

2023

ANNUAL REPORT

AUGUST 2024

SPIE.

The international society for optics and photonics

Coffee Area

Refresh.
Relax.
Connect.

We had a very productive week! We exhibited at the BiOS event as well as Photonics West, and it was a busy week: a lot of good contacts and fantastic networking opportunities. It's great to be back on a busy floor, to enjoy the energy of Photonics West. We also had a lot of people here presenting and getting a continuing education through SPIE courses, and we also participated in the job fair. It was all very productive and very, very busy.



Scott Orr
Senior Director, Global Marketing,
Excelitas Technologies Corp.
at 2023 SPIE Photonics West.

SPIE Photonics West
Exhibition 2023



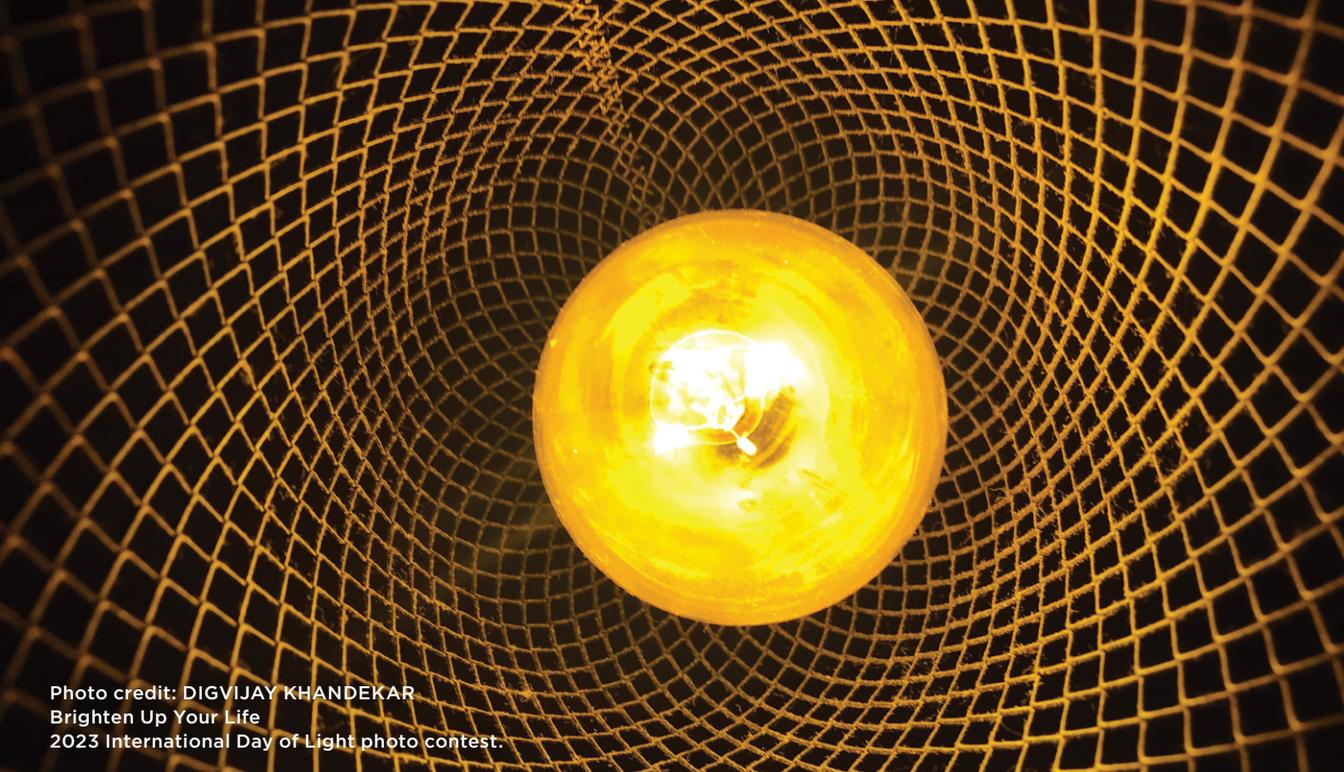


Photo credit: DIGVIJAY KHANDEKAR
Brighten Up Your Life
2023 International Day of Light photo contest.

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TO THE SPIE COMMUNITY



As I reflect after SPIE Photonics West 2024 on our community's great post-pandemic comeback and the extensive progress its researchers, engineers, students, technicians and entrepreneurs have carried out, I am filled with a profound sense of optimism and gratitude.

From revolutionary advances in optical lithography and silicon photonics, breakthroughs in medical imaging, to exciting prospects in quantum, the optics and photonics community continues to shape the landscape of our world in ways both profound and subtle. Even my own field of augmented reality has seen exciting developments as presented at this year's SPIE AR|VR|MR conference and the recent introduction of the Apple Vision Pro: an amazing concentration of state-of-the-art optical technologies spanning across display, imaging, and sensing, all working together in a tightly integrated headset.

SPIE is at the core of such discoveries and engineering developments by connecting and empowering the key actors of these revolutions through its symposia, technical conferences, exhibits, online services, and social events. The SPIE Digital Library is, for many of them, the first resource as the world's largest single depository of research in applied optics and photonics.

Fostering a strong and diverse network of individuals across industry, academia, government, and research — from student chapters to industry affiliates — is at the core of SPIE's mission. To do so, it is imperative that we cultivate the next generation of trailblazers in optics and photonics. SPIE's commitment to education, networking, and spreading knowledge across all boundaries will ensure that a vibrant and talented pipeline of scientists emerges to continue pushing the frontiers of our field. Many of those will also give back to the community by getting involved in SPIE's governance, helping to define its mission in the decades to come. We must all strive for inclusivity, diversity, and equity through mentorship and outreach activities that promote optics and photonics as a strong and rewarding career path and a field that will nurture many of the great technological revolutions to come. In the past five years alone, SPIE has given back more than \$24M in community support and development in various ways such as scholarships, endowments, awards, and grants.

Today we stand at a pivotal moment where the boundaries of possibility are constantly expanding. The rise of artificial intelligence and augmented reality and the dire need for sustainable energy solutions have placed an even greater emphasis on the transformative potential of light-based technologies.

For SPIE, this comes with a unique sense of responsibility to be at the forefront of such discussions. The yearly SPIE Photonics Industry Summit in Washington, DC, brings together government officials and technology experts from academia and industry, not only to acknowledge and discuss the importance of optics and photonics in all aspects of industry and life, but also to point out the many privacy and ethical challenges brought to light by these same technological revolutions. By promoting transparency, accountability, and inclusivity, it is possible to integrate ethics, and thus the wellbeing of the human, into the very fabric of such technological breakthroughs. I am proud to see SPIE fostering a culture of collaboration with policymakers, ethicists, and social scientists to ensure that our technology developments serve the public with good without infringing upon individual freedoms.

I am very humbled to have had the privilege to serve you as SPIE 2023 President. I remain deeply committed to helping empower our community as we embark on the next chapter of this remarkable journey filled with great opportunities but also profound challenges. With SPIE as a strong and steady partner for nearly 70 years, our community has the power to tackle such challenges with unwavering dedication.

The history of optics and photonics is a long-travelled road paved by relentless audacity, curiosity, ingenuity, and extraordinary resilience, leading to mind-blowing opportunities.

Together, we can harness the next opportunities to create a future that is brighter and more sustainable for all, resonating perfectly with SPIE's vision: "A future where the transformative power of photonics enhances life around the globe."

Bernard Kress
Director XR Engineering, Google
2023 SPIE President



YUANSHENG MA

As featured in the 2023 Women in
Optics Planner

Distinguished Product Engineer, Siemens.

LETTER FROM THE SPIE CEO

It brings me great pleasure to reflect on the remarkable progress SPIE and the optics and photonics community made in 2023. Our community demonstrated its continued commitment to fostering innovation and collaboration, resulting in groundbreaking advancements across various fields. From quantum technologies and biophotonics to remote sensing and semiconductor manufacturing, our Members have consistently pushed the boundaries of possibility, unlocking new frontiers and paving the way for transformative discoveries. The technical progress and innovative spirit of our constituents fuel the work we do at SPIE and inspire our continued growth and community-focused product offerings and services.

Amidst the myriad challenges and triumphs, one aspect stands out: the unparalleled power of personal connection, best demonstrated through our in-person gatherings. Highlighting this was the resounding success of SPIE Photonics West 2023. Photonics West is a testament to our community's impact, adaptability, and progress, featuring cutting-edge research presentations, thought-provoking panel discussions, boundary-pushing product launches and demonstrations, and invaluable networking opportunities.

In addition to Photonics West, we hosted 25 events that included nearly 300 distinct technical conferences, bringing together more than 35,000 people and well over 2,000 exhibiting companies, and registering more than 2,000 short-course customers. The vibrant exchange of ideas, the serendipitous encounters in the hallways, and the shared moments of inspiration all converged to create unforgettable experiences. It is the magic of in-person gatherings that ignites our passion and drives our collective ambition.

SPIE publications increase the extraordinary reach and value of these discoveries. In 2023, we served over 79,000 authors from 111 countries, and the SPIE Digital Library surpassed 600,000 pieces of scholarly content. We are the 20th largest scholarly publisher in the world (out of ~2,500) and the 6th largest society publisher. The results that our community publishes are widely used to further research and bring products to market, resulting in 2,315,413 academic citations and 128,569 patent citations since our inception. Our SHARE program (SPIE Helping Advance Research Everywhere) provided free Digital Library access to 114 World Bank-designated low-income countries, resulting in 1.2 million downloads since the program's inception in late 2020. SPIE is also the largest independent not-for-profit publisher of optics and photonics books in the world and, in 2023, published 30 new book titles, including the first two children's books in our history.

The year 2023 also saw growing photonics awareness from policymakers and the public, leading to an increasingly optimistic and opportunity-filled future for our community. To help our community take advantage of this environment, SPIE leveraged our relationships to help foster better communication between the US government and the photonics industry, hosting our second annual Photonics Industry Summit in DC, and having high-level speakers — including the director of NIST and the executive director of the Quantum Economic Development Consortium — at our technical conferences to outline programs that will require our community's technical prowess.

All of these outcomes depend on our Members and constituents — the presenters and authors who share their research, the program committees and reviewers who ensure content is compelling and beneficial, the volunteers who select the winners of awards and scholarships, and the companies who provide the tools and technologies that advance our field. In 2023, we introduced new initiatives to foster inclusivity and diversity, continuing our significant strides towards creating a more welcoming and equitable environment for all. By embracing diversity in all its forms, we not only grow our community and enrich our collective experience, but also lay the groundwork for greater innovation and impact.

This report describes many of our 2023 activities in more detail. But as we look ahead, I am filled with confidence and optimism about the possibilities that lie before us. The road in front of us may be challenging, but with the support of our Members, SPIE will continue to flourish and lead the way in advancing light-based technologies for the betterment of humanity. I extend my deepest gratitude to each and every one of you for your support of SPIE's mission. Together, let us celebrate our triumphs of the past year and redouble our efforts toward shaping a brighter, more innovative future.

Kent Rochford

Chief Executive Officer
SPIE





Photo credit: JI YUAN
Butterfly Wall
2023 International Day of Light photo contest.



Photo credit: FILIP HREBENDA
Born of Fire
2023 International Day of Light
photo contest.

SPIE MISSION AND PRIORITIES

MISSION

SPIE, the international society for optics and photonics, partners with researchers, educators, and industry to advance light-based research and technologies for the betterment of the human condition.

SPIE has operated as a not-for-profit since our founding in 1955, connecting, engaging, and serving our global constituency. Led by a dedicated team of volunteers — including our Board of Directors, governance committees, conference chairs, and journal editors — we bring engineers, scientists, students, and industry leaders together to advance light-based science and technology, strengthening the global optics and photonics community through conferences, knowledge-sharing, and professional development.

CORE PROGRAMS AND PRIORITIES:

During 2023, SPIE continued our mission by delivering programs in the following areas:

- » Creating successful, engaging, in-person conferences, exhibitions, and professional-development opportunities.
- » Bringing technical professionals, academics, and industry leaders together.
- » Expanding our field's largest collection of research, technical publications, and presentations via the SPIE Digital Library.
- » Providing entrepreneurial opportunities that support innovation, through events such as the industry-focused Startup Challenge and Prism Awards.
- » Contributing to the optics and photonics community through our scholarships, fellowships, endowments, grants, and educational resources.
- » Providing professional recognition, career development, skills-training, and lifelong learning to the optics and photonics community.
- » Engaging in proactive outreach and advocacy to help shape the future.

BIOS

Hot Topics



WORLD-LEADING TECHNICAL MEETINGS

SPIE convenes world-class meetings for the global optics and photonics community. Our events serve scientists, researchers, engineers, and optics and photonics companies with programs that include technical conferences, exhibitions, workshops, industry forums, and continuing-education programs.

In 2023, we proactively affirmed our commitment to in-person events and our communities responded by attending and engaging with each other. We saw an increase year-over-year in the number of abstract submissions, exhibitor participants, and attendees, a level of activity that bring us closer to our previous norms. Though an unexpected weather event impacted the opening day of SPIE Optics + Photonics, our skilled staff rapidly rescheduled more than 300 presentations as well as moving the exhibition to a new location. Barring any future external impacts, we forecast that events in 2024 will get us fully back to and perhaps exceed the positive outcomes of 2019, the year before Covid-19 affected meeting participation.

Highlights include:

- » More than 4,700 submissions were received across BiOS, LASE, OPTO, and the newly launched Quantum West, a 10% increase over 2022. The Photonics West Exhibition, the largest in North America, featured more than 1,350 exhibition booths.
- » SPIE AR|VR|MR welcomed a record-setting 1,100-plus attendees and hosted a sold-out exhibition of more than 50 exhibitors.
- » SPIE Defense + Commercial Sensing attracted over 3,000 attendees. The exhibition numbers — 298 companies strong — was up 15% year-over-year. Both our exhibitors and the technical community are looking forward to the new location rotation between DC (National Harbor, Maryland) and Orlando, Florida.
- » Five all-symposium presentations at SPIE Advanced Lithography + Patterning included those by ASML and NIST leaders, representatives from NVIDIA and Intel, and 2023 SPIE President Bernard Kress who discussed lithography requirements for next-generation AR/VR.
- » SPIE Laser Damage, the Society's longest-standing meeting, included a tour of the National Ignition Facility at Lawrence Livermore National Laboratory.
- » SPIE Optifab featured a sold-out exhibition and the conference's largest-ever Optifab Student Day, with over 450 students registering to learn about career opportunities and optical manufacturing.

