. Small moments build over time.

Mentors create moments. Networks multiply them. Organizations such as IUPAC sustain them across generations and across borders. Whether through a shared language for chemistry or initiatives such as the Global Women's Breakfast, these connections amplify voices, create opportunities, and strengthen the global scientific enterprise. The future of chemistry depends not only on scientific discoveries, but on our willingness to invest in the people, networks, and institutions that make those discoveries possible-and to create the moments that help others succeed.

References

- [1] K. Racke, *Chemistry International*, 2010, **32**(5), https://publications.iupac.org/publications/ci/2010/3205/cc1_091109.html#author
- [2] *Chemistry International*, 2019, **41**(3), 1, <https://www.degruyterbrill.com/journal/key/ci/41/3/html>
- [3] M. Garson, L. McConnell, *Chemistry International*, 2020, **42**(1), 22, DOI: <https://doi.org/10.1515/ci-2020-0107>

Creare il momento giusto

Le carriere nel campo della chimica prendono forma grazie a momenti di incoraggiamento, tutoraggio e connessione. Attingendo a esperienze maturate in ambito accademico, governativo, industriale e in seno alla IUPAC, questo articolo esamina come i mentor e le reti globali creino opportunità di crescita, diano risalto a voci diverse e rafforzino la collaborazione scientifica. In ultima analisi, tali connessioni promuovono sia la leadership sia l'intero ecosistema della chimica.