

2020

ANNUAL REPORT

AUGUST 2021



SPIE.

The international society for optics and photonics

SPECIAL MID-YEAR MESSAGE TO OUR COMMUNITY

In 2020, SPIE temporarily transformed our events into no-cost digital forums to help the optics and photonics community share results, discuss findings, and stay current—all without traveling. We made over 4,800 SPIE Digital Forum presentations available on demand as videos replaced standing in front of a conference room. While Zoom discussions and chat windows became normal, few would say these are a preferable substitute for face-to-face conversations.

While our elimination of registration fees reduced revenue, SPIE did not stop investing in education and outreach. At the direction of the SPIE Board of Directors, the organization continued and expanded programs to support the optics and photonics community.

New SPIE Endowment Matching grants totaling \$2,000,000 were announced to fund university faculty positions and research scholarships. We continued our pro-science government advocacy and efforts to boost research funding. Through the National Photonics Initiative and direct lobbying in Washington, DC, SPIE continued representing the interests of our Members and serving as the voice of our industry.

As an international society, we maintained programs supporting the International Day of Light to broaden public awareness of optics and photonics, particularly among educators and students. We also produced and continue to distribute a free Equity, Diversity, and Inclusion framework to help organizations create policies and practices that reduce unfair discrimination.

To help mitigate the financial strain many organizations faced during the global pandemic, SPIE reduced the cost of SPIE Digital Library subscriptions. We also introduced a worldwide subscription discount for SPIE journals, and launched the SHARE initiative to provide free access to the SPIE Digital Library in low-resource countries.

These examples demonstrate that even during a disastrous global pandemic, our commitment to our Members and the optics and photonics community did not diminish. Even with reduced travel-related grants, SPIE devoted \$5.1 million to community support in 2020. This program of giving was enabled by a history of prudent financial and operational management.

Now we see the light returning and eagerly welcome you back to face-to-face events, beginning with SPIE Optics + Photonics in San Diego in early August. Because travel continues to be difficult in many regions, SPIE is providing opportunities for remote participation at our first in-person meeting in over a year so that people everywhere may share results and exchange ideas.

SPIE is planning our 2022 event calendar with the assumption that most of us are looking forward to reconnecting in person at conferences. Whether online or in person, SPIE events couldn't happen without the global community of people serving on program committees and as conference chairs who shape our world-class programs. These dedicated people form the backbone of events filled with opportunities for learning, idea sharing, and personal interaction. Meetings worth attending every year are delivered only with the help of the thousands of active volunteers who comprise SPIE.

SPIE is a 501(c)3 non-profit organization registered in the United States.



Credit: Antonio Bemardino

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TO THE SPIE COMMUNITY

I wonder if there is anything to say about 2020 that has not already been said many times. When I wrote my first presidential letter for the January 2020 inaugural issue of *Photonics Focus*, I made a small joke that 2020 will be a year of “excellent vision.” I had no idea how wrong that would be, but at the same time, in retrospect, how correct that would be. 2020 was not the year that I had planned or expected for my presidential term, and it was not the year any of us had planned or expected. But it was the year we got, and it was amazing to watch our entire community transform its vision to the realities and conditions that faced all of us.

For most of us, last year amounted to challenges and disappointments: pivoting to remote teaching and learning, working from home, not being able to travel, remote conferences, and so on. We also know that for some of you, the effects of the pandemic were much more serious or tragic. Please know that you have the condolences and support of the entire SPIE Community.

As we prepared for SPIE Photonics West 2020, we were starting to hear of some illness in China. This prevented our friends and colleagues from China from traveling, and while missing them, Photonics West materialized as a vibrant, exciting, and mostly normal event for people who attended. In mid-February, SPIE Medical Imaging occurred as a live event and while missing our Chinese colleagues, it seemed only slightly impacted by the pending pandemic—except that there were suddenly lots of little bottles of hand sanitizer everywhere. By the time SPIE Advanced Lithography was held at the end of February, many participating companies were cutting back their participation, international travel was reduced, and the event was seriously impacted.

And then all in-person meetings worldwide shut down...

SPIE was required to pivot over a few short weeks to SPIE Digital Forums and working from home. I am incredibly grateful to everyone involved—SPIE staff that developed the new platforms and reorganized the meetings, conference and session chairs who developed and facilitated the technical programs, and authors who provided the content. And let’s not forget all of the attendees that came to each event virtually from unusual locations. Immense credit goes to the entire SPIE Community. We were all part of moving forward! Many more details about this change to digital forums and other SPIE activities are provided in the accompanying letter by SPIE CEO Kent Rochford.

I am equally grateful of our SPIE staff and volunteers who kept the other activities of the Society going: publications, communications, education, community outreach, awards, etc.

As the pandemic hit, it was obvious that the goals that had been set for the Society in 2020 were now inappropriate. Working with CEO Kent Rochford, and with the full support of the SPIE Board of Directors, three simple priorities were set for the Society:

- first, keep everyone safe and healthy.
- second, maintain and enhance the reputation of SPIE by supporting the community as we work to fulfil our mission.
- and finally, do as well financially as possible.

In keeping with the SPIE mission, we decided to offer our digital forums at no cost to either authors or attendees for 2020 to support the community. We also maintained our significant expenditures for Community Support when possible. This included continuing to distribute funds via the SPIE Endowment Matching Program, which was established in 2019.

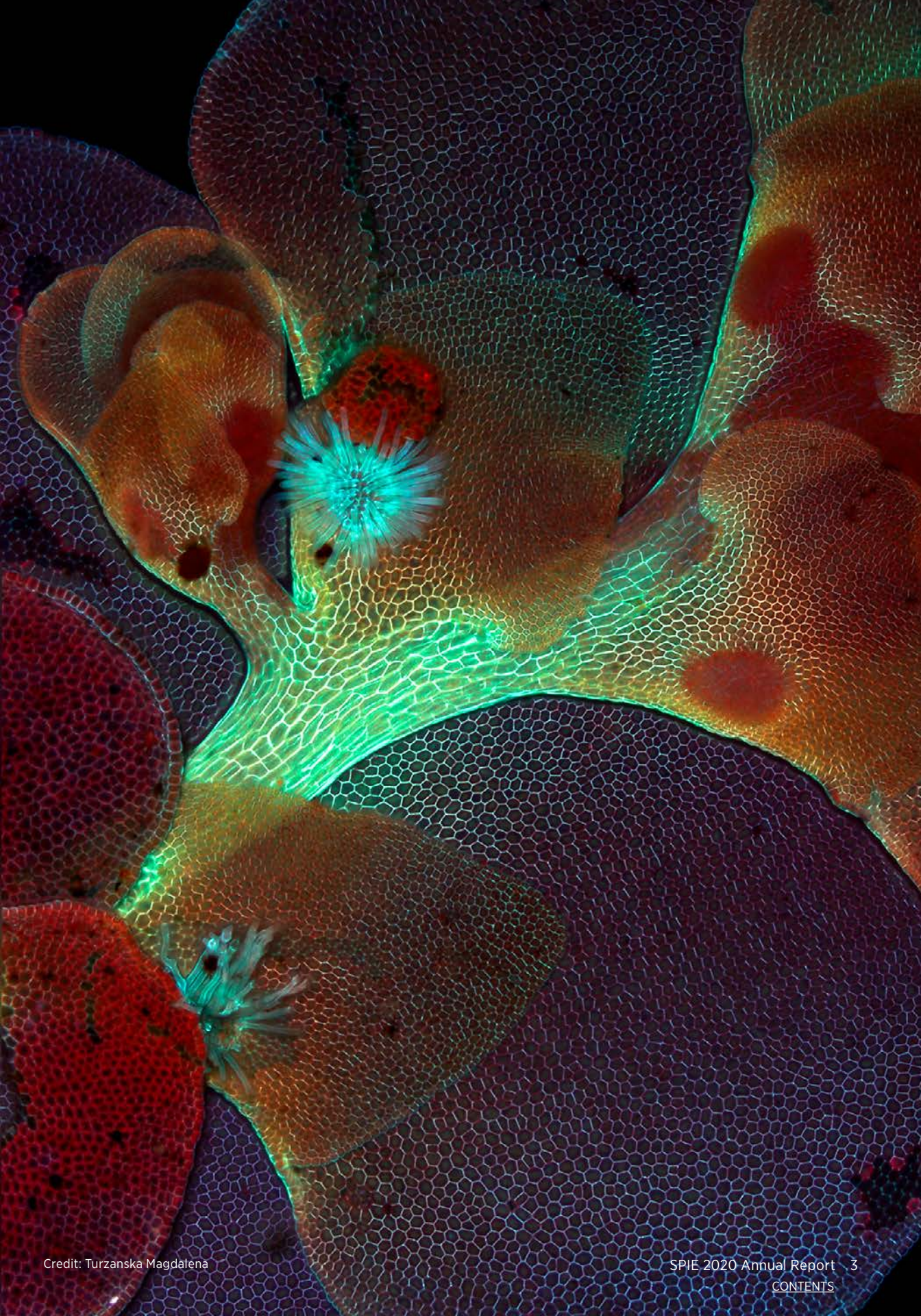
When you read the SPIE Treasurer’s Report, you will see that the 2020 results are much better than anyone would have expected given the severe health, travel, and economic impacts of COVID-19. This is in large part due to the fact that someone had the insight (or luck) to include pandemic coverage in the insurance that SPIE purchases for our events. These aggressively negotiated payouts (some of which will not be received until 2021) helped make up for the loss of revenue. The financial results are also aided by reductions in expenditures for budget items like staff and volunteer travel.

As the year of digital forums and remote committee meetings progressed, it became clear that something I had long speculated was indeed true. Many of us do not attend SPIE events primarily for the technical and exhibit program. We come to “bring the herd back together”—to catch up with our friends and colleagues and to make new friends and colleagues. And while we attend technical sessions and walk the exhibit floor, the SPIE Community is built in hallway, reception, and dinner conversations. For me, and I believe for many of us, these connections are what has been sorely missing and are what makes SPIE what it is.

Finally, 2020 was not the year that I expected, but it was an interesting, important, and challenging year. I believe that the things that we did and learned in 2020 have prepared our Society to come out of the pandemic stronger than ever. Thank you for the honor of serving you as SPIE President.



John Greivenkamp
2020 SPIE President
Wyant College of Optical Sciences
University of Arizona



LETTER FROM THE SPIE CEO

While the SPIE Annual Report historically summarizes the previous year’s operations, a recitation of numbers and outcomes is a wholly incomplete recounting of the period since March of 2020. A global pandemic changed almost every aspect of our lives. As a Society focused on bringing together optics and photonics professionals from around the world, SPIE suddenly found our promise of “Connecting Minds” profoundly impacted as travel and in-person meetings came to halt. Yet, as a community, we persevered.

I use “community” quite intentionally. SPIE has a professional staff that organizes, manages, and supports activities, but all of this is done in concert with volunteers. Without these volunteers, the important functions of the Society simply would not get done. The new demands of working from home, schooling from home, and caring for family and friends during a time of uncertainty and trauma left little free time. Professional demands increased for many people as well, with large segments of optics and photonics activity considered essential, and some technologies directly applied to fighting COVID-19. Priorities changed, but SPIE Members continued to participate and volunteer.

We had no pre-rehearsed COVID-playbook, so SPIE acted quickly to develop alternatives. Our first SPIE Digital Forum was held in April, just five weeks after our last in-person meeting, and this required rapid development of new online platforms and processes. I am proud of the heroic work by SPIE staff who continued to adapt and improve our digital forums over the course of the pandemic. But again, it was our community that brought this to fruition. Despite the uncertainty and format changes, program chairs and committees continued to develop sessions with compelling technical content. Session chairs took on new roles to facilitate virtual meeting flow and Q&A. Authors graciously pre-recorded presentations to support on-demand viewing and accommodate the upended schedules of many participants, or on occasion, kindly presented live sessions at inconvenient hours to accommodate time zone differences among participants.

The SPIE Board prioritized health and safety first, fulfilling our mission second, and assigned financial implications a distant third. With COVID causing furloughs and funding freezes in parts of our community, we view this tragedy as a time to help. In response, we offered SPIE Digital Forums at no cost to presenters, authors, or attendees throughout 2020. No other Society did that. As academic library budgets were cut to cover falling tuition revenues, we proactively decreased our Digital Library subscription price by 10% to help. No other Society did that. And we continued our ongoing community support programs, for example, awarding another \$298,000 in education scholarships, and through SHARE (SPIE Helping Advance Research Everywhere) we provided free SPIE Digital Library access to users in 109 countries. During 2020, we announced new endowments at the University of Wisconsin-River Falls, the University of Central Florida/CREOL, the University of Colorado/JILA, ICFO in Barcelona, and the University of Glasgow. We reached our program goal of \$2.5 million in endowments three years early, and then exceeded that goal with \$950,000 in additional gifts to be announced in 2021. No other Society did that. Personally, I am very proud to work for a member society that is willing to provide such support when conditions could have easily justified a retrenchment.