As always, and especially in 2023, we owe a debt of gratitude to the incredible professionalism and dedication of our symposia leadership, conference chairs, authors, instructors, and exhibitor community, as well as to the SPIE staff and the strong and positive relationships they maintain with members of the volunteer and vendor communities.

◀ BiOS Symposium Chair
Paola Taroni.



We're very pleased with the turnout. The first two days we had very good traffic and very good quality in the leads that we gathered. We had a lot of good conversations and a lot of good meetings — that's one of the things we enjoy and one of the main draws for us here at Photonics West: the connections with customers and reaching out. We had a number of papers that we presented as well, and we had people coming by after the presentations — that's perfect. It's always nice to have that conference interchange between the presentations and the follow-ups on the exhibit floor, the way they feed into one another.

Jonathan Lee

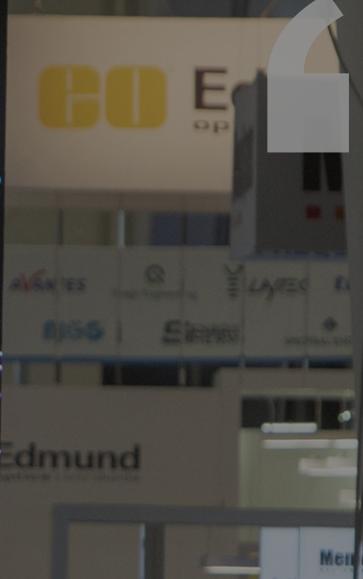
Tradeshow & Event Coordinator,
Trumpf, Inc.
at 2023 SPIE Photonics West

SPIE EXHIBITIONS

SPIE Exhibitions serve the SPIE exhibitor community by connecting companies with researchers, engineers, and buyers at SPIE events, providing opportunities that are unrivaled. We deliver excellent customer care and world-class exhibition management services that exceed customer expectations.

Highlights include:

- » Managed logistics for exhibitions and sponsorships for a total of more than 270,000 square feet of exhibition space.
- » Held exhibitions in nine cities and four countries: the United States, the Czech Republic, the Netherlands, and the United Kingdom.
- » Welcomed more than 2,200 exhibiting companies from across 40 countries.
- » Focused on in-person events that help engineers, scientists, and suppliers gather, and led to high exhibitor satisfaction.

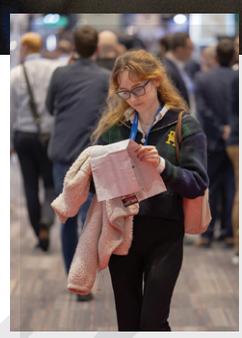


We are a longstanding attendee at SPIE Photonics West and this year it was so great to see everybody back at this in-person meeting – it’s so exciting and attendance at the booth was great! We exhibited at BiOS as well as Photonics West, and we get a great mixture of engineers, scientists and PhD students at the booth. We’ve been connecting with others not only here on the show floor, but also at the networking events and receptions. Everything together that SPIE offers makes a complete picture.

Rainer Erdmann
 Managing Director/CEO,
 PicoQuant (also a Prism Award winner)
 at 2023 SPIE Photonics West



- In 2023, SPIE included exhibitions at the following conferences:
- BiOS** (San Francisco, CA)
 - Photonics West** (San Francisco, CA)
 - AR | VR | MR** (San Francisco, CA)
 - Advanced Lithography + Patterning** (San Jose, CA)
 - Optics + Optoelectronics** (Prague, Czech Republic)
 - Defense + Commercial Sensing** (Orlando, FL)
 - Optics + Photonics** (San Diego, CA)
 - Sensors + Imaging** (Amsterdam, the Netherlands)
 - Photomask + EUV Lithography** (Monterey, CA)
 - Optifab** (Rochester, NY)
 - Photonex** (Glasgow, United Kingdom)



It’s been very exciting to get back to Photonics West. There’s been lots of traffic and lots of quality people interested in us. Talking with other exhibitors has also been great: we took part in a couple of networking events and those went really well. Everybody is so glad to see their colleagues again, to see the booths again, to get networking again — you can feel the energy on the floor.

Kaja Dauelsberg
 Sales & Marketing
 Ficontec



Photo credit: SERGEY TOLMACHEV
Water
2023 International Day of Light
photo contest.

LEADING PUBLICATIONS

Publishing with SPIE is an investment in your career and in your community. SPIE Publications — which include the SPIE Press, the Proceedings of SPIE, and 15 peer-reviewed journals — disseminate high-quality technical publications that meet the information needs of the optics and photonics community. As of December 2023, the SPIE Digital Library, the world's largest collection of applied optics and photonics research, included more than 600,000 publications across conference proceedings, presentation recordings, journals, and eBooks. SPIE continues to partner with more than 60 relevant scientific databases to enable researchers to easily find information published by SPIE.

In 2023, more than 28,500 new publications were added to the SPIE Digital Library including more than 22,600 conference proceedings papers, over 8,100 presentation recordings, over 1,600 journal articles, and 30 eBooks. Nearly 79,000 authors representing 111 countries contributed to SPIE publications last year.

Highlights include:

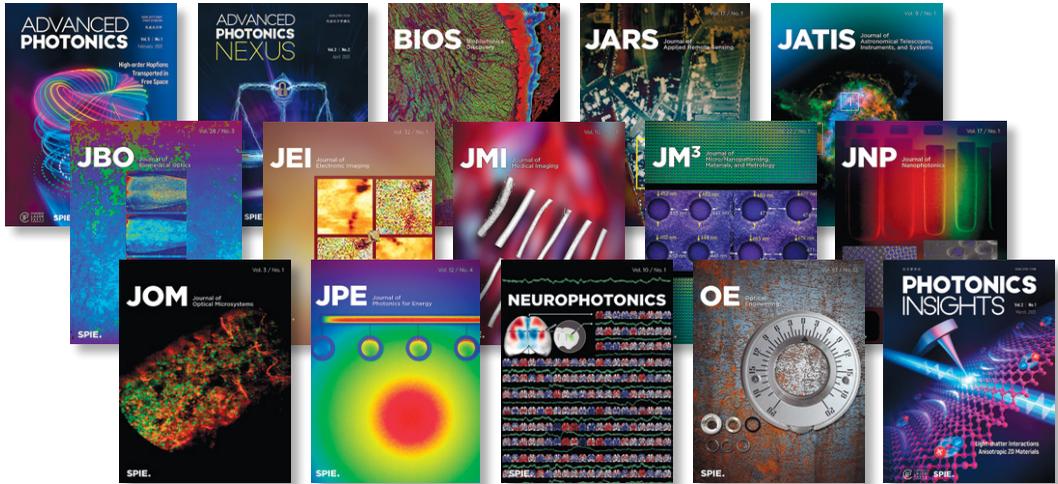
- » Launched our 15th journal, *Biophotonics Discovery*, a Gold Open Access journal.
- » Published 30 book titles, including the first two children's books in SPIE history.
- » *Advanced Photonics* ranked #4 overall in the Optics category in Web of Science, and *Neurophotonics* and *Journal of Biomedical Optics* continued to rank as the top two biomedical optics journals.
- » *Journal of Medical Imaging* and *Journal of Optical Microsystems* received their first Impact Factor.
- » Completed four journal editor searches, reviewing 164 candidates from 27 countries.
- » SHARE (SPIE Helping Advance Research Everywhere) is a program that provides free access to the SPIE Digital Library for researchers in 114 World Bank-designated low-income countries. Since its launch in October 2020, researchers have downloaded nearly 1.2 million papers from the SPIE Digital Library including more than 380,000 in 2023.

PROCEEDINGS OF SPIE

The Proceedings of SPIE are an important and valuable resource for both theoretical foundations and practical results, with millions of downloads a year from researchers and engineers across the globe. In 2023, SPIE published a total of 468 proceedings volumes, up from 395 in 2022 and 382 in 2021. SPIE provided publishing services to 113 non-SPIE conferences. At year-end, the SPIE Digital Library included a total of 528,369 proceedings papers, 55,068 presentation recordings, and 8,035 posters.

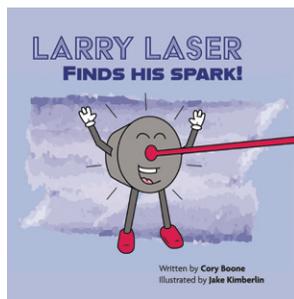
JOURNALS

SPIE publishes 15 journals with a rigorous peer-review process, including six Gold Open Access journals and a Diamond Access journal. In late June, SPIE received updated Impact Factors and CiteScores. The four-year Scopus CiteScore, which looks at citation ratios for papers published over the past four years, increased for five SPIE journals. The Web of Science Impact Factor, which considers citation ratios for papers published over a period of two years, increased for seven of our journals. *Advanced Photonics* is currently ranked #4 in the Web of Science Optics category; *Journal of Biomedical Optics* and *Neurophotonics* are the top-ranked biomedical optics journals; and the *Journal of Medical Imaging* and *Journal of Optical Microsystems* received their first Impact Factors.



SPIE PRESS

SPIE Press continues to be the largest independent society publisher of optics and photonics books. In 2023, we published 30 new titles and signed 32 new contracts for future titles. More than 500 books are now available in the SPIE Digital Library and more than 650 are available for purchase on [spie.org](https://www.spie.org). A particular highlight last year was the publication of the first-ever children's books by SPIE, *Jesse Explores: Vision and Vision Impairment*, written by Danuta Sampson and Gavrielle Untracht and illustrated by Marta Jakubowska, and *Larry Laser Finds His Spark*, written by Cory Boone and illustrated by Jake Kimberlin.



AGNIESZKA SIEMION

As featured in the 2023 Women in Optics Planner

Assistant Professor with the Optical Information Processing Laboratory, Faculty of Physics; Head of Laboratory of Optical Information Processing; Vice-Dean for Students Affairs, Warsaw University of Technology, Poland.



EDUCATION, LIFELONG LEARNING, AND PROFESSIONAL DEVELOPMENT

SPIE provides continuing education and professional-development products that meet the educational needs of SPIE's engineering, scientific, and business constituencies, and support and promote science, technology, and math education worldwide.

In 2023, our comprehensive portfolio of over 200 courses in optics and photonics — from *Design of Efficient Illumination Systems*, to *Introduction to Nonlinear Optics* — served people in industry, academia, and government. For wider accessibility, we recorded and updated two popular online courses, *Introduction to Optomechanical Design*, taught by Daniel Vukobratovich, and *Practical Optical System Design*, taught by Craig Olson.

Top five in-person courses in 2023

- » *Optical Technologies and Architectures for Virtual Reality (VR), Augmented Reality (AR) and Mixed Reality (MR) Head-Mounted Displays (HMDs)*
- » *Optical Metrology for AR/VR/MR*
- » *Introduction to Optical Alignment Techniques*
- » *Practical Optical System Design*
- » *Fastening Optical Elements with Adhesives*

Top three webinars in 2023

- » *Polarized Light and Optical Systems*
- » *Optics of the Human Eye*
- » *Head Mounted Requirements and Displays for Augmented and Virtual Reality Applications*



SPIE Member Sydney Sukuta teaching *Basic Laser Technology: Fundamentals and Performance Specifications* at Photonics West in 2023.

YOUR SPIE SOCIETY MEMBERSHIP CONNECTS YOU TO THE WORLD

SPIE encourages our Members to increase their engagement with the Society and the greater optics and photonics community, supporting them to become changemakers. SPIE Members are the lifeblood of the organization and we take pride in our growing Membership numbers. They represent the Society on the global stage, contributing extensively to the optics and photonics community in a variety of impactful ways, from producing cutting-edge research, to participating in the mentorship and networking activities that feed the development pipeline of the next generations of scientists and engineers.

We provide networking, mentoring, professional development, and legacy opportunities to every SPIE Member, making it easy for them to create Membership experiences that grow in tandem with their career.



Highlights include:

- » Expanded meaningful networking opportunities — including meetups and receptions — at SPIE meetings.
- » Continued growing our SPIE Students Slack workspace and built the framework to launch a similar online networking platform for Early Career Members in 2024.
- » Produced professional-development course topics that focus on the soft skills recent graduates need in order to enhance their success in the optics and photonics industry.
- » Funded 120 Student Chapters worldwide for more than 1,500 activities that encompassed outreach, professional development, succession planning, and technical programming.
- » Conducted “Student Chapter Best Practices” sessions at SPIE events to provide student leadership with resources and tools to foster more successful engagement.
- » Awarded the 2023 SPIE Presidential Award for Outstanding Student Chapter to the OSKar Student Chapter in Germany.
- » Welcomed 83 new Fellow Members and 89 new Senior Members into the SPIE community.

COMMITMENT TO COMMUNITY

STUDENT CONFERENCE SUPPORT INITIATES LIFELONG RELATIONSHIPS

This is the first time I have gone to the SPIE conference. I got considerable attention over my poster presentation. In addition, I made multiple contacts with the companies for my future research-related work and attended a couple of talks that improved my ability to enhance my research. I am very thankful to the SPIE team for providing me with these opportunities and the grant support.

Ravindra Kumar

PhD student, India,
attended SPIE Photonics West

The highlight of my experience at Photonics West was connecting with so many different people from all over the world, both from academia and from industry, which gave me a better understanding of all the exciting things that are happening in my field and of the different possibilities for a career in photonics.

Greta De Paoli

PhD student, United Kingdom,
attended SPIE Photonics West

I won third-place award for the Student Optical Design Challenge in the AR|VR|MR session. That was a very big encouragement for me to pursue more challenging problems of optical design. I will definitely attend SPIE Photonics West again if I have the chance next time.

