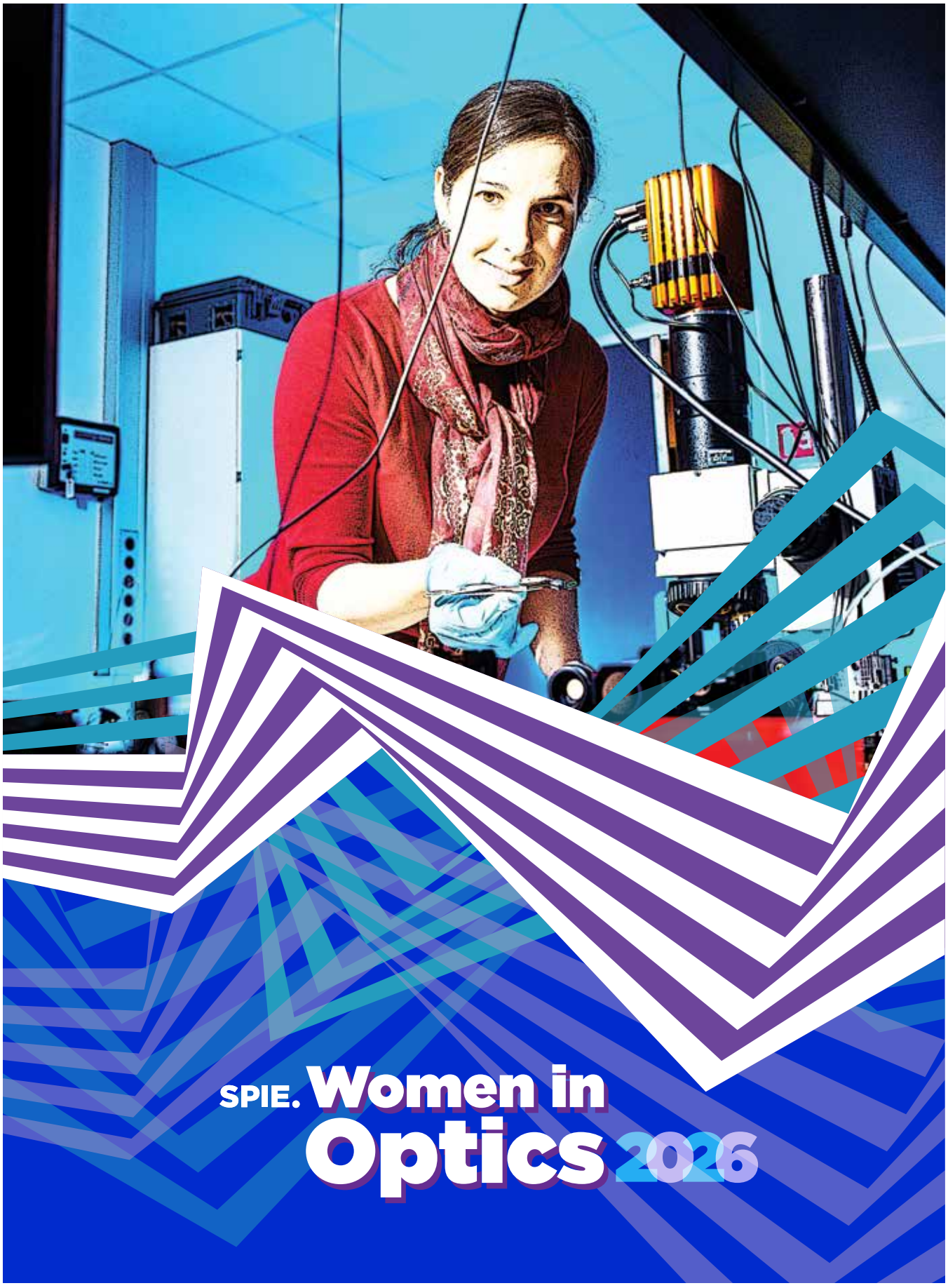

SPIE. Women in Optics 2026

SPIE. Women in Optics 2026

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On the cover: Jana Jágerská (page 24)

SPIE Women in Optics promotes personal and professional growth for women through community building, networking opportunities, and encouraging young women to choose optics as a career. For information, visit spie.org/wio.

An ongoing commitment to equity, diversity, and inclusion

SPIE has produced the annual Women in Optics notebook and provided it free of charge since 2005.

Know someone who should be featured next year? Nominate inspiring women in STEM for the 2027 Women in Optics notebook — and find out more about the SPIE Women in Optics program — at spie.org/wio.

SPIE.

SPIE is the international society for optics and photonics

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SPIE. Women in Optics 2026

▶ In Dava Sobel's book The Elements of Marie Curie: How the Glow of Radium Lit a Path for Women in Science, we learn about Curie's global influence on women in science. Nearly a century after her death, Marie Sklodowska-Curie remains the most recognized female scientist in the world.

What makes her the only woman scientist that most people can name? Many women traveled to Paris to work with Curie, returning to their home countries to make significant contributions to science, thus becoming part of her legacy. Curie was an inspiring mentor who, for decades, was often the only woman at international scientific meetings, shaping our collective understanding of the world.

Thankfully, times have changed, albeit much more slowly than we would have liked! For 21 years, the SPIE Women in Optics notebook has showcased women's achievements in optics, photonics, and other scientific fields. Each story is unique, while sharing common themes of ambition, impact, and contributions to the betterment of society.

Like Curie, these women inspire us to leverage our talents and make a difference in the world. I am proud to be part of this community, advancing women in science.

We carry forward Curie's empowering work. I hope that in the future, many of our names will be on the lips of people around the world.

Halina Rubinsztein-Dunlop
Professor of Quantum Physics, The University of Queensland; Deputy Director of the Australian Research Council Centre of Excellence in Quantum Biotechnology
Featured in the 2010 Women in Optics notebook
2025 SPIE Gold Medal recipient

2026

JANUARY

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SPIE. PHOTONICS WEST
17–22 January 2026
San Francisco, California, USA

PHOTONICS WEST EXHIBITION:
20–22 January 2026

AR|VR|MR EXPO:
20–22 January 2026

BIOS EXPO:
17–18 January 2026

QUANTUM WEST EXPO:
20–22 January 2026

VISION TECH EXPO:
20–22 January 2026

GLOBAL BUSINESS FORUM:
19 January 2026

11 FEBRUARY:
INTERNATIONAL DAY OF WOMEN AND GIRLS IN SCIENCE

SPIE. MEDICAL IMAGING
15–19 February 2026
Vancouver, BC, Canada

SPIE. ADVANCED LITHOGRAPHY+ PATTERNING
22–26 February 2026
San Jose, California, USA

EXHIBITION:
24–25 February 2026

26 FEBRUARY:
INTRODUCE A GIRL TO ENGINEERING DAY

8 MARCH:
INTERNATIONAL WOMEN'S DAY

SPIE. SMART STRUCTURES+ NONDESTRUCTIVE EVALUATION
15–19 March 2026
Vancouver, BC, Canada

SPIE. HIGH-POWER LASER ABLATION
16–20 March 2026
Santa Fe, New Mexico, USA

Present at an SPIE meeting

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APRIL

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SPIE. PHOTONICS EUROPE
12–16 April 2026
Strasbourg, France

EXHIBITION:
14–15 April 2026

SPIE. OPTICAL SYSTEMS DESIGN
12–16 April 2026
Strasbourg, France

EXHIBITION:
14–15 April 2026

OPIC 2026 OPTICS & PHOTONICS International Congress
20–24 April 2026
Yokohama, Japan

EXHIBITION:
28–30 April 2026

SPIE. DEFENSE+ SECURITY
26–30 April 2026
National Harbor, Maryland, USA

EXHIBITION:
28–30 April 2026

International Day of Light
16 May

23 JUNE:
INTERNATIONAL WOMEN IN ENGINEERING DAY

JULY

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SPIE. ASTRONOMICAL TELESCOPES+ INSTRUMENTATION

5–10 July 2026
Copenhagen

EXHIBITION:
7–9 July 2026

SPIE. OPTICS+ PHOTONICS

23–27 August 2026
San Diego,
California, USA

EXHIBITION:
25–27 August 2026

SPIE. SENSORS+ IMAGING

14–17 September 2026
Edinburgh, Scotland

EXHIBITION:
15–16 September 2026

SPIE. PHOTONICS INDUSTRY SUMMIT

September 2026
Washington, DC

Exhibit at an SPIE event

Reach the world's top optics and photonics professionals. Engage with your target audience. Share your latest solutions and make important business connections.

2026

OCTOBER

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SPIE. COS | PHOTONICS ASIA
October 2026
Nantong, China

SPIE. FUTURE SENSING TECHNOLOGIES
November 2026
Yokohama, Japan

▶ My greatest inspiration is my grandfather, a Portuguese homebuilder who left school early to support his family. He deeply valued education, encouraging me to be curious and to work hard — especially in math and science. He taught me about integrity, passion, and the value of doing things well, whether it was a school project or a job around the house.

I now lead research and development activities for SCREEN Semiconductor Solutions at imec, a world-renowned research center in Belgium. SCREEN is a global company that provides cutting-edge equipment and solutions for manufacturing semiconductors, the tiny components at the heart of all modern electronics. I coordinate a team of eight engineers. We develop and test new technologies and equipment for the next generations of microchips, focusing on innovation and sustainability; we're not just thinking about what works today, but designing processes that will be more efficient and environmentally friendly for the future.