We have learned important lessons. More than ever, we appreciate that SPIE is privileged to have highly engaged members and volunteers who are willing to make things happen, even when the going gets tough. Despite all the professional and personal challenges, our Members and volunteers continued to create meetings, present research, review journal papers, continue committee work, and more. The flexibility and persistence you demonstrated was extraordinary.

And we fully recognize how important human interaction is for our technical community. We’ve long known the benefits of networking, but now acknowledge that “networking” inadequately portrays what SPIE enables. SPIE is a collection of colleagues and collaborators from around the world who genuinely enjoy rekindling relationships at meetings. We all have one thing in common—optics and photonics—but SPIE is more than that, providing a focus for forming and strengthening connections, and more often than not, friendships. SPIE is so much more than science, engineering, and industry. SPIE truly is a community.

On behalf of SPIE staff, thank you for your support and your efforts!



Kent Rochford
Chief Executive Officer
SPIE





MISSION AND PRIORITIES

MISSION

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

Originating in 1955 with engineers and technicians in the aerospace industry meeting to solve optical instrumentation and imaging problems, we are now an international, not-for-profit, educational organization helping our members, volunteers, and constituents push the frontiers of optics and photonics technology. We help our community to expand research, development, and applications of optics and photonics to solve problems spanning healthcare, communications, energy, security, astronomy, transportation, manufacturing, and the environment.

By working together across disciplines and geographies to advance light-based science and technology, and by demonstrating a commitment to our global community, SPIE is recognized around the world as the leading international professional society in our field.

CORE PROGRAMS AND PRIORITIES

During 2020, SPIE worked toward our mission by delivering programs in the following areas:

- Events, conferences, exhibits, and digital forums
- Technical publications and presentations in the SPIE Digital Library
- New methods for online information sharing including SPIE Digital Forums and SPIE.Online webinars
- Entrepreneurial programs that support innovation
- Community support including scholarships, grants, and educational resources
- Career development and skills training
- Professional recognition for people and organizations
- Outreach and advocacy to positively shape the future

RESPONDING TO THE PANDEMIC

After the first three 2020 SPIE events—Photonics West, Medical Imaging, and Advanced Lithography—were held in person, the pandemic required SPIE to convert all remaining events during the year to digital forums. To support the community in this difficult time, SPIE did not charge any fee for either authors/presenters or attendees at SPIE Digital Forums.

As a result, between live events and online conferences, in 2020 SPIE published nearly 7,500 presentations, over 1,500 posters, and nearly 12,000 proceedings papers. Nearly 16,000 people registered for 53 free online events produced as part of the SPIE.Online program. These webinars are in addition to the 13 comprehensive and interactive SPIE Digital Forums created to replace scheduled live events. SPIE Digital Forums attracted over 24,000 registrants from across the world. This combination of on online conferences and webinars—all at no cost during 2020—helped the community stay connected and informed during the pandemic.



SPIE.ONLINE



WORLD-LEADING TECHNICAL EVENTS

SPIE conferences and exhibitions attract engineers, scientists, students, professors, entrepreneurs, investors, and business leaders who are developing or using optics and photonics technology. Through plenaries and keynotes, research presentations, networking events, and exhibit floors, our conferences cover the latest in such optics-enabled areas as healthcare; optical communications and data centers; security and defense; environmental monitoring; space exploration; advanced manufacturing; augmented and virtual reality; quantum computing; robotics and autonomy; lighting; and solar energy.

After successfully completing SPIE Photonics West, SPIE Medical Imaging, and SPIE Advanced Lithography early in 2020, all remaining SPIE events were rescheduled or transformed into digital events as we adjusted to the COVID-19 pandemic. Our transition from in-person meetings required quick, collaborative work, ensuring that the core parts of our mission—information sharing, lifelong learning, and professional connections—could continue.

SPIE leadership decided to use accumulated financial resources to support the optics and photonics community by offering free registration to our newly established digital forums to all attendees and presenters. By eliminating cost barriers and simplifying participation, tens of thousands of scientists, engineers, students, and entrepreneurs have published research results, acquired new technical methods, and stayed active with SPIE while travel has been restricted or impossible.

To support remote participation during the pandemic, we created a new program called SPIE.Online, a cost-free online series of wide-ranging webinars to ensure that collaborations between researchers, educators, and commercial institutions continued to thrive through the pandemic-related challenges of the year. That series has become an anchor of the SPIE community, addressing topics including research results, public policy updates, industry breakthroughs, technical “hot topics”, and career advancement opportunities.

- After an initial start to the year with in-person meetings (SPIE Photonics West, SPIE Advanced Lithography, SPIE Medical Imaging), we pivoted to virtual gatherings, working rapidly to create our SPIE Digital Forum platform. Our first online event, SPIE Photonics Europe, went from a cancelled in-person meeting in France, to a digital forum in just four weeks.
- During 2020, we hosted 13 virtual events. All these events featured free registration to attendees and participants.
- During SPIE Laser Damage, our longest-running meeting, we leveraged the online opportunity to include seven international virtual lab-tours for attendees.
- Throughout the year, we also harnessed the power of online presentation and discussion platforms to offer attendees across all time zones live plenaries, on-demand recorded presentations, and interaction opportunities with exhibitors and authors.
- Tens of thousands of people from around the world have participated in these online events and, in this way, SPIE continues to serve the community with information access, high visibility platforms to share and discuss new results, and establish new connections with researchers, engineers, and product suppliers.



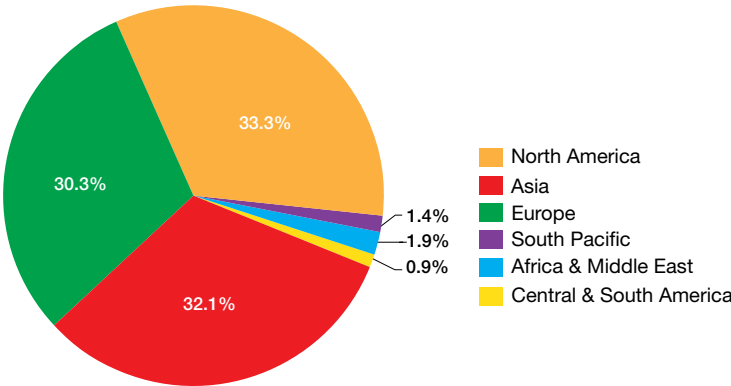
RELEVANT PUBLICATIONS

As a not-for-profit educational charity, the collection and sharing of knowledge, insight, technical solutions, and research results are key to our mission and the value we provide to the community. SPIE partners with more than 60 relevant scientific databases to enable researchers to find information published by SPIE. Proceedings and journal articles are indexed in the leading scholarly indexes, and are widely accessible to leading research organizations, universities, corporations, government agencies, conference attendees, and individual researchers. The Proceedings of SPIE are uniquely valuable as they report on the most cutting-edge research, are used by researchers worldwide, and are among the top sources of patent cites among optics and photonics collections.

Despite the challenges presented by the pandemic and loss of in-person conference activity, a tremendous amount of information was added to the SPIE Digital Library. This included nearly 7,500 presentations, over 1,500 posters, close to 12,000 proceedings papers, nearly 1,600 journal articles, and more than 450 eBook chapters. More than 54,000 authors representing 102 countries contributed to SPIE publications last year.

In addition, 2020 was another record year for SPIE Digital Library usage by researchers, scientists, educators, and engineers around the world. We recorded more than 10.7 million downloads, up from approximately 10.2 million downloads in 2019.

2020 SPIE DIGITAL LIBRARY DOWNLOADS BY REGION



- In response to COVID-19 and unprecedented budget cuts across the academic library market, SPIE decided to reduce 2020-21 institutional subscription pricing by 10%. SPIE was the only scholarly publisher to reduce pricing in response to the pandemic.
- Our journals team and editors quickly launched the SPIE.Online digital event format and hosted events highlighting three journals—*Advanced Photonics*, the *Journal of Biomedical Optics*, and *Neurophotonics*. Collectively these free online programs attracted more than 3,000 attendees.

- In late October, SPIE launched SHARE (SPIE Helping Advance Research Everywhere) with support from Google Scholar. The program provides free access to the SPIE Digital Library to researchers in World Bank-designated low-income countries. Since SHARE launched, there have been more than 220,000 downloads by researchers from 109 countries.
- Most presenters at SPIE in-person symposia and digital forums granted us permission to publish their oral and recorded presentations in the SPIE Digital Library. Starting with last year's Optics + Photonics Digital Forum we also began capturing poster proceedings and more than 1,500 posters were added to the SPIE Digital Library. In total, we published nearly 7,500 presentation recordings. At year-end, the Digital Library included a total of over 476,000 proceedings papers and nearly 30,000 presentation recordings.
- We launched the *Journal of Optical Microsystems* which marks the fourth Gold Open Access journal in the SPIE portfolio.
- Multi-year Read and Publish agreements were signed or went into effect in 2020. These include agreements with the BIBSAM Consortium (Sweden), the CNUST Consortium (Tunisia), TU Eindhoven (the Netherlands), KAUST (Saudi Arabia), the Weizmann Institute of Science (Israel), and Fraunhofer-Gesellschaft, the German National Library of Science and Technology, and Max-Planck-Gesellschaft (all in Germany).

SPIE Press continues to be the largest independent publisher of optics and photonics books, publishing between 25–30 titles a year. In 2020, we published 29 books: 24 new titles, two backfile books, and three licensed titles including *Introducing Photonics* by former SPIE President Brian Culshaw.

In addition:

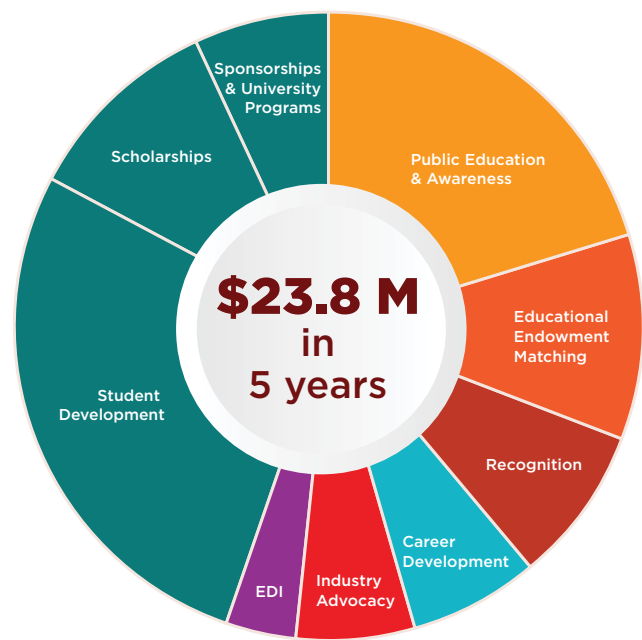
- We signed agreements for two new Press sub-series: The Tutorial Series for Technicians led by Alexis Vogt of Monroe Community College and the Optical Coating Cookbook series spearheaded by SPIE Senior Member Jennifer Kruschwitz of the University of Rochester.
- The new Photonic Materials and Applications series, co-published by SPIE and Elsevier and edited by SPIE Fellow Lorenzo Pavesi of University of Trento, received proposals for its first set of volumes. Initial titles covering metamaterials, quantum photonics, perovskite materials, and neuromorphic photonics are currently in development.
- In December, we also released *Fourier Transforms Using Mathematica®* by SPIE Fellow Joseph Goodman, Professor Emeritus at Stanford University, a title that was developed as an interactive Mathematica notebook file rather than a traditional PDF—a first for SPIE.



A CONNECTED GLOBAL COMMUNITY: SUPPORT, ENGAGEMENT, AND IMPACT

In 2020, SPIE provided \$5.1 million in community support including scholarships and awards, outreach and advocacy programs, public policy and lobbying work, and educational resources. We are an educational, not-for-profit organization that contributes a significant percentage of revenue, every month, every year, without a separate fundraising campaign or administrative foundation. Our mission to support our community is part of the SPIE DNA.

SPIE INVESTED \$23.8 MILLION IN COMMUNITY SUPPORT FROM 2016–2020



From 2016 to 2020, SPIE has invested \$23.8 million in programs supporting the optics and photonics community, spanning education and student development, direct scholarships, professional recognition and awards, career development, advocacy, and public awareness.

- The SPIE Endowment Matching Program, which funds the expansion of educational opportunities in optics and photonics, awarded six endowments to the following organizations: the University of Central Florida (UCF) College of Optics and Photonics (CREOL); the University of Colorado/JILA; ICFO, the Barcelona-based Institute of Photonic Sciences; the University of Glasgow; and the University of Wisconsin-River Falls (UWRF).
- SPIE awarded \$298,000 in education scholarships to 78 students. More than half—60%—of the scholarship winners were from outside of the United States.