Tianyao Zhang

MSc student, United States,
attended SPIE AR|VR|MR and
SPIE Photonics West

Inspired by the vision of a future in which the transformative power of photonics enhances life around the globe, SPIE offers a rich range of opportunities across both outreach and direct support. In 2023, SPIE contributed \$5.6 million to the international optics community through our community support and development programs.

In 2023, we celebrated the 19th year of our Women in Optics planner — one of the earliest efforts in our ongoing commitment to equity, diversity, and inclusion across all of our activities — by updating it to a sleek notebook. We continue to create open and inclusive forums that maximize the potential for innovation and collaboration, working to increase diversity and inclusion across all SPIE events and programs. In addition to our LGBTQ+ and Black in Photonics social and networking events, we include informal community lounge spaces at SPIE events for socializing, relaxation, and networking, as well as our Lunch and Learn discussion series. Our Family Care Grants continue to support attendance at SPIE conferences for Members with dependent-care responsibilities.

From scholarships, fellowships, and grants, to endowments, support of photonics technician training, career resources, industry resources, and professional recognition, SPIE contributes to the global optics and photonics community in various impactful and transformative ways. Whether it's the SPIE Career Center providing a trusted platform that facilitates both hiring opportunities and job searches across the industry, or our optics-and-photonics-focused education scholarships, SPIE prides itself on supporting next-generation optical engineers, early-career scientists, and established academic researchers alike. The following pages highlight some of the transformative impact that SPIE has on the international optics and photonics community.

- » Supported 367 SPIE Student Members through the Student Conference Support program, now in its second successful year. The travel reimbursements and conference fee-waivers enabled them to attend and present at 11 SPIE events. (You'll find some of their testimonials on these pages.)
- » Awarded 83 scholarships for a total of \$409,000 as part of SPIE's commitment to education and outreach.
- » Sponsored the Biophotonics Summer School on the Island of Ven, Sweden, with more than 50 students and more than a dozen world-renowned lecturers, offering attendees the opportunity to connect with fellow students, the school organizers, and teachers.

RECIPIENTS OF THE 2023 JENOPTIK-SPIE PHOTONICS TECHNICIAN SCHOLARSHIPS

These scholarships are awarded to students at an educational institution in Florida who are enrolled or planning to enroll in a laser, optics, or photonics technician associate or certificate program.



Katherine Mullins



Ray Maronpot

DEVELOPMENT

- » Announced a team of researchers from Tuskegee University as the 2023 recipient of the \$100,000 IBM-SPIE HBCU Faculty Accelerator Award in Quantum Optics and Photonics.
- » Supported outreach in the community through 14 SPIE Outreach Grants.
- » Co-organized and sponsored the 17th Education and Training in Optics & Photonics (ETOP) conference.
- » Held an equity, diversity, and inclusion program at the LASER World of PHOTONICS in collaboration with European Optical Society, Optica, IEEE Photonics, and others. The five-day event included a range of activities from workshops and panel discussions, to keynote speeches and networking events.
- » Sponsored the ICFO-KNUST International School's Frontiers of Light: Photonic Sciences Applications and Opportunities in Kumasi, Ghana. This five-day intensive course, directed at students in West Africa wishing to enter the field of photonics, featured lectures and classes by experts from ICFO and other top scientists from leading institutions.
- » Established the Women in Optics Scholarship with Optimax which will award two women \$5,000 a year each, over the next five years. The inaugural recipients will be announced in 2024.
- » Established the Berns-SPIE SPARK Grants in partnership with the Beckman Laser Institute. The grants for young research scientists honor laser tech and biomedical pioneer Michael W. Berns. The inaugural recipients will be announced in 2024.
- » Announced new Catalyst Award. The award, showcased during the 2024 SPIE Prism Awards, recognizes a for-profit company having an intentional and significant social, sustainability, community-focused, or environmental impact.



The experience at SPIE Medical Imaging 2023 was not only my first face-to-face experience at the event, but also one of my greatest professional experiences. The various events during the congress allowed me to meet people from different places and research groups, other students, and professionals with experiences in other contexts but with aspects similar to those I deal with in my work. It was my first experience presenting a poster for so many people and it allowed me to go into detail and exchange ideas with several researchers, while elaborating alternatives for the challenges faced. It was also possible to get to know in more detail the work of other colleagues. In addition to all this, we were very well welcomed, both in the general reception of the event and in the reception of students.

Arthur Costa

PhD student, Brazil,
attended SPIE Medical Imaging

A highlight from this experience was having meaningful and helpful conversations after my presentation about my research. It was a great feeling to know that people were interested in my work, and I gained ideas for improvement, based on recommendations from some of the leaders in the field that I communicated with. It was amazing to be able to meet so many people who have been doing groundbreaking work in Smart Structures and NDE.

Trenton Abbott

PhD student, United States,
attended SPIE Smart Structures
+ Nondestructive Evaluation

Personally, I greatly enjoyed the opportunity to attend my first in-person international conference since the Covid-19 pandemic. The highlight of the conference for me was the experience of witnessing early-stage researchers and very experienced scientists interacting in a friendly and open environment. The chance to engage with other students at the start of their career was of great benefit in building connections with colleagues across the globe.

Faolan Radford McGovern

PhD student, Ireland,
attended SPIE Optics +
Optoelectronics

RECIPIENTS OF THE 2023 EICHENHOLZ-SPIE PHOTONICS TECHNICIAN SCHOLARSHIPS

These scholarships support students who are enrolled or planning to enroll in a laser, optics, or photonics technician associate or certificate program.



Esther Dykstra



Harsha Gopi



Janvi Patel



Andrew Way

THE SPIE ENDOWMENT MATCHING PROGRAM

The SPIE Endowment Matching Program was inaugurated in 2019 to increase international capacity in the teaching and research of optics and photonics. With the 2023 establishment of the SPIE-Manchester Postgraduate Scholarship in Photonics, the program has provided over \$4 million in matching gifts, resulting in more than \$11 million in dedicated funds. The SPIE Endowment Matching Program supports optics and photonics education and the future of the industry by contributing a match of up to \$500,000 per award to college and university programs with optics and photonics degrees, or with other disciplines allied to the SPIE mission.

SPIE currently has endowment partnerships with the following institutions:

The University of Arizona's Wyant College of Optical Sciences: The SPIE Chair in Optical Sciences

The University of Central Florida's College of Optics and Photonics (CREOL): The SPIE-Glebov Family Optics and Photonics Graduate Scholarship Fund and the Soileau Family-SPIE Optics and Photonics Undergraduate Scholarship Fund

JILA, a joint institute of the University of Colorado, Boulder, and the National Institute of Standards and Technology (NIST): The Baur-SPIE Endowed Chair in Optics and Photonics at JILA

ICFO, the Barcelona-based Institute of Photonic Sciences: The SPIE@ICFO Chair for Diversity

The University of Glasgow: The SPIE Early Career Researcher Accelerator Fund in Quantum Photonics

The University of Wisconsin-River Falls: The SPIE/UWRF Optics Summer Research Scholars Fund

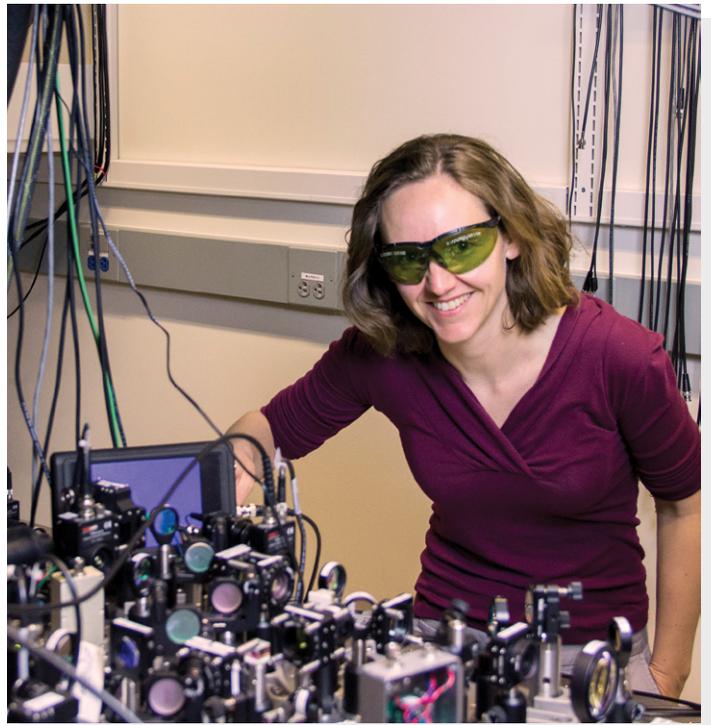
Vanderbilt University's School of Engineering: The SPIE Faculty Fellowship in Optics and Photonics

The University of Birmingham: The SPIE Optics and Photonics Champion Academy

The University of Rochester's Institute of Optics: The SPIE Graduate Fellowship in Optical Sciences and Engineering

The University of Manchester: The SPIE-Manchester Postgraduate Scholarship in Photonics

Cindy Regal, professor of physics at University of Colorado, Boulder, and Fellow of JILA, the joint institute of CU Boulder and the National Institute of Standards and Technology (NIST), the inaugural holder of the Baur-SPIE Endowed Chair in Optics and Photonics at JILA. ▶



Quazi Rushnan Islam

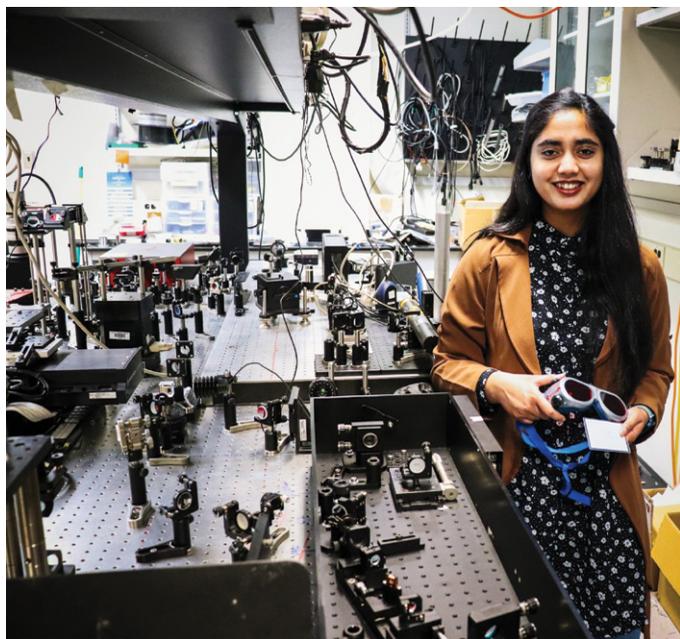
THE INAUGURAL SPIE GRADUATE FELLOW IN OPTICAL SCIENCES AND ENGINEERING AT THE UNIVERSITY OF ROCHESTER'S INSTITUTE OF OPTICS

Quazi Rushnan Islam's enthusiasm — for optics, for her research, for proactive participation in the science community — is infectious. “For my research, I have two things that I look for,” says Islam, a doctoral student at the University of Rochester's Institute of Optics whose work focuses on improving contact lenses. “One is, is it going to be intellectually challenging? And this definitely is, because I have to understand the biological aspect — I'm putting something on your eye! — while also applying changes to contact-lens material under different conditions. So that's both intellectually challenging and interdisciplinary. It's also great that my work will help people see better.” In other words, interesting work that benefits others. And vision science, Islam points out, is something people can relate to: “The health of your eyesight, it's just so fundamental.”

Some problems with eyesight occur because light is not falling on the retina correctly; corrective lenses — like any standard optical system — address this by refocusing light rays. “What we try to do is address how to focus light correctly on your retina by changing the contact-lens material itself, rather than just shaping the lens externally; we're trying to change the refractive index of the material so that it can correct your individual vision on a more granular level.” This particularly impacts multifocal lenses whose complex shapes of Fresnel patterns cause more frequent blinking and whose edges therefore attract more protein deposits.

“It's like when you have a serrated knife with all these edges and you use it with butter, and you have all this butter stuck to the edges,” Islam explains. “I want to give you a nice, smooth contact lens that fits nicely onto your eye, without the weird shape and edges. And I want to do that by changing the material properties inside that lens which will have the same effect on focusing light as the Fresnel shape does, but where you can see something far and something near because of the refractive corrector patterned into the material. I do that using lasers to change the properties within the material, so you don't have to worry about the blinking and the protein deposits.” While the technology of making Fresnel patterns in the material has already been achieved, Islam's research focuses on how to integrate this technology into the manufacturing line to mass-produce better contact lenses. “The conditions under which such patterning has to be implemented are challenging,” notes Islam. “But that just makes the problem intricate — and interesting.”

As the recipient of the SPIE Graduate Fellowship, Islam is benefiting from funding that supports her research. But the fellowship, she says, isn't just a critical milestone in terms of financial support — it's having an impact on a personal level as well. “A PhD is long,” says Islam. “It's a marathon. I know I'm doing great work, and I know it's going to help people one day, but sometimes having that external validation really helps. Part of SPIE's vision is to empower students — people like me — who want to learn more about optics. That aspect resonates with what I'm trying to do with science, that I'm trying to learn more about optics. As an optical engineer, I feel we help scientists do better science, whether it's probing something, or whether it's detecting something. Being funded by an organization like SPIE, one that has been supporting optics research and outreach for so long, is just a win-win in every direction: it helps me stay grounded as I work on my PhD, and having the SPIE name behind me is telling people that this research is important.”



Next to a custom-built Titanium:Sapphire laser designed to produce short red pulses, Islam is holding an IR card which she uses to follow the beam path of the output.

