



2020 Highlights of ACS Achievements

A report from Thomas Connelly
Chief Executive Officer
American Chemical Society

Please find below a very high-level summary of the 2020 Achievements. Beginning on page six you will find additional details, organized by the five goals found in the ACS Strategic Plan. Due to the collaborative nature of our work, several Divisions may have submitted similar achievements because each unit had a role to play.

Needless to say, 2020 was a year like no other. After starting in an ordinary fashion, the specter of COVID-19 was evident by late February. The ensuing weeks saw rapid, and continual, reassessment of the SARS-CoV-2 threat. Actions that seemed excessive one week, appeared to be insufficient by the next. Every ACS activity needed to be reconsidered, most being converted to virtual formats. The agility of both ACS members and staff were tested by these challenges. Both 2020 National Meetings were terminated, with the Fall meeting replaced by a virtual meeting. The 2021 Spring Meeting was also terminated and will be replaced by a virtual meeting. In early March 2020, ACS staff were given an option of working remotely. By mid-March, all ACS staff were required to work remotely. Outstanding support from our IT team allowed us to effect this transition quickly and smoothly.

In late May, the shocking and tragic killing of George Floyd led to the second major challenge of 2020. Like so many other organizations, ACS deeply reflected on issues of racism and social justice, within our Society and across the chemistry enterprise. During the second half of the year, listening sessions and training courses were conducted for staff and volunteers; workstreams and action plans were developed. Our five Diversity, Equity, Inclusion, and Respect (DEIR) workstreams comprise: 1) Increasing Awareness & Knowledge; 2) Building a Supportive Environment/Culture; 3) Diversifying ACS Governance/Volunteer Leaders; 4) Advancing DEIR in ACS Membership and Beyond; and 5) Advancing DEIR in the Chemistry Enterprise. More workstreams may be added. This work continues apace. Very significantly, at the recommendation of the Strategic Planning Committee, the ACS Board of Directors expanded our Core Value to Diversity, Equity, Inclusion, and Respect, and added our fifth Goal: 'Embrace and Advance Inclusion in Chemistry'. Increased emphasis on DEIR has been included throughout the ACS Strategic Plan.

ACS Membership for yearend 2020 stood at over 155,000 members. This growth was particularly spurred by the launch of a new Community Membership market test which provides the chemistry enterprise with a novel way to affiliate with ACS. ACS international

membership has continued to be an additional bright spot with 25% of members presently residing outside the U.S.

For our national meetings, the pandemic forced a new paradigm for meeting planning. Meeting programs were re-envisioned in 2020 to provide opportunities for chemists, researchers and the global community to connect and share research. Though the Spring 2020 National Meeting was terminated, more than 11,700 submissions from that planned meeting were shared on the SciMeetings platform, in partnership with ACS Publications. The Fall 2020 virtual meeting and expo was successfully produced following an intensive 10 weeks of preparation after it was determined that in-person activities would not take place. The meeting attracted just over 6,500 registrants with 70 exhibitors and sponsors combined. More than 4,100 presentations were provided for on-demand access during the meeting.

To support our ACS members in the midst of the COVID-19 pandemic, several ACS programs were launched or expanded. ACS provided access to the following highlighted resources. [LinkedIn Learning](#) is an online library with over 16,000 courses on a wide portfolio of topics. Access was granted to all ACS members. In partnership with our provider INOVA, members in need were provided no cost access to important assistance programs including [counseling](#), [financial guidance](#), and [legal assistance](#). Members impacted by the pandemic in the broadest sense (employment changes, family care responsibilities, health challenges) received a [dues waiver](#) for a year of continued ACS dues at renewal. In response to the National Meeting cancellations, we enabled [virtual career consultations](#) and [Virtual Career Days](#) via Zoom.

The ACS Green Chemistry Institute held its 24th Annual Green Chemistry & Engineering (GC&E) Conference, as the first all-virtual meeting hosted by ACS due to the COVID-19 pandemic. The GC&E Conference consisted of 350 scientific presentations using a combination of live and pre-recorded content. The combination of a virtual platform and free registration opened up the Conference to a large, global audience of nearly 5,000 people representing 99 countries—roughly a 10-fold increase in attendance from in-person GC&E conferences.

The ACS Petroleum Research Fund (PRF) awarded 185 grants for fundamental research in chemistry, engineering, and geology, providing a total of \$18.910 million in research funding. 2019-2020 represented the 65th anniversary of the first PRF grant awards. As of the end of 2020, over \$700 million had been awarded in the program since its inception. An ACS Presidential Symposium was held virtually in conjunction with the Fall 2020 National ACS Meeting, and a PRF retrospective was presented at the American Association of Petroleum Geologists (AAPG) 2020 Annual Meeting in September.

Confronted with the pandemic, our Education team needed to adapt their flagship programs to the new reality. Since in-person research experiences could not be offered, 291 [Project SEED](#) (Summer Experiences for the Economically Disadvantaged) students participated in a four-week virtual summer camp. Students learned about careers in chemistry, lab basics, and college preparation via webinars, independent assignments, and small group discussions. Student participants and undergraduate/graduate student cabin leaders received stipends.

The [U.S. National Chemistry Olympiad](#) was held online without the laboratory component. From the nearly 1,000 high school students who competed in the national exam, 20 were selected for a 10-day virtual study camp. Four students were selected for Team USA who performed strongly at the (virtual) International Chemistry Olympiad by winning four gold medals.

And in 2020, the [ACS Scholars Program](#) celebrated 25 years of providing renewable scholarships to over 3,300 underrepresented students majoring in chemistry-related disciplines. To date, over 445 alumni have received a PhD, MD/PhD, or PharmD, with many more receiving a variety of advanced degrees.

In the midst of the pandemic, the American Association of Chemistry Teachers (AACT) website, teachchemistry.org, received over 1.6M visits during 2020. For the 2020–2021 school year, over 259 partnerships were initiated through the Science Coaches program. During the rapid pivot to remote instruction, AACT promoted its unlocked resources and provided additional access to select resources. AACT also hosted 36 webinars and virtual symposia. AACT membership grew to 8,045 at yearend, a 20% increase over 2019.

The Office of the Secretary and General Counsel (OSGC) was highly committed to responding to the two major 2020 challenges: the pandemic and DEIR. OSGC transitioned multiple in-person meetings into virtual formats, enabling all committees to meet virtually to ensure their business was conducted without interruption or delay. The Council Policy Committee met several times to enact new policies to govern a virtual Council, and met once *ad interim* for Council. The Fall 2020 Council meeting was held virtually for the first time with more than 550 participants – Councilors, Committee Chairs, ACS Board Members, staff, and attendees. Councilors were able to conduct their business without any limitations on their ability to vote or debate issues. Councilors were able to listen and view presentations, vote, and speak on agenda topics. The preparation for this virtual Council included a rehearsal meeting with all the Officers and Committee Chairs that were scheduled to give a report, as well as two mock meetings whereby every Councilor was invited for training.

In 2020, OSGC also took the lead in coordinating the workstream seeking to diversify volunteers/governance. They arranged foundational bias training for the Board and several key committees and have begun actions that will strengthen diversity within our committee and elections processes. They created and distributed, internally to staff and externally to members, a 2021 ACS Diversity calendar. OSGC facilitated workshops and panel discussions focused on diversity and inclusion with multiple partner societies comprised of underrepresented minorities in the sciences. Also in 2020, the ACS Speaker Series for staff focused on the ACS Core Value of Diversity, Inclusion, and Respect. The series started with guest speaker Risha Grant - award-winning Diversity & Inclusion consultant and author who presented “Permission Granted to Get Rid of Your Bias Synapse (BS) and Build an Inclusive Culture”.

HR had a very busy year. 2020 was the pilot year for Performance Management (PM2020), a new approach to assessment and performance management of our staff. PM2020 is based on

quarterly oral and written evaluations. About 20% of ACS staff participated in the pilot. Based on the positive reception, PM2020 will be extended to all staff during 2021. HR also assisted with the transitioning of the ACS workforce to remote work, launched UltiPro for ACSI staff (approximately 150 staff are located outside of the U.S.) providing a consistent employment experience across the enterprise, and coordinated the Executive Leadership Team Listening Sessions in response to the Black Lives Matter movement.

To inform our strategy, the Strategic Planning Committee developed seven Change Drivers. Each is an indicator of fundamental driving forces where important change is, or could be, happening in the chemical enterprise that will impact strategic planning over the next 3 to 5 years. The *ACS Strategic Plan* was approved by the ACS Board of Directors at their December 2020 meeting and launched on the web (<http://strategy.acs.org>) in January 2021. It provides the basis for all of the Society's work in support of the Vision, Mission, and Core Values. The strategic plan is the result of broad engagement with governance and staff members, consolidated by the Strategic Planning Committee, and approved by the Board of Directors. Three significant changes are reflected in the new plan:

- Updated the core value of Diversity, Inclusion, and Respect to include Equity: Diversity, Equity, Inclusion, and Respect (DEIR);
- Added a fifth goal to specifically address DEIR: Embrace and Advance Inclusion in Chemistry; and,
- Updated and explicitly added language pertaining to DEIR through the plan.

Our Finance team operated through its first year of the simplified budgeting and forecasting process. The 'P1-P2' forecasting process was replaced with a single estimate after month 7. This significantly reduced the forecasting efforts. Moreover the Budget and Finance Committee combined the Society Program Portfolio Management System with the New Program Funding Request, thereby further streamlining our financial planning.

ACS achieved LEED Platinum Re-certification for the ACS Hach and Othmer Buildings in the Leadership in Energy and Environmental Design, Existing Building: Operations and Maintenance Version 4 program, sponsored by the U.S. Green Building Council (USGBC). The USGBC is the nation's leading non-profit authority for green buildings and is the nationally accepted benchmark for the design, construction, and operation of high performance green buildings. By achieving this certification, ACS has demonstrated its unwavering commitment to the environment that supports the sustainability goal set forth by the ACS Board of Directors.

The financial uncertainty of the pandemic challenged the Development team, particularly in the first half of 2020, as giving lagged vs. prior years. Thanks to the team's hard work, the year closed strongly, crossing the \$3M mark in December and ending the year at nearly \$3.3M. Amid the national conversation about racial inequities, ACS donors reaffirmed their commitment to diversifying the chemical sciences while fostering excellence in science education with their support of educational programs like Project SEED, ACS Scholars, and the ACS Bridge Program.

The value of our IT infrastructure investments during the past decade were clearly demonstrated during 2020. For example, the VPN infrastructure permitted the entire ACS staff to pivot to remote work within a week. Over the past several years, we outfitted most of the organization in DC with laptops, a move that also facilitated remote work. Three years ago, we initiated Enterprise Technology Shared Services, including a single service desk for all ACS staff, improving a high level of support to remote workers. Finally, our continuing investment in IT security gives us a stronger control environment, as our staff works remotely, around the world.