CLARE ELWELL Professor,
University College London
(2020 WiO Planner)

- Three special-interest, named scholarships were awarded: An SPIE Early Career Professional Member at the University of Houston was selected for the SPIE-Franz Hillenkamp Postdoctoral Fellowship in Problem-Driven Biomedical Optics and Analytics; the Joe and Agnete Yaver Memorial Scholarship was awarded to an SPIE staff member; and the Nick Cobb Memorial Scholarship was awarded to a graduate student studying advanced lithography.
- 65 Student Author Travel Grants to attend SPIE first quarter events were awarded through this program, jointly funded with MKS.
- SPIE Education Outreach Grants were awarded to 19 organizations, with 53% of the winners coming from outside of the United States.
- SPIE celebrated the International Day of Light (IDL) and contributed to the general public #Seethelight campaign. The annual SPIE IDL photo contest collected 2,000 entries, and 14 IDL Micro Grants were awarded to organizations from 10 different countries. Across the 2020 program, SPIE maintained a strong social media presence with more than 259,550 impressions and 5,300 engagements.
- A new Fellowship program was launched with the University Ottawa Joint Centre for Extreme Photonics and the International Centre for Theoretical Physics to bring early career researchers from developing countries for six months of research in the University Ottawa labs.
- SPIE sponsored the ICTP Winter College on Quantum Photonics which hosted 79 students from 27 developing countries. Of the attendees, 42% were female.
- As part of its annual Society Awards, SPIE established the Maiman Laser Award, named after the person who first demonstrated a working laser. The inaugural winner was Robert L. Byer.

SPIE ENDOWMENT MATCHING PROGRAM

The SPIE Endowment Matching Program, established in 2019, is a multi-million dollar, five-year, educational-funding initiative designed to increase international capacity in the teaching and research of optics and photonics. SPIE supports optics and photonics education and the future of the industry by contributing 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. In 2020 we established six endowments: \$2 million in giving from SPIE led to a transformative \$5.5 million total after matching.

SPIE/UWRF FUND WILL SUPPORT STUDENTS' FUTURES IN OPTICS

The SPIE/University of Wisconsin-River Falls (UWRF) Optics Summer Research Scholars fund supports critical engagement with professional research groups, supporting a UWRF student who wishes to attend a summer research program related to optics and photonics, either at UWRF or at another institution with a substantial optics research program. With an original \$50,000 in funds from SPIE, UWRF successfully raised the matching \$50,000 and has created an endowment for their students' use in perpetuity. As the endowment fund is invested and grows beyond the \$100,000 minimum, UWRF will make this scholarship available to additional students each summer.



University of Glasgow's Professor Daniele Faccio, center, working on laser system alignment and optimization with student Mihail Petev, left, and Niclas Westerberg, a Leverhulme Fellow in the School of Physics and Astronomy.

THE SPIE EARLY CAREER RESEARCHER ACCELERATOR FUND IN QUANTUM PHOTONICS WITH THE UNIVERSITY OF GLASGOW

The SPIE Early Career Researcher Accelerator Fund in Quantum Photonics, a \$1 million endowment established by a \$500,000 SPIE gift fully matched by the University of Glasgow, supports collaborative early-career research in quantum photonics. The fund creates two new programs at the university: an annual SPIE Early Career Researcher in Quantum Photonics Scholarship will be awarded to an outstanding University of Glasgow graduate student who is in the process of completing their studies. In addition, the SPIE Global Early Career Research program will support outgoing and incoming placements at and from the university as part of its ongoing collaboration with leading quantum-photonics research groups across the globe. Each year, the program will pair several university early-career researchers with counterparts from outside laboratories for six-month-long shared projects.

We're pleased and proud to be establishing the Early Career Researcher Accelerator Fund in Quantum Photonics thanks to SPIE's generous gift, which we're very happy to match with our own funding.

—Professor Sir Anton Muscatelli
principal and vice-chancellor of the University of Glasgow



THE SPIE@ICFO CHAIR FOR DIVERSITY IN PHOTONIC SCIENCES WITH ICFO

A fund-matching partnership between SPIE and ICFO, the Barcelona-based Institute of Photonic Sciences, established this \$1-million-plus fund when a \$500,000 gift from SPIE was matched by €500,000 from the existing ICFO endowment. The fund will support the appointment of a chair at ICFO whose remit will be to leverage the center's activities to further enhance its promotion of diversity, starting with its multiple programs supporting the education and careers of young women from diverse backgrounds who have an interest in photonics.

The ambition for the SPIE@ICFO chair program goes beyond gender diversity and aims to support a diverse range of ambitious students and researchers in photonic sciences who would otherwise not have such opportunities. Newly supported opportunities will include the SPIE@ICFO Chair María Yzuel Fellowship Award Internships; the SPIE@ICFO Chair Travel Fellowship; and the SPIE@ICFO Chair Research Fellowship.



The Baur family with Ralphie, the real-life mascot of the CU Boulder Buffaloes.

THE BAUR-SPIE ENDOWED CHAIR IN OPTICS AND PHOTONICS AT JILA

JILA is a joint institute of the University of Colorado, Boulder (CU Boulder) and the National Institute of Standards and Technology (NIST). The \$500,000 in funding from SPIE is being matched 3:1 by a gift of \$1.5 million from Tom and Jeanne Baur. In addition, CU Boulder is providing a \$500,000 contribution. The \$2.5-million fund will support the very first endowed chair at JILA: The Baur-SPIE Endowed Chair in Optics and Photonics will enable JILA to expand its research and education capacity in optical physics and photonics, providing comprehensive support for a faculty chair. Preference will be given to early-to-mid-career researchers affiliated with groups historically underrepresented at CU Boulder, as well as to academics who have an established interest in teaching and mentoring.

I am grateful to the Baur family and SPIE for this incredible opportunity to advance my group's latest ideas and research at JILA.

—Cindy Regal
First recipient of the Baur-SPIE Endowed Chair
in Optics and Photonics at JILA

THE SOILEAU FAMILY-SPIE OPTICS AND PHOTONICS UNDERGRADUATE SCHOLARSHIP FUND FOR THE UNIVERSITY OF CENTRAL FLORIDA (UCF) COLLEGE OF OPTICS AND PHOTONICS (CREOL)

For this \$250,000 endowment, the \$125,000 in funding from SPIE was matched in full by a gift from the Soileau family in order to create scholarships for undergraduate students at CREOL, with preference given to students who are first generation—the first in their families to attend college.

“I learned early that wealth does not equal worth,” said M.J. Soileau. “My family is pleased to partner with SPIE to support scholarships for students studying optics and photonics to help them realize their worth.”



THE SPIE-GLEBOV FAMILY OPTICS AND PHOTONICS GRADUATE SCHOLARSHIP FUND FOR THE UNIVERSITY OF CENTRAL FLORIDA (UCF) COLLEGE OF OPTICS AND PHOTONICS (CREOL)

This \$650,000 scholarship fund, create for graduate students at CREOL, was established with a \$325,000 SPIE gift that was matched in full by the College's Research Foundation and the Glebov family. Leonid Glebov, a research professor, and his wife, Larissa Glebova, a retired research scientist, are longtime members of UCF CREOL.

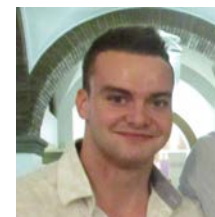
We are pleased to partner with SPIE and UCF CREOL to create an enduring scholarship for graduate students in the exciting field of optics and photonics,” said Leonid Glebov. “Together, we are investing in new opportunities for talented young people, because talent does not correlate with the ability to pay for an education.

SCHOLARSHIP AND FELLOWSHIP RECIPIENTS

2020 TOP SCHOLARSHIP WINNERS

Jonathan Pinnell

The SPIE D.J. Lovell Scholarship was awarded to Jonathan Pinnell, University of the Witwatersrand, Johannesburg (South Africa). This is the Society's largest and most prestigious scholarship sponsored by SPIE.



David Lippman

The Optical Design and Engineering Scholarship was awarded to David Lippman, the Institute of Optics, University of Rochester (United States). The scholarship was established in memory of Bill Price and Warren Smith, both well-respected members of SPIE's technical community. This scholarship is awarded to a student in the field of optical design and engineering.



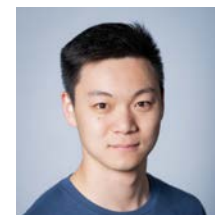
Daniel Louie

Daniel C. Louie, the University of British Columbia (Canada), was awarded the John Kiel Scholarship which was established to honor SPIE founding member John Kiel, in recognition of his long-standing and significant contributions to the Society. This scholarship is sponsored by SPIE and is awarded for the student's potential for long-term contribution to the field of optics and optical engineering.



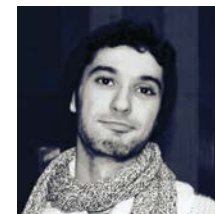
Yonghuan David Ren

Yonghuan David Ren, University of California, Berkeley (United States), was awarded the BACUS Scholarship. This scholarship is awarded to a student in the field of microlithography with an emphasis on optical tooling and/or semiconductor manufacturing technologies. This scholarship is sponsored by BACUS, SPIE's Photomask International Technical Group.



Gehrig Carlse

The Laser Technology, Engineering and Applications Scholarship was awarded to Gehrig Carlse, York University (Canada). This scholarship is awarded in recognition of a student's scholarly achievement in laser technology, engineering, or applications. Funds are provided in part by SPIE.



Deesha Shah

Deesha Shah, Purdue University (United States), is the recipient of the Teddi Laurin Scholarship. Photonics Media is partnering with SPIE to fund the Teddi Laurin Scholarship to raise awareness of optics and photonics, and to foster growth and success in the photonics industry by supporting students involved in photonics. This scholarship is in memory of Laurin Publishing and Photonics Media founder Teddi Laurin.



SPIE AND OSA ARTHUR H. GUENTHER CONGRESSIONAL FELLOWSHIP AWARD: MICHELLE SOLOMON

The Congressional Fellowship's program mission is to bring technical and scientific backgrounds and perspectives to the decision-making process in Congress and provide scientists with insight into the inner workings of the federal government. Fellows have the opportunity to participate in a multitude of policymaking functions including conducting legislative or oversight work, assisting in congressional hearings and debates, preparing policy briefs, and writing speeches. Michelle Solomon, whose graduate research concentrated on ways to use light to purify chemicals used in the pharmaceutical and agrochemical industries with the goal of decreasing side effects, will serve a one-year term in Washington, DC, USA, as a special legislative assistant for a member of the US Congress or as a staff member for a congressional committee. SPIE and OSA are co-sponsors of the fellowship.



I am thrilled to have been selected as the Arthur H. Guenther Congressional Fellow, and I look forward to applying science-driven thinking in service to the public while learning about policymaking and the legislative process.

—Michelle Solomon

SPIE-FRANZ HILLENKAMP POSTDOCTORAL FELLOWSHIP IN PROBLEM-DRIVEN BIOMEDICAL OPTICS AND ANALYTICS: FERNANDO ZVETCOVICH

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. Fernando Zvietcovich's research—conducted in conjunction with Kirill Larin and Michael Twa at the University of Houston's Biomedical Optics Lab—builds on work covered in Larin's lab over the past five years. Zvietcovich will work on translating a novel biophotonics-based optical coherence elastography (OCE) method, developed and designed for the non-invasive quantification of corneal spatial biomechanical properties in 3D, into the *in vivo* clinical use for human ocular disease diagnostics and treatment monitoring.

Receiving this prestigious Fellowship from SPIE will enable me and my colleagues to, in the long term, improve people's quality of health. I am very proud and fortunate that SPIE recognizes the value of my work by providing me with an excellent opportunity for developing translational research that constitutes a fundamental step towards my career development as young and independent investigator in the biophotonics and translational science fields.

—Fernando Zvietcovich



Credit: J. Adam Fenster/Univ. of Rochester

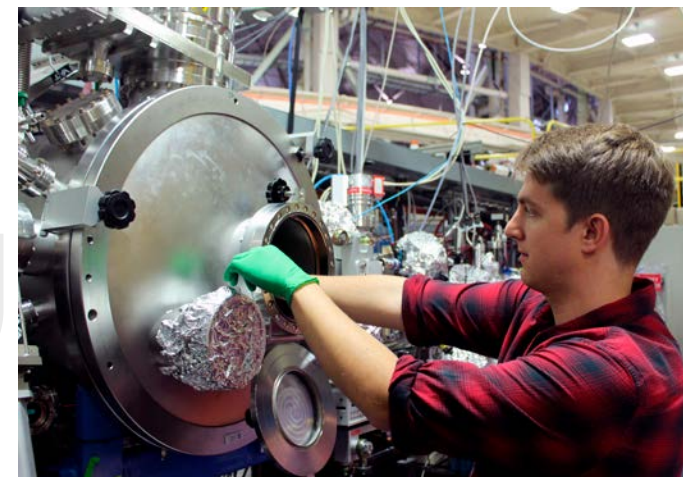
NICK COBB MEMORIAL SCHOLARSHIP: LUKE LONG

In partnership with Siemens EDA, the Nick Cobb Memorial Scholarship honors the memory of Nick Cobb, an SPIE Senior Member and Chief Engineer at Mentor Graphics—now Siemens EDA—and his groundbreaking contributions enabling optical and process proximity correction for IC manufacturing. The \$10,000 scholarship supports the education of a graduate student studying in a field related to advanced lithography.

Luke Long is pursuing his PhD degree in the physics department of the University of California at Berkeley. His current research interests lie in the fundamental physics of EUV photoresist, specifically in understanding the spatial propagation of chemistry responsible for production of lithographic patterns.