Patrick Cameron

INAUGURAL BENEFICIARY OF THE SPIE GLOBAL EARLY CAREER RESEARCH PROGRAM AT THE UNIVERSITY OF GLASGOW

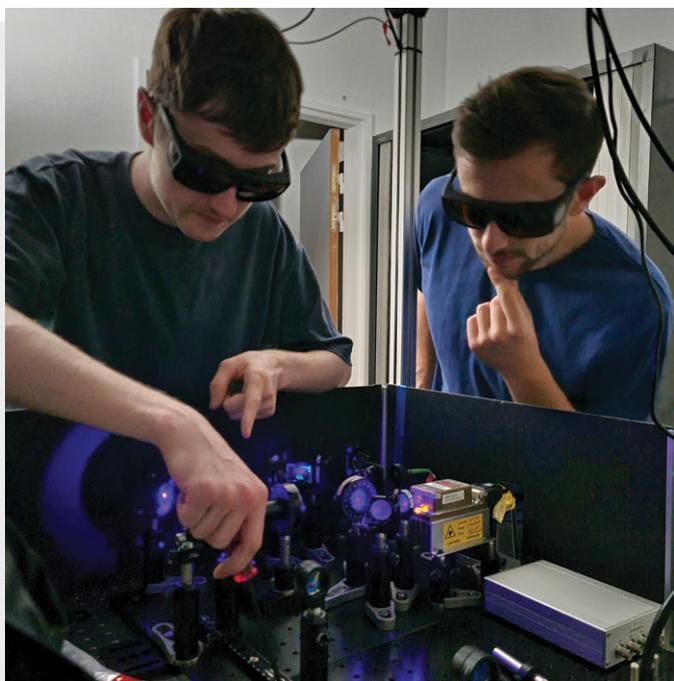
For Patrick Cameron, born and raised in Aboyne, a village in the northeast of Scotland, science has been a lifelong interest. “My dad would find me books about science when I was a kid, and I enjoyed it at school,” he says. “When it was time to choose what to study at university, I didn’t see myself doing anything other than physics.” By the time Cameron was considering a final-year university project, he was drawn to the practicalities of photonics-focused physics: “I quite like this idea that you can have your bench and engineer your experiment and build it yourself.”

Cameron’s BSc in physics in 2019 was followed by an MSc in quantum technology in 2020, both at the University of Glasgow. During that master’s year, he discovered Daniele Faccio’s Extreme Light Group, working under the supervision of group member Hugo Defienne. Becoming interested in Faccio and Defienne’s research in quantum imaging, Cameron was accepted as a PhD student on a project to explore ways of manipulating and shaping quantum light for imaging applications. And, when Defienne moved to Paris to establish his own lab, Cameron’s options included working with Defienne across the Channel.

Cameron is pursuing this opportunity thanks to a collaboration between SPIE and the University of Glasgow. Established in 2020, the SPIE Early Career Researcher Accelerator Fund in Quantum Photonics, part of the SPIE Endowment Matching Program, was created by SPIE and the university to support graduate students working in quantum photonics. It encompasses two new programs at Glasgow: the SPIE Early Career Researcher in Quantum Photonics Scholarship and the SPIE Global Early Career Research program, the latter promoting international cross-laboratory collaborations between leading quantum-photonics research groups, pairing university early-career researchers with counterparts from external laboratories for six-month-long shared projects. Cameron is the first beneficiary of the cross-laboratory program.

“I’m studying the propagation of entangled light through complex media, specifically multimode optical fibers,” says Cameron. “I chose to do this project in Paris because of Dr. Defienne’s expertise and the reach of his professional network: aside from his own laboratory, he’s closely aligned with Sylvain Gigan’s group.” The research interests of Gigan, a professor of physics at the Sorbonne and a researcher within the Laboratoire Kastler-Brossel, include fundamental investigations of light propagation in complex media, biomedical imaging, sensing, and signal processing, as well as quantum optics and quantum information in complex media.

“It’s really great to be able to work closely with other students and researchers who are working with the same concepts,” he points out. “You can ask colleagues about your ideas without having to explain the whole thing from scratch; because they are already familiar with what you’re doing, you can get right to the point. I have access to a lot more people who know what they’re doing, who have a range of expertise and knowledge, and a different point of view on things.” He grins. “Yeah, I can pester a lot more people.”



Cameron, left, with intern Remy Grasland, aligns a new photon-pair source that will test new cameras. “This is a typical photon-pair source that we have in most of the experiments in the lab,” says Cameron. “We use a process called SPDC (spontaneous parametric down conversion) to generate the pairs by converting one high-energy photon into two lower-energy entangled photons. Specifically, we illuminate a non-linear crystal with a blue laser (405nm wavelength), which generates pairs with wavelength in the near-infrared range (~810nm). The blue/violet light is some scattered light from the laser. We then detect the pairs using an EMCCD camera so we can align the lenses.”

Tuskegee University Team

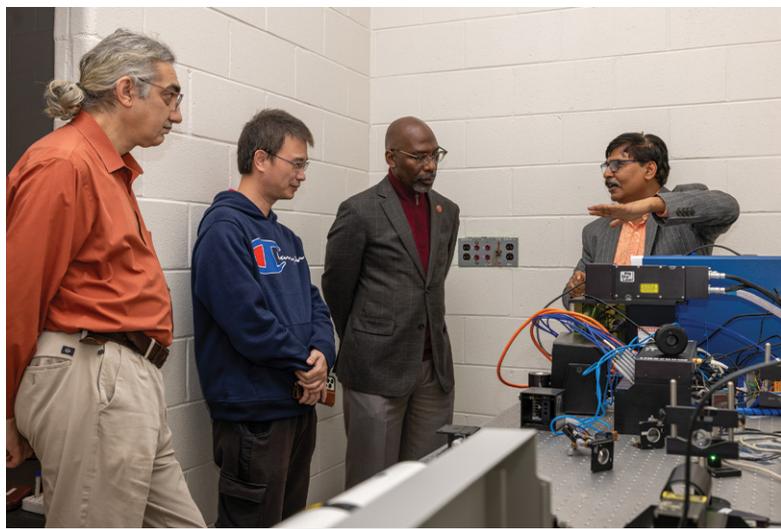
RECIPIENT OF THE 2023 IBM-SPIE HBCU FACULTY ACCELERATOR AWARD IN QUANTUM OPTICS AND PHOTONICS

Established in 2021, the IBM-SPIE HBCU Faculty Accelerator Award in Quantum Optics and Photonics, a \$100,000 annual award presented jointly by SPIE and the IBM-HBCU Quantum Center, supports and promotes research and education in quantum optics and photonics within IBM-HBCU Quantum Center member institutions. The collaboration arose as a way to ensure that quantum and its related technologies of the future incorporate the skills, experience, and input of a diverse community; SPIE and IBM believe the impact of these technologies will be stronger with the inclusion of the ideas and work of the diverse student-bodies found at America's HBCUs. The IBM-SPIE joint annual award is expected to provide a shared total of \$500,000 by 2025.

The 2023 IBM-SPIE HBCU Faculty Accelerator Award in Quantum Optics and Photonics has gone to a group of researchers and educators at Tuskegee University. The team includes the head of the university's physics department Akshaya Kumar; Dimitar Dimitrov, a fellow physicist and committed student mentor; Fan Wu, who facilitates cutting-edge computational tools for this research group's students; and S. Keith Hargrove, a scientist, industry-alliance expert, and the university's provost and senior vice president for academic affairs.

The Tuskegee University group will use the award to implement "Exploring the Optical Properties of Rare Earth-Doped Glasses and Photonic Crystals," a project that will explore and utilize the importance of rare-earth ions doped in glasses which have a significant impact on quantum optics, photonics, and quantum-stage storage. One application in particular involves the integration of solid-state laser materials, crucial for transmitting quantum information via light. As a core element of the student research training objective, the project will educate the students in glassmaking, impart optical measurement skills, and lead them through both theoretical and experimental approaches for photonic-crystal development. As well as its quantum-focused research goals, the Tuskegee University project includes a dedicated focus of preparing and empowering the group's students for utilizing quantum optics and photonics research.

"Our team is very grateful to receive the IBM-SPIE HBCU Faculty Accelerator Award in Quantum Optics and Photonics," said Kumar. "We are excited to be introducing Tuskegee University students to the frontier area of quantum optics and photonics research. This grant will be particularly helpful to the university's faculty and students researching glass materials doped with rare earth ions and photonic crystals for quantum upconversion, quantum cutting, and light quantum control applications. At the same time, a tandem approach for understanding the photonic crystals via theoretical simulation and experimental research is planned by university researchers."



The Tuskegee University team discussing the laser induced plasma formation near the Q switched-ND:YAG laser, coupled with spectrometer and the sample chamber. From left to right: Dimitar Dimitrov, Fan Wu, S. Keith Hargrove, and Akshaya Kumar.

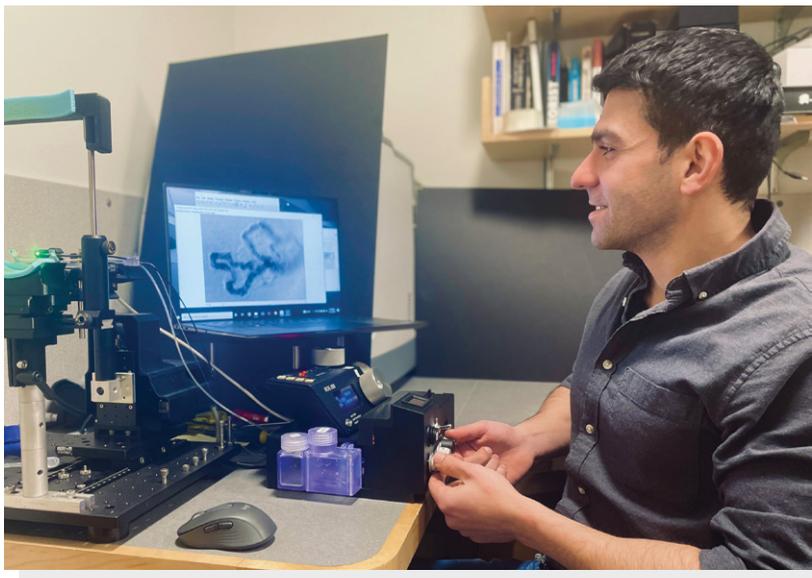
Arutyun Bagramyan

RECIPIENT OF THE 2023 SPIE-FRANZ HILLENKAMP POSTDOCTORAL FELLOWSHIP IN PROBLEM-DRIVEN BIOMEDICAL OPTICS AND PHOTONICS

Arutyun Bagramyan, who received his PhD in physics and biomedical engineering from Laval University in 2020, is the 2023 recipient of the SPIE-Franz Hillenkamp Postdoctoral Fellowship in Problem-Driven Biomedical Optics and Analytics. The annual award of \$75,000 supports interdisciplinary problem-driven research and provides opportunities for translating new technologies into clinical practice for improving human health.

Bagramyan’s postdoctoral research — conducted in conjunction with Principal Investigator Charles Lin at the Wellman Center for Photomedicine — focuses on the development of a miniature oblique back-illumination microscope for real-time, non-invasive imaging of white blood cells in human microvasculature. The clinical device will benefit one of the most vulnerable populations of patients — neonates — by alleviating the need for blood extraction (phlebotomy), while enabling preventative monitoring of the immune system for early diagnosis of infection and for any abnormal immune-system functioning that might induce inflammation. The aim is an immediate clinical improvement that will relieve prematurely born infants from repeated phlebotomy and prevent life-threatening medical complications such as septic shock.

“Receiving the SPIE-Franz Hillenkamp Fellowship is an extraordinary opportunity for me to continue working on a fascinating translational project with a potentially far-reaching medical impact,” noted Bagramyan on hearing the news. “I hope that one day, clinicians will use our instrument for safe daily diagnosis of inflammation in prematurely born neonates, without inducing pain or drawing blood.”



Bagramyan analyzing high-frame rate videos of human capillaries. He is looking for the immune cells that circulate in the blood flow and also, adhere to blood vessel walls. The monitoring and quantification of immune cells can help to detect the presence of pathogens or infections that induce inflammation.

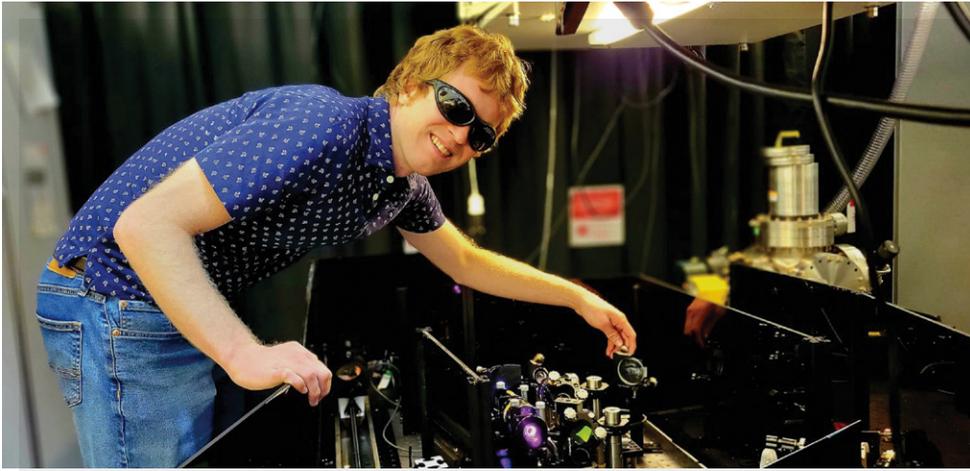
NEWLY ESTABLISHED IN 2023, THESE AWARDS WILL WELCOME THEIR INAUGURAL

The Berns-SPIE SPARK Grants

This SPIE and Beckman Laser Institute (BLI) partnership honors laser tech and biomedical pioneer Michael W. Berns. SPIE and the BLI will each contribute \$200,000 toward the Berns-SPIE SPARK Grants; the \$400,000 total will cover multiple grants over the next two years. The Berns-SPIE SPARK Grants will provide support to young research scientists — either postdocs or faculty — who are using lasers and other optically based systems to study basic cell process or to develop technologies to diagnose and/or treat diseases in an innovative way that could have a major impact on the field of biophotonics.