CAS had another record year for revenue and net from operations. 2020 was the fifth consecutive year of outstanding growth and innovation for CAS. CAS delivered high-quality enhancements to [SciFinderⁿ](#) to continually add value for global innovators, including export improvements, seamless CAS-Medline deduplication, and Electronic Lab Notebook (ELN) integrations and visualizations. Key enhancements to retrosynthesis in SciFinderⁿ included custom scoring and stereoselectivity display. Extensive content and capabilities were added to [STNext](#), including the addition of claims, numerical property searching, element count for super atoms, asset management updates, and patent reporting enhancements. Our continued investment is helping customers realize the additional value in STNext and resulted in significant migration to this platform in 2020.

In response to the spreading pandemic, CAS initiated outreach to organizations on the front lines of COVID-19 research, establishing partnerships and providing access to its scientific information solutions and other resources. CAS quickly organized actionable data focused on vaccine and therapeutic initiatives and publicly shared this information through these relationships and the [COVID-19 hub](#) on the CAS website. Our scientists published several papers in ACS Publications, [one of which](#) was downloaded over 300,000 times, setting a record for access to an ACS paper in such a short period of time. In addition, datasets, blogs, webinars, and videos explaining how the virus and associated vaccines work in the body have continued to be leveraged by those seeking to stay informed on the science of the virus.

ACS Publications also had a record year for revenue and net from operations. ACS Publications strengthened its reputation as the most trusted, most cited, most read publisher of science in chemistry and related fields. Despite the challenges associated with the COVID pandemic, 2020 was a very successful year for ACS Publications. This success derived from collective and collaborative efforts. Last year, ACS journals received a record number of submissions, and published more than 62,000 articles. This represented a remarkable increase of nearly 9%, despite lab closures and restrictions around the world. Usage of ACS publications continues to climb, with an increase of 10% in downloads to 172 million. Nearly one-third of our journals are achieving their highest ever Impact Factor.

Supported by the ACS Board of Directors, and the Governing Board for Publishing, 2020 was also a pivotal year for our open access publishing initiatives. We are accelerating ACS representation in the Open Access segment by leveraging the successes of *ACS Central Science* and *ACS Omega*, the latter growing to 3.5K articles during 2020. The past year also saw the successful launch of *JACS Au* --this latest being fully open access reflection of our flagship journal. We will build on our Au (GOLD) brand, through the introduction of nine

open access ACS Au (GOLD) discipline-specific journals. These new journals will expand our ability to meet the needs of our authors who are facing publication mandates from their funders and institutions.

Despite the manifold challenges of the pandemic, the Society had a very strong year financially. Thanks to strong performance by CAS and ACS Publications, plus prudent cost control across all units, all five of our financial guidelines were met or exceeded. No ACS staff member has been laid-off or furloughed as a consequence of the pandemic.

GOAL 1—*Provide Information Solutions* – Deliver indispensable chemistry-related information solutions to address global challenges and other issues facing the world’s scientific community.

- **Enabling Access to COVID-19 Scientific Information Resources**

Several days prior to the World Health Organization’s (WHO) formal declaration of a pandemic, CAS initiated outreach to organizations on the front lines of COVID-19 research, establishing partnerships and providing access to its scientific information solutions and other resources. CAS quickly organized actionable data focused on vaccine and therapeutic initiatives and publicly shared this information through these relationships and the [COVID-19 hub](#) on the CAS website. Our scientists published several papers in ACS Publications, [one of which](#) was downloaded over 300,000 times, setting a record for access to an ACS paper in such a short period of time. In addition, datasets, blogs, webinars and videos explaining how the virus and associated vaccines work in the body have continued to be leveraged by those seeking to stay informed on the science of the virus.

- **SciFinder[®] Enhancements**

CAS delivered high-quality enhancements to [SciFinder[®]](#) to continually add value for global innovators, including export improvements, seamless CAS-Medline deduplication, Electronic Lab Notebook (ELN) integrations and visualizations. Key enhancements to retrosynthesis in SciFinder[®] included custom scoring and stereoselectivity display. (Note: SciFinder[®] is a registered trademark of the American Chemical Society.)

- **STNext[®] Expansion**

CAS added extensive content and capabilities to [STNext](#), including the addition of claims, numerical property searching, element count for super atoms, asset management updates and patent reporting enhancements. Our continued investment is helping customers realize the additional value in STNext and resulted in significant migration to this platform in 2020.

- **Biosequence Search**

A full-scale Biosequence search functionality was added to CAS’s franchise solutions, SciFinder[®] and STNext, expanding our footprint in Biologics by allowing customers to explore the world’s largest biosequence collection as part of the unique CAS content collection.

- **Visualization**
 CAS launched two new visualizations, Chemscape and Bioscape for the core CAS platforms, which provides customers with an innovative approach to exploring chemical and sequence patents for a chemical substance or biosequence.
- **SearchGuard™**
 CAS introduced a new offering, [SearchGuard](#), providing research assistance leveraging CAS Science IP professionals to enable customers to add capacity and expertise wherever and whenever needed in order to support risk mitigation and increase speed of response to opportunities.
- **Formulus®**
 CAS continues to improve capabilities for the [Formulus](#) solution to ensure formulators can develop safe, effective and differentiated products.
- **Pistoia Alliance Partnership**
 Launch of the [Pistoia Alliance Chemical Safety Library](#), powered by a new CAS platform, facilitates information sharing between scientists to improve laboratory safety by providing access to critical crowd-sourced reaction hazard information to reduce incidents.
- **Scilligence Partnership**
 CAS partnered with Scilligence, a provider of web-based informatics solutions for R&D to enable [direct access to CAS scientific content through the Scilligence informatics platform](#). This partnership builds on a previous collaboration by streamlining additional workflow scenarios. Users can now access CAS REGISTRYSM data directly from Scilligence ELN and Scilligence Inventory.
- **MIT Partnership**
 CAS entered into a research collaboration with the Massachusetts Institute of Technology (MIT) to [accelerate research on predictive chemical synthesis planning](#). CAS provided MIT's Department of Chemical Engineering Connor Coley's Research Group a collection of high-quality, scientist-curated chemical reaction data, enabling them to train advanced algorithms in retrosynthesis and reaction prediction.
- **National Science Foundation of China (NSFC) Partnership**
 CAS engaged a one-year partnership to complete scientific and data analytics research between CAS and NSFC.
- **Patent Examiner Tool (PET)**
 CAS built and deployed a [Patent Examiner Tool](#) (PET) for use by CAS examiners processing the Brazilian Patent Office backlog, resulting in a 3x productivity improvement for the examiners.

- Analytics Presence**

The CAS Data, Analytics and Insights team deepened its market presence in 2020. The team published peer-reviewed papers, contributed to *C&EN* Discovery Reports, authored CAS blog posts, and submitted a Continuation in Part patent application for which CAS received a patent grant. The team also received a 4th place honorable mention for the International Institute for Analytics ANNY Award.
- Engaging Scientists of Tomorrow**

CAS participated in the inaugural C&EN Futures Festival held August 25-26, 2020. Hosted virtually on C&EN's webinar platform, and presented by ACS, the Festival was described as, "... a forward-looking forum featuring the people, ideas, and discoveries that will shape the future of science." The online event showcased prominent scientists from industry and academia alongside select alumni and new awardees of ACS-sponsored leadership initiatives, including the CAS Future Leaders program. CAS partnered with C&EN to increase the brand/program visibility across ACS audiences and executed a session featuring talks by four CAS Future Leaders alumni that reached over 2,000 live and on-demand registrants.
- ACS Publications Continues to Thrive Despite COVID-19**

ACS Publications delivered a remarkable performance through 2020, given the global turbulence caused by the COVID-19 pandemic. All staff rapidly switched to remote working during Q1, with the organization's contingency plans implemented smoothly. Multiple activities and strategies successfully pivoted to reflect the new 'socially distanced/no travel' environment in effect across much of the world. ACS also took the lead in making all COVID-19 relevant content free-to-access, supporting the fight against the virus and increasing public awareness through relevant *C&EN* and journal articles. Indeed, a [COVID-19 article](#) authored by CAS colleagues, peer reviewed and published in *ACS Central Science*, rapidly attracted over 300K downloads globally, demonstrating the quality, relevance and interest in this material.

Despite the disruption to staff, editors, researchers and all other stakeholders, ACS journals still grew in submissions, usage and citations. The Division also implemented a bold move to support Open Access publishing, with the development of *JACS Au* and nine 'ACS Au' pure open access journals. These journals will support European researchers whose funders intend to restrict their publishing options to only open access journals.

Chemical & Engineering News continues to actively innovate, with new technology solutions to enhance discovery, readership and accessibility. Readership to the journal grew considerably through 2020, and the magazine supported a range of strategic activities to grow ACS membership.

- Scientific Journals Continue to Deliver Global Influence**

The portfolio of ACS peer reviewed journals continues to represent the most trusted, most cited, most read scientific publications in their respective fields. During 2020 key editorial and quality metrics increased positively, with over:

- 62,000 articles published
- 172 million full text article downloads
- 3.6 million total citations reported
- 31% of journals achieving their highest ever Impact Factor

The portfolio of peer reviewed journals was further strengthened with a number of important strategic launches:

- *ACS ES&T Water* and *ACS ES&T Engineering*
- *ACS Agricultural Science & Technology* and *ACS Food Science & Technology*
- *Accounts of Materials Research*, developed and launched in close partnership with ShanghaiTech University
- A ‘fully gold’ open access journal *JACS Au* was announced, launched and published its first articles during 2020. In addition, a suite of nine ‘ACS Au’ titles, spanning the breadth of chemical research were announced and will open to submissions January 2021.

To accommodate the dramatic increase in off-campus use of ACS journals due to the global pandemic, several new remote access options were enabled, including SeamlessAccess, GetFTR, and Google CASA. These new remote access options ensured researchers could continue to easily download subscribed journal content while away from their campus or corporate network.

- **Open Access Initiatives**

Open Access (OA) publishing across the global scientific publishing environment continues to accelerate. Building on ACS’s leading activities and engagement with OA, the Society has:

- Significantly grown the reach of transformative ‘Read & Publish’ agreements to cover 336 institutions across 21 countries. These programs couple subscription access licensing with open access publication credits and encourage open access publishing while OA funding sources remain uncertain.
- Augmented the portfolio of wholly open access journals to include *JACS Au* and nine *ACS Au* titles to cover the broad diversity of chemistry research.
- Increased the scale of open access publishing to 8,400 articles, an increase of 40%. As of 2020, 13% of all ACS journal articles are published openly.
- *ACS Omega* continued to build on its strengths. During 2020 the journal published over 3,500 papers (an increase of more than 40%).
- To support the growing need for information relating to Open Access, the Division launched the user-friendly portal: ACSOpenScience.org

- **Building Operational Excellence**

To support the research community, ACS Publications is continually honing and improving the services we provide throughout the publication process. ACS journals are renowned for providing among the fastest time-to-publication in the industry. During 2020 the Division:

- Deployed four Artificial Intelligence (AI) technology solutions, immersed within journal operations to improve researcher experience.