It is an honor to win the Nick Cobb scholarship in recognition of my work on understanding EUV stochastics and serves as motivation going forward for furthering our understanding of this challenging subject. I am excited to utilize the support to continue my research, and to present my results at SPIE conferences in the coming year.

—Luke Long



MICHAEL KIDGER MEMORIAL SCHOLARSHIP AWARD: BRANDON HELLMAN

Brandon Hellman, James C. Wyant College of Optical Sciences, University of Arizona (United States), has been awarded the 2020 Michael Kidger Memorial Scholarship in Optical Design. The scholarship, established in 1998 to honor Michael John Kidger, a well-respected educator, design software developer and member of the optical science and engineering community, is awarded to a student engaged in optical design including lens design, illumination design, and computational optical design.

Hellman received a BS in Optical Sciences and Engineering from the Wyant College of Optical Sciences as the Outstanding Senior, Summa Cum Laude, in 2015. He is currently a fifth year PhD candidate at the James C. Wyant College of Optical Sciences under the guidance of Professor Yuzuru Takashima.



**JOE AND AGNETE YAYER MEMORIAL SCHOLARSHIP:
ALISON WALKER**

The Joe and Agnete Yaver Memorial Scholarship is intended for those seeking further education that provides “the business knowledge required to facilitate the advancement and application of optics and photonics research and technology.” The \$10,000 scholarship is available to SPIE Members and staff seeking an advanced degree or certificate from an accredited program.

Alison Walker, a marketing project manager with the Society, is using this business-oriented scholarship to pursue two certification courses—Project Management and Web Design.

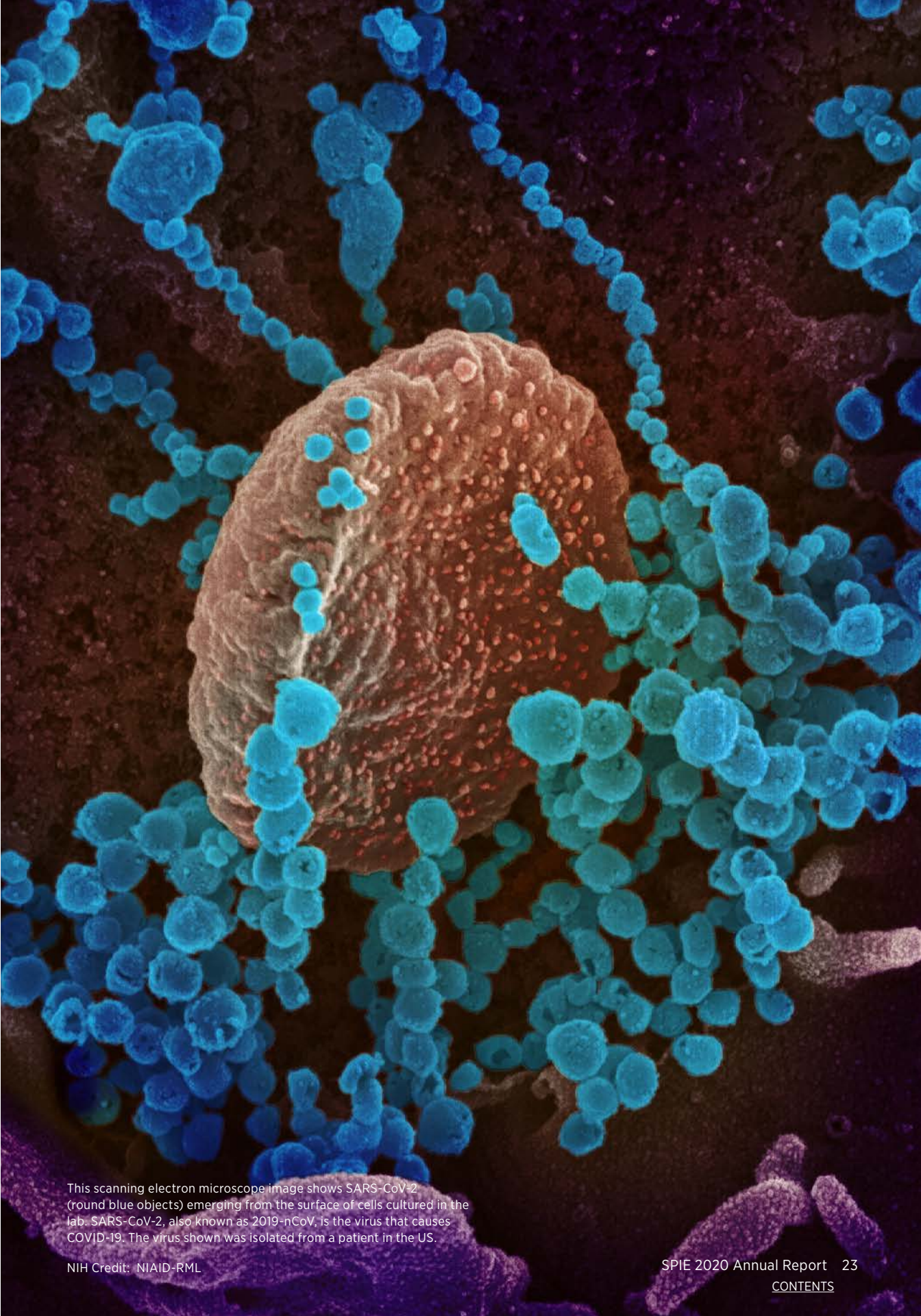


In 2020, SPIE awarded \$298,000 in education scholarships to 78 outstanding individuals for their potential long-range contribution to optics, photonics, or other related fields. Individual scholarships typically range from \$3,000 to \$11,000.

SPIE Optics and Photonics Education Scholarships are open to SPIE Student Members located anywhere in the world who are studying optics, photonics, or related fields.

ADDITIONAL OPTICS AND PHOTONICS EDUCATION SCHOLARSHIP RECIPIENTS

Haralds Abolins	Mitchell Harling	Xianglei Liu	Uladzislau Shapel
Md Imtiaz Alamgir	Eric Hopmann	Jeanie Malone	Aleksei Smirnov
Laura Andre	Samantha Johnson	Charles Matte-Breton	Aneesh Sridhar
Catherine Blevins	Wesley Kendall	Eden McEwen	Wesley Stolte
Jason Chen	Kaveh Khaliji	Vadim Medvedev	Mohammad Taghinejad
Amanda Cheung	Inki Kim	Vlad Medvedev	Olivier-Michel Tardif
Mateus Corato-Zanarella	Kirill Koshelev	Grady Morrissey	Lorna Tu
Xiang Dai	Natalia Kuk	Guzel Musina	Jessica Williams
Petr Demchenko	Daria Kurakina	Molly Nehring	Zheng Xiong
Jingshan Du	Anna Kuzikova	Benjamin Nussbaum	Ning Xu
Mohammadsadegh Faraji-Dana	Kevin Kwock	Jose Hernan Ortiz Ocampo	Elizaveta Zaloznaya
Ashan Ariyawansa Galabada Dewage	Hee Ryung Lee	Evgeniya Ponomareva	Khosro Zangeneh Kamali
Yunhui Gao	Cedric Lemieux-Leduc	Andrey Pushkin	Tao Zhan
Gary Ge	Xuzhou Li	Rohan Ramesh	Aonan Zhang
Diana Gonzalez-Hernandez	Peng Lin	Alvaro Rodriguez Echarri	Bowen Zhang
Tengfei Hao	Ronghui Lin	Natalie Rozman	Runzhou Zhang
	Anna Lisova	Olga Sarmanova	Yifei Zhang
	Egor Litvinov	Md Hosne Mobarok Shamim	Jun Zhu
			Ruixue Zhu



This scanning electron microscope image shows SARS-CoV-2 (round blue objects) emerging from the surface of cells cultured in the lab. SARS-CoV-2, also known as 2019-nCoV, is the virus that causes COVID-19. The virus shown was isolated from a patient in the US.

NIH Credit: NIAID-RML

SPIE AT WORK IN THE COMMUNITY

In a year that tested our resilience, SPIE continued to create positive impact in the optics and photonics community. Thank you—SPIE Members, customers, and volunteers—for helping to create a brighter future by supporting programs for education, advocacy, career development, and public outreach.



\$298,000
in education scholarships
went to **78** recipients from
23 countries in 2020

In the last five years, SPIE has invested over **\$13 million** in scholarships, university programs and endowments, and student development.

342
Student Chapters in
54 countries, totalling
4,327 students



SPIE. STUDENT CHAPTERS

Student Support



\$5.1 M
in 2020
by SPIE

\$2 million in Endowments

SPIE/UWRF Optics Summer Research Scholars fund—University of Wisconsin-River Falls

SPIE Early Career Researchers in Quantum Photonics—University of Glasgow

Baur-SPIE Endowed Chair—JILA/University of Colorado

SPIE-Soileau Scholarship—CREOL/University of Central Florida

SPIE-Glebov Scholarship—CREOL/University of Central Florida

SPIE@ICFO Chair for Diversity in Photonics—Institute of Photonic Sciences, Barcelona

56%
Increase in Career Lab
members from 2019

SPIE. CAREER LAB

1,200

Attendees at career advancement programs

Outreach

14
IDL grants totaling more
than **\$30,000** given to
recipients in **10** countries



300K

IDL social media impressions



2,000

Entries to the IDL photo contest,
including **80** youth entries



Recognition



74
New Senior Members



72
New SPIE Fellows

9
Companies recognized
with Prism Awards



1,200

Community Champions
recognized for supporting the
optics and photonics
community



24

SPIE Award winners,
including two new awards



Equity, diversity, and inclusion



4,700

Buttons and **1,135** ribbons
distributed



4,000

Women in Optics planners
given away

730

Attendees at SPIE EDI events



SOCIETY MEMBERSHIP

Optics and photonics practitioners join SPIE as it is an ever-evolving Society that reflects their changing interests, expectations, and needs. It is the Society that delivers access to relevant information, career support, and professional development. Members want tools and services that will enhance their research capabilities as well as allow the global optics and photonics community to connect, communicate, and collaborate. SPIE is committed to help us all thrive in the 21st century.

SPIE Membership brings together a connected community for academic collaboration, networking, and professional growth. We are proud of our global and interdisciplinary community, which creates a powerful network of mutual benefit and shared interests.

Our goal is to help build the next generation of optical engineers and scientists and lead our Membership to continue with cutting-edge innovations that advance human society. SPIE supports nearly 350 student chapters across the world as an important pipeline for our fields through career support, training, and specialized programs.

Walking shoulder to shoulder with you, our Members, we will continue to strengthen our science and our community.

“

Membership in SPIE opened up access to the global community of photonics professionals and academics. The intersection of researchers, engineers, and business people that I encountered at conferences, first as a young laser engineer, allowed me to see beyond the narrow scope of my graduate work. SPIE conferences became essential to my career advancement as I became more involved with business development, allowing me to immediately connect with new communities in various application fields. SPIE volunteer activities further broadened my perspective and network, bringing me new friends and often renewing old contacts and allowing for broader impact. It is difficult for me to imagine how my career would have developed without having become an engaged SPIE Member.



—Michelle L. Stock

”



NITHIN ABRAHAM, Coatings Engineer,
NASA Goddard Space Flight Center, USA
(2020 WiO Planner)

Credit: NASA Chris Gunn



EDUCATION AND LIFELONG LEARNING

SPIE is a leading provider of optics and photonics training, committed to offering continuing education and professional development opportunities in multiple formats for maximum flexibility. In addition, SPIE develops resources and materials for educational outreach including grants, scholarship programs, and support of educational conferences.

Where would an engineer or scientist trained in another discipline efficiently learn about lens design and fabrication, optomechanical design, head-mounted displays, laser reliability, quantum computing, optical coherence tomography, or the fundamentals of lidar systems? The answer is with SPIE with over 200 courses offered at events or online.

While most people take in-person courses at SPIE events, we also offer top-quality courses in alternative formats, including online classes and customized, in-company training options.

- Total online course sales were up 48.6%, and registrations were up 85%. Because of the need for lifelong learning and competitiveness, many course takers are from industry.
- We created 12 new online courses.
- We implemented a monthly webinar series as part of SPIE.Online. These instructional, interactive webinars are high-level overviews of existing or upcoming SPIE courses with their instructors.
- We began adding transcription services, closed captioning, and Google Translate options to our online courses.
- We introduced and issued digital badges and certificates to course attendees who earned credentials from 2015 to 2020, providing opportunities for course-takers to share their participation in SPIE continuing education on social media and on individual websites.

“

Teaching for SPIE is very much about the people that I meet,” says Jessica DeGroote Nelson whose ‘How to Make Cost-Effective Optical Components,’ a high-level overview of her in-person and online course ‘Optical Materials, Fabrication and Testing for the Optical Engineer,’ was one of 2020’s top three SPIE instructional webinars. “Every time I teach, I actually learn. People who take the course, most of the time they already have a lot of experience in different facets of optics, so I get a lot of good questions, a lot of good discussion. And anytime you give a presentation, I find that the best thing that comes out of it is the networking that happens after the course. That really opens up great opportunities to talk, share, and collaborate.