Brendan McBennett

RECIPIENT OF THE 2023 NICK COBB MEMORIAL SCHOLARSHIP



McBennett adjusting a wedge, an optic that reflects only a small fraction of the laser beam and transmits the rest. This allows imaging of a beam mode on a CMOS (complementary metal oxide semiconductor) camera, which would otherwise be damaged by the full laser power.

Brendan McBennett is the 2023 recipient of the \$10,000 Nick Cobb Memorial Scholarship, a joint scholarship supported by SPIE and Siemens EDA, formerly Mentor, a Siemens company. The Nick Cobb scholarship recognizes an exemplary graduate student working in the field of lithography for semiconductor manufacturing, and honors the memory of Nick Cobb, who was an SPIE Senior Member and chief engineer at Mentor.

McBennett is pursuing a PhD in Physics at the University of Colorado, Boulder (CU). Working under the supervision of Professors Margaret Murnane and Henry Kapteyn, his graduate work focuses on heat — “the most entropic and overlooked form of energy, which nonetheless plays a crucial role in nanoelectronics and quantum technologies,” according to McBennett. In the Kapteyn-Murnane group, he uses short-wavelength lasers to resolve heat flow on length scales below the visible diffraction limit, which has led to numerous counterintuitive observations that have pushed the boundaries of existing theory and opened new routes to modeling heat dissipation in nanoelectronics. To address a critical bottleneck issue — acquiring the nanofabricated samples necessary to study industry-relevant material geometries — McBennett has worked with mentors at NIST and across CU to learn electron beam lithography, while simultaneously developing an ultraviolet transient grating experiment to extend nanoscale heat flow measurements to high bandgap energy materials. McBennett received his BS in Mathematics and BA in German Studies from the University of North Carolina at Chapel Hill in 2016, and an MS in Physics from CU in 2021.

“It is an honor to receive the Nick Cobb Memorial Scholarship, and I am excited to build closer ties with other advanced lithography researchers at the SPIE conference this February,” said McBennett. “Thermal management is critical to nano, energy, and quantum technologies, and, as our understanding of heat flow at nanometer scales improves, it will be possible to design faster and more energy-efficient devices. I look forward to the new collaborations that this award will make possible as we apply our ultraviolet sources to study heat flow at shorter length scales and in new materials.”

RECIPIENTS IN 2024.

The Women in Optics Scholarship

Two annual scholarships will support the education of two women who are US citizens studying in the field of optics, photonics, or engineering in the United States. Each individual \$5,000 scholarship may be used for tuition and fees, textbooks, computer upgrades, or any supplies and equipment required for relevant courses of instruction.

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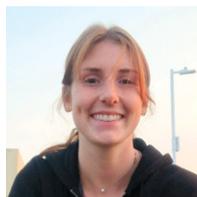


SPIE NAMED AND SPONSORED SCHOLARSHIPS



Benjamin Crockett

Benjamin Crockett, of the Institut National de la Recherche Scientifique, Canada, received the **D.J. Lovell Scholarship**, the Society's largest named scholarship. The scholarship honors the memory of longtime SPIE Member D. J. Lovell who authored the book *Optical Anecdotes* for SPIE Press. Funded by SPIE, this scholarship recognizes the recipient's top ranking among the group of SPIE named scholarship recipients.



Malley Richardson

Malley Richardson, of the University of British Columbia, Canada, received the **Teddi Laurin Scholarship**. The scholarship raises awareness

of optics and photonics and fosters growth in the industry by supporting photonics students. Funded by SPIE and Photonics Media, it honors the memory of Laurin Publishing and Photonics Media founder Teddi Laurin.



I am deeply grateful to SPIE for supporting me in my work and the outreach activities I have been pursuing during my studies. This scholarship allows me to focus on conducting creative research in photonics while thriving for a cooperative and open-minded environment.

Benjamin Crockett

Canada,
D.J. Lovell Scholarship recipient



Alexis Guidi

Alexis Guidi, of the University of British Columbia, Canada, received the **Laser Technology, Engineering, and Applications Scholarship**.

Funded by SPIE and by the officers, directors, and members of the Forum for Military Applications of Directed Energy (F-MADE), this scholarship recognizes the student's scholarly achievement in laser technology, engineering, or applications.



The SPIE Optics & Photonics Education Scholarships provide an incredible opportunity for students to progress in their career and connect to the broader optics community. These scholarships are crucial in supporting students and helping them move through their degree with minimal external obstacles.

Alexis Guidi

Canada, Laser Technology, Engineering,
and Applications Scholarship recipient



Photo credit: FLAVIA GOMES
All the lights
2023 International Day of Light photo contest.



Shannon Hamp

Shannon Hamp, of Montana State University, USA, received the **John Kiel Scholarship**.

The scholarship honors SPIE Founding Member John Kiel and his longstanding and significant contributions to the Society. This scholarship is funded by SPIE and recognizes the student's potential for long-term contribution to the fields of optics and optical engineering.

I am grateful to have received the John Kiel Scholarship as it has advanced my research goal of using UAV-based hyperspectral imagery to refine satellite measurements of snow reflectivity by providing a new, faster computer. Support from this scholarship has also provided course materials that have helped me build a foundational understanding of optics and photonics in my graduate classes at Montana State University.

Shannon Hamp
United States,
John Kiel Scholarship recipient



Dylan Maxwell

Dylan Maxwell, of Montana State University, USA, received the **Optical Design and Engineering Scholarship**. The scholarship, which honors

well-respected members of the SPIE technical community Bill Price and Warren Smith and is funded by SPIE and the Price Fund, supports a fulltime undergraduate or graduate student in optical design and engineering.

SPIE-Managed Scholarship

Ankur Desai



Ankur Desai, of the University of Rochester, USA, received the **Michael Kidger Memorial Scholarship in Optical Design**. The scholarship,

funded by the Kidger Family, supports a student engaged in optical design, including lens design, illumination design, and computational optical design.



Dong Gi Lee

Dong Gi Lee, of Hanyang University, Republic of Korea, received the **BACUS Scholarship**. The scholarship is sponsored by BACUS, the Photomask

International Technical Group of SPIE, and supports students who are pursuing work in photomask- and microlithography-manufacturing for the semiconductor industry.

SPIE SCHOLARSHIP RECIPIENTS

Omar Alkhazragi

King Abdullah Univ. of Science and Technology (Saudi Arabia)

Erick Ramon Baca Montero

Univ. de Guanajuato (Mexico)

Nune Badalyan

Yerevan State Univ. (Armenia)

Wenlin Bai

Southwest Jiaotong Univ. (China)

Valentina Bellemo

Nanyang Technological Univ. (Singapore)

Essam Berikaa

McGill Univ. (Canada)

Yamila Borsch

Vrije Univ. Brussel (Belgium)

Jennifer Bragg

The Univ. of Arizona (United States)

Rodolfo Carrillo-Betancourt

Univ. Nacional Autónoma de México (Mexico)

Trevor Chen

Westview High School (United States)

Suyeon Choi

Stanford Univ. (United States)

Wilmer Contreras Sepulveda

Instituto Nacional de Astrofísica Óptica y Electrónica (Mexico)

Gloria Davidova

Cornell Univ. (United States)

Kirtan Pravin Dixit

The Univ. of Alabama in Huntsville (United States)

Faraneh Fathi

Univ. of Kentucky (United States)

Mengfan Fu

Shanghai Jiao Tong Univ. (China)

Hatice Göktürk

Ludwig-Maximilians-Univ. München (Germany)

Isabella Gomez

Univ. EAFIT (Colombia)

Grzegorz Gomólka

Wroclaw Univ. of Science and Technology (Poland)

Diana Laura Gonzalez Hernandez

King Abdullah Univ. of Science and Technology (Saudi Arabia)

Artem Hrinchenko

V. N. Karazin Kharkiv National Univ. (Ukraine)

Ilija Hristovski

The Univ. of British Columbia Okanagan (Canada)

Huai-Ching Hsieh

National Taiwan Univ. (Taiwan)

Tatyana Ivanova

Heriot-Watt Univ. (United Kingdom)

Marcin Jastrzębski

Univ. of Warsaw (Poland)

Na Jin

Brown Univ. (United States)

Md Moinul Islam Khan

McGill Univ. (Canada)

Yeseul Kim

Pohang Univ. of Science and Technology (Republic of Korea)

Stanislaw Kurzyna

Univ. of Warsaw (Poland)

Joseph Lamarre

Polytechnique Montréal (Canada)

Weijia Li

McGill Univ. (Canada)

Michal Lipka

Univ. of Warsaw (Poland)

Xiaomin Liu

Shanghai Jiao Tong Univ. (China)

Karol Łukanowski

Univ. of Warsaw (Poland)

Cong Ma

Nanjing Univ. of Aeronautics and Astronautics (China)



▲
SPIE 2023 President Bernard Kress with Student Conference Support recipients as well as SPIE scholarship recipients at 2023's SPIE Optics + Photonics.

“The SPIE Photonics Educational Scholarship has had a significant impact on my academic journey, providing crucial support for my education. The financial assistance has allowed me to invest in resources such as textbooks and university courses essentials. Additionally, the scholarship has helped me to upgrade my computer, enhancing my capabilities for future research and coursework. This support not only eases the financial burden of education but also directly contributes to the quality of my learning.”

Marcin Jastrzębski, Poland

With the scholarship, I was able to acquire a computer used for conducting simulations, which is crucial for my studies in optical communications. Beyond the financial assistance, the scholarship inspired me to dedicate myself to advancing the field through meaningful research. I am very grateful for the scholarship and look forward to continuing to make the most of the support.

Mengfan Fu, China

Yakshita Malhotra

Univ. of Michigan (United States)

Dylan Maxwell

Montana State Univ. (United States)

Yun Meng

Tianjin Univ. (China)

Hugo Abel Moreno-Rodríguez

Tecnológico de Monterrey (Mexico)

Ishtiaque Ahmed Navid

Univ. of Michigan (United States)

Ikechi Theo Ndamati

Johns Hopkins Univ. (United States)

Can Özcan

Univ. of Toronto (Canada)

Evgeny Pakhomenko

Univ. of Minnesota
Twin Cities (United States)

Leerin Perumal

Univ. of the Witwatersrand
Johannesburg (South Africa)

Cade Ribeiro Peters

Univ. of the Witwatersrand
Johannesburg (South Africa)

Jiaming Qian

Nanjing Univ. of Science and
Technology (China)

Sweta Rani

IITB-Monash Research Academy
(India)

Connor Rowe

Institut National de la Recherche
Scientifique (Canada)

Prithu Roy

Institut Fresnel (France)

Swetapadma Sahoo

Univ. of Illinois (United States)

Suparna Seshadri

Purdue Univ. (United States)

Basem Shahriar

Univ. of Alberta (Canada)

Lee Sikstrom

Western Univ. (Canada)

Janet Sorrells

Univ. of Illinois (United States)

Michael Soskind

Princeton Univ. (United States)

Shriniketh Sreevatsan

Wyant College of Optical Sciences
(United States)

Icel Sukovaty

The Institute of Optics
Univ. of Rochester (United States)

Shaban Sulejman

The Univ. of Melbourne (Australia)

Ibrahim Tanriover

Northwestern Univ. (United States)

Pavel Tonkaev

The Australian National Univ.
(Australia)

Rachel Turner

The Univ. of Arizona (United States)

Chen Wang

The Univ. of Oklahoma (United
States)

William Ward

McMaster Univ. (Canada)

Piotr Wegrzyn

Institute of Physical Chemistry PAS
and Univ. of Warsaw (Poland)

Jimin Wu

Rice Univ. (United States)

Yixin Xiao

Univ. of Michigan (United States)

Qian Yang

CREOL, the College of Optics and
Photonics
Univ. of Central Florida (United
States)

Younghwan Yang

Pohang Univ. of Science and
Technology (Republic of Korea)

I am immensely grateful for the SPIE scholarship, which played a crucial role in my final year of pursuing a bachelor's degree in physics. It alleviated financial stress related to tuition fees, allowing me to dedicate my full attention to academic pursuits. Moreover, the scholarship facilitated the enhancement of my personal computer with advanced memory and graphics capabilities. This specific upgrade proved vital in elevating the quality of my coursework, especially in practical aspects such as rendering holograms and conducting intricate ray tracing simulations - essential techniques in my studies.

Hugo Abel Moreno-Rodríguez, Mexico



Welcome to

SPIE. PHOTONICS
INDUSTRY SUMMIT

SPIE.

PHOTONICS
INDUSTRY SUMMIT

17

INDUSTRY CONNECTIONS AND RESOURCES

SPIE provides the necessary nexus for people working in industry, government, and academia. Our events, exhibitions, and programs are designed to support companies as they grow and expand into new markets; identify emerging market segments; find new suppliers; and hire the optics and photonics talent required to innovate and build customers and impactful products.

In addition to our longstanding SPIE Global Industry Report, the Global Salary Report, the exciting Startup Challenge, and the prestigious Prism Awards, we also offer industry-focused executive events at our major meetings for in-person engagement and networking purposes.

Highlights include:

- » A highly successful Photonics West industry program on the Exhibition Stage, with sessions on healthcare funding, the role of AI in healthcare, and the importance of wearables and point-of-use technologies, showcased the BIOS program. Sessions on 3D sensing, microLEDs, silicon photonics, and training the next generation of optical technicians featured during Photonics West. Throughout the week, industry sessions routinely saw standing-room-only crowds, providing exceptional content and added value for attendees and exhibitors.
- » Photonics West also featured our second Quantum West industry program. Speakers included the CEO of Toshiba and the lead quantum architect for JPMorgan Chase, as well as sessions on product advancements, workforce development, and global funding.
- » At Advanced Lithography + Patterning, the director of NIST gave a plenary presentation that featured the first public details of the US CHIPS Act, a funding opportunity to construct, expand, or modernize commercial facilities for leading edge, current generation, and mature nodes.
- » The Defense + Commercial Sensing industry program featured a session on free-space optical communications organized with the Florida Photonics Cluster as well as a panel discussion on directed energy. The program also focused on technologies from exhibiting companies, providing those participating with a forum to present their products outside of the technical conferences or their booth.
- » The industry webinar series offerings continued this year with webinars by COMSOL and Hamamatsu, providing those companies with additional platforms through which to reach customers.
- » The SPIE team completed their update to the very popular and respected Global Industry Report. Key findings featured as highlights at our new event, the SPIE Global Business Forum, which launched at Photonics West 2024.