- Streamlined and standardized numerous editorial workflows to improve author experience.
- Enhanced the author 'Direct-Correct' galley proof tool so more authors can make inline corrections in their manuscripts.
- Introduced new global service vendors to improve author service and time to publication.
- Introduced standardized project management operations to increase efficiency and effectiveness of customer facing enhancements.

- **Expanded Global Presence**

Reflecting the global nature of scientific advancement, ACS Publications also advanced the Society's organizational goal for increased global engagement through selective appointment of ACS-International staff in Asia, Europe and Latin America. This has led to a direct increase in strategic activities across these territories.

Through 2020, just over half of all new editorial appointments were from outside North America.

- **Innovation and New Product Development**

- Following the termination of the ACS Spring National Meeting, ACS Publications accelerated the development of SciMeetings and enabled presentation material from the virtual event to be uploaded, shared and preserved.
- In collaboration with the Education Division, two professionally developed learning modules were designed and released.
- ACS played a leading role in two broad industry initiatives aimed at streamlining access to scholarly content. Both [SeamlessAccess.org](https://www.acs.org/education/seamless-access) and [GetFTR](https://www.acs.org/education/getftr) (Get Full Text Research) were deployed by ACS, as well as many other leading scientific publishers in 2020.
- ACS Publications advanced ACS's support for Open Science relating to research data. Working collaboratively with CAS and in partnerships with numerous funders and consortia, evaluated best practice to making research data more discoverable, accessible and interoperable, to advance science.
- ACS Publications officially launched *ACS Reviewer Lab - Graduate Toolkit*. This allows all course graduates to access an interactive toolkit to help guide them through the peer review process in real time. At the same time, ACS Reviewer Lab continues to grow, with over 15K course users each month during 2020.

- **Market Outreach and Community Development**

Social distancing and the cancellation of most in-person events impacted the way researchers, scientists and the ACS could interact. The Division's outreach strategy pivoted to support researchers as they turned more to online and social media sources for information.

- 26 ACS on Campus events were hosted, many virtually, attracting over 11K attendees.
- 83 Webinars were presented, with 177% increase in attendees.

- 38 Whitepapers, quizzes and eBooks were released, an increase of 24% on previous year.
- Twitter followers grew by over 25% with a 260% increase in engagement (e.g. sharing).
- A successful C&EN Futures Festival was organized and promoted, with exceptional participant feedback.

With the traditional advertising market depressed, C&EN remained well placed to support key clients through its highly respected custom publishing and lead generation services.

- **C&EN Media Group**

C&EN completed a transformation in culture within its newsroom to emphasize speed, growth and continuous improvement. In addition to numerous program activities, through the year C&EN:

- Launched C&EN Chemistry Update, a voice-activated daily information briefing accessible via Amazon's Alexa and Google Home.
- Partnered with News Catalyst, supporting newsroom product training programs.
- Launched a new and improved App for smart phones 'Chemistry News by C&EN'.
- Rolled out additional translation services, to now include Portuguese and Arabic.
- Introduced 'diversity in journalism' tracking, to inform and improve diversity of the source (writer) of the content and the subject of the content (where relevant).

- **National, Expo, Regional & Specialty Meetings (Supports Goals 1, 2, 3, 4, & 5)**

COVID-19 set the stage for a new paradigm of meeting planning. Meeting programs were re-envisioned in 2020 to provide opportunities for chemists, researchers and the global community to connect and share research. Though the Spring 2020 National Meeting was terminated, more than 11,700 submissions from that planned meeting were shared on the SciMeetings platform, in partnership with ACS Publications.

The Department of Meetings & Exposition Services (DMES) staff supported the ACS Green Chemistry & Engineering Conference, the first ACS virtual meeting. The meeting attracted nearly 5,000 attendees from 99 different countries.

The Fall 2020 virtual meeting and expo was successfully produced following an intensive 10 weeks of preparation after it was determined that in-person activities would not take place. The meeting attracted just over 6,500 registrants with 70 exhibitors and sponsors combined. More than 4,100 presentations were provided for on-demand access during the meeting. Like the in-person meeting, 80% of the registrants were ACS members. Nearly 20% of the registrants were international hailing from 60 countries. First-time registrants were one-third of total attendees which is higher than our in-person meetings, which typically see 10% first-time registrants.

- **Kavli Lectures**

At the Fall Virtual National Meeting, the Kavli Foundation Emerging Leader in Chemistry Lecture was delivered by Dr. Bryan Barton of DuPont Electronics & Imaging.

The Fred Kavli Innovations in Chemistry Lecture was presented by Nobel Laureate Ben Feringa of the University of Groningen. Due to the termination of the 2020 Spring National Meeting in Philadelphia, the Kavli lectures will be delivered during the 2021 Spring Virtual National Meeting.

- **24th Annual Green Chemistry & Engineering (GC&E) Conference**

The 24th Annual GC&E Conference, the first all-virtual meeting hosted by ACS due to the COVID-19 pandemic, was held June 15-19, 2020. Using a combination of live and pre-recorded content, ACS GCI hosted over 350 scientific presentations across 45 technical sessions, four poster sessions, and five keynote lectures. The combination of a virtual platform and free registration opened up the Conference to a large, global audience. Nearly 5,000 people representing 99 countries attended the conference—roughly a 10-fold increase in attendance from in-person GC&E conferences, where attendance ranges from 500-600 participants. Feedback from attendees was overwhelmingly positive. The technical content was available on-demand through September 25, 2020.

- **Safety Symposium During the 2020 ACS Green Chemistry & Engineering Conference**

Members of the Committee on Chemical Safety organized and contributed to the symposium on *Making Your Undergraduate Chemistry Lab Greener and Safer* during the 2020 ACS Green Chemistry & Engineering Conference. Over 500 people logged into the symposium page during the day the symposium was presented and the symposium was available on demand for 90 days after the conference.

- **ACS Green Chemistry Institute Industrial Roundtables**

- *Pharmaceutical Roundtable*

- Roundtable membership continues to increase, currently with 37 members, including associate and affiliate members.
- A total of \$300,000 in research grants was distributed in 2020, funding eight research groups.
- New tools for Roundtable members were released including an improved spreadsheet-based PMI-LCA tool, a new online Reagent Guide, and an online Analytical Method Greenness Score Calculator.
- Publications included, “Sustainability Challenges and Opportunities in Oligonucleotide Manufacturing” in *J. Org. Chem.* and two “Green Chemistry Articles of Interest to the Pharmaceutical Industry” in *Org. Process Res. Dev.*
- The Peter J. Dunn Award for Green Chemistry and Engineering Impact in the Pharmaceutical Industry was given to Dan Bailey of Takeda Pharmaceuticals for his work developing the synthesis of a 5-HT₄ receptor agonist in water.

- *Oilfield Chemistry Roundtable*

- The Roundtable expanded its scope from Hydraulic Fracturing to Oilfield Chemistry.
- The Roundtable published a paper in *ACS Energy and Fuels*, “Grand Challenges and Opportunities for Greener Chemical Alternatives in Hydraulic Fracturing:

A Perspective from the ACS Green Chemistry Institute Oilfield Chemistry Roundtable.”

- The Roundtable presented an ACS Webinar, “Greener Alternatives within the Oil and Gas Industry,” which was viewed live by 337 attendees and an additional 135 individuals within 24 hours.

- **ACS Petroleum Research Fund**

The ACS Petroleum Research Fund (PRF) awarded 185 grants for fundamental research in chemistry, engineering, and geology out of 771 proposals reviewed in 2020, providing a total of \$18.910 million in research funding. The PRF Committee voted to extend the eligibility of Primarily Undergraduate Institution (PUI) new investigators to five years as the principal priority for a professor starting in a PUI institution is teaching.

- **PRF 65th Anniversary**

2019-2020 represented the 65th anniversary of the first PRF grant awards. In 1954-55, \$164,367 was awarded to 27 research groups. As of the end of 2020, over \$700 million had been awarded in the program since its inception. The planned ACS Presidential Symposium was held virtually in conjunction with the Fall 2020 National ACS Meeting, and a PRF retrospective was presented at the American Association of Petroleum Geologists (AAPG) 2020 Annual Meeting in September. A special retrospective virtual edition of JACS was published featuring the work of PRF grantees, and both a comment and a feature article on PRF were published in *C&EN*. Additionally, 230 grantee stories, comments, and pictures regarding the impact of PRF were posted on the PRF website.

- **2020 ACS Safety Summit**

The 2020 ACS Safety Summit took place February 21-22 at ACS Headquarters. Thirty ACS members and experts from external organizations worked with ACS staff members to develop a communications strategy that would help establish ACS as an authoritative resource for chemical safety information. Participants identified several key topics that ACS could champion within its current areas of engagement.

- **ACS-FDA Colloquium**

The ACS and Food and Drug Administration (FDA) organized its second joint colloquium at FDA on February 27. The colloquium focused on “Innovations in Active Food Packaging” and featured speakers from the Active & Intelligent Packaging Industry Association, Cornell University, Clemson University, and the University of Zaragoza, Spain.

- **IT Support for ACS Publications**

Information Technology (IT) made major enhancements to ACS Direct Connect, our author proofing tool. Before the upgrade about 30% of our requested changes could be handled using this tool. After the upgrade approximately 90% can be handled. This is due to a significant increase in sophistication of the underlying technology.

Artificial Intelligence (AI) was used to power a reviewer recommender. The launch has been well received and editors report the new capabilities far exceed those of our current vendor.