One of the accomplishments I'm most proud of is having launched a platform where I help young professionals — especially women — develop their careers. I share practical advice and honest insights about workplace challenges, leadership, and career development. Seeing people apply what they've learned, grow in confidence, and achieve their goals has been incredibly rewarding.

One of the biggest challenges I faced came with motherhood: In my previous job, after returning from maternity leave, I lost all my projects: opportunities that would have been a natural next step were no longer offered to me. I decided to embrace a new challenge, joining a company where I feel respected and valued. I'm recognized for my flexibility, my practical thinking, and my ability to find fast, effective solutions — qualities that being a parent has only sharpened. I learned the importance of working in a place that sees your value, and not being afraid to walk away when you're being underestimated.

Not only for girls or women who are pursuing STEM, but in general, I would say: Don't compare yourself to others; don't copy anyone's path. Focus on what you do well and keep developing that. Your talents and personality make you unique! **STEM is an incredible field, full of opportunities, and we need more diverse voices at the table.** My journey hasn't been easy, but every challenge has made me more determined to make an impact. If you're a woman considering STEM, know that your perspective is valuable, your ideas matter, and that the industry needs you.

Andreia Santos
R&D Manager, SCREEN SPE, imec
Born in Portugal / Resides in Belgium
Educational Background: BSc and MSc in Chemical Engineering, University of Aveiro, Portugal

▶ My parents nurtured my childhood love for diverse literature, cultivating a reading habit that expanded my horizons. This instilled the belief that societal limitations and stereotypes cannot confine my aspirations. When I embraced this mindset, I discovered my passion for mathematics and science. The growing field of machine learning and artificial intelligence, which leverages mathematical and scientific methodologies to address real-world challenges, captivated me.

As a senior research engineer at Advanced Systems & Technologies, I focus on the cutting-edge realms of machine learning and sensemaking. My role involves comprehending customer requirements, developing and executing research plans, and ensuring the timely delivery of results. In addition to these core duties, I engage in STEM outreach initiatives, fostering a passion for science, technology, engineering, and mathematics in younger generations.

My proudest achievement so far is my PhD. People thought I couldn't finish my degree after taking time off to become a mother, but I was determined to complete it and succeeded. This shows me, my daughter, and others that becoming a mom didn't stop me from achieving my dream.

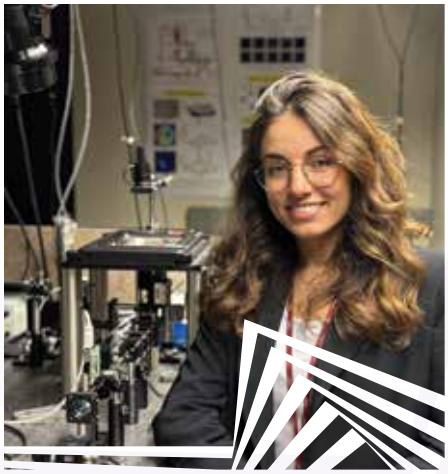
Managing the equilibrium between professional responsibilities and personal life presents a significant challenge. I've been blessed with a supportive husband and children who provide their full support for work whenever needed. Furthermore, my work colleagues are equally understanding, and committed to maintaining a healthy work-life balance.

The societal pressure on women to conform to traditional roles discourages young girls from pursuing STEM careers. It is important to learn to disregard these stigmas and focus on personal goals. This not only benefits them individually but also advances gender equality in these fields.

I aspire to serve as a positive role model for my daughters, and to inspire individuals in the STEM fields. I hope to illustrate that **dedication and resilience can lead to remarkable achievements.**

I dream of a world where young people will enjoy the freedom to explore their diverse interests and passions without fear or judgment, their wings unfettered to pursue their desired paths, be they in STEM, the arts, or any other field. This vision celebrates diversity, inclusivity, and the boundless potential of every individual, regardless of gender.

Anee Azim
Senior Research Engineer, Advanced Systems & Technologies, Lockheed Martin Australia
Born in Bangladesh / Resides in Australia
Educational Background: BSc in Electrical and Electronic Engineering, Bangladesh University of Engineering and Technology, Bangladesh; PhD in Electrical Engineering, Monash University, Melbourne, Australia



▶ As a kid, I was always binge-watching science documentaries. (Shout-out to my favorite Italian one: *SuperQuark*!). In high school, I liked math and physics because formulas gave me a clear, logical way to understand the world and figure out what might happen next. On the other hand, biology gave me my first headache: endless chains of biochemical reactions, immense diversity, and the enigma of memory, emotions, and consciousness. I wanted to use physics and math to untangle and control this complexity. That's how I found my way into biophysics and optical engineering.

As a researcher at MIT, I design and build optical tools to study cells, tissues, and humans, and I just wrapped up my first clinical trial. My work spans fundamental research in areas like cancer and embryonic biology, to tech-transfer projects developing endoscopy probes for diagnosing ear infections. I'm supported by Apollon, a startup revolutionizing non-invasive diabetes management through spectroscopy, so bringing lab discoveries into real-world applications is a central part of what I do. You might find me hands-on in the lab, brainstorming in meetings across time zones, or deep in data, searching for patterns behind a biological process. I feel truly privileged: I get to learn something new every day and never get bored.

My career at MIT is my greatest accomplishment so far: for someone passionate about biomedical optics, MIT feels like a sacred place, with a rich legacy of optics-driven discoveries. Arriving here was both exciting and intimidating. What makes me proud is not just having adapted personally and professionally, but having transitioned while staying productive, social, and genuinely enjoying the journey.

Just because something seems unlikely or hasn't been done before doesn't mean it's unfeasible. You must take something that excites your imagination and break it down into baby steps. You don't need to follow a straight or traditional path. **Your original way of thinking, your different background, and even your own doubts are your assets.** On the scientific side, I want to show that connecting ideas that often seem to be worlds apart can actually drive discovery. More broadly, I hope to convey that STEM is creative, fun, and social, and that it's a space where women belong. It is nothing like the old stigma of being alone with your formulas in a man's world. Also, it can be paired with a great work-life balance!

Arianna Bresci
Postdoctoral Associate, Laser Biomedical Research Center, Massachusetts Institute of Technology
Born in Italy / Resides in United States
Educational Background: BS in Biomedical Engineering; MS in Bioengineering, Biomechanics, and Biomaterials; PhD in Physics, Politecnico di Milano, Milan, Italy

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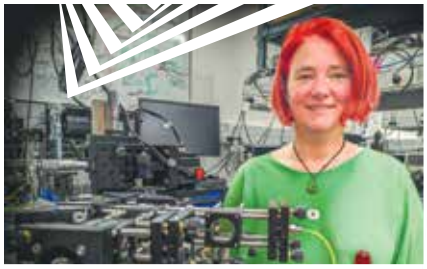
Clockwise from top left :
11 years – Nicole D.
19 years – KeneKeo S.
21 years – Toni K.
15 years – Anna C.
11 years – Nicole C.
15 years – Arunsri T.
17 years – Lesly M.
16 years – Yasnais C.
10 years – Jeannette H.



▶ Along my career path, I have met some amazing scientists, especially women, starting with some of my high school teachers and lecturers at university. I had so much support and encouragement from them that I only realized that gender discrimination was something real when I started my postdoc. Luckily, I had — and still have — excellent colleagues and mentors to inspire and support me.

Fundamentally, I love learning and trying to make the world a better place. I have been lucky enough to work with people who are just as passionate about their work as they are about diversity and inclusion. My work is interdisciplinary: I design and build imaging systems for biologists, engineers, physiologists, and even art conservators. Currently, I am the head of a research group in biophotonics and the director of a New Zealand Centre of Research Excellence in photonic and quantum technologies, Te Whai Ao — Dodd-Walls Centre. As the head of the biophotonics group, my main responsibilities are securing funding for the project and group members, making sure we deliver on these research projects, and supervising the research students.

Te Whai Ao — Dodd-Walls Centre's goal is to develop an inclusive, diverse, knowledgeable, and dynamic research eco-system in photonic and quantum technologies known for excellent science, innovation, and people development. As the director, I interact with industry, policymakers, and a broad range of researchers. We also organize outreach events and support students.

My greatest accomplishments are with people and science: I am proud of the students I have supervised and the people I have mentored, as well as of my scientific achievements. I am particularly proud of my work in monitoring bacteria and understanding cartilage degeneration to enable the early detection of osteoarthritis. I am also passionate about teaching, which means that at the start of my career as a lecturer, I spent a lot of time improving course delivery. As a result, my publication record took a hit, so, at some point, I made the conscious decision to focus on my research and secure grants. That paid off, and my research group is thriving.

I'm proud to be doing my part to make our research community more inclusive and to have enabled the successes of others. I hope, in doing so, that I've been able to remove barriers for people who traditionally would not have studied or worked in optics and photonics.

Frédérique Vanholsbeeck
Director, Te Whai Ao — Dodd-Walls Centre for Photonics and Quantum Technologies; Professor of Physics, The University of Auckland
Born in Belgium / Resides in New Zealand
Educational Background: Certificate in Architecture, Institut Supérieur d'Architecture Victor Horta, Belgium; BSc in Physics, Graduate Diploma in Teaching – Secondary, MSc in Physics, and PhD in Physics, Université Libre de Bruxelles, Belgium

▶ I didn't start out in physics. My first major at university was philosophy and literature, driven by a desire to explore big questions — where we come from, what we're made of, how life emerged. Switching to physics felt like discovering a "philosophy of nature." Books like *The Seven Daughters of Eve* by Bryan Sykes and *Poussières d'étoiles* by Hubert Reeves sparked my curiosity further, from genetics to astrophysics. Mentors also shaped my path, including Assistant Professor Phil Chan in Singapore and Dr. Alex Weber-Bargioni during my postdoc at Lawrence Berkeley National Laboratory.