◀ SPIE CEO Kent Rochford speaking at the SPIE Photonics Industry Summit in Washington, DC.

PUBLIC POLICY, GLOBAL ADVOCACY

SPIE advocates on behalf of our global community, representing the interests of students, researchers, engineers, and optics and photonics companies. We work with the US Department of Commerce Sensors and Instrumentation Technical Advisory Committee (SITAC) — which SPIE staff in Washington, DC, currently chair — hosting committee meetings where policy recommendations are created, increasing access for our industry constituents as well as advocating key priorities for laser and sensor companies.

Highlights include:

- » Hosted the second annual SPIE Photonics Industry Summit, a one-day event with US Government speakers in Washington, DC. The event drew high-level government speakers and broad attendance from across the optics and photonics community.
- » Submitted five export-control proposals to update international Wassenaar Agreements in areas governing laser technology. This was accomplished through our role as chair of the Sensor and Instrumentation Technical Advisory Committee within the Department of Commerce, and alongside partner organization SPECTARIS.
- » Supported two National Photonics Initiative meetings, one advocating for National Quantum Initiative (NQI) reauthorization and another on R&D funding — including NQI-specific funding — and the CHIPS and Science Act.
- » Drafted a legislative proposal to improve the National Quantum Initiative in the areas of education and workforce that was included in the House draft of the legislation.
- » Met with various international cluster leads, gathering information to better understand and support the international community via government advocacy.



Google's Maria Pace, speaking at the SPIE Photonics Industry Summit. ▶



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**SPIE.
PHOTONICS
INDUSTRY SUMMIT**

PRISM20 AWARDS23



SPIE PRISM AWARDS FOR BEST NEW PRODUCTS

Since 2009, we have been recognizing the companies and teams who have launched the best new products of the previous year. Today, the Prism Awards for Photonics Innovation are recognized as the top new product awards in our industry. The annual Prism Awards evening at SPIE Photonics West has become the largest get-together for industry executives, investors, and entrepreneurs. Companies from around the world benefit from recognition and differentiation earned by their association with Prism Award finalists and winners.

2023 WINNING COMPANIES

CATEGORY	COMPANY	PRODUCT
AUGMENTED & VIRTUAL REALITY	TriLite Technologies	Trixel® 3
BIOMEDICAL DEVICES	Philophos	KUOS-0100
CAMERAS AND IMAGING	Metalenz	PolarEyes™
LASERS	Kyocera SLD Laser	LaserLight LiFi System
QUANTUM TECH	CQuiX Quantum	20-mode quantum Photonics Processor
SENSORS	Ocean Insight	SpeedSorter™
SOFTWARE	Dotphoton	Jetraw
TEST AND MEASUREMENT	Precitec Optronik	Flying Spot Scanner FSS 310

Kyocera SLD Laser accepting their SPIE Prism Award. ▶

KYOCERA SLD Laser

LaserLight LiFi System



SPIE. AWARDS

2023 SOCIETY AWARDS

The SPIE Awards Program is the most prestigious way the Society recognizes professional and personal excellence, and one of the longest-running Society programs. Since 1959, SPIE has honored the best in optics and photonics for their significant achievements and contributions in advancing the science of light.



Graham T. Reed
Gold Medal of the Society



Burn Lin
Mozi Award



Zeev Zalevsky
Chandra S. Vikram Award
In Optical Metrology



Patrick Meyrueis
President's Award



Wolfgang Fink
Aden and Marjorie Meinel
Technology Achievement
Award



Aydogan Ozcan
Dennis Gabor Award in
Diffractive Optics



John Greivenkamp
Directors' Award



Wei Min
Biophotonics Technology
Innovator Award



Danuta Sampson
Diversity Outreach Award

2023 SOCIETY AWARDS



Carmelo Rosales-Guzmán

Early Career Achievement
Award—Academic Focus



John MacKenty

George W. Goddard Award
in Space and Airborne
Optics



Bo Gu

Maiman Laser Award



Fenglin Peng

Early Career Achievement
Award—Industry/Government
Focus



Tara Fortier

Harold E. Edgerton Award
in High-Speed Optics



Volker Sorger

Maria Goeppert Mayer
Award in Photonics



Anthony Yen

Frits Zernike Award
for Microlithography



Elizabeth Krupinski

Harrison H. Barrett Award
for Medical Imaging



Alexis Spilman Vogt

Maria J. Yzuel Educator
Award



Miguel A. Alonso

G.G. Stokes Award
in Optical Polarization



David Benaron

Britton Chance Biomedical
Optics Award



Wilhelm Ulrich

Rudolf and Hilda Kingslake
Award in Optical Design



FELLOWS AND SENIOR MEMBERS

SPIE Fellows have made significant contributions in the multidisciplinary fields of optics, photonics, and imaging. They are honored for their technical achievement, for their service to the general optics community, and to SPIE.

Senior Members are recognized for their professional experience, active involvement with the optics community and SPIE, and achievements that set them apart from their peers.

SPIE congratulates all those listed below.

2023 FELLOWS: 83 NEW SPIE FELLOWS ELECTED

Dr. Katherine P. Andriole	Prof. Sylvain Gioux	Dr. Lawrence S. Melvin	Mr. Michael A. Soel
Dr. Brian E. Applegate	Prof. Christos Grecos	Prof. Rajesh Menon	Dr. Cristina Elizabeth Solano
Prof. George Barbastathis	Ms. Deborah Gustafson	Dr. David W. Messinger	Prof. Yuzuru Takashima
Prof. Ralf B. Bergmann	Prof. Nathan A. Hagen	Dr. Nishant Mohan	Prof. Mitsuhiro Terakawa
Dr. Martin Burkhardt	Prof. Pin Han	Mr. Warren Montgomery	Mr. Mark A. Tolbert
Prof. Wenshan Cai	Dr. Jed J. Hancock	Prof. Stephen P. Morgan	Prof. Ventsislav K. Valev
Prof. Heang-Ping Chan	Mr. Richard B. Holmes	Dr. Derek Nankivil	Prof. Gijs van Soest
Prof. Genda Chen	Prof. Juejun Hu	Prof. Chittur S. Narayanamurthy	Dr. Geert Vandenberghe
Prof. Guang-Hong Chen	Dr. R. John Koshel	Dr. Binh-Minh Nguyen	Dr. Frédérique Vanholsbeeck
Capt. Christopher T. Cotton	Prof. Michael W. Kudenov	Dr. Michael B. North-Morris	Prof. Georgios Veronis
Dr. Julia M. Craven	Dr. Santosh Kumar	Dr. Tatiana Novikova	Mr. Benjamin J. VerSteeg
Prof. Kenneth B. Crozier	Prof. Patrick J. La Rivière	Dr. Linyong Pang	Dr. Jue Wang
Dr. Jeanette L. Domber	Prof. Muyinatu A. Lediju Bell	Prof. Cheng-Wei Qiu	Prof. Yayi Wei
Dr. Marla Dowell	Dr. Daniel A. LeMaster	Prof. Sukhdev Roy	Prof. Bernd Witzigmann
Dr. Karen Drukker	Prof. Shien-Kuei Liaw	Mr. Samuel P. Sadoulet	Dr. Peter L. Wizinowich
Dr. Stanislav Y. Emelianov	Dr. Amy W. K. Liu	Dr. Takashi Sato	Prof. Yun-Feng Xiao
Dr. Rebecca Fahrig	Prof. Quan Liu	Dr. Mansoor Sheik-Bahae	Dr. Valeriy V. Yashchuk
Prof. Donald F. Figer	Prof. Yongmin Liu	Prof. Jeffrey Harold Siewerdsen	Dr. Lifeng Yu
Mr. Aki Fujimura	Dr. Makenzie Lystrup	Prof. Cather M. Simpson	Prof. Yang Yue
Dr. Qiaoqiang Gan	Dr. Christi K. Madsen	Prof. Maksim Skorobogatiy	Dr. Jian J. Zhang
			Prof. Wei Zhao
			Prof. Chao Zuo

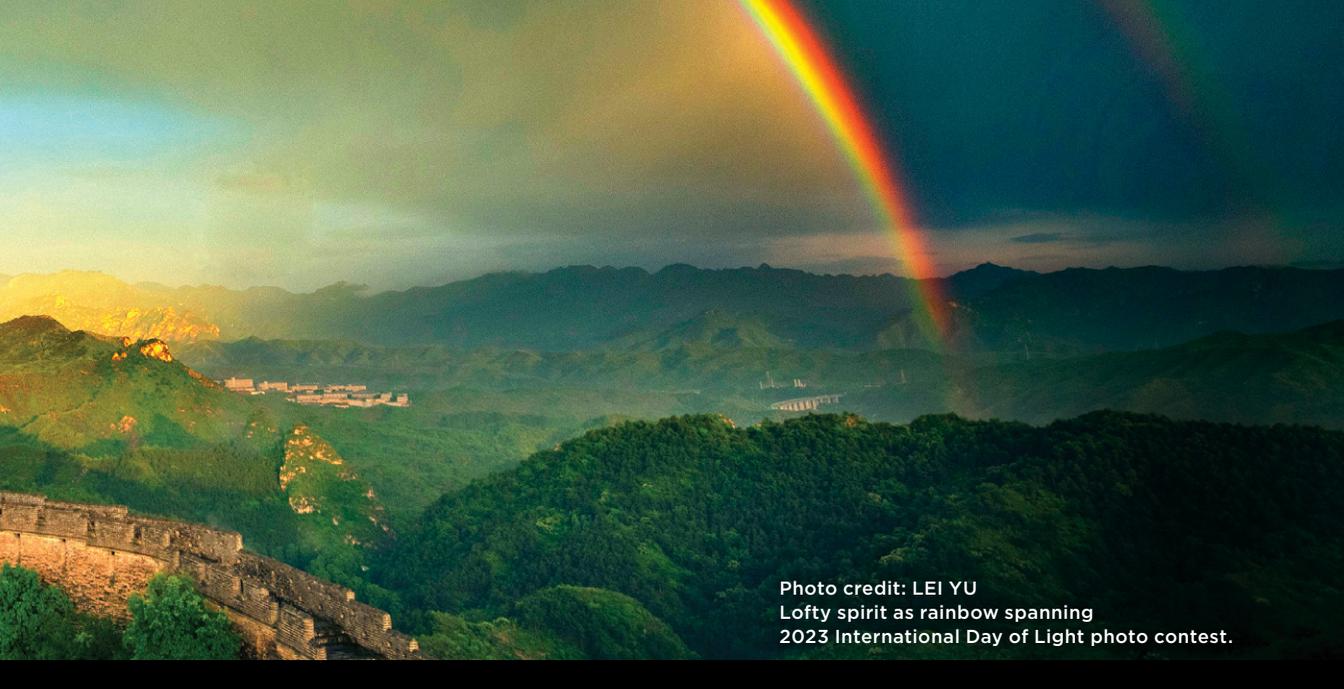


Photo credit: LEI YU
Lofty spirit as rainbow spanning
2023 International Day of Light photo contest.

2023 SENIOR MEMBERS: 89 NEW SENIOR MEMBERS ELECTED

- | | | | |
|---------------------------|------------------------------|---------------------------------|--------------------------|
| Dr. Timothy M. C. Abbott | Dr. Konstantinos Falaggis | Prof. Justus C. Ndukaife | Prof. Heather M. Whitney |
| Dr. Alexander R. Albrecht | Prof. Didier Felbacq | Dr. Jeffrey W. Nicholson | Prof. Rengmao Wu |
| Mr. Sachidananda R. Babu | Dr. Zexin Feng | Prof. Jack H. Noble | Dr. Rosalind M. Wynne |
| Dr. Saša Bajt | Dr. Anuradha Godavarty | Prof. Teri W. Odom | Prof. Junjie Yao |
| Dr. Bryan M. Barnes | Mr. William J. Gressler | Dr. Saidi Reddy Parne | Prof. Ken-Tye Yong |
| Dr. Steven Berukoff | Dr. Jason A. Guicheteau | Dr. Uwe Petzold | Dr. Imrana Ashraf Zahid |
| Dr. Yusuf Bhagat | Dr. Brian A. Hicks | Prof. Dario Polli | Prof. Chi Zhang |
| Prof. Prem Ballabh Bisht | Mr. Richard F. Horton | Dr. Rosario Porras-Aguilar | |
| Dr. Joel N. Bixler | Dr. Xisen Hou | Dr. Matthew T. Posner | |
| Dr. Wiley T. Black | Dr. Soichi Inoue | Prof. Edik U. Rafailov | |
| Dr. Misty Blowers | Dr. Abhinav Kumar Jha | Dr. Tyler S. Ralston | |
| Dr. Ingo Bork | Dr. James B. Johnson | Dr. Bradley M. Ratliff | |
| Prof. Christian Brosseau | Prof. Antonios G. Kanaras | Dr. Henning Rehn | |
| Prof. Joshua D. Caldwell | Dr. DongKyun Kang | Prof. Ingrid S. Reiser | |
| Prof. Hui Cao | Prof. Alexander B. Khanikaev | Ms. Elizabeth Rogan | |
| Dr. Christopher W. Carr | Prof. Giti A. Khodaparast | Prof. Dmitry Savransky | |
| Dr. Zhenyue Chen | Mr. Jangsun Kim | Dr. Thomas Franz Karl Scheruebl | |
| Prof. Chau-Jern Cheng | Mr. Paul C. Knutrud | Prof. Ioannis Sechopoulos | |
| Dr. Myung K. Cho | Prof. Tae-Woo Lee | Dr. Daniel C. Senft | |
| Dr. Charles F. Claver | Prof. Beiwen Li | Dr. Behrouz Shabestari | |
| Dr. Laura E. Coyle | Dr. Hui Li | Dr. Corrie Smeaton | |
| Prof. Brian T. Cunningham | Dr. Mingqi Li | Dr. Ronald M. Summers | |
| Prof. Hamed Dalir | Dr. Sarah J. Lipsy | Prof. Michael E. Thomas | |
| Dr. Peter S. DeVore | Prof. Po-Tsun Liu | Dr. Jaione Tirapu-Azpiroz | |
| Dr. Kyle R. Drexler | Prof. Yu-Jung Lu | Ms. Ingrid Udd Scheel | |
| Dr. Mohammad H. Elahinia | Mr. Mark John Maslow | Dr. Abhishek Vikram | |
| | Dr. Muhammad Qasim Mehmood | Mr. Garrett J. West | |
| | Prof. Jeremy N. Munday | | |
| | Dr. Kent H. Nakagawa | | |