- **Rapid Pivot to Address the COVID-19 Pandemic**

The Office of the Secretary and General Counsel (OSGC) rapidly pivoted to play a major role in addressing challenges presented by the onset of the COVID-19 pandemic both internally and externally. Activities and support included:

- Lead Internal Contingency Planning Meetings – Beginning in mid-March, we provided support to the ACS enterprise contingency planning team by coordinating daily meetings to plan for transition of in-person meetings to virtual, details of staff moving to an all-remote work operation, planning for eventual re-entry, and moderating 23 CEO webinars for ACS staff through the end of 2020 (sessions occurred weekly initially then transitioned to bi-weekly).
- Designed & Implemented an ACS COVID-19 Web-based Resource – Working across the ACS enterprise, OSGC led the efforts to create a [web-based resource](#) of research and educational tools available not only to members but also to policymakers, the media and the general public. From its inception the webpage grew in terms of content, design and usage.
- Engagement with ACS Global Partners – ACS reached out to partner organizations which have current or pending Chemistry Enterprise Partnerships (CEP's) with ACS, as well as to chemistry federations worldwide, including: the European Chemical Society (EuChemS), the Federation of African Societies of Chemistry (FASC), the Federation of Asian Chemical Societies (FACS) and the Latin American Federation of Chemical Associations (FLAQ). Fifteen societies participated in the survey including societies from Africa, Asia, Europe, Latin America and Oceania.
- Created COVID-19 Related Communication Materials, Videos & Webinars –
 - Issued more than 15 press releases through a new fast-tracked process that immediately put ACS journal SARS-CoV-2 related research into reporter's hands, as well as posting on science news and social media sites. These items also appeared in the weekly ACS PressPac. In total, coronavirus items resulted in hundreds of news articles each month and appeared in outlets such as CNN, *Newsweek*, *The New York Times* and Reuters.
 - In 2020, ACS Experts responded to 90 requests from the news media to help with coronavirus-related stories. Stories resulting from these interactions appeared in outlets such as *The Financial Times*, *The Los Angeles Times*, NBC News, *The New York Times*, STAT and WHYY.
 - Coordinated a Twitter chat with five ACS Experts about chemistry and the coronavirus in April. Over the course of two hours, the experts answered 35 questions on topics, including sanitization, vaccines and treatments, virology and antibodies. Total engagement was high, with more than 5,000 retweets, replies and likes for the more than 140 tweets related to the Q&A. Comments and questions came from participants around the world, including France, Taiwan, Canada, Nigeria, Mexico, India and across the U.S.

- Produced eight COVID-related videos in the *ACS Reactions series*. These timely videos received more than 275,000 views on YouTube and another 350,000 on Facebook.
 - Developed and moderated several COVID-19 related webinars in collaboration with ACS Webinars.
 - On May 12, “*How this coronavirus is (and isn't) different from other viruses*” was broadcast. More than 2,500 people registered and more than 1,700 tuned in live (a 68% attendance rate – a record for ACS Webinars to that date). This webinar was among the top five ACS Webinars for 2020.
 - On May 13 as part of ACS Science & the Congress, “*COVID-19: Understanding the Scientific and Medical Aspects of the Pandemic*” was broadcast. More than 2,200 people registered and nearly 1,500 tuned in live (a 63% attendance rate).
 - On May 14, “*Materials, Disinfection and Reuse during COVID-19*” was broadcast. Nearly 3,200 people registered and more than 2,100 tuned in live (a record for registration and live attendance to that date).
 - On June 4, “*Understanding Your Needs: Restarting Academic Research with COVID-19*” was broadcast. Nearly 450 people attended the online event with an additional 89 viewing the recording.

- **Virtual Briefings**
 - In partnership with the STEM Ed Coalition, ACS conducted a “How COVID is Affecting Current and Future Employment Trends in the STEM Fields” briefing on September 24th.
 - On November 17th, ACS partnered with the Aspen Institute on a virtual webinar entitled “The Chemistry of Beauty: the Science & the Lore.” The event had over 200 participants from 23 countries.
 - On December 9th, ACS hosted a Science & the Congress [briefing](#) titled “Advanced Chemical Recycling: Addressing the Plastics Problem.”
 - The Global Outreach team hosted four Dine Globally events in 2020, including three virtual events, with an average attendance of 35-40 people. This series continued to provide ACS colleagues across all divisions the opportunity to learn about global initiatives and strategies impacting ACS’s membership. The 2020 Dine Globally series included:
 - A workshop on Chemistry Enterprise Partnerships
 - ACS Education Division & Program Globalization through Virtualization – hosted by Jodi Wesemann
 - Chemistry & the Strategic Development Goals: Global Next Steps with Scientific Advancement – hosted by Mary Kirchhoff, Ashley Donovan , and Brandi Neifert
 - C&EN Goes Global: Sharing Successful Strategies to Drive the International Expansion of C&EN – hosted by Bibiana Campos Seijo

GOAL 2—Empower Members and Member Communities – Provide access to opportunities, resources, skills training, and networks to empower our members and member communities to thrive in the global economy.

- **Three Consecutive Years of Membership Growth**

In 2020, Membership closed the year with over 155,000 members; sustaining membership growth after declines for the rest of the decade. This growth was particularly spurred by the launch of a new Community Membership market test which provides the chemistry enterprise with a novel way to affiliate with ACS. ACS international membership has continued to be an additional bright spot with 25% of members presently residing outside the US; major markets including Canada, China, Germany, India, Japan, South Korea, and the United Kingdom.

- **Successful Community Membership Test**

In support of future changes to membership, a test of a new membership type was chartered. Community Membership, provided webinar attendees a no cost way to engage with ACS, receiving a more limited set of benefits. The test proved overwhelmingly successful with approximately 13,000 new joins.

- **Office of Awards & Member Recognition**

ACS held its first virtual ChemLuminary Awards ceremony on December 9th. The theme, for the 22nd Annual ChemLuminary Awards ceremony was “2020 Focus on Our Volunteers: Moving Chemistry Forward”. The virtual ceremony included a keynote address by Janet L. Bryant, recipient of the 2020 Award for Volunteer Service to the American Chemical Society, and presentations of awards given by 23 committees of the Society. 49 awards were presented to 51 recipients. Over 600 people from 30 countries registered for the event, with almost 300 first time attendees.

- **COVID Response (Supports Goals 1, 2, 3 & 4)**

To help combat the COVID-19 pandemic, several ACS programs were launched or expanded. To ensure appropriate support of ACS members in their professional and personal lives, ACS provided access to the following highlighted resources:

- **LinkedIn Learning:** LinkedIn learning is an online library with over 16,000 courses on a wide portfolio of topics. Access was granted to all ACS members.
- **Member Assistance Program:** In partnership with our provider INOVA, members in need were provided no cost access to important assistance programs including counseling, financial guidance, and legal assistance.
- **COVID-19 Dues Waiver:** Members impacted by the pandemic in the broadest sense (employment changes, family care responsibilities, health challenges) received a dues waiver for a year of continued ACS dues at renewal.
- **COVID-19 Resources:** A [comprehensive collection](#) of ACS resources was assembled to help combat the COVID-19 pandemic.
- **Virtual 1:1 Career Consultations:** In response to the Spring 2020 National Meeting termination, and to the pandemic more broadly, we purchased Zoom licenses for all Career Consultants who opted in and began conducting virtual consultations via Zoom. 350+ consultations took place since April 2020.

- **Virtual Office Hours:** A standing time each week allows Members to speak with Career Consultants and network with fellow members. Over 700+ attendees have participated since implementation.
 - **Virtual Career Days:** ACS Career Days had historically taken place in-person at local sections. While two took place in-person early in 2020, these were pivoted to virtual offerings. Since April 2020 we have had five Virtual Career Days with 750+ attendees.
- **Value of American Association of Chemistry Teachers (AACT) Demonstrated (Also Supports Goal 3)**
The AACT website, teachchemistry.org, received over 1.6M visits. AACT reached 901 items in its online resource library. For the 2020–2021 school year, over 259 partnerships were initiated through the Science Coaches program. During the rapid pivot to remote instruction, AACT promoted its unlocked resources and provided additional access to select resources from March 13 through April 17. AACT hosted 36 webinars and virtual symposia, including the AACT Summer Symposium Series. AACT membership increased to 8,045 at year end, a 20% increase since 2019.
 - **Students and Postdocs Connected and Supported Virtually (Also Supports Goal 3)**
In place of the many activities disrupted as a result of COVID-19, new activities were held, including 12 Social Distancing Socials, three ACS Journal Clubs, and virtual meeting programming. Various communication channels, social media campaigns, and the online [ACS Graduate & Postdoctoral Chemist](#) and [inChemistry](#) magazines maximized engagement.
 - **Connections with ACS International Student Chapters Increased**
There are now 87 international student chapters in 28 countries. Of these, 47 submitted chapter reports and 43 chapters received performance awards.
 - **ACS Graduate Student Organization (GSO) Program Established**
This new program supports communities of graduate students interested in networking, career preparation and professional development. Four ACS-GSOs have been chartered.
 - **Support for Transitions into Faculty Careers Expanded (Also Supports Goal 3)**
The [New Faculty Workshop](#) was held virtually and a series of three Virtual Cafés were held for alumni of the 2018 and 2019 Workshops during the transition to remote instruction. The 2020 [Postdoc to Faculty Workshop](#) was held virtually, and advice from facilitators was shared in a new booklet *Tips for Securing a Faculty Position*.
 - **Access to Professional Education Courses Enhanced**
In response to COVID-19, prices of [On Demand courses](#) were reduced, marketing of [Online Live courses](#) was increased, and other traditional, in-person courses were offered virtually at a discount during the summer and in conjunction with the Fall 2020 ACS Virtual Meeting & Expo.

- Virtual Career Development Resources Expanded**
[ACS Career Pathways](#) and the [ACS Leadership Development System](#) courses continued transitioning face-to-face learning to online delivery. ACS Career Kickstarter was also offered virtually. The online career planning tool [ChemIDP.org](#) had 1,770 new users, who were directed to [College to Career](#) and [ACS Virtual Classrooms](#) for career exploration and development.
- Assisting Divisions and Program Chairs During COVID**
 After the COVID pandemic forced the termination of the Spring Meeting, James Takacs, Chair, Committee on Divisional Activities, started hosting regular meetings for program chairs in order to provide them with a venue to collaborate on programming and discuss programming needs with Meetings staff and the Committee on Meetings and Expositions. Along with increased email communication with divisions, these forums provided critical information and feedback for virtual meeting planning. Additionally, the 32 divisions were offered an ACS Enterprise Zoom account to assist them with connecting and sharing information with members during this challenging year.
- Jonathan L. Sessler Fellowship for Emerging Leaders in Bioinorganic and Medicinal Inorganic Chemistry**
 The Scientific Advancement Division managed the inaugural Jonathan L. Sessler Fellowship for Emerging Leaders in Bioinorganic and Medicinal Inorganic Chemistry competition. The Division of Inorganic Chemistry constituted a review panel to select the recipient, Eszter Boros, Assistant Professor of Chemistry at Stony Brook University, who will present her research during the Spring 2021 National Meeting. The Jonathan L. Sessler Fellowship is open to investigators in the first five years of a tenure-track position. Recipients of the distinction receive an honorarium, an engraved plaque, and registration, travel and housing support for the ACS National Meeting at which they present their research.
- Postdoc Virtual Symposium**
 ACS held its first Postdoc Virtual Symposium, organized by the Scientific Advancement Division, on November 19. Forty-nine postdoctoral scholars presented their research in six concurrent sessions, which were moderated by members of ACS technical divisions. The technical program was followed by a workshop on networking strategies, organized by the Education Division. A total of 425 participants joined the virtual symposium. The postdoctoral scholars expressed their appreciation to ACS for providing this additional opportunity for them to share their research.
- Virtual Council Meeting**
 Due to the pandemic, the Fall 2020 ACS Council meeting was held virtually. Information Technology's Society and Administrative Technology (SAT) department worked with the Office of the Secretary and General Counsel to select and implement a web conferencing solution with capabilities to facilitate governance meetings, perform duties as may be prescribed by the Constitution and Bylaws of the Society, including voting, presentations, and discussions. The Lumi cloud solution was chosen. In addition to the software solution, the team provided training prior to the Council meeting for Councilors,

the production staff, and technical staff; and held mock meetings and provided operations review sessions. To ensure coordination of the production staff, the team incorporated support desk services, Slack channels for communication during the meeting, and job aids to the Councilors. The Council meeting was successful and for the Spring 2021 Council meeting the same tool will be used.