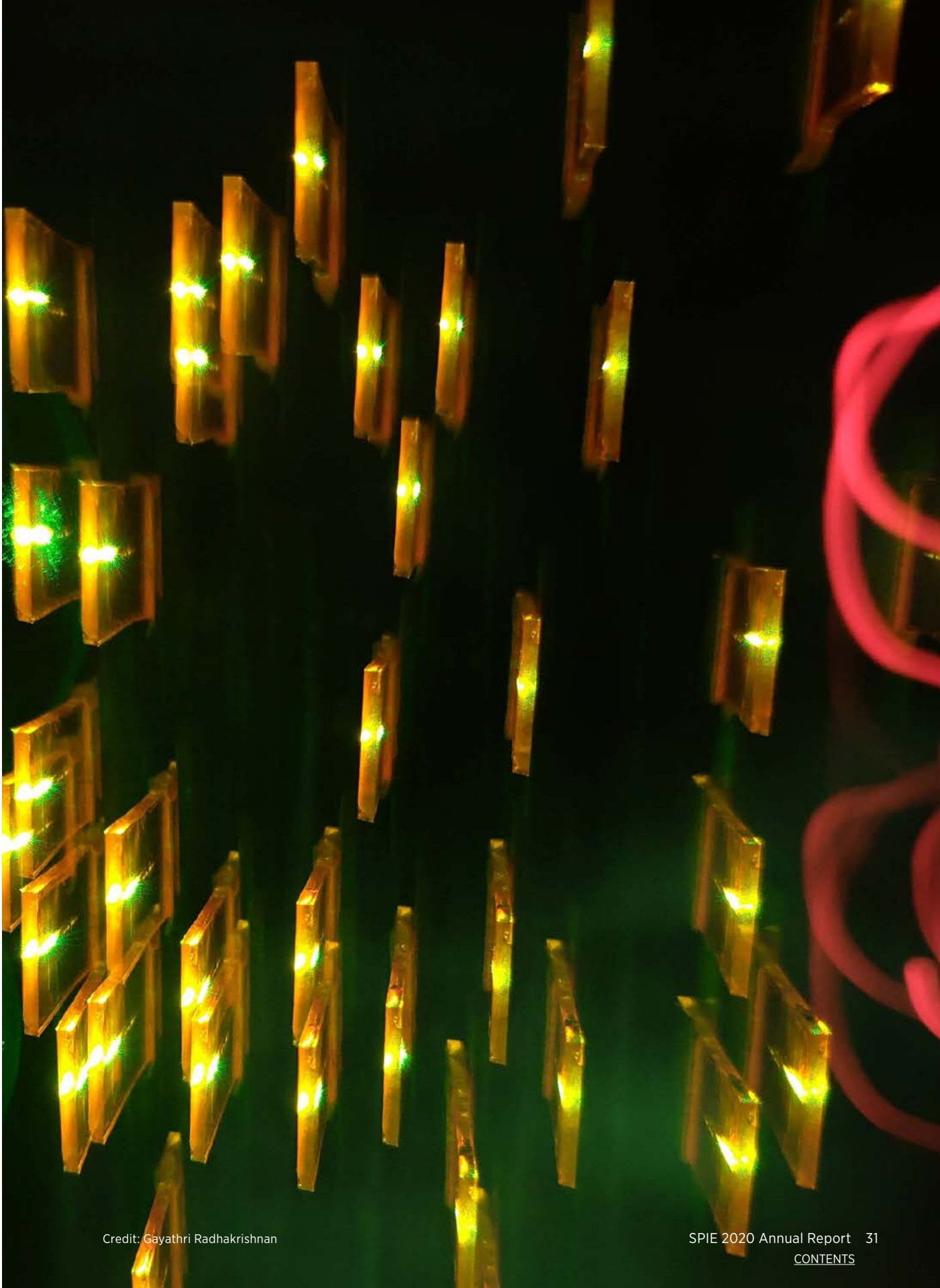
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PUBLIC POLICY, GLOBAL ADVOCACY

SPIE provides a voice for our community to government officials, representing the interests of students, researchers, engineers, and technology suppliers. We collaborate with the US Department of Commerce Sensors and Instrumentation Technical Advisory Committee (SITAC), which SPIE chairs, and host meetings at SPIE and other events to increase accessibility for our industry constituents as well as advocating key priorities for laser and sensor companies.

- In 2020, SPIE continued our work as co-chair of the NIST Coalition, which was established to lobby Congress for the laboratory research and construction budgets of NIST. Through our leadership, the coalition grew its membership and gained vocal Republican support of funding increases, an addition to our standing Democrat-led sponsors.
- We launched and hosted two meetings of the Wassenaar Laser Working Group, a multi-national group designed to identify and organize needed proposed changes to international export control agreements in laser technology. Five proposals were finalized from the 2020 discussions and submitted to German and US government officials.
- Through our work as co-leader of the National Photonics Initiative, we established a bipartisan and bicameral Congressional Optics and Photonics Caucus. Additionally, we coordinated a stakeholder lobbying effort that led to significant increases in funding for the National Quantum Initiative via the annual FY21 appropriations bill.





INDUSTRY RESOURCES

Since SPIE was formed, our focus has helped bridge the gap between academia and industry. Today SPIE has programs designed to help companies form and grow; expand into new markets; identify promising new market segments; hire the talent necessary to build winning products; reach new customers internationally and build brand visibility. SPIE can help you grow your bottom line with resources for marketing, sales, engineering, compliance, and HR.

- Industry-focused event development and implementation—from business-focused panels, workshops, and keynotes, to related special events such as the Prism Awards and Startup Challenge—grew in 2020: SPIE Photonics West had its largest industry program ever, with 71 sessions running over six days.
- In the 2020 SPIE Startup Challenge: Healthcare track, 1st place including \$10,000 cash and \$5,000 in equipment went to Odin Technologies, LLC (presented by Steven Hansen), 2nd place to Rubitection (presented by Sanna Gaspard), and 3rd place to Eysz, Inc. (presented by Rachel Kuperman).
- In the 2020 SPIE Startup Challenge: Deep Tech track, 1st place including \$10,000 cash and \$5,000 in equipment went to Senorics GmbH (presented by Ronny Timmreck), 2nd place to Labby Inc. (presented by Anshuman Das), and 3rd place to Circle Optics (presented by Zakariya Niazi).
- We initiated a new partnership with *Laser Focus World* publisher Endeavor Media, providing SPIE-branded content and sponsorship at its annual Marketplace Seminar during Photonics West.



“

One of the things I find extremely useful in terms of preparing to teach, is simply walking around the exhibit hall at an SPIE meeting and talking with people,” says Daniel Vukobratovich who has been teaching his SPIE course in opto-mechanics since 1985. “I can’t say enough about those walking-the-hall conversations.





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 awards banquet 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 associated with Prism Award finalists and winners.

2020 WINNING COMPANIES		
COMMUNICATION	Innolume	CW Datacom Laser
ENERGY	Prisma Photonics	PrismaSense
HEALTHCARE	PhotoniCare	TOMi Scope
LIFE SCIENCES	TERA-print	TERA-Fab E Series
MANUFACTURING	Inspekto	Inspekto S70
QUALITY CONTROL	CloudMinds	Smart MEMs Handheld Raman XI ²
SAFETY & SECURITY	Pendar Technologies	Pendar X10
TRANSPORTATION	Outsight	3D Semantic Camera
VISION TECHNOLOGY	WaveOptics	Waveguides

I first started dealing with SPIE when I was in grad school at Texas A&M, building the student chapter and being a student-chapter officer. There was so much support: we held a symposium which SPIE funded, and we were able to bring in a really big name to speak, and that’s how I got my post-doc. That happened to be [with] Steve Boppart—here on stage with me—which led to the founding of PhotoniCare. A couple of years ago we won the Startup Challenge which SPIE puts on, and now it’s just an absolute pleasure to be on this stage to continue that. My next goal is to grow this company to the point where PhotoniCare can start sponsoring some of these events through SPIE because it’s an absolute great opportunity for students and companies alike.

–From the Prism Award acceptance speech of
Ryan Shelton, CEO and co-founder of PhotoniCare



EQUITY, DIVERSITY, AND INCLUSION (EDI)

SPIE believes in the development of collaborative environments that value participation from individuals with different ideas and perspectives, which ultimately have a positive impact on the science of light. Our programs reflect these core values. At our events, both in person and online, we aim to provide resources, guidance, and education to build a more inclusive optics and photonics experience for all our attendees.

- With leadership support, SPIE continues to demonstrate its commitment to increasing diversity and inclusion in all SPIE activities. We started the year out strong with 15 events at three of our in-person meetings (SPIE Photonics West, SPIE Advanced Lithography, SPIE Medical Imaging). These included panel discussions, executive women's networking sessions, LGBTQ+ socials, Lunch & Learns, and interactive Wikipedia Edit-A-Thons to create new biographies for female scientists and engineers.
- In response to COVID-19, SPIE EDI events rapidly developed an engaging online series of interactive sessions with experts such as science journalist Angela Saini on "Racism in Science: Past and Present" and an SPIE Women in Optics series of interviews hosted by Jess Wade, winner of our first SPIE Diversity Outreach Award.
- In June 2020, the SPIE Stories of Pride series highlighted LGBTQ+ scientists in our technical community.
- That same month, we announced a new SPIE endowment-matching agreement, which established the SPIE@ICFO Chair for Diversity in Photonic Sciences.
- In 2020, SPIE celebrated the 15th year of the Women in Optics Planner. The original goal of supporting women scientists has expanded to become an engaging introduction for girls and young women to opportunities in STEM careers as well as showcasing female role models in technical fields. We also added fun to function with a deck of playing cards showcasing the words and images of 52 women scientists, researchers, engineers, and industry leaders.
- We expanded our SPIE Childcare Grants to Family Care Grants and offered them as part of the SPIE Digital Forums acknowledging childcare challenges even when attendance is virtual.
- The SPIE EDI Activity Grants funds activities and events that promote the EDI mission. In 2020, SPIE awarded 12 EDI Activity Grants funding professional development activities, education outreach, mentoring, and sponsoring programs.
- The SPIE Career Lab, a Facebook group of more than 1,800 participants, often covers EDI-focused topics in its weekly chats, including Black ally best practices; racial harmony and inclusion within the optics community; and mental health during PhD work.

To serve our corporate community, SPIE developed a framework that provided actionable steps to help companies raise awareness, increase engagement, and drive measurable results towards equity, diversity, and inclusion. This project was designed to help small and medium enterprises, but these techniques are equally useful to large corporations and academic institutions. This framework focuses on support for recruitment, retention, and advancement of diverse populations, and frames these actions as an investment in our community's future.





SPIE. AWARDS

2020 SOCIETY AWARDS



Ursula Keller
Gold Medal of the Society



Robert L. Byer
Maiman Laser Award



Jessica Wade
Diversity Outreach Award



Daniel Vukobratovich
President's Award



Steven Jacques
Britton Chance Biomedical
Optics Award



Kathleen Richardson
Maria J. Yzuel Educator
Award



Gary Spiegel
Directors' Award



Nirmala Ramanujam
Biophotonics Technology
Innovator Award



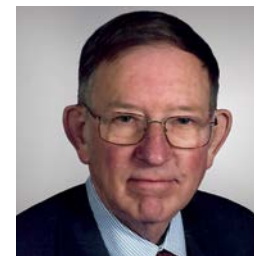
Alan R. Fry
Harold E. Edgerton Award
in High-Speed Optics