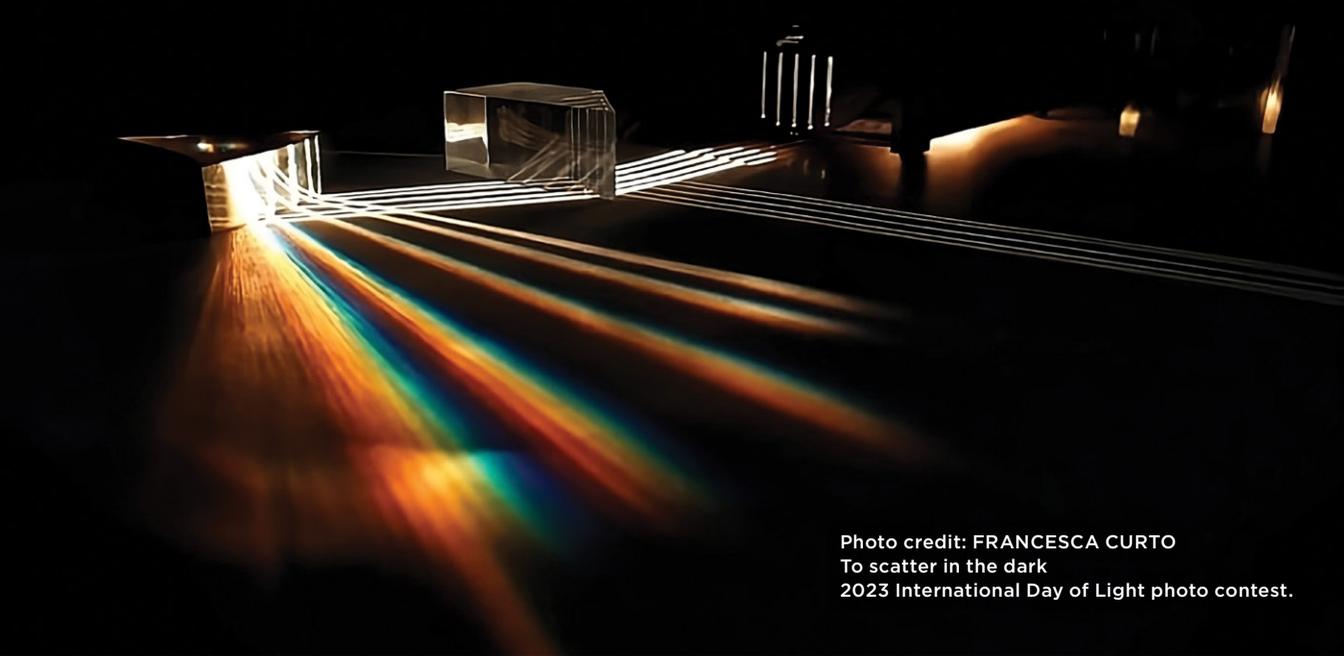


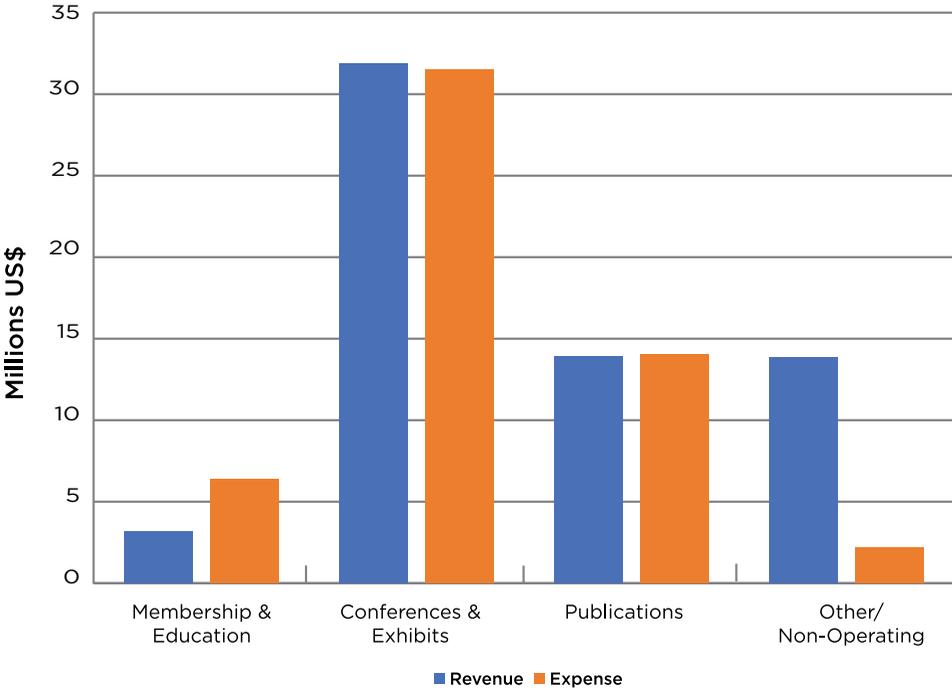
Photo credit: FRANCESCA CURTO
 To scatter in the dark
 2023 International Day of Light photo contest.

FINANCIAL SUMMARY

SPIE generates revenue through publications, exhibitions, conferences, continuing-education programs, and individual and corporate memberships. In addition, the Society holds investment assets in the financial markets, with a Board goal of maintaining investment levels that contribute to SPIE community-development programs and provide SPIE with the ability to continue to support our community during challenging economic times.

In 2023 SPIE generated \$62,826,559 in revenue with \$54,150,578 in expenses, resulting in an overall surplus of \$8,675,980.

2023 REVENUE AND EXPENSE BY ACTIVITY



During 2023, SPIE provided \$5.6 million in community support that includes scholarships and awards, outreach and advocacy programs, travel grants, public policy, and educational resources. Aligned with our focus on community support and education, the SPIE Board of Directors approved a new endowment at the University of Manchester, as part of the SPIE Endowment Matching Program, an educational-funding initiative that supports the establishment of endowed chairs and scholarships that directly expand education and research in optics and photonics.

SPIE FINANCIALS BY KEY ACTIVITY

SPIE remains positioned to continue our mission of supporting the optics and photonics community, even during challenging times. With a long history of prudent volunteer leadership, cautious financial management, and the involvement of thousands of scientists and engineers globally, SPIE is using our resources for the good of our community while continuing to manage the organization in an economically responsible and sustainable way.

	2022	2023
	Total \$	Total \$
Revenue by Product Line		
Membership & Education	1,990,806	3,160,300
Conferences & Exhibits	20,838,588	31,889,907
Publications	15,066,328	13,938,195
Other/Non-Operating	(13,325,068)	13,838,156
TOTAL REVENUE	24,570,654	62,826,559
Expense by Product Line		
Membership & Education	5,964,220	6,407,265
Conferences & Exhibits	28,407,685	31,518,909
Publications	14,184,033	14,034,699
Other/Non-Operating	1,717,322	2,189,705
TOTAL EXPENSE	50,273,260	54,150,578
Net Surplus/(Deficit)	(25,702,606)	8,675,980

2023 ANNUAL MEETING MINUTES

MINUTES OF THE ANNUAL MEETING of the SOCIETY OF PHOTO-OPTICAL INSTRUMENTATION ENGINEERS (SPIE)

Tuesday, 22 August 2023

6:00 pm–7:00 pm

San Diego Marriott Marquis: Marina Ballroom D
San Diego, CA 92101

AGENDA

1. Meeting called to order by the President (Bernard Kress)
 2. Certification of quorum (Allison Romanyshyn)
 3. Approval of Agenda
 4. Approval of the Minutes from the Annual Meeting 22 August 2022
 5. Report of the President (Bernard Kress)
 6. Report of the Treasurer (Jim McNally)
 7. Report of the CEO (Kent Rochford)
 8. Election Results from the President (Bernard Kress)
 9. Q & A with SPIE Officers
 10. Other Matters Appropriate for Discussion
 11. Time and Location of Next Meeting
 12. Adjournment
-
1. **Meeting called to order by the President:** SPIE President, Bernard Kress, called the Annual General Meeting to order at 6:01 pm.
 2. **Certification of quorum:** Allison Romanyshyn, SPIE staff, explained that while business as stated on the agenda could be conducted, a quorum was not reached, and therefore no new business could be conducted.
 3. **Approval of the Agenda:** David Andrews moved to approve the agenda and Jim Oschmann seconded. There was no objection to approve the agenda as written. The agenda was approved.
 4. **Approval of the Minutes from the Annual Meeting 22 August 2022:** Gary Spiegel moved to approve the minutes, and Maryellen Giger seconded. All were in favor. Motion passed. The minutes were approved.
 5. **Report of the President:** 2023 SPIE President Kress highlighted SPIE programs and activities in 2022. This included providing more than \$4 million in community support in the form of scholarships, student development, public education and awareness, career development, awards, industry advocacy, sponsorships and university programs, equity, diversity, and inclusion activities, and the endowment matching program. He provided details about these programs and featured some of the recipients of these funds in 2022. Kress urged members to nominate their colleagues for the SPIE awards program, and for elevation to Senior and Fellow member categories, highlighted the value of SPIE membership, and listed ways to get more involved with SPIE. In closing, Kress explained that the Society continues to grow thanks to a strong leadership chain committed to implementing long-term strategic plans to build a diverse, resilient, and adaptive organization that caters to an ever evolving and growing community.
 6. **Report of the Treasurer:** 2023 SPIE Treasurer McNally reported on the financial status of the Society. He reviewed the operating revenue and expense summary, pointing out that SPIE spent just under \$4 million on community and support activities in 2022. Operating revenue and surplus were \$38.7 million and -\$10 million, respectively. McNally explained financial impacts in 2022, due in part to the Covid-19 Omicron variant. SPIE's total revenue and surplus for 2022 (inclusive of investments) were \$24.6 million and -\$25.7 million respectively. The Society withdrew \$3 million in 2022 from its investment portfolio to sustain operations and community support programs; a conservative and diversified portfolio keeps SPIE well-positioned for the future. McNally thanked SPIE staff for positioning the Society to come out of the financial downturn due to the Covid pandemic.
 7. **Report of the CEO:** SPIE CEO, Kent Rochford, began his presentation by explaining that 2021 ended with bookings for Photonics West 2022 higher than expected, but the Covid-19 Omicron variant caused unexpected cancellations. Event attendance improved over the course of 2022. Short course demand also rebounded in 2022, meeting and exceeding pre-Covid levels at some events, in addition to online offerings. Rochford highlighted the volume and popularity of materials in the SPIE Digital Library, noting 2022 was another record year for usage. Other highlights for the SPIE Digital Library in 2022 included the ad-

2023 ANNUAL MEETING MINUTES

dition of patent citation data, the success of the SHARE program (SPIE Helping Advance Research Everywhere), improvements to the journals program, the launch of *Advanced Photonics Nexus* and *Photonics Insights*, and the success of SPIE Press, (now the largest press house for optics and photonics books). 2022 concluded with staff planning for Photonics West 2023, which proved to be wildly successful. Rochford concluded by thanking staff for all their work to ensure the Society remains strong, and continues to serve its constituents and members.

8. **Election Report from the President:** Kress announced the following individuals were selected as Officers and Directors of the Society for the periods indicated and will begin service on 1 January 2024.

Officers for 2024:

President: **Jennifer Barton**, University of Arizona

President Elect: **Peter de Groot**, Zygo Corporation

Vice President: **Julie Bentley**, University of Rochester

Secretary/Treasurer: **Jim McNally**, StratTHNK Associates

Directors for the 2024-2026 Term:

Samuel Achilefu, University of Texas Southwestern Medical Center

Agnes Hübscher, Edmund Optics

Daewook Kim, University of Arizona

Michelle Stock, TraInnovations

9. **Q & A with SPIE Officers:** SPIE Member Barbara Darnell thanked staff for moving the Annual General Meeting from Monday morning to Tuesday evening. She also thanked staff for doing an amazing job with adjusting event logistics necessitated by Tropical Storm Hilary.
10. **Other matters appropriate for discussion:** No other matters were discussed.
11. **Time and Location of next meeting:** The next Annual General Meeting will take place on Tuesday, August 20, 2024 at the San Diego Convention Center in San Diego, California, USA.
12. **Adjournment:** Maryellen Giger moved to adjourn the meeting and Gary Spiegel seconded. All were in favor. The meeting was adjourned at 6:40 pm.