- **Community Connection (FORMS Replacement)**

On December 1, 2020 a replacement to the Forms Online Report Management System (FORMS) was released. This new application provides a centralized, streamlined and consistent application designed to serve volunteer members in a more deliberate and focused way. The application allows governance volunteers from Technical Divisions, Local Sections and International Chapters to have an intuitive application that allows for a smoother workflow to complete, approve and review the annual administrative reporting, enter yearly financial information, provide information on events, and submit events for awards. The application is built on the Salesforce platform and integrations with data from the ACS Yellow Book, the Association Management System, and NetForum, and feeds data into the Society Data Store. Over the next year the application will incorporate the Student Chapters Annual Report Form (SCARF) information so that volunteer governance are using a unified application.

- **Membership 2.0 - Community Affiliate Membership**

In Q2-2020, the Membership 2.0 team developed and implemented a Market Test to verify the technology and viability of a Community membership option. This new membership offering provided registrants of ACS Webinars to receive the Community Affiliate membership offer with digital access to Essential C&EN subscription, *ACS Matters*, the ACS Network Community, and Affinity Benefits. This application used the Adobe Magento software platform to register users to the ACS Webinar, create ACS ID Single Sign On for login credentials, and a membership in the Association Management System NetForum with the ability to renew and upgrade to a paid package.

- **Virtual ACS Store**

During the Fall 2020 Virtual National Meeting, and in partnership with the ACS Marketing department, Society and Administrative Technology implemented a new ACS Store using the Adobe Magento software platform with ecommerce capability. The store allows meeting registrants the ability to purchase merchandise. Additionally, the solution stores product information and integrates with a fulfillment center, accepts payment using a credit card, integrates with a secure payment gateway and payment processor, and integrates with ACS financial system. The system was responsive, mobile friendly and accessible. This provided Membership 2.0 the structure necessary to accept credit card payments.

In December 2020, the ACS Store was converted to a Holiday store using configurable capabilities, not development efforts. The ACS Store will continue to expand in 2021 and replace the current online store that resides on the NetForum platform.

- **Data Strategy and Data Governance**

By Q2-2020 and as part of the Membership 2.0 pillar, Use Data to Gain Insight, a data strategy assessment was completed. The goal of the data strategy is to help define the future data analytics ecosystem and provide an implementation roadmap that focused on key business priorities centered around transforming the member experience.

- **ACS On-Line Chemistry Advocacy Workshop Launched (Also Supports Goal 4)**

In July, an innovative, self-paced on-line training program was launched titled the “ACS Chemistry Advocacy Workshop.” Developed by External Affairs & Communications (EAC), it is designed to help ACS members and other interested parties, who are passionate about science and chemistry advocacy, and want to learn the basics in the comfort of their home or office. This workshop includes four modules covering skills, resources, logistics and communications to foster effective advocacy of ACS policy priorities on the federal level. Participants learn to successfully plan and execute advocacy activities, as well as have an opportunity to network and build a community with others passionate about science advocacy and ACS. To date, more than 700 individuals have begun the workshop with more than 70 of them having completed the full course.

- **Global Engagement** – The Office of the Secretary and General Counsel (OSGC) leads the Global Coordinating Group, an ACS cross-divisional team tasked with improving coordination on international projects.

The ACS Presidential Succession continued to demonstrate support and outreach to the global chemistry community throughout the year. Highlights with global partners include:

- In February, ACS President Luis Echegoyen attended the 86th meeting of the Israel Chemical Society in Jerusalem.
- President Echegoyen delivered celebratory greetings to EuChemS in honor of its 50th anniversary and the German Research Foundation (DFG) to celebrate its centenary.
- In October, President Echegoyen delivered technical virtual remarks to the Brazilian Chemical Society (SBQ) with over 600 attendees joining for the talk.
- ACS President-elect H.N. Cheng participated in a joint ACS-CAS two-day event highlighting 100 years of polymers and the future of sustainable chemistry in coordination with ACS on Campus, ACS Publications and the German Chemical Society (GDCh).
- In November, all three members of the succession penned a joint editorial congratulating the Federation of Asian Chemical Societies (FACS) for the publication of its inaugural edition of AsiaChem.

Despite the global pandemic, EAC was able to advance its Chemistry Enterprise Partnerships virtually.

- ACS and the German Chemical Society (GDCh) signed their five-year Chemistry Enterprise Partnership (CEP) agreement in a virtual ceremony on October 28. The signing ceremony was conducted in tandem with a Presidential symposium and

webinar on the role of chemical societies advancing the UN Sustainable Development Goals (SDGs). Tom Connelly provided opening remarks and introduced Luis Echegoyen. Mary Kirchhoff provided technical remarks related to chemistry and sustainability. The webinar attracted 260 attendees from the United States, Germany and multiple other countries. The [webinar was recorded](#) and is available on the ACS and GDCh websites.

- The CEP yearend report contains further details about engagement with nine other CEP partners as well as with three non-CEP partners.

OSGC staff, in coordination with ACS Board member Dorothy Phillips and Scientific Advancement Executive Vice President Mary Kirchhoff, organized a workshop on October 22 at the AAAS Science, Human Rights, and Technology Conference. The session was entitled “The Physical Sciences, Human Rights, and the SDGs” and was an interactive session of breakout groups who discussed technical solutions and socioeconomic barriers to the achievement of three specific goals: Health, Energy, and Climate. Some 35 attendees participated in this robust and productive session.

- **2020 Engagement with Industry (Also Supports Goal 4)**

- The 2020 ACS Chief Technology Officers (CTO) Summit was held virtually on September 15. The program featured two panels addressing issues of great interest to the CTOs: New Normal: Accelerated R&D with Digital Tools; and Best Practices on Diversity and Inclusion. Guest speakers included Katherine A. Lemos, Ph.D. Chair, U.S. Chemical Safety and Hazard Investigation Board; Erik Roth, Senior Partner at McKinsey Consulting; Elizabeth Grieco, Senior Analyst, National Science Foundation; and LaTrea Garrison, Executive Vice President, ACS Education Division.
- In May, an effort was initiated to develop an industry-ACS collaboration to communicate to the public the chemistry being done in industry. A team of company communications representatives and ACS developed a project plan. Initially 10 companies have signed on to be part of the project, which will run through 2021. To date, the following activities have occurred as part of this project.
 - An ACS Webinar titled “Chemical Industry: Innovation & Career Opportunities” was held on October 15th. It featured John Banovetz/3M, Alexa Dembek/DuPont, and Peter Eckes/BASF. Nearly 400 people registered, with nearly half tuning in live.
 - A pilot podcast was also produced and published on November 17th as part of the ACS Orbitals podcast series. “Preventing COVID-19: The Science and Scientists Behind Protective Equipment” featured scientists from 3M and BASF.

- **Philanthropy**

The extraordinary events of 2020 also strongly affected philanthropic giving around the globe. Many nonprofit organizations experienced disruptions in giving as donors focused their attention elsewhere, while others received more attention and support as various societal needs gained a greater sense of urgency. The ACS is grateful to have received strong support for its programs in 2020, with over \$3.2M in total funds raised. Amid the national conversation about racial inequities, ACS donors reaffirmed their commitment to

diversifying the chemical sciences while fostering excellence in science education with their support of educational programs like Project SEED, ACS Scholars, and the ACS Bridge Program. Donors continued to support the recognition of outstanding chemists who are making outstanding contributions to our field; and, as the world sought unbiased scientific information about the pandemic, readers of *C&EN* expressed their appreciation for rigorous science journalism with gifts to the magazine.

GOAL 3— *Support Excellence in Education – Foster the development of innovative, relevant, and effective chemistry and chemistry-related education.*

- **Reach and Relevance of Learning Resources Expanded**
Digital access was provided to select [AACT](#) resources and [ChemMatters](#). Educational resources were bundled by topic in [Chemistry at Home](#) to aid parents and teachers in student enrichment. [Middle School Chemistry](#) in-classroom lessons were converted to remote teaching lessons. The 10th edition of [Chemistry in Context](#) was released in print and ebook formats.
- **Guidance on Navigating the Changing Educational Landscape Provided**
The ACS Committee on Professional Training issued a series of [statements](#) in response to COVID-19. ACS Education co-produced [ACS Webinars](#) with [Chemical & Engineering News](#), as well as the [Journal of Chemical Education](#) and [AACT](#), on laboratory courses and teaching remotely. ACS Education also partnered with C&EN to offer two virtual Table Talks, one focused on laboratory courses and the other on graduate students, as well as a two-part workshop on mental health for undergraduate and graduate students.
- **Discussion Series for Chairs of Chemistry Departments Initiated**
Important issues in higher education are the foci for virtual discussions hosted quarterly by ACS Education for chairs of chemistry departments. [Teaching laboratory courses in the time of COVID-19](#) was the topic for both the July and October discussions.
- **New ACS Approval Application and Review Platform Implemented**
The process by which bachelor's degree chemistry programs seek ACS Approval continued to transition to a new platform. All applications and reports are now being collected and reviewed in the Chemistry Program Approval and Review System.
- **ACS Bridge Project Continues to Broaden Participation in Graduate Education (Also Supports Goal 5)**
The [ACS Bridge Project](#) is supported by a five-year \$2.3 million alliance grant from the NSF Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering & Science (NSF INCLUDES) program (NSF-1834545), along with funding from the Genentech Foundation and PPG.
 - **ACS Bridge Program**
There are now six ACS Bridge Sites and nine Partnership Departments. Twenty new ACS Bridge Fellows were selected, and they were among the 50 graduate students and postdoctoral scholars attending a virtual version of ACS Career Kickstarter in November.