Yuri Kivshar
SPIE Mozi Award



Pietro Ferraro
Dennis Gabor Award



Harold L. Kundel
Harrison H. Barrett Award

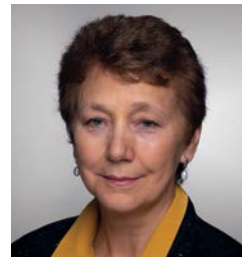
2020 SOCIETY AWARDS



Sona Hosseini
Early Career Achievement
Award - Industry/Government
Focus



Nishant Mohan
Early Career Achievement
Award - Industry/Government
Focus



Tatiana Novikova
G.G. Stokes Award
in Optical Polarization



Vivian Ferry
Early Career Achievement
Award - Academic Focus



Gordon Wetzstein
Early Career Achievement
Award - Academic Focus



John H. Lehman
Maria Goeppert-Mayer
Award



Winfried Kaiser
Frits Zernike Award
for Microlithography



Pablo Benitez
A.E. Conrady Award in
Optical Engineering



Oswald Siegmund
George W. Goddard Award
in Space and Airborne
Optics

2020 SOCIETY AWARDS



John R. Rogers
Rudolf and Hilda Kingslake
Award



James E. Millerd
Chandra S. Vikram Award



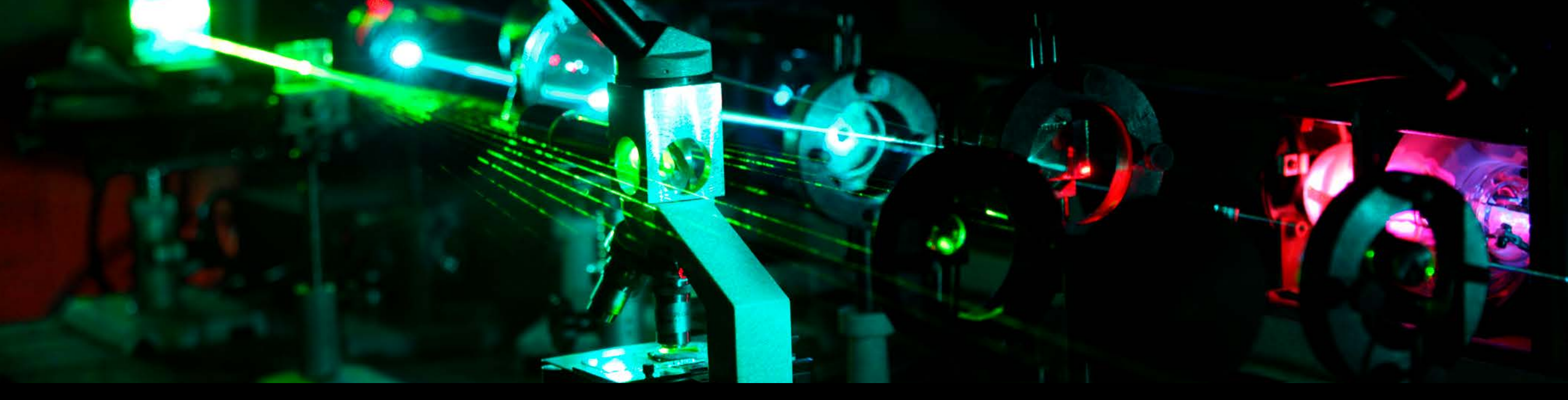
Sanjay Krishna
Aden and Marjorie Meinel
Technology Achievement
Award



Irving J. Bigio
Joseph W. Goodman
Book Writing Award



Sergio Fantini
Joseph W. Goodman
Book Writing Award



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.

2020 FELLOWS

Jun Arai	Irene Georgakoudi	Wei Lee	Anna Roe
Theresa Axenson	Stephen Glick	Richard Levenson	Raymond Rumpf
Sarah Bohndiek	Tzung-Fang Guo	Gang Li	Zouheir Sekkat
Caroline Boudoux	Stephen Hammel	Zhenqiang Ma	Gennady Shvets
Delia Cabrera	Daniel Hammer	Arash Mafi	Doug Simons
Marcelo Dapino	Ming Han	Andrey Matsko	Daniel Smith
Timothy Day	Gloria Hoefler	Ian McLean	Laura Smoliar
Marta de la Fuente	Michael Hoenk	Seemantini Nadkarni	Stephen Sweeney
Thomas Deserno	Yi-Pai Huang	Nadarajah Narendran	Setsuhisa Tanabe
Celine D’Orgeville	Zhiwei Huang	Stefan Nolte	Paola Taroni
John Dudley	James Hubbard	Zoubeida Ounaies	Alexander van Eijk
Alper Erturk	David Huckridge	Kyung Hyun Park	Michael Vasilyev
Sina Farsiu	Bennett Ibey	YongKeun Park	Shu-i Wang
Wolfgang Fink	Kenneth Jerkatis	Paul Pellegrino	Sean Wang
Alejandro Frangi	Malgosia Kaczmarek	Wellesley Pereira	Qi-Huo Wei
Hiroshi Fukuda	Wilhelm Kaenders	Roberto Pini	Chrisatopher Wilcox
Sergi Gallego Rico	Rainer Kling	Austin Richards	Rachel Won
James Gee	Junichiro Kono	Michael Rieger	Yimin Zhang

2020 SENIOR MEMBERS

Muhammad Abuturab	Daniel Elson	Neal Lafferty	Axel Schülzgen
Saeed Al Mansoori	Ernest Feleppa	Andrew Lambert	Shumay Shang
Muhammad Al-Qaisi	Germain Fenger	Richard Leach	Jianda Shao
Gabriela Apiou-Sbirlea	Stavroula Foteinopoulou	Ted Liang	Shy Shoham
Sumith Bandara	John Fourkas	Ivan Lima	Robert Sitnik
Ayan Banerjee	Desmond Gibson	Shiuan-Huei Lin	Michael Speidel
John Fredy Barrera	Noel Giebink	Amy W. Liu	Stuart Stock
Ramírez	Debbie Gustafson	Chengbo Liu	Jinghua Teng
Wim Bogaerts	James Hamilton	Kevin Lucas	Mark Tolbert
Claudio Bruschini	Jed Hancock	Makenzie Lystrup	Jan van Schoot
Danuta Bukowska-Sampson	Ralf Heilmann	Michael Miga	Laurent Vivien
Martin Burkhardt	Eric Herman	Wataru Nakagawa	Lizhe Wang
Pavel Cheben	Joseph Herzog	Lidia Ogiela	Ya Wang
Shean-Jen Chen	Song Hu	Ndubuisi Orji	Jian Xu
Zhen Cheng	Jeremy Huddleston	Thomas O’Sullivan	Sumio Yano
Amol Choudhary	Ivana Išgum	Manojit Pramanik	Lifeng Yu
Christopher Cotton	Sarah Kendrew	Jerry Prince	
Mini Das	Mikhail Khodzitskiy	Vijaya Ramarao	
Prakash Duraisamy	Ajay Koshti	Samuel Sadoulet	
	Patrick La Rivière	Marius Schamschula	

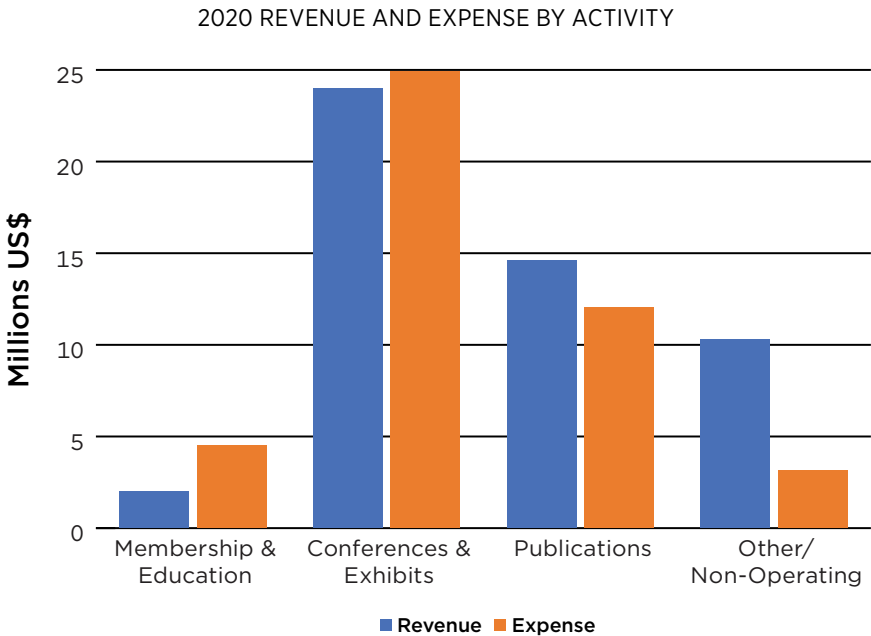


Credit: Andrii Shcherbakov

FINANCIAL SUMMARY

SPIE generates revenue through publications, exhibitions, conferences, educational programs, and individual and organizational 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 support programs and provide SPIE with the ability to continue to support our community during unexpected hardships.

In 2020 SPIE operations generated \$40,591,352 in revenue with \$41,421,971 in expenses, resulting in an operating loss of \$830,619. That figure does not include investment gains or losses.



The moderate financial surplus generated by the suite of SPIE events and publications provides funds for reinvestment in the optics and photonics community via membership, education, and community support activities.

During 2020, SPIE provided \$5.1 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, in 2020 the SPIE Board of Directors created the SPIE Endowment Matching Program, an educational-funding initiative allocating an additional \$2.5 million over five years to support the establishment of endowed chairs and scholarships that directly expand education and research in optics and photonics.

SPIE FINANCIALS BY KEY ACTIVITY

	2019	2020
	Total \$	Total \$
Revenue by Product Line		
Membership & Education	2,311,025	1,991,133
Conferences & Exhibits	27,911,791	24,013,152
Publications	15,478,876	14,587,067
Other/Non-Operating	17,230,283	10,308,240
TOTAL REVENUES	62,931,976	50,899,572
Expense by Product Line		
Membership & Education	5,657,164	4,480,110
Conferences & Exhibits	25,481,514	24,913,360
Publications	14,380,307	12,028,501
Other/Non-Operating	2,249,001	3,115,139
TOTAL EXPENSES	47,767,986	44,537,110
Net Surplus/(Deficit)	15,163,990	6,362,462

SPIE programs work together in useful ways: technical conferences attract the people—and potential customers—who suppliers want to meet, while engineers and scientists learn about new product possibilities and share their technical-equipment and process requirements with exhibitors and collaborators from around the world. This exposure to industry also helps researchers bring new ideas to market.

Another key outcome from SPIE conferences is the content: proceedings manuscripts, recordings, and posters are vital forms of scientific and engineering communication. These globally visible formats are often where engineers and scientists first share their research and results. Combined with SPIE journals and SPIE Press, these publications provide critical research and applied knowledge to the global science and engineering community.

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.

2019 ANNUAL MEETING MINUTES

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

Tuesday, 13 August 2019
6:00 pm – 7:00 pm
San Diego Marriott Marquis Hotel and Marina *
Marina E Ballroom
San Diego, California

AGENDA

- 1. Meeting called to order by the President (Jim Oschmann)
- 2. Certification of quorum (Allison Romanyshyn)
- 3. Approval of Agenda
- 4. Approval of the Minutes from the Annual Meeting 21 August 2018
- 5. Report of the President (Jim Oschmann)
- 6. Report of the Treasurer (Jason Mulliner)
- 7. Election Results from the President (Jim Oschmann)
- 8. Q & A with SPIE Officers
- 9. Other Matters Appropriate for Discussion
- 10. Time and Location of Next Meeting
- 11. Adjournment

- 1. **Meeting called to order by the President:** SPIE President, Jim Oschmann, called the Annual General Meeting to order at 6:03 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:** Approval of the agenda was moved by Gary Spiegel and seconded by Kevin Harding. There was no objection to approve the agenda as written. The agenda was approved.
- 4. **Approval of the Minutes from the Annual Meeting 21 August 2018:** Anita Mahadevan-Jansen moved to approve the minutes, and Chris Mack seconded. All were in favor. Motion carried. The minutes were approved.
- 5. **Report of the President:** SPIE President, Jim Oschmann, began his presentation by reviewing the mission of SPIE. He then discussed all aspects of SPIE core business including conferences, exhibitions, publishing, and membership, as well as SPIE services and community support such as student chapters, advocacy and public policy, scholarships, the International Day of Light, and the National Quantum Initiative. Oschmann highlighted specific Equity, Diversity, and Inclusion activities, the recent acquisition of Photonex by SPIE, and announced the new Endowment Matching Program, with the first gift supporting the SPIE Endowed Chair in Optical Sciences at the Wyant College of Optical Sciences at the University of Arizona.
- 6. **Report of the Treasurer:** 2019 SPIE Secretary/Treasurer, Jason Mulliner, reported on the financial status of the Society. He began with an overview explaining that while the financial condition of the Society

2019 ANNUAL MEETING MINUTES

is strong, increasing venue expense and shrinking research budgets continue to provide challenges. The late 2018 stock market performance looms large in the year-end financials; but quickly corrected itself in the beginning of 2019. SPIE spent more than \$4 million on community support activities in 2018, accounting for more than 10% of operating revenue. SPIE’s total revenue and surplus for 2018 (inclusive of investments) were \$40.4 million and -\$4.1 million respectively. Operating revenue and surplus were \$45.3 million and \$1.7 million, respectively. Total SPIE assets approached \$120 million in 2018, with liquid reserves remaining stable at 19.8 months. Mulliner said the Society is in good financial health and has benefitted from an improving stock market in 2019. Although market volatility is always possible, a conservative and diversified portfolio keeps SPIE well positioned for the future. Mulliner thanked the SPIE staff for their diligence in managing expenses while continuing the excellent financial stewardship that allows SPIE to support its members and the greater photonics community.

- 7. **Election Report from the President:** Oschmann announced the following individuals were selected as Officers and Directors of the Society for the periods indicated and will begin service on 1 January 2020.