Today, I work as an R&D engineer at PsiQuantum, a quantum computing company. We are building a computer that runs on light. More specifically, we use individual particles of light — photons — to create quantum bits, or qubits. These qubits allow us to process information in a completely new way. I work on the Circuits Team, designing and testing the photonic circuits that form the building blocks of our quantum computer.

One of my proudest accomplishments, besides building a cello, has been building a career that bridges disciplines, technologies, and cultures. I've worked across academia, consulting, and industry, living in five countries on three continents. This diverse path has shaped how I see science — not just as equations and systems, but as a human endeavour that crosses borders. I'm also part of the executive committee of the Far West Section of the American Physical Society (APS) and proud to help foster that community.

One of the biggest challenges I've faced has been learning to exist — and thrive — as a woman in the quantum industry. When I joined PsiQuantum, fewer than 10% of the technical staff were women. Today, we are still a minority. Navigating that environment was a steep learning curve; finding allies, both male and female, was key.

My advice to young women in STEM is to know that you deserve to be here as much as anyone else. Be aware of biases from others, as well as the ones you may have internalised. Seek out mentors and peer networks. **Don't wait for confidence to start pursuing your goals — professional and personal alike.**

Looking forward, I hope to help shape a more inclusive global physics community. Through my work with the APS, I'm bringing voices from underrepresented regions — and maybe soon, developing countries — into local conferences. Professionally, I'm proud to be contributing to the development of quantum technologies — tools that may transform how we tackle complex problems such as drug discovery and climate change. Personally, I love to engage with local musicians, acrobats, and art galleries — channel their humanity into my soul.

Camille Stavrakas
R&D Engineer, Photonic Circuits, PsiQuantum Corp.
Born in France / Resides in United States
Educational Background: BSc in Physics (Cosmology), Paris Sorbonne (UPMC), France / National University of Singapore; MSc and MRes in Condensed-Matter Physics and Nanoscience, Paris Sorbonne (UPMC), France / Uppsala Universitet, Sweden / University of Cambridge, United Kingdom; PhD in Physics, University of Cambridge, United Kingdom

▶ As a teenager, taking an optical physics class and discovering how a piece of glass called a lens could create images of objects sparked my love of optics. In the 35 years since, I have progressed in the field of optics from student to engineer to manager. I have recently switched away from a pure engineering career to directing the operations department at the laser system manufacturing company, Daylight Solutions. As a senior director of operations, it is my responsibility to ensure that our company manufactures innovative, high-quality laser products for our customers, delivering them on time while preserving business-sensible costs.

My career progression represents my biggest accomplishment in my professional life so far. I am grateful for the opportunities I have had to continuously expand my knowledge of what it takes to design, prototype, and manufacture laser systems. I have grown from an individual contributor, participating in designs and solving technical problems, to leading increasingly more functionally diverse teams of people who deliver on business needs.

The day I discovered the meaning of the term "impostor syndrome" is the day I found a name for my biggest career obstacle. I have tamed it in part thanks to the great mentors I had in my thesis advisor and in my direct managers, and, in part, by learning to trust that **my drive to always do the best work I can, will yield valuable results.**

Looking back, I wish two books — and their topics — had crossed my path earlier. One is titled *Emotional Intelligence 2.0* by Travis Bradberry and Jean Greaves, and the other is *The Confidence Code: The Science and Art of Self-Assurance — What Women Should Know* by Katty Kay and Claire Shipman. I would highly recommend them to anyone starting out in their career, with the second one especially empowering for women.

Looking forward, I wish to continue developing people's careers in the context of increasing Daylight Solutions' impact in this world. Our motto is "To Protect with Light," and I believe we do just that. In the process, I also hope to help normalize women leaders in our society's high-tech companies.

Edeline Fotheringham
Sr. Director of Operations, Leonardo DRS – Daylight Solutions
Born a French citizen / Resides in United States
Educational Background: BS in Engineering, École Nationale Supérieure de Physique de Strasbourg, France; MS in Photonics, Université Louis Pasteur, France; PhD in Electrical Engineering, JILA, University of Colorado, United States

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▶ I met Professor Christine P. Hendon during the optical system class of my master's program; she later accepted me for summer research and my PhD. She inspired my interest in how optical imaging systems can improve the clinical outcome as a diagnostic and procedural tool.

My work is developing imaging-integrated surgical tools for the therapy of irregular heart rhythms. We provide real-time information on what's happening inside the tissue, to guide the ablation procedure and improve the quality and clinical outcome. My proudest achievement is that my PhD degree was not my only accomplishment to come out of my doctoral work: During that time, I initiated and organized events such as industry visits to foster the optics student community at Columbia University; I mentored MS researchers, and several of those students were admitted into top-tier universities for their PhDs; and I also volunteered to help optics PhDs and postdocs secure grants.

When I struggled over deciding between an academic position and a purely scientific path, I overcame the challenge by "jumping out of the circle," exploring on-and-off campus events in order to meet others who had made the transition. I got an internship in a combined tech-business role in a venture capital firm, which helped solidify my goals.

It's good to think big and dream big, but what's more important is making it practical. Always set a goal for yourself. Then, identify a role model in that position and learn about the journey of that individual. Outline the key milestones for yourself to track your progress along the way and start executing them. The goal can be either long-term or short-term but must be specific and detailed rather than simply "I want to be successful" — that's just too broad. Consider this example: "I want to apply for an SPIE scholarship next year." Look through the awardees this year to see what they have accomplished. Then break your aims down into specifics, such as achieving at least one publication or conference presentation and joining or volunteering with an SPIE Student Chapter. Make those your milestones.

I hope to continue showing young optics students how to develop themselves and make an impact on our field from multiple aspects, not just academic research, using my own experience to inspire those who want to engage and contribute to the optics community but may not know how to start.

Haiqiu Yang
Co-Founder, Researcher, OptiCardio Inc.
Born in China / Resides in United States
Educational Background: BEng in Electrical Engineering and Automation, Fudan University, China; MS in Electrical Engineering, PhD in Electrical Engineering, Columbia University, United States

▶ During my master's studies, I learned about biosensors and micro-electro-mechanical systems (MEMS) technology and focused on these areas during my PhD. During that time, I gained years of experience in micro- and nano-fabrication tools and techniques at the MEMS Research and Application Center in Ankara, Türkiye. While working at the Center, I discovered the vast potential of semiconductor technology that could be applied to life sciences and decided to concentrate my efforts on developing innovative devices for biomedical applications.

I currently lead a research group focused on applied science and engineering in the fields of biosensors and bioelectronics. We work on creating integrated devices for the early detection of diseases at the point of care. I mentor researchers, write and review manuscripts and project proposals, give talks at national and international scientific meetings, and teach undergraduate and graduate students. My greatest motivation is collaborating with our multidisciplinary research team and our partners to address research problems and discover innovative solutions that can inspire other researchers, advance health, and save lives.

What I've learned over my career so far that I can share with others is this: If you face challenges or obstacles in reaching your goals, **focus on believing in yourself, learn from your failures, strive for excellence, and put forth your best efforts to achieve those goals no matter what.**

Hatice Ceylan Koydemir
Assistant Professor, Department of Biomedical Engineering & Center for Remote Health Technologies and Systems, Texas A&M University
Born in Türkiye / Resides in United States
Educational Background: BSc in Environmental Engineering, MSc in Chemical Engineering, PhD in Chemical Engineering, Middle East Technical University, Türkiye

▶ I had always dreamed of becoming a neurosurgeon, but everything changed when I was diagnosed with a significant neurological condition at 17. Then, at 19, I was diagnosed with another neurological condition. Seeing that the diagnoses were quite lengthy and challenging for the doctors pushed me to research my conditions, and I realized there was a world behind medicine — scientific discovery — that fuels the tools physicians use to help people. I also realized how many unanswered questions still exist in neuroscience. One of my teachers encouraged me to pursue bioengineering, recognizing my passion for both medicine and engineering. These experiences, along with my family's struggles navigating the healthcare system, inspired me to pursue biomedical engineering and develop technologies that can make diagnoses faster, more accurate, and less invasive.