– **ACS Bridge Travel and Career/Professional Development Awards**

A cohort of 15 undergraduate students from underrepresented groups received support to attend the ACS Fall 2020 Virtual Meeting & Expo and the Virtual Fall Conference of our project partner, the National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NOBCChE), and for additional career and professional development opportunities.

• **Inaugural NSF Innovations in Graduate Education Principal Investigators Meeting Held**

The inaugural principal investigators meeting for the Innovations in Graduate Education (IGE) program of the National Science Foundation, [Catalyzing advances and generating knowledge](#), was held January 30-31, 2020 in Washington DC. ACS and NSF leadership welcomed 48 representatives of IGE project teams. The PI meeting was supported via a supplement to the NSF IGE grant to ACS for the [Impact Indicators and Instruments for Individual Development Plans](#) project (NSF-1806607).

• **ACS Scholars Celebrate 25th Anniversary (Also Supports Goal 5)**

The [ACS Scholars Program](#) celebrated 25 years of providing renewable scholarships to over 3,300 underrepresented students majoring in chemistry-related disciplines. To date, over 445 alumni have received a PhD, MD/PhD, or PharmD, with many more receiving a variety of advanced degrees. The anniversary campaigns included a [C&EN profile series](#) where current ACS Scholars interview ACS Scholar Alumni. A new online platform, ACS Connects, helped current ACS Scholars meet and network with each other and potential mentors.



• **Project SEED Virtual Summer Camp Held (Also Supports Goal 5)**

Since many in-person research experiences could not be offered, 291 [Project SEED](#) (Summer Experiences for the Economically Disadvantaged) students participated in a four-week virtual summer camp. Students learned about careers in chemistry, lab basics, and college preparation via webinars, independent assignments, and small-group discussions. Student participants and undergraduate/graduate student cabin leaders received stipends.



• **The U.S. National Chemistry Olympiad Held Virtually**

The [U.S. National Chemistry Olympiad](#) was held with online exams and without the laboratory component. The nearly 1,000 students who competed in the national exam were recognized with digital certificates. From these students, 20 were selected for a 10-day virtual study camp featuring presentations from distinguished chemists in addition to rigorous technical training in various areas of chemistry. Team USA continued its historically strong performance at the International Chemistry Olympiad by winning four gold medals, including the top medal overall.



- Get the Facts Out about Middle and High School Teaching**
 Information about the “Get the Facts Out” project and tool kit was disseminated to the chemistry community via the website www.acs.org/getthefactsout, workshops and presentations, and ACS Publications. The project is supported by the National Science Foundation Improving Undergraduate STEM Education Initiative (NSF-1821710 and 1821462).
- Get the Facts Out** 
- Green Chemistry Student Awards**
 ACS Green Chemistry Institute (GCI) recognized the following students and postdoctoral scholars for excellence in their green chemistry research and studies:

 - The **2021 Kenneth Hancock Memorial Award** winners are Sarah Ellis, Queen’s University, and Stephanie McCartney, Columbia University.
 - The **2021 Joseph Breen Memorial Fellowship** winner is Mary Kate Lane, Yale University.
 - The **2020-2021 Ciba Travel Awards in Green Chemistry** winners are Allison Schrader, Illinois Wesleyan University, and Nobuyo Wantanabe, Barnard College of Columbia University.
 - In January 2020, the first students to be selected for the newly endowed **Heh-Won Chang, PhD Fellowship in Green Chemistry** were Heather LeClerc, Worcester Polytechnic Institute, and Nakisha Mark, The University of the West Indies. The 2021 winners are Gabriela Gastelu, National University of Cordoba, and Tessa Myren, The University of Colorado Boulder.
- ACS Green Chemistry Student Chapters**
 ACS GCI acknowledged the green chemistry accomplishments of 22 ACS Student Chapters in 2020, including one international chapter.
- Summer School on Green Chemistry and Sustainable Energy**
 Sixty-two students, out of an applicant pool of 142, were accepted into the 2020 ACS Summer School on Green Chemistry and Sustainable Energy. The summer school was postponed to July 2021 due to the COVID-19 pandemic.
- Green & Sustainable Chemistry Education Module Development Project**
 Starting in 2020, ACS GCI initiated a three-year project to develop green and sustainable chemistry education resources for undergraduate students studying general and organic chemistry. These resources will integrate green and sustainable chemistry using a systems thinking lens and the U.N. Sustainable Development Goals (SDGs) to set the context. In 2020, multiple webinars were held outlining the project, a scoring rubric was developed, a module development guide was created, and 31 educators were selected from over 100 applicants to develop modules starting in January 2021.
- Green Chemistry Teaching and Learning Community**
 In partnership with Beyond Benign, ACS GCI secured \$250,000 in initial funding from the Argosy Foundation to develop a Green Chemistry Teaching and Learning Community (GCTLC). The community will be an online hub for vetted resources

teaching core chemistry concepts with a green chemistry lens, networking and collaboration.

- **PRF Outreach to Primarily Undergraduate Institutions (PUI)**

Despite the fact that there are two grant types specifically provided for PUI faculty, the number of applications for these grants is typically small. In an attempt to reach out to these institutions, staff organized and presented two webinars specifically directed to PUI faculty, enhanced ties to the Council on Undergraduate Research, and interacted with PUI faculty groups via Zoom. Efforts in this area are believed to be particularly important as a number of PUIs have considerable populations of underrepresented minorities.

- **Advancing the ACS Policy and Legislative Agenda (also support Goal 4)**

ACS endorsed and worked closely with stakeholders to advance our legislative agenda as defined in our ACS public policy statements:

- On September 25th, The Clean Economy and Jobs Innovation Act (H.R. 4447) passed the House of Representatives. This 900-page legislation includes top ACS energy, sustainability, research, and scientific integrity priorities, and represents nearly two years of work with allies in the House Science, Space & Technology Committee and House Energy & Commerce Committee. In total, nine ACS endorsed pieces of legislation were included in H.R. 4447.¹ ACS staff worked closely with the offices of Congresswoman Diana DeGette (D-CO), Congressman Fred Upton (D-MI), Senator Ed Markey (D-MA) and Senator Thom Tillis (R-NC) advocating for emergency supplemental funding to aid research agencies and scientists in recovery. This led to two letters to Congressional leadership signed by 181 members of the House and 33 Senators; the Research Investment to Spark the Economy (RISE) Act (H.R. 7308 / S. 4286), which was sponsored by 145 members of the House and 6 Senators respectively; and \$3 billion in funding for National Science Foundation being included in the revised Health and Economic Recovery Omnibus Emergency Solutions Act (HEROES) in September. Cosponsors included 20 members of the Chemistry Caucus. Advocacy efforts led to collaboration with other scientific societies and multiple Act4Chemistry Alerts to members.
- In September, H.R. 4979, the Rural STEM Education Act, passed the House of Representatives. The bipartisan bill calls for supporting pre K-12 STEM education initiatives in rural school districts across the country and increased access through rural broadband infrastructure investments. ACS endorsed the bill and worked with bipartisan partners to enhance support for underserved communities. In December, Sen. Jacky Rosen (D-NV) and Sen. Roger Wicker (R-MS) reached out to EAC staff to help recruit support for the bipartisan Senate companion bill. In light of the COVID-19 pandemic, ACS leveraged congressional contacts to advocate for a rural infrastructure and access to broadband as virtual learning increased rapidly across the country.
- The Sustainable Chemistry Research and Development Act was included in the National Defense Authorization Act, which was passed into law subsequent to Congress overriding the President's veto at the end of the year. This legislation was drafted at the behest of ACS by Chemistry Caucus members Senators Chris Coons (D-DE) and Susan Collins (R-ME) as well as Representatives John Moolenaar

- (R-MI) and Dan Lipinski (D-IL). ACS has championed an expanded federal role in green and sustainable chemistry for nearly two decades, and has worked directly with congressional champions over multiple congresses to bring this vision to fruition.
- ACS took a leadership role in several defensive campaigns against Trump Administration Executive Orders and federal agency proposed rules regarding student visas and workforce immigration. ACS submitted comments to the following:
 - Department of Homeland Security (DHS) opposing a proposed interim rule affecting duration of status of student visas. ACS has also served as a community leader in this topic.
 - ACS led the development of an open letter opposing a July proposed Immigration and Customs Enforcement (ICE) rule that could have revoked thousands of student visas (and encouraged outreach through the Act4Chemistry network), and cosigned two community comment letters in opposition to proposed federal rule changes from DHS raising wage requirements for H-1B applicants and the Department of Labor eliminating the H-1B lottery.

GOAL 4—*Communicate Chemistry’s Value – Communicate – to the public and to policymakers – the vital role of chemical professionals and chemistry in addressing the world’s challenges.*

- **Webinars and Career Services Enhancements (Also Supports Goals 1, 2, & 3)**
The ACS Webinars team significantly increased the number and frequency of webinars available to members and the chemistry community at large during COVID-19 pandemic. From April to June, during the first wave of public safety measures, the ACS Webinars team increased broadcast frequency from weekly to a daily live broadcast. By the end of 2020, ACS Webinars produced 122 member-facing webinars, an increase of 90% over 2019, which were attended by over 63,000 people, an increase of 199%. Weekly topics covered the economy, job market, professional development, public and lab safety, chemistry education, and the state of research into the novel coronavirus and treatments.
- **Public Outreach Campaigns Conducted Virtually (Also Supports Goal 5)**
The 50th anniversary of Earth Day was celebrated in 2020. [Chemists Celebrate Earth Week](#), with the theme “Protecting our Planet through Chemistry”, and [National Chemistry Week](#), with the theme “Sticking with Chemistry”, were conducted virtually. The [Virtual Kids Zone](#) provided science outreach in conjunction with the ACS Fall 2020 Virtual Meeting & Expo in both English and Spanish.
- **Outreach Training Offered Virtually**
The [Festival Training Institute](#) was held virtually in conjunction with weekly [Outreach Training Program](#) webinars. ACS continued to partner with the ChemAttitudes project, participating in the pilot of [Let’s Do Chemistry](#) Train-the-Trainer online workshops.