Officers for 2020:

President: John Greivenkamp, Wyant College of Optical Sciences, University of Arizona
President Elect: David Andrews, University of East Anglia
Vice President: Anita Mahadevan-Jansen, Vanderbilt University
Secretary/Treasurer: Jason Mulliner, Alluxa

Directors for the 2020-2022 Term:

Halina Rubinsztein-Dunlop, University of Queensland
Katie Schwertz, Edmund Optics
Cristina Solano, Centro de Investigaciones en Óptica, CIO
Scott Tyo, UNSW Canberra at the Australian Defence Force Academy

- 8. **Q & A with SPIE Officers:** SPIE member Dr. Ali Khounsary advised officers to think of liquid reserves in terms of a looming stock market crash, requested the Optics + Photonics symposium be moved to earlier in August, and asked if SPIE staff are being adequately compensated for their work. Oschmann replied that staff are well compensated; Mulliner explained that SPIE’s investment diversification minimizes possible loss from a potential market crash.
- 9. **Other matters appropriate for discussion:** No other matters were discussed.
- 10. **Time and Location of next meeting:** The next Annual General Meeting will take place on Monday, August 24, 2020.
- 11. **Adjournment:** Bob Lieberman moved to adjourn the meeting and Ali Khounsary seconded. All were in favor. The meeting was adjourned at 6:44 pm.

2020 ANNUAL MEETING MINUTES

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

Tuesday, 24 August 2020
10:00 am–11:00 am
Virtual Meeting

AGENDA

1. Report of the President (John Greivenkamp)
2. Report of the Treasurer (Jason Mulliner)
3. Election Results from the President (John Greivenkamp)
4. Time and Location of Next Meeting

1. Report of the President: SPIE President, John Greivenkamp, began his presentation by reviewing the mission of SPIE. He then discussed all aspects of SPIE core business including conferences, exhibitions, publishing, and membership, as well as community support such as scholarships, awards, outreach, advocacy programs, public policy, educational resources, student chapters, and Equity, Diversity, and Inclusion activities. Greivenkamp described the impact of COVID-19 on SPIE business in 2020, reviewing the transition from in-person events to virtual events via the SPIE Digital Forum. The priorities that drove the organization through this transition were to keep everyone safe, preserve and enhance the global reputation of SPIE among constituents, and manage finances. Greivenkamp concluded by explaining SPIE's event insurance claims, enumerating other activities that have continued in spite of COVID-19, providing an update on the Endowment Matching Program, announcing Photonics West 2021 dates for March, and thanking SPIE Staff.

2. Report of the Treasurer: 2020 SPIE Secretary/Treasurer, Jason Mulliner, reported on the financial status of the Society. He began with an overview explaining that 2019's financial performance was very strong for both operations and investments, rebounding from 2018's performance, and breaking a record for operating revenue. 2019 operating surplus dropped significantly from 2018 due to an increase in community support spending (more than \$5.6 million). 2020 has brought challenges to all aspects of SPIE business, but Mulliner reported he only expects a modest financial deficit for the year. SPIE's total revenue and surplus for 2019 (inclusive of investments) were \$62.9 million and \$15.1 million, respectively. Operating revenue and surplus were \$46.3 million and \$0.1 million, respectively. Total SPIE assets

2020 ANNUAL MEETING MINUTES

approached \$135 million in 2019, with liquid reserves remaining stable at 19.3 months. Mulliner said the historically strong financial condition of the Society has prepared it to address the challenges of 2020. After a historic drop in the stock market at the end of Q1 2020, the investments portfolio made a steady recovery and currently sits at a 3% loss from before the drop. Additional market volatility is possible, however SPIE's conservative and diversified portfolio is well positioned. SPIE remains diligent in managing expenses while pivoting to provide service to its community in a predominately digital environment. Staff continue to manage expenses while adjusting and improving digital offerings to best position SPIE for a post-pandemic environment.

3. Election Report from the President: Greivenkamp announced the following individuals were selected as Officers and Directors of the Society for the periods indicated and will begin service on 1 January 2021.

Officers for 2020:

President: John David Andrews, University of East Anglia

President Elect: Anita Mahadevan-Jansen, Vanderbilt University

Vice President: Bernard Kress, Microsoft Corp.

Secretary/Treasurer: Jason Mulliner, Alluxa

Directors for the 2021-2023 Term:

Ruth Houbertz, Multiphoton Optics GmbH

Elizabeth Krupinski, Emory University School of Medicine

Kyle Myers, U.S. Food and Drug Administration

Cather Simpson, The Univ. of Auckland

4. Time and Location of next meeting: The next Annual General Meeting will take place at 10:00 AM PDT, on Monday, August 2, 2021 at the Marriott Marquis Hotel and Marina in San Diego California, USA.

2021 ANNUAL GENERAL MEETING OF THE SPIE CORPORATION

2 August 2021 • 10:00 AM - 11:00 AM PDT
San Diego Marriott Marquis Hotel and Marina
Marina E Ballroom
San Diego, California

AGENDA

1. Meeting called to order by the President (David Andrews)
2. Certification of quorum (Allison Romanynshyn)
3. Approval of Agenda
4. Approval of the Minutes from the Annual Meeting 13 August 2019
5. Approval of the Minutes from the Annual Meeting 24 August 2020
6. Report of the President (David Andrews)
7. Report of the Treasurer (Jason Mulliner)
8. Election Results from the President (David Andrews)
9. Q & A with SPIE Officers
10. Other Matters Appropriate for Discussion
11. Time and Location of Next Meeting
12. Adjournment



2020 SPIE COMMITTEES

AUDIT COMMITTEE

The Audit Committee reviews financial transactions of the Society and reports results to the Board.



2020 COMMITTEE CHAIR
David Wick
Sandia National Labs
United States

COMMITTEE MEMBERS

- Judy Fennelly
- Jessica DeGroote Nelson
- Allen Earman
- Joseph Howard
- R. John Koshel
- Makenzie Lystrup
- Robert Sprague

COMPENSATION COMMITTEE

The Compensation Committee is appointed by the Board of Directors to assist the Board in its responsibilities regarding compensation of the Chief Executive Officer, Senior Executives and “disqualified persons” (as defined in the Internal Revenue Code).



2020 COMMITTEE CHAIR
Jason Mulliner
Alluxa, Inc.
United States

COMMITTEE MEMBERS

- Maryellen Giger
- Jim McNally
- Jim Oschmann
- Gary Spiegel

AWARDS COMMITTEE

The Awards Committee reviews the choices of the award subcommittees, selects the Gold Medal recipient and submits these recommendations for Society Awards to the Board.



2020 COMMITTEE CHAIR
Kyle Myers
US Food and Drug Administration
United States

COMMITTEE MEMBERS

- Julie Bentley
- Kent Choquette
- Donis Flagello
- Goldie Goldstein
- Maryah Haertel
- Daniel Kane
- Ursula Keller
- Elizabeth Krupinski
- Charles LaCasse
- Anita Mahadevan-Jansen
- Fernando Mendoza-Santoyo
- Yukitoshi Otani
- Michal Pawlowski
- Rosario Porras-Aguilar
- Dan Smith
- James Trolinger
- Lihong Wang

CORPORATE AND EXHIBITOR COMMITTEE (CEC)

The Corporate and Exhibitor Committee monitors and oversees Society activities that address the needs of SPIE Corporate Members and Exhibitors.



2020 COMMITTEE CHAIR
Leonard Chen
Raytheon Vision Systems
United States

COMMITTEE MEMBERS

- Lynore Abbott
- Uri Abrams
- Jennifer Barton
- Scott Bass
- Mark Bigelow
- William Burgess
- Linda Claytor
- Joseph Dallas
- Sandra Garcia
- George Gasparian
- Craig Goldberg
- William Holtkamp
- Vince Meli
- Haley Mellinger
- Nishant Mohan
- Uwe Ortmann
- Scott Rudder
- Stephanie Snow
- Russell Spalding
- Thomas Tongue
- Chris Toomey
- Mary Turner
- Tori Uthe

2020 SPIE COMMITTEES

EARLY CAREER AND STUDENT SUBCOMMITTEE

The Early Career and Student Subcommittee brings organized volunteer guidance to SPIE Student and Early Career Professional programs.



2020 COMMITTEE CHAIR
Matthew Posner
Excelitas Canada, Inc.
Canada

COMMITTEE MEMBERS

- Shashwath Shankar Bharadwaj
- Angeles Camacho Rosales
- Tatevik Chalyan
- Olivia Fehlberg
- Ryo Kato
- Inga Saknite
- Sarmishtha Satpathy
- Lin Sun
- Orlando Torres Perales

EDUCATION AND OUTREACH COMMITTEE

The Education Committee maintains surveillance of the educational activities of the Society and monitors the quality of educational programs conducted in the name of the Society.



2020 COMMITTEE CHAIR
Jessica DeGroote Nelson
Optimax Systems, Inc.
United States

COMMITTEE MEMBERS

- Rhys Adams
- Anand Asundi
- Katelynn A. Bauer
- Valdis Blūms
- Robert M. Bunch
- Marta C. de la Fuente
- Carmiña Londoño
- Kristen C. Maitland
- Michael McKee
- Kate Medicus
- Brian Monacelli
- Tatjana Pladere
- Matthew T. Posner
- Anne-Sophie Poulin-Girard
- Than Singh Saini
- Guillermo Ezequiel Sánchez-Guerrero
- Joseph A. A. Shaw
- Cather M. Simpson
- Orlando Torres Perales
- Jess Wade
- Linhui Yu

ENGINEERING, SCIENCE & TECHNOLOGY POLICY

The ESTeP Committee promotes understanding at all levels of policy decision-making, about those issues that affect the well-being of the optical science and engineering communities worldwide. This Committee also advises the Board and other Society groups on ways to expand the Society's role in science and engineering policy.



2020 COMMITTEE CHAIR
Jennifer Barton
Univ. of Arizona
United States

COMMITTEE MEMBERS

- Lynn Allen
- Leonard Chen
- Peter Delfyett
- Olivia Fehlberg
- Gerorge Gasparian
- Simi George
- Andrew Haefner
- Marc Himel
- John Lincoln
- Jim McNally
- Jeremy Murray-Kreza
- Wenko Süptitz
- Christina Walker
- Kirk Warden
- Waylin Wing

EQUITY, DIVERSITY, AND INCLUSION COMMITTEE

The Equity, Diversity and Inclusion Committee works to develop a set of strategies that SPIE can adopt to improve and enhance diversity and inclusion in all aspects of SPIE. Diversity is defined as any group that is considered to be underrepresented in the fields of science and engineering. This includes race, gender, ethnicity, lifestyle, economic, and geographic.



2020 COMMITTEE CHAIR
Halina Rubinsztein-Dunlop
The Univ. of Queensland
Australia

COMMITTEE MEMBERS

- Andrea Armani
- Julia Craven
- Simi George
- Maryellen Giger
- Evan Hale
- Srividya Jayaram
- Sarah Kendrew
- Iva Laginja
- Martin Leahy
- Latifah Maasarani
- Anita Mahadevan-Jansen
- Shoula Nikzad
- Orlando Torres Perales
- Frédérique Vanholsbeeck
- Jess Wade

2020 SPIE COMMITTEES

EUROPEAN ADVISORY AD-HOC COMMITTEE

The European Advisory Ad-hoc Committee advises the SPIE Board of Directors on, and provides leadership on, the Society's strategic and ongoing activities in Europe.



2020 COMMITTEE CHAIR
Agnes Hübscher
Edmund Optics
Germany

COMMITTEE MEMBERS

- Francis Berghmans
- Andres Cifuentes
- Dominique Hamoir
- Robert Lamb
- Steve Najda
- Steffen Reichel
- Hans Zappe

FELLOWS COMMITTEE

The Fellows Committee makes recommendations to the President and Board of Directors for Fellows, Life, and Honorary Membership candidates.



2020 COMMITTEE CHAIR
Michelle Lynn Stock
TOPTICA
United States

COMMITTEE MEMBERS

- Andrea Alù
- Betty Lise Anderson
- Peter Anderson
- Eugene Arthurs
- Anand Asundi
- Nerine Cherepy
- Elder De la Rosa
- Keith Doyle
- Donis Flagello
- Bo Gu
- Rüdiger Grunwald
- Ray-Hua Horng
- Mona Jarrahi
- Helena Jelinková
- Thomas Kampe
- Kazuo Kuroda
- Kwang-Sup Lee
- Laura Marcu
- Boon S. Ooi
- Kara Peters
- Jeffery Puschell
- Stanley Rogers
- Angela Seddon

FINANCIAL ADVISORY COMMITTEE

The Financial Advisory Committee reviews and consults with the Treasurer regarding Society financial affairs and procedures.



2020 COMMITTEE CHAIR
Jason Mulliner
Alluxa, Inc.
United States

COMMITTEE MEMBERS

- William Arnold
- Allen Earman
- Jim McNally
- Linda Smith
- Gary Spiegel

INFORMATION TECHNOLOGY COMMITTEE

The IT Committee provides oversight of the information technology capability and products of the Society and makes recommendations to staff and leadership.



2020 COMMITTEE CHAIR
Christopher Wilcox
Air Force Research Laboratory
United States

COMMITTEE MEMBERS

- Alexander Doronin
- Dirk Faber
- Carlos Font
- Yi Hua
- Apurva Jain
- Matthew Jungwirth
- Martha Navarro
- Lin Sun
- Scott Tyo
- David Wick

2020 SPIE COMMITTEES

MEMBERSHIP & COMMUNITIES COMMITTEE

The Membership and Communities Committee oversees and guides Society activities that promote the professional careers and address the needs and interests of SPIE individual Members and constituents.