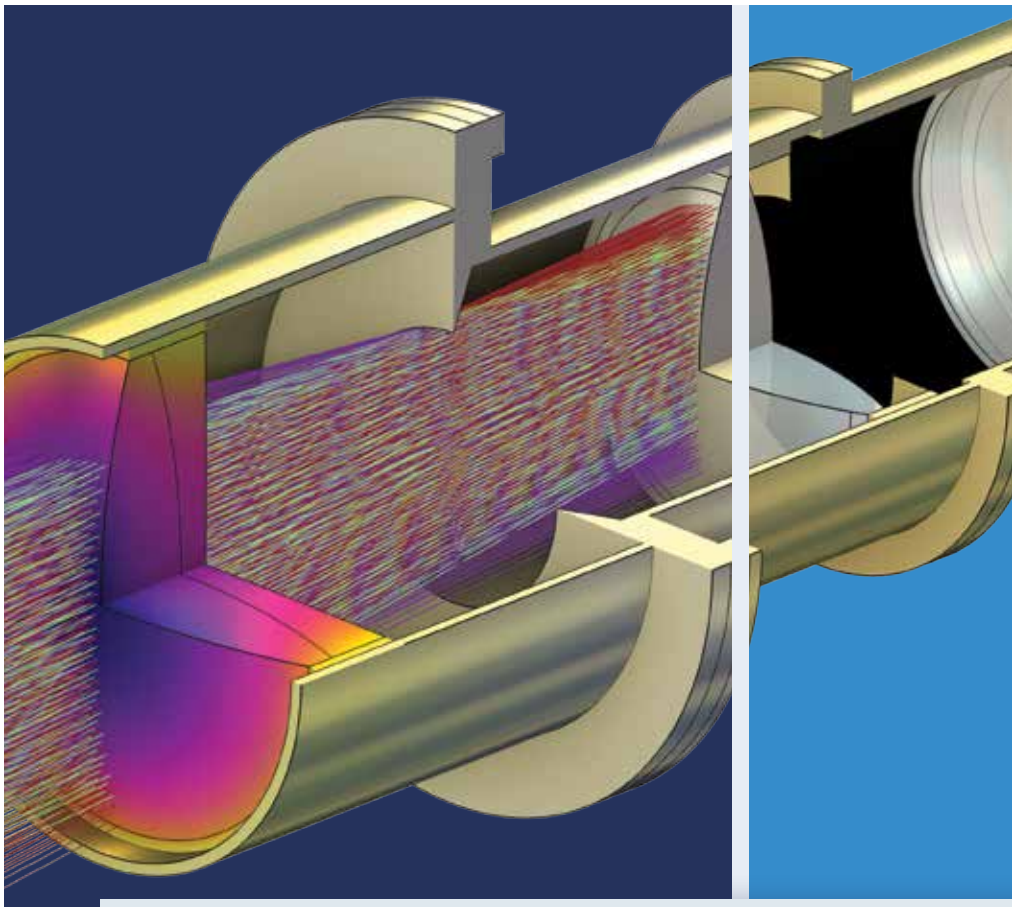
As a postdoctoral researcher at Stanford University, I study how the human brain changes with age. I work with donated brain tissue and advanced sequencing technologies to understand how molecular patterns shift over time. My work combines biology, medicine, computer science, and engineering. I use AI to uncover patterns in data, hoping to discover new ways to detect and prevent brain diseases.

One of my proudest accomplishments is developing a non-invasive liquid biopsy that uses Raman spectroscopy and AI to detect brain tumors from blood samples. This method could help patients avoid high-risk surgeries. During the COVID-19 pandemic, I also co-developed a biosensor that could detect the virus in saliva with more than 95% accuracy. These projects reminded me of how science can respond to urgent, real-world needs.

Managing my health while pursuing a demanding academic path was a challenge, but I never saw myself as limited or defined by my conditions; I truly believe that this mindset — and my excitement for discovery — played a role in my healing. I remember showing up to lab just days after surgery or being in a meeting right before a scheduled surgery, while my doctors were looking for me in the OR prep room. These experiences strengthened me, giving me deeper understanding of what patients face and fueling my determination to create science that is human-centered, innovative, and impactful.

I hope to make brain diagnostics smarter and more accessible, while mentoring future scientists and advocating for diversity in STEM. I want my journey to show that challenges can be a catalyst for innovation. **Optics is not just about light: It's about illuminating possibilities.** I'm honored to be part of this vibrant community shaping the future.

Hulya Torun
Postdoctoral Fellow, Neurology and Neurological Sciences, Knight Initiative for Brain Resilience, Stanford University
Born in Türkiye / Resides in United States
Educational Background: BS in Bioengineering, Yildiz Technical University, Türkiye; MS in Biomedical Engineering, PhD in Biomedical Engineering, Koc University, Türkiye



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▶ In my role as a Project Manager in R&D and Engineering at MKS Instruments, I work at the intersection of business objectives, technological advancements, and market-driven demands to ensure successful project execution.

This requires strategic planning, and continuous problem-solving, alongside a deep understanding of system components to identify potential failure points and mitigate risks. I support project teams by prioritizing tasks, managing constraints, and navigating critical dependencies, while fostering collaboration across departments. Beyond project execution, I conduct post-project evaluations, extracting valuable insights that drive future improvements.

As detectors provide significantly higher resolution, the demand for exceptionally high-quality lenses intensifies. Designing these advanced optical systems presents a complex technological and engineering challenge, requiring the integration of cutting-edge technologies and creative problem-solving while managing risk associated with rapid advancements.

We develop precision-engineered optical components to meet stringent optical performance standards, particularly in the infrared spectrum.

To tackle these challenges, I rely on continuous learning, seeking expert advice from our outstanding technology teams, conducting in-depth reviews of past projects and fostering a culture of innovation. I encourage my team to explore creative solutions and actively listen to diverse perspectives to arrive at the best possible outcomes.

For those considering a career in optics, I would say: **Believe in yourself. No one has all the answers, and learning is a continuous process.** Enter the field understanding that it involves an ongoing journey of education and adaptation, especially as technology evolves rapidly. Trust in your ability to learn, grow, and adapt. Do not be afraid to ask questions, challenge conventions, and always — always! — seek out opportunities that will allow you to expand your knowledge.

Inbar Yaffe
Project Manager, R&D and Engineering, MKS Instruments, Inc.
Born in Israel / Resides in Israel
Educational Background: BA and MA in Art History, Hebrew University, Israel; MA in Policy and Theory of the Arts, Bezalel Academy of Arts and Design, Israel; Project Management – LAHAV, Tel Aviv University Executive Education Programs, Israel; Certification in Hi-Tech Product Management, Bar-Ilan University, Israel

▶ While I did not specifically pick lithography as my field at the start, I was introduced to STEM at an early age through mechanical engineering and physics. My mother, who was a medical doctor by academic training, ended up running an automotive-parts factory for most of her career. She taught me to be fearless, to focus on problem-solving, and that any skill can be learned by anyone. All of these elements together made me gravitate toward engineering and a research career.

I manage a team of lithography researchers who develop and deliver solutions for leading-edge semiconductor logic chips — specifically at 2 nm and below nodes — using some of the most advanced manufacturing equipment in the world, such as extreme ultraviolet (EUV) scanners.

One of my proudest achievements has been leading on some of the early lithography solutions that resulted in IBM's announcement of 2 nm gate-all-around technology and Vertical-Transport FET transistors. I'm equally proud of my involvement in hiring and bringing in more than 20 brand-new, just out-of-school engineers into lithography as their first job and seeing them build fantastic careers.

In general, breaking into the social dynamics of a new project team or peer networks and establishing a comfort zone has always been an obstacle for me. I know that these networks are just as essential to career progression as technical skills, and I've found that establishing authentic common ground and allies always helps. For me, it's an ongoing learning process.

I can say that there is fundamentally nothing harder or unique about STEM than any other non-STEM field; if you are being made to feel otherwise, don't believe it. Keep an open mind and evaluate your interest in STEM on an equal footing with any other career choices you might have. **Keep learning and never fear the unknown! That's really where all the fun is.**

For myself, I hope to continue to shape the future of lithography and semiconductor process technology, and to lead solutions and teams that make even more advanced chips a reality. I also hope to leave behind people whose careers I have helped shape in some form.

Indira Seshadri
Manager, Lithography Process Research, IBM
Born in India / Resides in United States
Educational Background: BE Manufacturing Engineering, Anna University, India; MS Mechanical Engineering, The Ohio State University, United States; PhD in Mechanical Engineering, Rensselaer Polytechnic Institute, United States

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▶ My interest in physics began during high school. My passion for photonics, however, was inspired by three remarkable individuals I was fortunate to meet throughout my career: The first, Professor Čtyorký, has been my thesis supervisor, mentor, and collaborator for over 20 years. Next, Professor Jelínková served as an example of a successful female researcher, demonstrating that it is possible to balance a top-tier research career with family. Lastly, Professor Faist, a true icon in the field, stands out for his brilliance, approachability, and humanity. His passion for science and our motivating discussions have had a lasting impact.

As a professor and research team leader, my primary responsibilities include steering the direction of the team, managing and supervising its activities, and representing our work within the broader scientific community. I facilitate knowledge transfer, foster innovation, and ensure the team's sustainability by seeking funding opportunities. I consider it my utmost responsibility to uphold the highest standards of quality and scientific integrity in all aspects of our work.

I once had the ambition to save the world; over time, I tempered this as an unlikely goal. However, recently, my group successfully demonstrated a new, tiny-yet-powerful photonic gas sensor for environmental monitoring. I believe this innovation has the potential to make a meaningful contribution to addressing global challenges. Creating something that can be genuinely useful to humanity stands out as my greatest accomplishment so far.

The biggest challenge I have faced is balancing my career role with motherhood. That said, transitioning from a postdoctoral researcher to a faculty position was also a significant hurdle. What certainly helped was perseverance, self-belief, and many long days and late nights of hard work.

A career in STEM is the right path for you if you truly enjoy your work and feel passionate about it. **Surround yourself with people who value and respect you, and don't waste your time on those who don't.** Your passion and determination will guide you to where you belong.

I hope to make an impact through meaningful, high-quality research: I want to be an advocate for safeguarding research quality and scientific integrity, as our scientific community needs this now more than ever. Lastly, I want to highlight that researchers are multifaceted individuals and human too — they can have passions, hobbies, and interests outside of science. Not all of us wear white coats, thick glasses, and have messy hair. And some do, and that's perfectly okay!

Jana Jágerská
Professor, Department of Physics and Technology, UiT The Arctic University of Norway
Born in Slovakia / Resides in Norway
Educational Background: MSE in Applied Physics, Czech Technical University in Prague, Czech Republic; PhD in Photonics, Ecole Polytechnique Fédérale de Lausanne, Switzerland

▶ Exploring light-matter interactions sparked my passion for optics and photonics.