- 2020 Green Chemistry Challenge Awards**
 ACS GCI partnered with the U.S. EPA on the 2020 Green Chemistry Challenge Awards program, with the winners recognized during the virtual 24th Annual Green Chemistry & Engineering Conference. The 2020 winners are:

 - Academic Award – Professor Steven Skerlos of the University of Michigan and Fusion Coolant Systems: Pure-Cut™
 - Small Business Award – Vestaron Corporation: SPEAR® Insecticide: First Member of a New Class of Biopesticides That Show Efficacy Comparable to Synthetic Insecticides
 - Greener Synthetic Pathways – Genomatica: Biobased Butylene Glycol
 - Greener Reaction Conditions – Merck & Co.: A Green Solution to the ProTide Synthesis Problem: Design of a Multifunctional Catalyst That Stereoselectively Assembles ProDrugs
 - For Designing Greener Chemicals – Johns Manville, a Berkshire Hathaway Company: Biobased Formaldehyde-Free Thermoset Binder Formulation
- Sustainable Chemistry Research & Development Act**
 With support from GCI, the ACS has worked for many years towards the passage of the Sustainable Chemistry Research & Development Act, which became law on January 1 as part of the National Defense Authorization Act. This Act creates a multiagency taskforce to guide investment in sustainable chemistry research, as well as a new public-private partnership program. It also authorizes a broad review of existing chemistry programs to give Congress a better understanding of the government’s role in green and sustainable chemistry.
- Creation & Launch of UNTOLD Video Series**
 ACS received a \$115,000 grant from YouTube Learning to produce a large-scale video project entitled [Untold](#) consisting of 10 videos, representing a total of 120 minutes of high-quality content, in an extremely short period of time – five months. In addition to being posted on the ACS *Reactions* channel, the video series will also be available as a YouTube Learning Playlist on the YouTube website. Since the videos were posted in July, they have been viewed more than 125,000 times.
- Communicating the 2020 Nobel Prize in Chemistry**
 As part of the ACS annual efforts related to the Nobel Prize in Chemistry, OSGC executed a comprehensive public relations plan on October 7th. The plan included a press release highlighting a comment from ACS President Luis Echegoyen, Ph.D.; 10 media interviews with Echegoyen; supporting information about the Nobel Prize for reporters; and the production of a video in collaboration with Chemical & Engineering News explaining the work being recognized. The resulting media coverage from October 7-13 included more than 480 news stories that mentioned ACS, Echegoyen, or other ACS representatives, with a potential audience for these news stories of more than 800 million. The related video was viewed on multiple platforms more than 13,500 times during this period.

- **Promoting Chemistry and Its Practitioners to Media and the Public**

For 2020, OSGC provided chemical information to the media, ACS members and directly to the public.

- Media outreach in 2020 resulted in more than 33,400 articles in print and online news media outlets with a potential audience of more than 47.6 billion online and 159.1 million in print and broadcast.
- ACS produced and distributed 44 weekly PressPacs, 47 embargoed press releases, and 80 other releases that highlighted more than 250 Society news stories and ACS published journal articles and news stories in 2020.
- As part of the ACS Press Center for the ACS Fall 2020 Virtual Meeting & Expo, August 17-20, 16 science-based press releases were issued. All of the press releases were covered by the media, with more than 900 news articles resulting. The coverage reached a potential audience of 1.7 billion through print and online reporting. Four of the releases included videos produced by ACS Productions, which received a total of 3,656 views during the nine-day monitoring period. The spring national meeting was terminated, resulting in no ACS Press Center for that meeting.
- The ACS series *Reactions* was refreshed with a new format and style in the first quarter of 2020, launching the new look in March. For the year, ACS published 31 *Reactions* and subseries videos in 2020, with all videos in the series receiving a total of more than 7.6 million views on Facebook and YouTube. *Reactions*' Facebook page has more than 298,000 likes and its YouTube channel has more than 362,000 followers.
- For ACS Experts, more than 200 requests from the news media for scientists to help with stories or additional placements were fulfilled in 2020. These requests came from news outlets including Agence France-Presse (AFP, which is France's version of AP), *Financial Times*, *The New York Times* and *The Washington Post*, as well as from general audiences.
- The National Historic Chemical Landmarks program launched a pilot program to translate the webpages for six Landmarks into Spanish. The first three Spanish translations have been posted online: one about CFCs and ozone depletion, one about the Mexican steroid industry and one about penicillin.

GOAL 5—Embrace and Advance Inclusion in Chemistry – Promote diversity, equity, inclusion, and respect; identify and dismantle barriers to success; and create a welcoming and supportive environment so that all ACS members, employees, and volunteers can thrive. (Goal added in January 2021; however, work began in 2020)

- **Sharing Global Information**

For more than 100 years, CAS has organized the world's disclosed chemistry and related research. In 2020, CAS provided scientific information solutions to researchers in 86 countries who innovate across every scientific discipline related to chemistry.

- **Engaging Researchers of Tomorrow**

The CAS Future Leaders program awards early-career global scientists with leadership training and a trip to the ACS National Meeting & Exposition. The 2020 participants were selected among hundreds of applicants, represent 18 countries and span a wide array

of scientific disciplines. In its 11th year, the program has convened more than 200 alumni representing 35 countries.

- **Embracing Diversity**

Building an inviting and inclusive environment within the CAS division has always been integral to enabling our global reach. Our team members are located in offices all over the globe, speak and read more than 50 languages and leverage our core Operating Principle, Diversity of Thought, as we develop solutions to better serve our global scientific community.

- **Living our Values**

CAS colleagues are incredibly active in our local communities, supporting initiatives that honor and celebrate diverse cultures, promote STEM education, as well as selflessly contributing to helping those in need. We live our values and the ACS vision of improving people's lives through the transforming power of chemistry every day!

- **Diversity, Equity, Inclusion and Respect**

In June, all ACS journals published a joint editorial entitled [“Confronting Racism in Chemistry Journals”](#) condemning racism and committing to key actions toward combating racial bias in our journals: annually reporting on demographic statistics; training editors to recognize and interrupt bias in peer review; including journal diversity in the evaluation of Editor-in-Chief performance; appointing an ombudsperson to serve as a liaison between Editors and the chemistry community; and developing diversity plans for each ACS journal.

ACS Publications introduced a landmark policy for researchers who wish to change their names for reasons including gender identity, marriage, divorce, or religious conversion.

- **DI&R Strategy Development Workshop**

Held in Atlanta, GA during the 2020 ACS Leadership Institute, the goals of this workshop were to develop high level strategies for the Society's Core Value of Diversity, Inclusion, & Respect (DI&R); to obtain alignment among leaders and stakeholders on the high-level strategies; and to review the charge for DI&R Advisory Board.

- **Staff Focused Diversity Initiatives**

Along with supporting several cross divisional initiatives led by ACS Publications and Education, staff engaged in several activities to better understand member diversity and to increase awareness and a sense of inclusion among staff. This included Heritage Month Celebrations that included the first Black History Month celebration in February, Hispanic History Month in October, and Native American History Month in November. Division staff participated in and supported ELT Listening Tours this past summer in two very important ways: (1) serving as facilitators for several sessions held for staff and (2) supporting data collection and analysis in partnership with Research & Data Analytics team to look for themes across all of the sessions. A Slack channel was launched by Division staff for discussing the recent (and historically) tragic events, and to continue the conversation across all of ACS.

- **Member Focused Diversity Initiatives & Outreach**

The Industry Matters Newsletter published a *Delivering On Diversity* column on September 17, 2020 focusing on diversity executives who are sharing plans and suggestions to advance diversity, equity, inclusion, and respect. Cargill and Genentech Diversity leaders contributed to articles in 2020 and commitments have been received from Chevron and DuPont for future articles.

Membership & Society Services updated the [DEIR webpage](#) and placed it more prominently on acs.org. This overhaul added several DI&R resources which will be updated as often as needed. Since these changes were implemented there has been a 3x increase in usage.

Membership & Society Services staff also created an email banner and short ad creatives to increase awareness of our diversity efforts and to link to the newly updated acs.org pages. The email banners were distributed to all staff to use if they so choose.

- **Diversity, Inclusion, and Respect**

In 2020, the Office of the Secretary and General Counsel took the lead in coordinating the workstream seeking to diversify volunteers/governance. We arranged for foundational bias training for the Board and several key committees and have begun actions that will strengthen diversity within our committee and elections processes. We also created and distributed internally to staff and externally to members, a 2021 ACS Diversity calendar that includes religious and secular holidays from around the world, major celebrations, notable dates, and celebrations of diverse chemists. The calendar is downloadable both through [Outlook](#) and [Google Calendar](#). Each event allows a user to click and learn more about each of the more than 170 events listed.

- Chemistry Enterprise Partnerships have been signed with three partner societies, and a major leading chemical corporation. Our office has facilitated workshops and panel discussions focused on diversity & inclusion with multiple partner societies comprised of underrepresented minorities in the sciences.
- Staff presented to the Chief Technology Officers Summit a plan for holding a Chief Diversity Officers Summit in 2021, and a ‘kitchen cabinet’ of advisors have contributed their thoughts and ideas on the potential topics and agenda of this summit.
- In 2020, the ACS Speaker Series focused on the ACS Core Value on Diversity, Inclusion, and Respect. The series started with guest speaker Risha Grant - award-winning Diversity & Inclusion consultant and author who presented “Permission Granted to Get Rid of Your Bias Synapse (BS) and Build an Inclusive Culture” on March 6, 2020 in Marvel Hall. On August 21, training focused on micro-aggressions was facilitated by Dr. Jermaine Davis for the OSGC Division. Davis shared how to recognize biases, assumptions, prejudices, and stereotypes (BAPS) in the workplace and provided information on what to do when BAPS behavior occurs.

- **Webinar Featuring Dr. Kizzmekia Corbett, Project SEED Alum**

In October, ACS was proud to host NIH researcher Dr. Kizzmekia Corbett for a webinar highlighting her career trajectory from Project SEED alum to leading COVID-19 researcher. As a senior research fellow on the NIH Vaccine Research Center Coronavirus

Team, Dr. Corbett leads the preclinical work that is speeding the development of a COVID-19 vaccine. Dr. Corbett is also a Project SEED alum and a woman of color. She graciously shared with webinar participants how Project SEED sparked her interest in a science career, and offered advice to students about academic, professional, and other work-life issues.

ALL STRATEGIC PLAN GOALS—Support for ACS Governance and Operations

- **ACS Maintains a Robust and Evolving Strategic Plan**

The [*ACS Strategic Plan*](#) was approved by the ACS Board of Directors at their December 2020 meeting and will launch on the web in January 2021. It provides the basis for all of the Society's work in support of the Vision, Mission, and Core Values. The strategic plan is the result of broad engagement with governance and staff members, consolidated by the Strategic Planning Committee, and approved by the Board of Directors. Three significant changes are reflected in the new plan:

1. Updated the core value of Diversity, Inclusion, and Respect to include Equity: Diversity, Equity, Inclusion, & Respect (DEIR);
2. Added a fifth goal to specifically address DEIR: Embrace and Advance Inclusion in Chemistry; and,
3. Updated and explicitly added language pertaining to DEIR through the plan.

- **ACS Change Drivers are Updated and Refreshed**

The Strategic Planning Committee worked with an external vendor to develop a set of seven Change Drivers which are indicators of fundamental driving forces showing where important change is, or could be, happening in the chemical enterprise that will impact strategic planning over the next 3 to 5 years. The Change Drivers are developed from research and environmental scanning. A discussion guide was also developed and will be used to help staff and members focus their work with the Society.