2020 COMMITTEE CHAIR
Craig Olson
L-3 Technologies Sonoma EO
United States

COMMITTEE MEMBERS

- Andrei Anisimov
- Sandra Balderas-Mata
- Judith Dawes
- Gilles Freddy Feutmba
- Matthew Jungwirth
- Ryo Kato
- Beop-Min Kim
- Vasudevan Lakshminarayanan
- Nishant Mohan
- Kyle Myers
- Rosario Porras-Aguilar
- Matthew Posner
- Inga Saknite
- Katie Schwartz
- Dimitra Stratis-Cullum

NOMINATING COMMITTEE

The Nominating Committee nominates candidates for Vice President, Treasurer, Secretary, and Director.



2020 COMMITTEE CHAIR
Jim Oschmann
Ball Aerospace, Retired
United States

COMMITTEE MEMBERS

- Maryellen Giger
- Debbie Gustofson
- Agnes Huebscher
- Bernard Kress
- Jay Kumler
- Byoungcho Lee
- Halina Rubinsztein-Dunlop

PUBLICATIONS COMMITTEE

The Publications Committee monitors the publications of the Society and ascertains that editorial content of digital and printed matter distributed in the name of the Society is appropriate to the technical and ethical standards of the discipline and the Society.



2020 COMMITTEE CHAIR
David Sampson
Univ. of Surrey
United Kingdom

COMMITTEE MEMBERS

- Allison Barto
- Julie Bentley
- David Boas
- Audrey Bowden
- Alexander Heisterkamp
- Matthew Jungwirth
- Beop-Min Kim
- Elizabeth Krupinski
- Francesco Pavone
- Jannick Rolland-Thompson
- Inga Saknite
- Ifor Samual
- Cather Simpson
- Tomasz Tkaczyk
- Din Ping Tsai
- Christopher Wilcox
- Kenneth Kin-Yip Wong
- Xiao-Cong (Larry) Yuan

2020 SPIE COMMITTEES

SCHOLARSHIP COMMITTEE

The Scholarship Committee makes recommendations to the Board of Directors on the scholarship and grant awards made in the name of the Society.



2020 COMMITTEE CHAIR
Kate Medicus
Ruda-Cardinal, Inc.
United States

COMMITTEE MEMBERS

- Shiva Abbaszadeh
- Frank Abboud
- Indrani Bhattacharya
- Olga Bibikova
- Jeremy Bos
- Liangcai Cao
- Tatevik Chalyan
- Amol Choudhary
- Javier Concha
- James Corsetti
- Richa Dubey
- Angela Louise Dudley
- Judy Fennelly
- Andrew Forbes
- Nea Hamilton
- Sona Hosseini
- Apurva Jain
- Dae Wook Kim
- Maciej Kraszewski
- Dorilian Lopez-Mago
- Nancy Magnani
- Moritz Merklein
- Nur Nabila Binti Mohd Makhtar
- Sonika Obheroi
- Brian Primeau
- María Sánchez-López
- Sarmishtha Satpathy
- Babak Shadgan
- Mark Spencer
- Ganapathi Subramania
- Paul Kumar Upputuri
- Perla Marlene Viera-González
- Xifeng Xiao
- Renjie Zhou
- Chao Zuo

SENIOR MEMBER COMMITTEE

The Senior Member Committee makes recommendations to the President and Board of Directors for Senior Members.



2020 COMMITTEE CHAIR
Dimitra N. Stratis-Cullum
CCDC Army Research Lab
United States

COMMITTEE MEMBERS

- Ruth Houbertz
- Eunkyong Kim
- Oliver J. Myers
- Shouleh Nikzad
- Eric M. Panning
- Paul M. Pellegrino
- Shiv Kumar Sharma

STRATEGIC PLANNING COMMITTEE

The Strategic Planning Committee provides oversight of and leadership to the strategic planning process of the Society.



2020 COMMITTEE CHAIR
David Andrews
Univ. of East Anglia
United Kingdom

COMMITTEE MEMBERS

- David Andrews
- Allison Barto
- Jennifer Barton
- Leonard Chen
- Jessica DeGroot Nelson
- John Greivenkamp
- Robert Lipson
- Anita Mahadevan-Jansen
- Jason Mulliner
- Craig Olson
- Kent Rochford
- Halina Rubinsztein-Dunlop
- David Sampson
- Christopher Wilcox

SYMPOSIA COMMITTEE

The Symposia Committee has oversight responsibilities for the global aspects of the Society's symposia and technical activities including international, national, and regional educational programs and conferences.



2020 COMMITTEE CHAIR
Allison Barto
Ball Aerospace
United States

COMMITTEE MEMBERS

- Peter de Groot
- Judy Fennelly
- Marc Himel
- Kevin Liddane
- Craig Olson
- Andreas Ostendorf
- Yukitoshi Otani
- Halina Rubinsztein-Dunlop
- Volker Sorger
- Ding Ping Tsai
- David Wick



Credit: Zeeshan Jadoon

SPIE BOARD OF DIRECTORS AND OFFICERS

2020 OFFICERS



PRESIDENT
John Greivenkamp
Univ. of Arizona,
United States



IMMEDIATE PAST PRESIDENT
Jim Oschmann
Retired, Ball Aerospace &
Technologies Corp.,
United States



PRESIDENT-ELECT
David Andrews
Univ. of East Anglia,
United Kingdom



VICE PRESIDENT
Anita Mahadevan-Jansen
Vanderbilt Univ,
United States



SECRETARY/TREASURER
Jason Mulliner
Alluxa, United States



BOARD ADVISOR
Kent Rochford
SPIE, United States

2020 DIRECTORS AND ADVISORS



Allison Barto
Ball Aerospace, United States
Board Advisor; Chair Symposia
Committee
(Term 2020)



Leonard Chen
Raytheon Co, United States
Chair, Corporate & Exhibitor
Committee
(Term 2020)



Julia M. Craven
CVI Laser Optics, United States
(Term 2019-2021)



Peter de Groot
Zygo Corp., United States
(Term 2019-2021)

2020 DIRECTORS AND ADVISORS



Marta de la Fuente
ASE Optics Europe, Spain
(Term 2019-2021)



Judy Fennelly
Retired, Air Force Research Lab,
United States
(Term 2019-2021)



Kazuo Kuroda
Utsunomiya Univ, Japan
(Term 2018-2020)



Byoungcho Lee
Seoul National Univ., South Korea
(Term 2020-2022)



Chris Mack
Fractilia, LLC, United States
(Term 2018-2020)



Kristen Maitland
Texas A&M Univ, United States
(Term 2018-2020)



Jim McNally
Applied Technology Associates,
United States
(Term 2019-2021)



Kyle Myers
US Food & Drug Administration,
United States
(Term 2018-2020)



Craig Olson
L3 Sonoma EO, United States
Board Advisor; Chair, Membership
and Communities Committee
(Term 2020)



Halina Rubinsztein-Dunlop
Univ. of Queensland, Australia
(Term 2020-2022)



David Sampson
Univ. of Surrey, United Kingdom
Board Advisor; Chair,
Publications Committee
(Term 2020)



Katie Schwartz
Edmund Optics Inc., United States
(Term 2020-2022)



Cristina Solano
Centro de Investigaciones
en Optica Ac, Mexico
(Term 2020-2022)



Scott Tyo
UNSW Canberra, Australia
(Term 2020-2022)



Credit: Julio Castro

SPIE MANAGEMENT



CHIEF EXECUTIVE OFFICER
Kent Rochford



SENIOR DIRECTOR, GLOBAL
BUSINESS DEVELOPMENT
Andrew Brown



SENIOR DIRECTOR, INFORMATION
TECHNOLOGY, CTO
Scott Ritchey



CHIEF OPERATING AND
FINANCIAL OFFICER
Brad Ferguson



SENIOR DIRECTOR, TECHNICAL
PROGRAMS
Marilyn Gorsuch



SENIOR DIRECTOR, COMMUNITY
ENGAGEMENT, & CHIEF INCLUSION
OFFICER
Allison Romanyshyn



DIRECTOR, INDUSTRY
DEVELOPMENT
Stephen Anderson



DIRECTOR, GOVERNMENT AFFAIRS
Jennifer O'Bryan



DIRECTOR, PUBLICATIONS AND
PLATFORM
Patrick Franzen



DIRECTOR, MEMBERSHIP AND
COMMUNITY DEVELOPMENT
Nelufar Mohajeri



DIRECTOR, SOFTWARE
DEVELOPMENT
Jill Stanton



DIRECTOR, FINANCE
Teresa Handy DeVeau



DIRECTOR, SCIENCE &
TECHNOLOGY
Bob Hainsey



DIRECTOR, MARKETING &
INDUSTRY RELATIONS
Peter Hallett



DIRECTOR, SECURITY, OPERATIONS
& BUSINESS INTELLIGENCE
Tom Greer



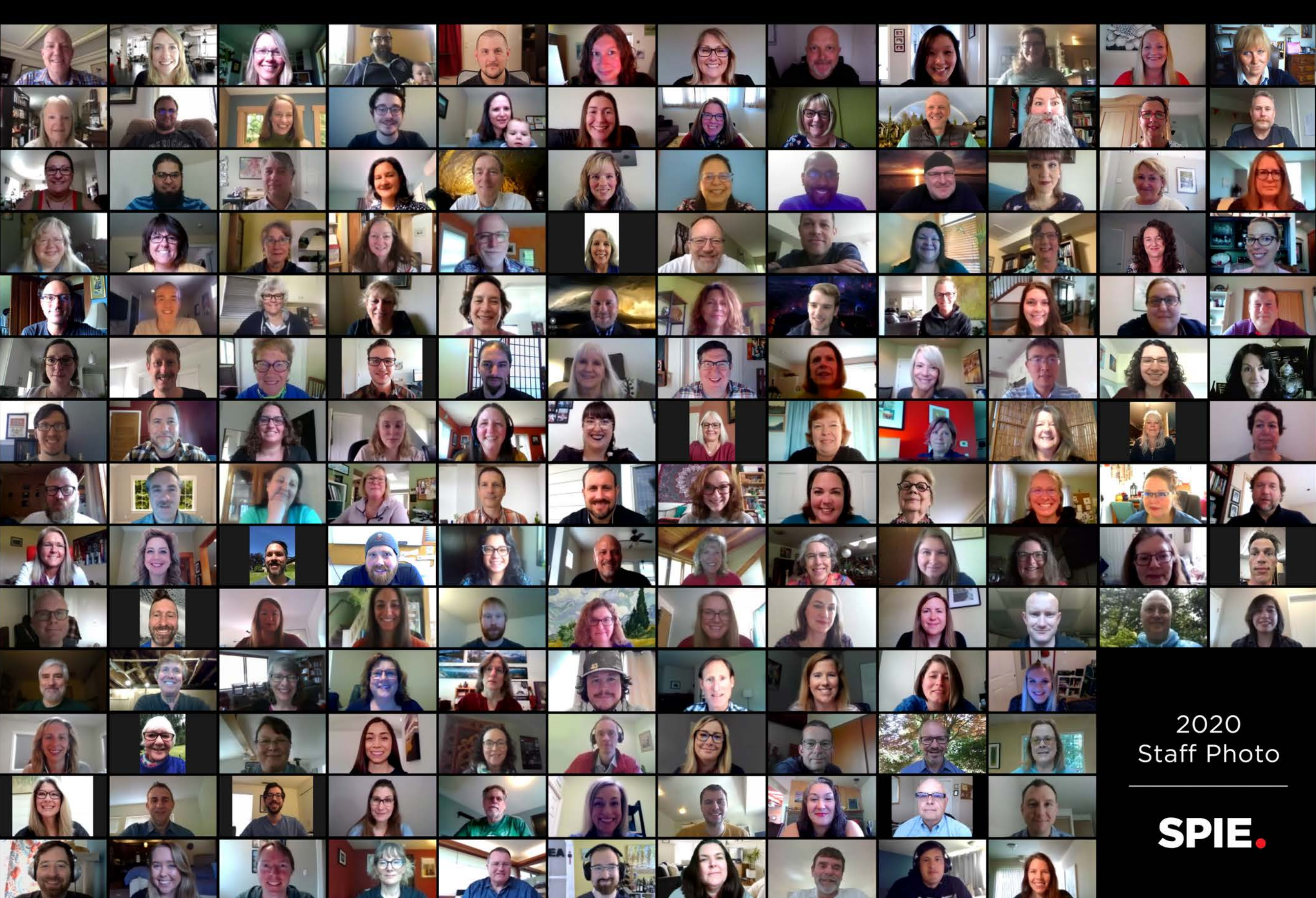
DIRECTOR, HUMAN RESOURCES
Sarah Wills



DIRECTOR, BUSINESS SERVICES,
SYSTEMS, & DATA GOVERNANCE
Lara Miles



DIRECTOR, GLOBAL EXHIBITION
SERVICES
Bonnie Peterson



2020
Staff Photo

SPIE.

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Increase your involvement. Expand your professional network,
gain greater access to the latest research,
advance your career, and create a brighter future.

spie.org/membership



SPIE.

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