I work on research in quantum physics and photonics. Specifically, I study how light can be used in advanced technologies and converted into energy for various applications, including solar cells and energy-saving devices. I also organize scientific events and projects that promote STEM. One of my key roles is mentoring young researchers and supporting women in science.

Among my greatest achievements that I would like to note are receiving a grant from the US National Science Foundation, implementing inter-university projects in nanotechnology, and creating educational initiatives to popularize science among young people. I would especially like to highlight the project to retrain war veterans in Ukraine, which helps them acquire new skills to work with solar power plants. This contributes to their professional development and develops renewable energy in Ukraine.

One of the most difficult challenges has been combining active scientific activity with work on international grant projects and the popularization of STEM. The balance between these areas requires discipline, strategic planning, and great perseverance. However, despite all the difficulties, an even greater challenge is not to lose faith and continue to engage in science during the war. Commitment to the cause, support from like-minded people, and the realization that science is not only research but also a contribution to the future that we are now fighting for, very much help us to cope.

Don't be afraid of challenges or doubt your abilities. **STEM is not just for geniuses but for anyone willing to learn, experiment, and persevere in facing challenges.** Seek out mentors, be curious, and don't be afraid to take responsibility.

I want more young people, especially girls, to believe they can contribute to science and technology. My ambition is to create an environment where women in STEM can grow, be supported, and realize their ideas.

Science is not just a career; it's a way to change the future. If we join forces, we can make technology more accessible, greener, and useful for society.

Kseniia Minakova
Head of the Optics & Photonics Laboratory, Micro- and Nanoelectronics Department, National Technical University Kharkiv Polytechnic Institute
Born in Ukraine / Resides in Ukraine
Educational Background: BS in Applied Physics, MS in Theoretical Nuclear Physics, V. N. Karazin Kharkiv National University, Ukraine; LLM in Intellectual Property and Copyright, National Technical University Kharkiv Polytechnic Institute, Ukraine; PhD in Solid State Physics, National Academy of Sciences of Ukraine

▶ My life has been — and continues to be — full of role models, each one contributing to the scientist and person that I am today.

My mother drove me to the library and planetarium, while my father supported my higher education. My supervisor, Jean-Claude Diels, and female colleagues welcomed and inspired me. My students remind me to approach my work with excitement and wonder, and my colleagues uplift me.

In my current role, I use ultrafast optics techniques to characterize the response of photodiodes and develop methods for high-precision radio-frequency measurement. I am also responsible for characterizing plasma generated with radio frequency in semiconductor manufacturing. Additionally, I contribute to organizational strategy and science communication, ensuring alignment with overall institutional goals while fostering a culture of innovation.

My greatest achievement has been conducting ultrafast spectroscopy of "air lasing," which occurs due to ultrashort high-intensity laser propagation in air, known as light filaments. The results were unpredictable and provided a wealth of information from the acquired spectra. I especially valued the opportunity to conduct research on a topic close to my heart while on maternity leave. The process of shedding light on the complex interplay of optics, propagation, molecular response, and high-field ionization was both intellectually rewarding and enjoyable. I also deeply appreciated the conversations I had with colleagues in the field, as we worked together to unravel this fascinating phenomenon.

The biggest challenge I have faced in my career was embracing my dual roles as a scientist and a single mother. Not being able to travel and present at conferences limited my visibility and opportunities for collaboration. Despite these challenges, I have learned to find alternative ways to stay connected with the scientific community, leveraging virtual platforms and seeking local opportunities for collaboration and visibility.

It's crucial to support other women and believe in the power of community. **Having a network of strong, supportive colleagues is invaluable, and we can all help each other rise.** Don't be afraid to connect with others and build meaningful relationships that can support and inspire you throughout your career.

Ladan Arissian
Physicist, Communications Technology Laboratory; RF Technology Division / Spectrum Technology and Research Division, National Institute of Standards and Technology
Born in Iran / Resides in United States
Educational Background: BS in Applied Physics, Sharif University of Technology, Iran; MS in Nuclear Engineering, AZAD University, Iran; MS in Physics, Shahid Beheshti University, Iran; PhD in Optical Science in Engineering, University of New Mexico, United States

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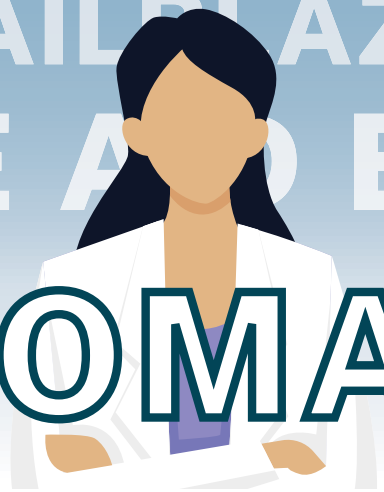

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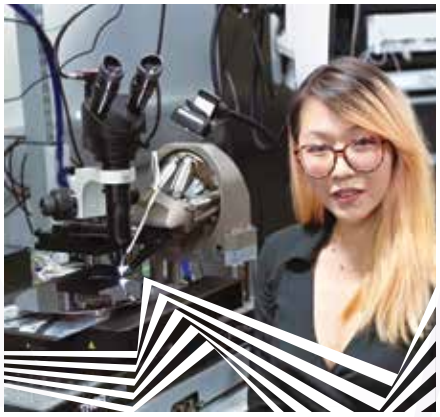


▶ The person who most inspired me to work in opto-mechanics is Arthur Ashkin, the inventor of optical tweezers. His work showed that you could use light not just to observe matter, but to physically move it. That simple but profound idea led to breakthroughs across biology and physics, and it sparked my dream: to create a platform technology that, like his, could touch multiple fields and make a lasting impact.

Today, I'm the CEO and CTO of Zero Point Motion, a startup developing a whole new type of semiconductor sensor for positioning and navigation: we have combined photonics with semiconductors to create accelerometers and gyroscopes. I wear many hats: I lead fundraising efforts, meet customers, work with suppliers, and build our team. On the technical side, I still get moments in the lab — recently doing laser locking — but what I love most is enabling our team to work smarter and faster, strategizing and questioning all the industry and social norms that hold us back from innovating.

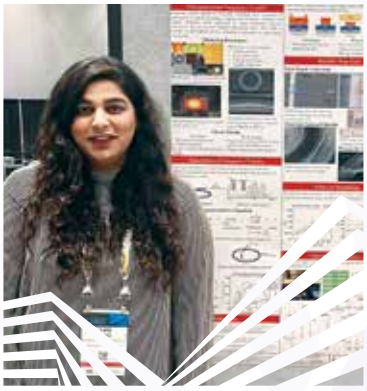
My proudest accomplishment so far is creating the first optical fiber-based optomechanical accelerometer that was successfully field-tested on a moving vehicle. It started as a bench-top lab experiment and became a battery-powered device in a rugged case, tested outdoors. I built it alone in under a year, and while it wasn't award-winning research, it changed the course of my career and my life. It proved I could take an idea from the lab to real-world use, to cross over from physicist to engineer. That experience and achievement gave me the courage to start my company.

The biggest challenge has been learning to build teams from scratch, especially with limited resources. It means looking beyond conventional CVs, taking risks on people, and creating a culture of "constructive conflict." We're building the parachute as we fall, so decisions must be made quickly and debated honestly. That kind of environment is where we create groundbreaking achievements.

To young girls or women thinking of a STEM career, I would say: **Trust logic. Science and maths are always there for you — they're your sword and shield.** And learn a bit of psychology, too. Understanding how the world works will help you navigate it without internalizing the setbacks. You are *not* the problem. Keep going.

As for the legacy I want to leave? I hope I'm remembered as someone who lived the values of my company — passion, integrity, and focus — and who built something that provided others with the tools to go further than I ever could.

Lia Li
CEO, Zero Point Motion
Born in China / Resides in United Kingdom
Educational Background: MSci in Physics, First-Class Honours, Imperial College London, United Kingdom; PhD in Physics, University College London, United Kingdom



▶ From a young age, I was captivated by microscopes, telescopes, and lasers and how they enable us to see and manipulate the world in a different way. As an undergrad, when I learned about the concept of lab-on-a-chip technology, I was instantly intrigued by the potential of nanophotonics. I knew I wanted to work in a field where I could design miniature structures that could be applied to a variety of technologies.

As a PhD student in nanophotonics, I study how light interacts with microscopic photonic structures. My main role is to design, fabricate, and characterize photonic devices on a silicon-nitride platform. These devices have potential uses in optical communication, sensing, and quantum technologies. I combine computer simulations, cleanroom fabrication, and optical experiments to understand their performance.

Publishing my research on photonic devices on silicon nitride platforms, with real-world applications in optical metrology and quantum technologies, has been a significant achievement. I'm also proud of mentoring students and contributing to a more inclusive STEM environment.

One of the biggest challenges I've faced is impostor syndrome — feeling like I didn't belong or wasn't capable enough — especially in technical spaces where I was often one of the only women. With time, I've learned to see those feelings not as weaknesses, but as part of the growth process. What's made a difference has been surrounding myself with encouraging mentors and peers, and recognizing the value in every small achievement. These moments have helped me stay grounded and reminded me that I have a place in this field.

Believe in yourself, even when it feels hard. Your ideas matter even if you are the only woman in the room. Surround yourself with mentors and peers who uplift you, and don't be afraid to advocate for yourself.