2024 ANNUAL GENERAL MEETING OF THE SPIE CORPORATION

20 August 2024

6:00 PM–7:00 PM

San Diego Convention Center, Room 33A
San Diego, California

AGENDA

1. Meeting Called to Order by the President (Jennifer Barton)
2. Certification of Quorum (Allison Romanyshyn)
3. Approval of Agenda
4. Approval of the Minutes from the Annual Meeting of 22 August 2023
5. Report of the President (Jennifer Barton)
6. Report of the Treasurer (Jim McNally)
7. Report of the CEO (Kent Rochford)
8. Election Results from the President (Jennifer Barton)
9. Q & A with SPIE Officers
10. Time and Location of Next Meeting
11. Adjournment

2023 SPIE COMMITTEES

AUDIT COMMITTEE

COMMITTEE CHAIR



Gary Spiegel
Strategic Consulting
United States

COMMITTEE MEMBERS

Allen Earman
Joseph Howard
R. John Koshel
Makenzie Lystrup
Jessica DeGroot Nelson
Robert Sprague
David Wick

CORPORATE AND EXHIBITOR COMMITTEE

COMMITTEE CHAIR



Scott Bass
Edmund Optics
United States

COMMITTEE MEMBERS

Diane Brau
Sam Burchfield
Kimberly Clifton
Susan Cummings
Daniel Denison
Mandy Eckert
Marie-Christine Ferland
Mario Gerecke
Kelly Gregorak
James Hamilton
Alison Kohyama
S. Craig Olson
Erik Stover
Connie Wimmer

AWARDS COMMITTEE

COMMITTEE CHAIR



Samuel Achilefu
The Univ. of Texas
Southwestern Medical
Ctr. at Dallas
United States

COMMITTEE MEMBERS

Nicholas Antipa
Sterling Backus
Caroline Boudoux
Arthur Gmitro
Viktor Gruev
Maryah Haertel
Harry Levinson
Carmiña Londoño
Kyle Myers
Shouleh Nikzad
Michal Pawlowski
Pascal Picart
Brian Primeau
Bradley Ratliff
Martin Richardson
Amrita Sahu
Joanna Schmit
Maciej Trusiak

EDUCATION AND OUTREACH COMMITTEE

COMMITTEE CHAIR



Cory Boone
Edmund Optics
United States

COMMITTEE MEMBERS

Justin Baba
Yun-Chorng Chang
Katie Chong
Benjamin Cromey
Marla Dowell
Oliver Fähnle
Danielle Harper
Brian Primeau
Alberto Uriel Rivera-Ortega
Donn Silberman
Lien Smeesters
Cristina Solano
Alexis Vogt
Nicholas Wong

ENGINEERING, SCIENCE & TECHNOLOGY POLICY

COMMITTEE CHAIR



Marc Himel
MKS Instruments, Inc.
United States

COMMITTEE MEMBERS

Naamah Argaman
Kamran Avanaki
Debasmita Banerjee
Walter Burgess
Eva Campo
Bo Gu
Hemang Jani
Daewook Kim
Nicole Naselaris
Madison Rilling
William Roach
George Simion
Michael Williams
Christina Willis

2023 SPIE COMMITTEES

EQUITY, DIVERSITY, AND INCLUSION COMMITTEE

COMMITTEE CHAIR



Jessica Wade
Imperial College
London
United Kingdom

COMMITTEE MEMBERS

Andrea Armani
Stavroula Foteinopoulou
Agnes Hübscher
Sarah Kendrew
Matthew Kupinski
Ying Lia Li
Latifah Maasarani
Sile Nic Chormaic
Maria Pace
Robert Sewell
J. Scott Tyo

FINANCIAL ADVISORY COMMITTEE

COMMITTEE CHAIR



Jim McNally
StratTHNK Associates
LLC
United States

COMMITTEE MEMBERS

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Julia Craven
Jason Mulliner
Samuel Sadoulet
N Darius Sankey
Gary Spiegel

FELLOWS COMMITTEE

COMMITTEE CHAIR



Peter Andersen
DTU Electro
United States

COMMITTEE MEMBERS

Timothy Bunning
Leonard Chen
Aaron Fenster
Emily Gallagher
Eunyoung Kim
Edmund Lam
Wei Lee
Paul Lightsey
Gisele Maxwell
Hakaru Mizoguchi
Shouleh Nikzad
Jean-Christophe Olivo-
Marin
Richard Pfisterer
Jessica Ramella-Roman
Steffen Reichel
Ann Roberts
Eva Sevick-Muraca
Perry Shum
Richard Silver
Paola Taroni
Georgia Tourassi
Norman Wereley
Rachel Won
George Zentai

MEMBERSHIP & COMMUNITIES COMMITTEE

COMMITTEE CHAIR



Maryellen Giger
Univ. of Chicago
United States

COMMITTEE MEMBERS

Rebecca Berman
Anuja De Silva
Rebecca Fahrig
Goldie Goldstein
Nathan Hagen
Colin Ingram
Matthew E. Jungwirth
Saulius Juodkazis
Qian Kemao
Nicholas Petrick
Rosario Porras-Aguilar
Perla Viera-González
David Wick

2023 SPIE COMMITTEES

NOMINATING AND LEADERSHIP DEVELOPMENT COMMITTEE

COMMITTEE CHAIR



Anita Mahadevan-Jansen

Vanderbilt Univ.
United States

COMMITTEE MEMBERS

Jennifer Barton
Donis Flagello
Bernard Kress
Paul Montgomery
Kyle Myers
Halina Rubinsztein-Dunlop
Katie Schwertz
Jessica Wade

SCHOLARSHIP COMMITTEE

COMMITTEE CHAIR



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Anduril Industries, Inc.
United States

COMMITTEE MEMBERS

Kathy Beaudette
Claudio Castellan
Chris Clifford
Ronald Driggers
Stavroula Foteinopoulou
Sergi Gallego Rico
Pascuala García-Martínez
R. Luke Harris
Tomonori Hu
Anastacia Manuel
Diana Mojahed
Isaac Nape
Fenglin Peng
Aniruddha Ray
Carmelo Rosales-Guzmán
Jami Shepherd
Zhimin Shi
Kebin Shi
Alex Sincore
Ghanshyam Singh
Breann Sitariski
Elaine Maria Stewart
Mateusz Szatkowski
Nathalia Tomazio
David Vega
David Wayne
Brian Wheelwright
Heather Whitney
Xihua Zou

PUBLICATIONS COMMITTEE

COMMITTEE CHAIR



Cather Simpson

The Univ. of Auckland
Australia

COMMITTEE MEMBERS

Megan Eckart
Rebecca Fahrig
Kayn Forbes
Jana Kainerstorfer
Qian Kemao
Daniel LeMaster
Julius Muschaweck
Uzodinma Okoroanyanwu
Lorenzo Pavesi
Samuel Serna-Otálvaro
Fatima Toor
Heather Whitney
Zeev Zalevsky
Hans Zappe

SENIOR MEMBER COMMITTEE

COMMITTEE CHAIR



Oliver Myers
Clemson Univ.
United States

COMMITTEE MEMBERS

Jean Dolne
Marla Dowell
Kevin Eliceiri
Frank Grochocki
Marina Leite
Uttam Kumar Majumder
P. Suthitha Menon
Stefan Nolte
Elisabet Pérez Cabré
Christopher Stolz
Shu-I Wang

2023 SPIE COMMITTEES

STRATEGIC PLANNING COMMITTEE

COMMITTEE CHAIRS



Jennifer Barton
The Univ. of Arizona
United States



Kent Rochford
SPIE
United States

COMMITTEE MEMBERS

Peter de Groot
Agnes Hübscher
Bernard Kress
Anita Mahadevan-Jansen
Kristen Maitland
Jim McNally
Anna Mignani
Miles Padgett

SYMPOSIA COMMITTEE

COMMITTEE CHAIR



Donis Flagello
Nikon Research Corp.
of America
United States

COMMITTEE MEMBERS

Elizabeth Bernhardt
Mark Clampin
Emily Gallagher
Keisuke Goda
Agnes Hübscher
Jana Kainerstorfer
Kate Medicus
Karin Stein
Alexander M. van Eijk
Sharon Weiss
Christopher Wilcox

Photo credit: YASHVARDHAN SINGH SENGAR
Life interacting light
2023 International Day of Light photo contest.



SPIE BOARD OF DIRECTORS AND OFFICERS

2023 OFFICERS



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Bernard Kress
Google
United States



IMMEDIATE PAST PRESIDENT
Anita Mahadevan-Jansen
Vanderbilt Univ.
United States



PRESIDENT-ELECT
Jennifer Barton
Univ. of Arizona
United States



VICE PRESIDENT
Peter de Groot
Zygo Corp.
United States



SECRETARY/TREASURER
Jim McNally
StratTHNK Associates LLC



BOARD ADVISOR
Kent Rochford
SPIE
United States

2023 DIRECTORS AND ADVISORS



Allison Barto
Ball Aerospace
United States
(Term 2022-2024)



Audrey Bowden
Vanderbilt Univ.
United States
(Term 2022-2024)



Rebecca Fahrig
Siemens Healthineers
Germany
(Term 2022-2024)



Maryellen Giger
Board Advisor; Chair, Membership and
Communities Committee
Univ. of Chicago
United States

2023 DIRECTORS AND ADVISORS



Ruth Houbertz
ThinkMade Engineering &
Consulting
Germany
(Term 2021-2023)



Donis Flagello
Board Advisor; Chair, Symposia
Committee
Nikon Research Corp. of America
United States



Paul Montgomery
Lab. des sciences de l'Ingénieur, de
l'Informatique et de l'Imagerie
France
(Term 2023-2025)



David Hagan
CREOL, The College of Optics and
Photonics, Univ. of Central Florida
United States
(Term 2023-2025)



Jessica DeGroot Nelson
Edmund Optics
United States
(Term 2023-2025)



Gong-Ru Lin
National Taiwan Univ.
Taiwan
(Term 2022-2024)



William "Pat" Roach
Air Force Office of
Scientific Research
United States
(Term 2022-2024)



Kyle Myers
Puente Solutions LLC
United States
(Term 2021-2023)



Cather Simpson
Univ. of Auckland and
Orbis Diagnostics
New Zealand
(Term 2021-2023)
Chair, Publications Committee



Miles Padgett
Univ. of Glasgow
United Kingdom
(Term 2023-2025)



Scott Bass
Board Advisor; Chair, Corporate
and Exhibitor Committee
Edmund Optics
United States



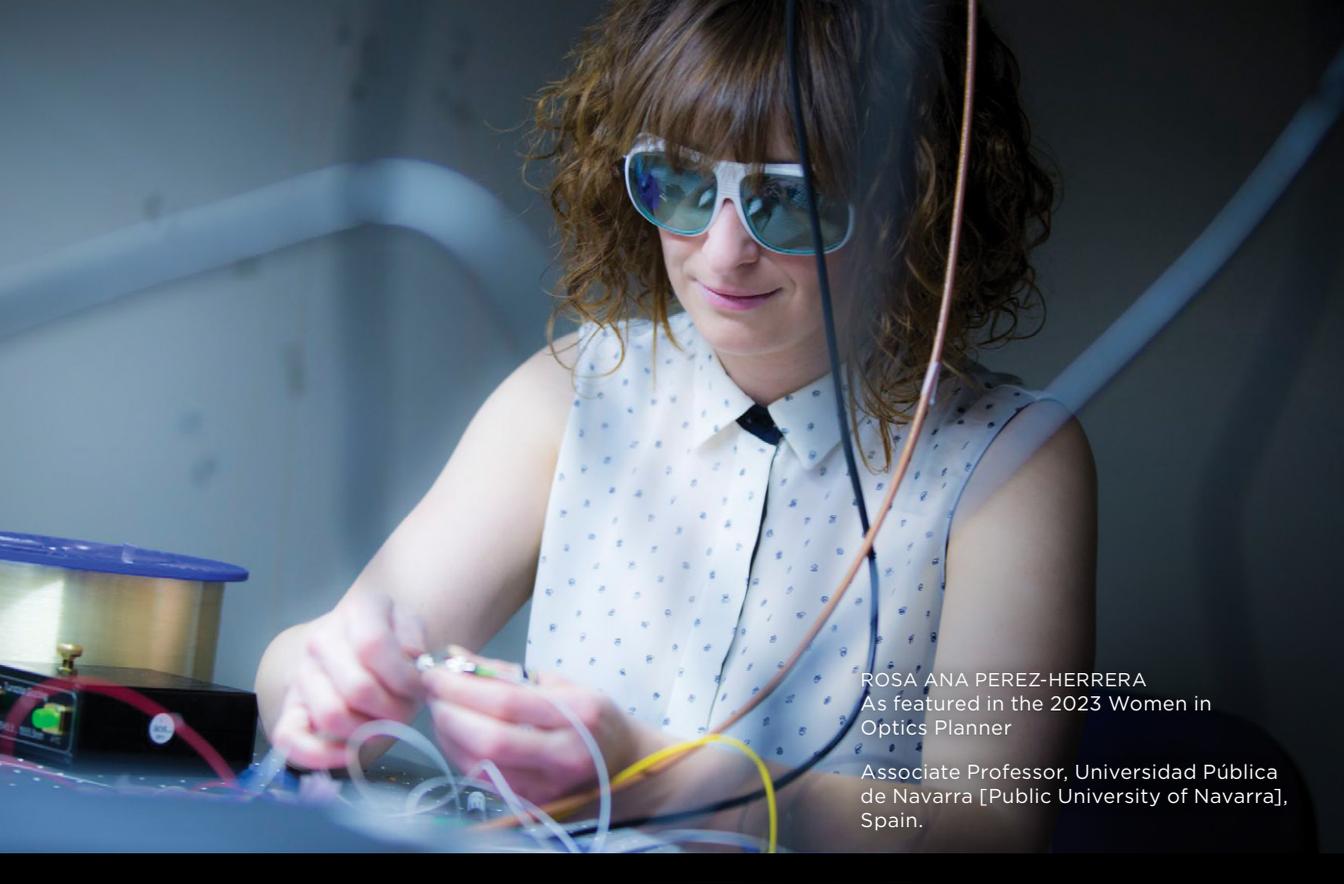
Joseph Shaw
Montana State Univ.
United States
(Term 2021-2023)



Rainer Erdmann
PicoQuant GmbH
Germany
(Director 2023)



Laura Waller
Univ. of California, Berkeley
United States
(Term 2023-2025)



ROSA ANA PEREZ-HERRERA
As featured in the 2023 Women in
Optics Planner

Associate Professor, Universidad Pública
de Navarra [Public University of Navarra],
Spain.

SPIE MANAGEMENT



CHIEF EXECUTIVE OFFICER
Kent Rochford



CHIEF OPERATING AND
FINANCIAL OFFICER
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