I hope to continue to contribute meaningful advances in nanophotonics while helping make STEM more inclusive. Beyond my research, I want to inspire others, especially those who see themselves as underrepresented, and leave behind a legacy of curiosity, mentorship, and empowerment. If my journey can inspire even one person to pursue STEM, that would be a legacy I would be proud to leave behind.

The journey in STEM isn't always a straight line. **Curiosity and resilience are just as important as intelligence.** Never shy away from asking questions, and always remember that persistence is the key to every success.

Lala Rukh
PhD candidate, University of New Mexico
Born in Pakistan / Resides in United States
Educational Background: BS in Electrical Engineering, Lahore University of Management Sciences, Pakistan; MS and PhD (anticipated completion in Fall 2025) in Optical Science and Engineering, University of New Mexico, United States

▶ I believe the phrase “It takes a village to raise a child” describes my career very well. From the very beginning, my career choices have been shaped by my community and network: my high school STEM teacher, my research advisors, my classmates, my work colleagues, my professors, my friends, my family, and my husband — all of these people had an impact on the development of my career as an optical scientist.

I am a prolific inventor. I received my first two patents when I was in grad school, covering polymer for freeform optics and infrared materials. Later, as an optical scientist at Meta Reality Labs, I was able to use my creativity to innovate in the areas of augmented and virtual reality (AR/VR), optical materials, electronics, sensors, and photonics. Now, as a hardware developer at Amazon Prime Air, I am innovating technology for commercial drone delivery. As of today, I hold 30 US patents.

Despite loving science from a young age, I never thought I could make a living from being a scientist since I was part of a low-income community in Mexico. It just wasn’t my reality; it felt like science fiction. Studying and working hard were my only tools back then. Subsequently, I was able to secure a full-tuition scholarship from the University of Texas at Brownsville; later, I secured fellowships and research assistantships for my doctoral studies at the College of Optical Sciences at University of Arizona. After all the hard work, I became an optical scientist. My story is not science fiction — now it’s just science!

Some insights I have learned: **Collaboration is a great way to increase your career scope, build relationships within your organization, and broaden your impact.** However, do not forget to also prioritize your own projects as this builds leadership skills, strengthens your technical expertise, and cultivates your decision-making skills.

I also believe that balancing your career with your personal life is crucial for success. For instance, in the last three years, I summited four of the five volcanos (>8400 ft elevation) in Washington state. This has helped me to challenge myself outside of my STEM life and motivates me to continue developing my optics skills. I hope to have a lasting impact, and that my scientific contributions and outreach leadership help to open and preserve educational STEM opportunities for women and minorities across the world.

Liliana Ruiz Diaz
Hardware Development Engineer, Amazon Prime Air
Born in Mexico / Resides in United States
Educational Background: BS and MS in Physics, University of Texas at Brownsville, United States; MS and PhD in Optical Sciences, University of Arizona, United States

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▶ My story is one of great luck! I'm 86 years old, and for the last 63 years I have worked in the world of lasers and optics. (Yes, I'm still working).

By age five, I had made two decisions: I wanted to be a scientist, and I wanted to have children. In the community where I lived in Houston, Texas, I was also impressed that people around me with the best jobs worked for the Hughes Tool Company. I thought that perhaps someday I would work for Hughes.

My dad taught me how to make things, and my mom made it inconceivable that I would not go to college. I earned a BS in physics and math from Valparaiso University in 1960. The next piece of good luck came as I was entering grad school: the invention of the laser at Hughes Aircraft Company. I settled for an MS from Wayne State University and got a job at Hughes, working to extend the usefulness of lasers. I learned to be a systems engineer, a role that would dominate the rest of my life. Also at Hughes, with luck playing an important role, I invented tunable dye lasers during my second pregnancy (I have three wonderful daughters!). After 13 years at Hughes, Lawrence Livermore National Laboratory (LLNL) became interested in Atomic Vapor Laser Isotope Separation (AVLIS); I understood how dye lasers could produce laser-line widths narrow enough to make this mission possible. My next years were filled with building prototype equipment for an AVLIS plant capable of delivering fuel for nuclear-power plants. We made tremendous progress, building full-scale hardware and operating a laser-pumped dye laser 24/7 for ten years.

Although my hopes for AVLIS were dashed, soon after, I was in the right place at the right time to join the LLNL effort to complete the design, install the hardware, and operate the National Ignition Facility (NIF), the world's highest energy laser. During completion of the design, I was the lead systems engineer, responsible for several design features that contributed to making it so successful. In December 2023, NIF demonstrated fusion ignition in the laboratory for the first time. Today, I'm still helping improve the ultimate performance of NIF.

My advice? **Become a Member of SPIE — and always take advantage of good luck!**

Mary Spaeth
Senior Scientist, National Ignition Facility and Photon Sciences, Lawrence Livermore National Laboratory; Grandmother of six
Born in United States / Resides in United States
Educational Background: BS in Physics and Math, Valparaiso University, United States; MS in Physics, Wayne State University, United States

▶ Growing up in a family where every woman was a mathematics teacher or professor, I was immersed in a culture that valued logic, learning, and curiosity. Over time, my fascination with science and technology only deepened. When choosing a PhD topic, I intentionally stepped beyond theory to explore how fundamental science could be applied to real-world challenges. That's what led me to the semiconductor industry — an ideal space where microelectronic innovation directly powers our everyday lives.

In my current role, I lead the development of software solutions for cutting-edge technologies, acting as a connector across engineering, marketing, and sales. My focus is not only technical but also people-driven, ensuring collaboration, clarity, and continuous progress. Over the years, I've learned that being truly customer-centric and adaptable is essential to building solutions that meet both market and human needs.

Among my proudest accomplishments is pursuing an Executive MBA while managing a full-time job and raising three children. This journey has been one of growth — broadening my perspective, sharpening my leadership skills, and connecting me with a global network of inspiring professionals. It stands as a testament to the power of intentional time management and the pursuit of excellence through lifelong learning.

One of the greatest challenges I've faced has been balancing my career with motherhood; raising young children while pursuing an ambitious professional path requires immense discipline and support. Today, I use my experience to mentor young women navigating similar journeys.

To girls and women considering a career in STEM: go for it. This field offers endless opportunities to make a real impact, solve important problems, and be part of building the future. Seek out mentors — especially female role models or supportive allies — and never doubt that your voice and ideas belong here.

I hope my legacy will be one of purpose-driven impact: contributing to innovation, advocating for inclusion, and helping open doors for others. I'm especially proud of my advocacy for girls in STEM, including my work with Siemens and partner organizations to expand access, visibility, and mentorship in science and engineering. I believe **we're living in a time of major change, when technologies like AI are bringing science, innovation, and human values together in ways that are shaping the future like never before.** As professionals in STEM, we have both the responsibility and the privilege to shape a future that is not only innovative but also inclusive and sustainable.

Nassima Zeggaoui
Technical Manager of Advanced Technologies, Siemens Digital Industries Software
Born in Algeria / Resides in France
Educational Background: BS in Physics and MS in Physics and Optics, Sophia Antipolis University, France; PhD in Optics and Microelectronics, Joseph Fourier University, France

▶ I was always fascinated by the intricacies of mathematics and physics, captivated by how they reveal the beauty and logic of the world. This curiosity laid the foundation for my path into science, optics, and precision engineering. My father encouraged me to pursue questions deeply; later, I drew strength and inspiration from mentors and women scientists who showed me what was possible in a field where diverse voices are still growing.

Currently, I design and develop high-precision optical components used in diverse healthcare and industrial applications, including medical imaging, scientific instruments, aviation displays, thermal cameras, and low-vision aids. My work centers on advancing manufacturing techniques to shape complex lenses and mirrors, down to the level of atoms. A primary focus is Single Point Diamond Machining, a subtractive process essential for producing ultra-smooth, geometrically exact optics that other methods often can't match in quality or efficiency.

My broader research goal is to develop a streamlined and affordable process chain for manufacturing these components, so that even small and medium enterprises can contribute to high-end technological innovations.

One of the most impactful milestones in my research journey has been the design and development of high-diopter lenses, which have enabled significantly improved vision for individuals with severe impairments. These lenses were also distributed to those in need, making a meaningful difference in their lives and contributing to a broader social cause.

Early in my career, I was often the only woman in the room, which could feel isolating. I overcame this by building a strong support network, seeking mentorship, and staying committed to my purpose. I have learned to transform such challenges into motivation, to push boundaries, stay curious, and advocate for more inclusive spaces in science and engineering. Navigating the dual challenges of technical leadership and underrepresentation as a woman in engineering has been tough but rewarding. I have learned the value of perseverance, strong mentorship, and building a community that uplifts every individual.

To young girls and women considering STEM: **Trust your instincts, follow your curiosity, and never underestimate the value of your unique voice.** I wish someone had told me early on that you don’t need to have everything figured out: The journey itself will shape you.

Neha Khatri
Principal Scientist, CSIR-Central Scientific Instruments Organisation
Born in India / Resides in India
Educational Background: BTech in Mechanical Engineering, India; MTech in Advanced Instrumentation Engineering and PhD in Opto-Mechanical Instrumentation, Academy of Scientific & Innovative Research, India; Fulbright Nehru Postdoctoral Research, Wyant College of Optical Sciences, University of Arizona, United States

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▶ I've always loved art and music, but creating in those spaces rarely brought lasting satisfaction. I found comfort in science, where creativity is grounded in logic and discovery. Academic research gave me a space I never imagined possible: one where creativity could flourish, validated by science.

Throughout my journey, I was fortunate to be surrounded by people who believed in me, often before I could believe in myself. A college physics teacher once asked if I had considered electrical engineering. I hadn't — coming from a family rooted in health sciences, it was unfamiliar. Yet that question planted a critical seed.

My first job as an applications engineer at Teradyne in Boston introduced me to exceptional managers who nurtured my confidence. Later, while working in Dallas for Texas Instruments, I was inspired by two women with PhDs, Dr. Elizabeth Marley and Dr. Isabella Cerutti, who encouraged me to pursue graduate studies. My PhD advisor, Professor Keren Bergman, became a lasting role model, not just in research, but in resilience and leadership.

My primary responsibility as a university professor is to ensure that the next generation of engineers is not only technically proficient but also equipped with the work ethic necessary to make meaningful contributions to society and improve quality of life. Interestingly, I didn't always envision myself in this role. Drawn to service-oriented vocations, I once imagined becoming a physical education teacher or even a neurosurgeon. But during my PhD, I discovered how deeply fulfilling academic research could be: a space where intellectual challenge and creativity converge. What continues to drive me is the opportunity to work with bright minds, supporting the growth of ideas from their sparks into contributions that shape science and society.

Restlessness has always been my greatest obstacle while being also my greatest source of energy, one that I've had to learn to tame and redirect. When channeled constructively, it holds immense promise. In my younger years, I was constantly in motion, drawn to endurance activities — Ironman races, cross-country skiing — and to team sports — basketball, hockey, water polo — as a way to release and refocus that intensity. While my body no longer allows me to follow those paths, I'm channeling this energy differently, with more intention and a sense of renewal through teaching and swimming.

For others considering a career in STEM: Follow your instincts. **Push yourself beyond what feels comfortable. Discover your edge and embrace the challenge.** At the same time, breathe, take moments to rest, and comfort yourself. Balance is strength.

Odile Liboiron-Ladouceur
Professor/Researcher, Electrical and Computer Engineering, McGill University
Born in Canada / Resides in Canada
Educational Background: BEng in Electrical Engineering, McGill University, Canada;
MS and PhD in Electrical Engineering, Columbia University, United States

▶ I have always been fascinated by learning through a logical and rational approach, where understanding replaces rote memorization. This focus drew me towards mathematics and science. My interest further evolved during my MS and PhD studies, where I became deeply curious about molecular spectroscopy and its connection to understanding various pathophysiological conditions.

Now, I lead a Raman research group focused on developing advanced optical systems for deep-tissue analysis and point-of-care screening/monitoring. A significant part of my role involves mentoring students and postdoctoral researchers, teaching, and writing grant proposals to secure research funding.

As a researcher, I am passionate about translating scientific research into tangible products. In that context, my postdoctoral work at Vanderbilt with Professor Anita Mahadevan-Jansen — which focused on understanding dynamic molecular changes *in-vivo* — stands out. Additionally, I am particularly proud of helping to develop Diffuse Resonance Raman Spectroscopy (DRRS), a technique for non-invasively characterizing red blood cells, as it has the potential for real-world applications.

One of the biggest challenges I have faced is building confidence in my abilities. I overcame this by actively seeking support and encouragement from mentors and colleagues, which has helped me recognize my strengths.

My advice to young women considering STEM is to embrace challenges boldly; **remember that temporary setbacks become powerful lessons that ultimately strengthen your career journey.** Believe in yourself, and don't let self-doubt cause you to miss opportunities. Give your best to whichever path you choose and keep going while continuing to learn.

Looking ahead, I aim to develop innovative optical technologies and methodologies that advance scientific understanding while directly improving disease diagnosis and monitoring. I hope that my legacy will be marked by inspiring future scientists, fostering an inclusive research environment, and supporting the career advancement of women in STEM.

Science is a collaborative endeavor: Every day I am grateful for the opportunity to work with talented researchers from around the world.

Rekha Gautam
Senior Scientist, Raman Team Lead, Biophotonics, Tyndall National Institute, University College Cork
Born in India / Resides in Ireland
Educational Background: BS and MS in Physical Chemistry, Delhi University, India; PhD in Physical Chemistry, Indian Institute of Science, India; Diploma in Optical Instrument Design, University of California, Irvine - Division of Continuing Education, United States

▶ From an early age, I was drawn to the pursuit of knowledge — not only because I was curious, but also because I wanted to understand the world and find my place in it. That deep curiosity became my compass. Growing up without scientists as role models and without much encouragement to pursue science, I often felt out of place. Sometimes it was hard to be heard. But my love for learning and discovery kept me going. Following that inner call — despite the challenges — became both my strength and my path to joy.

Today, I lead a research team where I serve as a facilitator — someone who guides our direction, ensures that everyone has what they need to thrive, and nurtures a sense of shared purpose. Our mission is to democratize microscopy, to develop imaging tools that are affordable, accessible, and impactful. To support this mission, my work includes writing grants to fund our efforts, teaching, mentoring students through their research, and contributing to the broader community through service and outreach. I also spend time reviewing papers, supporting students through the publication process, and serving on scientific and university committees.

What I'm most proud of is the team I've built. We are united by shared values — scientific rigor, joy, and curiosity — and by a deep respect for one another. It's incredibly fulfilling to work in an environment where people genuinely care about their mission and about each other's growth.

To young girls or women considering a STEM career, I'd say this: **listen to your inner voice. Don't choose a career to please others or fit into expectations. Follow what truly excites you.** If STEM calls to you, go for it! The path can be challenging, but so are the most fulfilling journeys. And if you're not sure yet, explore, volunteer, and observe how you feel — your curiosity will show you the way. You'll learn more about who you are and what lights you up.

For me, science is not just about answers: It's about the courage to ask questions, the joy of discovery, and the commitment to serve others through collaborative work. Challenges can arise in many forms — whether you are navigating stereotypes, securing funding, or learning to work with others — but by doing our best, learning from our mistakes, adapting along the way, and staying true to ourselves, we grow, not only as scientists but as people. That's the kind of science I love, and the kind of scientist I aspire to be every day.

Rosario Porras-Aguilar
Associate Professor of Physics and Optical Sciences, University of North Carolina at Charlotte
Born in Mexico / Resides in United States
Educational Background: BS in Electronics and Communications, Institute of Technology of Tuxtla Gutierrez, Mexico; MS in Astronomical Instrumentation, PhD in Optics, National Institute in Astrophysics, Optics, and Electronics, Mexico

▶ My journey began at the University of Applied Sciences Jena, where my professors ignited my interest in laser technology and optics. At Jabil, I learned from experienced Zeiss veterans who developed optical designs by hand and created foundational programs. Their mentorship taught me different ways of thinking and the importance of incorporating the experience of predecessors.

Now, as the functional manager of Jabil's optical design group, I work alongside a team of dedicated professionals in a collaborative environment that encourages innovation and excellence. Guidance and encouragement from my peers and leaders have been crucial in shaping my career. I lead a team of engineers in creating cutting-edge optical systems for use in automotive technologies and consumer devices. I coordinate efforts to develop innovative solutions, ensuring projects meet high standards of quality and performance. I collaborate with other departments, mentor my team, drive technical communication with clients, and ensure the manufacturability of optical designs.

My dedication has earned recognition through awards and speaking opportunities at industry conferences, allowing me to support and inspire women in STEM. My expertise has driven the development of groundbreaking products, particularly in augmented reality (AR) and automotive head-up display (HUD) systems. Recently, I achieved a personal success by creating a design superior to the one initially provided by the customer. Despite initial skepticism, my team and I developed a design with less risky components and a higher yield in just two weeks, proving the value of our effort and experience.

Managing a diverse team of engineers while ensuring the successful completion of high-stakes projects was a significant challenge. I overcame this by leveraging my leadership abilities, building a cohesive team through open communication, mentorship, and fostering mutual respect. My dedication enabled me to navigate complexities and achieve success, strengthening my leadership skills and inspiring my team to strive for excellence.

I hope to inspire future generations of women in STEM by demonstrating the power of determination, innovation, and collaboration. My legacy is one of dedication to excellence and fostering a culture of continuous learning and development. I believe in empowering technical experts to assert themselves and be heard, bridging the gap between technical and customer management worlds.

The future of optics and photonics is incredibly bright. **Collaboration and innovation drive progress,** and I encourage young women to pursue their passions in STEM. Committed to mentoring and supporting the next generation, I hope to inspire others to make meaningful contributions to the field.

Theresa Kunz
Principal Optical Design Engineer, Jabil
Born in Germany / Resides in Germany
Educational Background: BS and MS in Laser and Opto-Technology, University of Applied Sciences Jena, Germany

▶ Growing up in Okinawa, I never saw a scientist. My parents were farmers, and it wasn't expected —especially for a girl — to pursue science. That all changed when I attended NASA Space Camp and touched a real moon rock at the Smithsonian Museum. That moment opened my world. Space suddenly felt real and reachable, and I knew I wanted to be part of that world. That spark of wonder and possibility has stayed with me ever since.

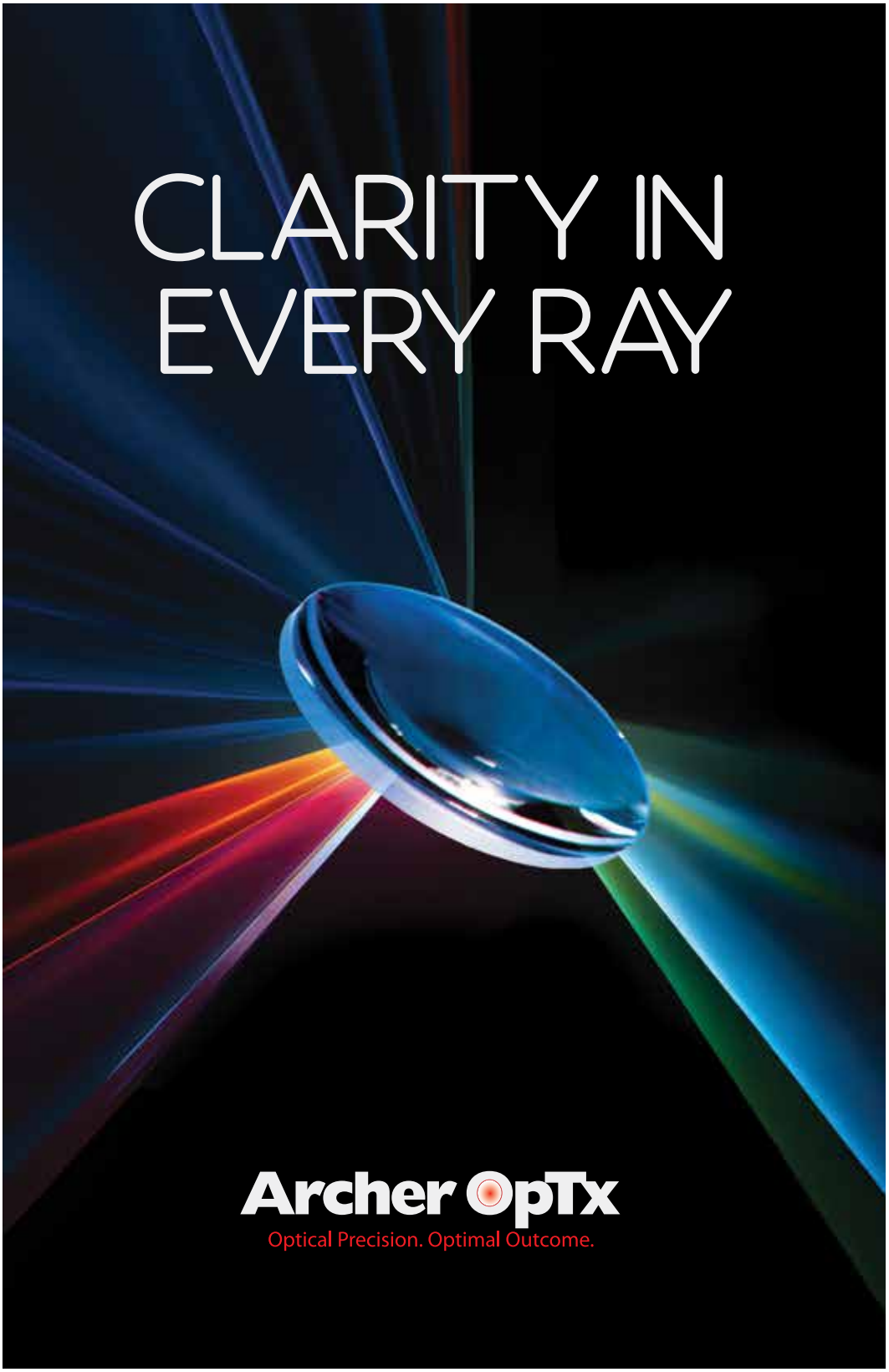
I work where science, education, and community meet, striving to make science more accessible, inclusive, engaging, and inspiring for all. I do this by co-creating programs with schools and community partners to ensure science education reflects the community's values, voices, and needs. I support major international research projects by ensuring that broader impacts, like community engagement and workforce development, are thoughtfully integrated. In short, I help connect science with people.

What I'm most proud of is helping students — many from underserved communities — realize that, when it comes to science, they belong. I've also brought my five-year-old daughter with me to over two dozen international conferences, showing that science and motherhood can coexist. Creating space for others, especially where none existed before, is the accomplishment that means the most to me.

Balancing a scientific career with single motherhood, community engagement, and educational work hasn't been easy. But I learned to own my story, not shrink from it. I built support networks, found strength in community, and stayed grounded in my roots and values. It's how I make systems better.

I want to leave behind a world where science is shaped by and for everyone. I hope to build bridges between disciplines, cultures, and generations. If one young girl sees someone like her in science because of the paths I've helped create, then I've done something meaningful. My legacy is not just in the galaxies I study, but in the communities that I serve. **Science is not just about discovery: it's about connection.** The universe is vast, but so is the potential within each of us. Let's keep creating spaces where everyone can reach for the stars — and bring others with them.

Yuko Kakazu
Astronomer, Education & Engagement Manager, Thirty Meter Telescope (TMT) International Observatory and National Astronomical Observatory of Japan
Born in Japan / Resides in United States
Educational Background: BS in Physics, Tohoku University, Japan; MS and PhD in Astronomy, University of Hawai'i, United States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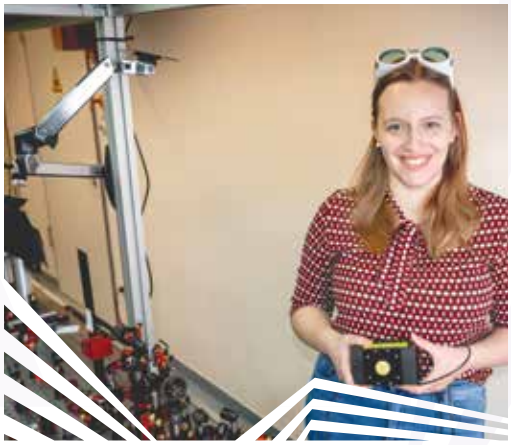

▶ Originally, I was unmotivated to work in optics. During my studies, I considered work in the optics lab just plain boring, just tightening a lot of screws to a table. But my desire to unlock the mysteries of our universe motivated me to pursue hardware development for astronomical applications, and it was then that I realized how exciting and diverse the field of optics is.

Now, I'm a mechanic, astronomer, programmer, and hardware developer, and I love it. As a PhD candidate at the University of Erlangen, my research focuses on photon correlations from distant stars. One of my greatest accomplishments has been the development of a time-to-digital converter with sub-10ps timing resolution and a large active area single-photon detector. Both innovations are now available on the market as commercial products.

The most significant challenge I have faced was entering a male-dominated field and navigating the accompanying biases. I found it difficult to express my opinions in discussions where I frequently felt outnumbered. However, I was fortunate to have strong support from my family, friends, and fellow female PhD students. By actively engaging in discussions and supporting each other, we built our confidence together.

Male-only groups may not fully realize the diversity of perspectives they are missing out on. However, the reward of making the field more welcoming for women is invaluable. By creating a supportive environment — even if I only inspire one female student to see the excitement in optics — I consider that a significant achievement. Each step we take to encourage women not only enriches our research but also strengthens the entire scientific community. Together, we can create a culture where women thrive and contribute their individual insights, ultimately advancing the field for everyone.

My advice for young girls and women considering a career in STEM, is to stay strong in pursuing your dreams and never let others bring you down. **Your feelings and experiences are valid, and it's important to cultivate the strength to push back against negativity.** Seek out supportive networks and surround yourself with those who uplift and encourage you. This camaraderie is vital for navigating the challenges you may face and reinforcing your belief in your abilities. Achieving success can be tough, but with focus and hard work, you'll absolutely get there!

Verena Leopold
Doctoral Researcher/PhD Student, Friedrich-Alexander University of Erlangen-Nuremberg
Born in Germany / Resides in Germany
Educational Background: BS and MS in Physics with integrated doctoral program, Friedrich-Alexander University of Erlangen-Nurenberg, Germany

“Curiosity and resilience are just as important as intelligence.”

— Lala Rukh, *page 29*

“STEM is an incredible field, full of opportunities, and we need more diverse voices at the table.”

— Andreia Santos, *page 8*

“Dedication and resilience can lead to remarkable achievements.”

—Anee Axim, *page 9*

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“STEM is not just for geniuses but for anyone willing to learn, experiment, and persevere in facing challenges.”

— Kseniia Minakova, *page 24*

“Your original way of thinking, your different background, and even your own doubts are your assets.”

— Arianna Bresci, *page 10*

“Don’t wait for confidence to start pursuing your goals — professional and personal alike.”

— Camille Stavrakas, *page 13*

“Having a network of strong, supportive colleagues is invaluable, and we can all help each other rise.”

— Ladan Arissian, *page 26*

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“It’s good to think big and dream big, but what’s more important is making it practical.”

— Haiqiu Yang, *page 16*

“Trust your instincts, follow your curiosity, and never underestimate the value of your unique voice.”

— Neha Khatri, *page 34*

“Your feelings and experiences are valid, and it’s important to cultivate the strength to push back against negativity.”

— Verena Leopold, *page 44*

“Optics is not just about light: It’s about illuminating possibilities.”

— Hulya Torun, *page 18*

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“Believe in yourself. No one has all the answers, and learning is a continuous process.”

— Inbar Yaffe, *page 20*

Keep learning and never fear the unknown! That's really where all the fun is."

— Indira Seshadri, *page 21*

“Surround yourself with people who value and respect you, and don’t waste your time on those who don’t.”

— Jana Jágerská, *page 24*

“Trust logic. Science and maths are always there for you — they’re your sword and shield.”

— Lia Li, *page 28*

“Remember that temporary setbacks become powerful lessons that ultimately strengthen your career journey.”

— Rekha Gautam, *page 37*

“Listen to your inner voice. Don’t choose a career to please others or fit into expectations. Follow what truly excites you.”

— Rosario Porras-Aguilar, *page 38*

“Science is not just about discovery: it’s about connection.”

— Yuko Kakazu, *page 41*

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