- **CEO Hosts Webinars for Staff**

In an effort to increase communications during the global pandemic, the ACS CEO held 22 webinars for staff with a total of over 16,000 attendees who submitted more than 1,700 comments and questions. The average satisfaction rating was 94%. Several of the webinars featured external subject matter experts on topics such as epidemiology, vaccines, diversity and inclusion, and mental health and wellness.

- **Prior Year Infrastructure Investments Paying Dividends In 2020 During A Crisis**

In 2020, the technology investments in the technology infrastructure of the past 10 years paid for themselves in value delivered to the organization.

It is not a surprise that we were prepared to have everyone work remotely. In DC we are used to protests and other risks and needed to be prepared. Twelve years ago we closed the data center that had for decades been in the sub-basement of the 1155 16th Street – our executive office building blocks from the White House. We not only shuttered the in-house data center – we moved into two remote redundant data centers.

Five years ago we invested in the second of two remote access technologies, VPN and VDI services. This meant that the work of staff at all levels could continue uninterrupted from the moment we left the offices. When the Pope visited Washington a few years ago, we pressured tested this combination of services when we elected to close the physical offices but remain open that day. We had over 400 people work remotely without significant incident.

We had outfitted most of the organization in DC with laptops in recent years due to high travel, increased use of the ACS flexible work arrangements and business continuity. By maintaining standards as much as possible in the face of constant pressure to make exceptions, we have been able to provide similar levels of support in this distributed environment.

Six years ago, ACS focused on operational efficiency. These investments not only saved money, but they also eliminated complexity and contributed to our ability to work remotely effectively.

Three years ago, we initiated Enterprise Technology Shared Services, this has benefited the organization a great deal – we were more prepared, our systems more homogenous and our teams larger and more skilled which allowed us to respond to this changing environment fairly seamlessly.

- **COVID Response**

We continue to adapt and change procedures and approaches to adapt to the continued full remote work posture of the organization. Most service levels have been maintained. Services response times involving some hardware requests have declined; however, all services have remained operational throughout.

The scope of our security effort has expanded from two data centers and selected remote workers, to protecting over 2,000 end points on an ongoing basis for an undetermined amount of time. The central security organization established six years ago ensured that all parts of ACS were considered as the security profile of the organization changed overnight. We have and continue to make many changes in our operation to protect the organizations evolving operating position.

Dedicated IT professionals have continued to go into the office and perform the necessary tasks onsite to ensure not only continued operation, but continued progress on new projects like the changing member engagement model and many others.

IT continued to meet its commitments to the divisions who were expecting technology investment in 2020. In addition to keeping all the highest priority projects on track, we were able to assist the organization's pivot of many high profile in person events into online virtual events. This included many events notably the Green Chemistry & Engineering Conference, Fall National Meeting, and last Council meeting of the year.

- **Membership Support**

Working closely with our colleagues across the organization, IT is building the next generation technology that will drive membership and society program activities long into the future. This includes advanced use of data and analytics, enhanced personalization, and more flexible membership benefit options and price points.

We were able to deploy and use in production important components of this future technology stack in support of normal operations in 2020. For example, we used the new e-commerce platform to drive the online membership store.

Despite the headwinds and distractions of the year, we maintained pace and operated within budget on our investment in Membership 2.0 capabilities. The technologies that will ultimately support the new membership model are already in place – many of them used to support existing applications. These include the ecommerce platform Magento, Adobe’s experience manager and a sophisticated data store/warehouse integrated with ACS legacy systems that will provide significant flexibility to the organization moving forward.

- **Governance Support**

In 2020, staff transitioned multiple in-person meetings into virtual formats, enabling all committees to meet virtually to ensure their business was conducted without interruption or delay. The Council Policy Committee met several times to enact new policies to govern a virtual Council, and met once *ad interim* for Council. The Fall 2020 Council meeting was held virtually for the first time with more than 550 participants – Councilors, Committee Chairs, ACS Board Members, staff, and attendees. Councilors were able to proceed through the Council agenda without any limitations on their ability to vote or debate the issues before them. Councilors were able to listen and view presentations, vote, and speak on certain agenda topics. The preparation for this virtual Council included a rehearsal meeting with all the Officers and Committee Chairs that were scheduled to give a report, as well as two mock meetings whereby every Councilor was invited to attend.

- **Committee on Committees**

Staff supported the Committee on Committees (ConC) as they carefully reviewed and successfully recommended an ACS committee for dissolution. The Council and the ACS Board of Directors approved this recommendation during their virtual meetings in August. ConC held a summit entitled “Promoting Diversity, Inclusion & Respect and Removing Systemic Barriers within ACS Committees” to hear from all committees about their plans and brainstorm approaches to removing barriers within the committee system and ACS. ConC is also bringing forth a petition to Council in March 2021 (“Petition to Harmonize Committee Structures, Processes and Terms”) that would harmonize the ACS committee structures, relax the “Councilor only” designation that exists for some of the ACS committees, and standardize committee term limits.

- **Presidential Succession**

Due to COVID-19, many of the meetings and events (domestic and international) were either cancelled or done virtually. The Office of the Secretary and General Counsel staff coordinated arrangements, and prepared presentations and/or remarks for the following events where the Presidential Succession and other Board members represented ACS, including at virtual ACS national, regional, and local section meetings. Staff also supported and organized their participation in multiple meetings across the US with university groups, government entities, and with other chemical and scientific societies. This outreach included a Chemistry Enterprise Partnership signing ceremony with the German Chemical Society. Our President took an active role in highlighting the ACS Core Value of Diversity, Respect & Inclusion throughout multiple meetings, a *C&EN* Comment, statements and videos.

- **ACS STAR Award Program**

The program has achieved its highest number of award submissions since its inception in 2014. There were 155 awards submitted for December, bringing the total to 504 awards for 2020. This total almost doubled from previous years; 260 in 2019. There were two new enhancements to the program this year: (1) staff were given an opportunity to grant up to four awards, and (2) staff could grant awards to a team with up to four staff members. A final report for 2020 will be provided in mid-January.

- **Legal Team Successfully Partners With ACS Divisions in Numerous Areas**

ACS Legal secured substantial savings against potential damages arising out of the termination of several ACS meetings, including three national meetings and PacifiChem 2020; aided in the successful bond offering totaling \$60,750,000; helped lead a coalition of scholarly publishers to create a new organization, GetFTR LLC, with the goal of enhancing legal sharing of copyrighted content; and continued its efforts to protect its valuable intellectual property.

- **Treasurer & CFO Division Operations**

Faced with a pandemic and its impact on our operating model, the Treasurer & Chief Financial Officer's division quickly changed course in March and transitioned operations to a fully remote model, with the exception of a few members of our team that were required to help keep our otherwise empty facilities in DC safe and secure. Operating deadlines were met, processes evolved with experience working remotely, and important strategic initiatives continued forward to successful completion.

One surprising outcome of the pandemic's impact on operations is achievement of a record level of net revenue for 2020. Total revenues finished close to budgeted levels, even with the termination of the Spring meeting and a much reduced Fall virtual meeting. Careful expense management contributed most significantly to the achievement of the large net contribution. The Society once again met all Board-established financial guidelines and saw significant growth in unrestricted net assets.

- **COVID-19 Building Safety Protocols**

In February, ACS Facilities began to implement increased cleaning and safety protocols as the seriousness of COVID-19 was becoming more apparent. These included enhanced cleaning, regular sanitizing of high touch areas, move to prepackaged food for events, creation of a more stringent visitor process, and enhancements to building air handling equipment and operation.

In order to prepare for the eventual return to office-based operations, Facilities and Security have worked to establish protocols, so once open, ACS can operate the buildings responsibly and provide employees with a safe environment. Measures include installation of thermal screening equipment (to identify individuals with possible elevated body temperatures) in the Hach building lobby entrance, loading dock entrance, basement entrance and sub-basement entrance; and installation of various social distancing and safety signage. Security officers were fully trained to reinforce processes and procedures for the thermal screening technology. Plans have been made to engage a nursing service to provide secondary screening as well, after the buildings reopen. Signage has been placed throughout the buildings, common spaces reconfigured to ensure proper social distancing, and we collaborated closely with Human Resources on the development of training materials and updated building procedures. Since the COVID situation is fluid, safety protocols will continue to be updated and adjusted.

- **Achievement of Fully-Funded Defined Benefit Pension Plan**

In May, the Society issued a taxable bond for \$60.75 million and \$60 million of the proceeds were invested in the ACS Defined Benefit Pension Plan to bring the funded status to 100%. This represents achievement of a long-standing ACS goal of ensuring the stability of this important commitment to current and past ACS employees. It also culminated an effort that began a year earlier and executed in the early days of the COVID pandemic.

The plan is now in “hibernation” and the asset-duration matches the liability-duration. This provides greater financial security for ACS and plan participants. The organization’s unrestricted net assets are now less sensitive to changes in long-term interest rates (the bonds have a fixed interest rate below 4% payable in 30 years) and the need to annually contribute large amounts of free cash has been mitigated.

- **ACS Achieves LEED Platinum Re-certification for the Hach and Othmer Buildings**

ACS, led by the DC Facilities team, achieved Platinum Recertification for the ACS Hach and Othmer buildings in the Leadership in Energy and Environmental Design, Existing Building: Operations and Maintenance Version 4 (LEED-EB O&M V4) program, sponsored by the U.S. Green Building Council (USGBC). The USGBC is the nation’s leading non-profit authority for green buildings and is the nationally accepted benchmark for the design, construction, and operation of high performance green buildings.

The intent of LEED-EB O&M is to provide third-party verification that a building or community are designed and built using strategies aimed at improving performance across the metrics that matter most: energy savings, water efficiency, CO₂ emissions

reduction, improved indoor environmental quality, and stewardship of resources and sensitivity to their impacts. The Platinum designation is the highest level of recognition awarded by USGBC and the ACS facilities are the only two in their category to have received this honor.

By achieving this certification, ACS has demonstrated its unwavering commitment to the environment that supports the sustainability goal set forth by the ACS Board of Directors.

- **Strong Investment Performance and Operating Cash Management**

For the second consecutive year, the ACS General Fund investments grew at a healthy level (pre-audit estimate of approximately 15 percent). On a relative basis, the performance was particularly notable. In March, the ACS Investment Pool was not down nearly as much as other institutions. However, subsequently, the Investment Pool captured a good portion of the recovery in equities. The ACS Investment Pool performed in the top quintile of its peer group and outperformed the majority of similarly sized endowments by several percentage points.

Given the strong operating performance of the Society in 2020, net cash flow was extremely positive throughout the year. This allowed the addition of \$73 million of contributions from working capital to the ACS General Fund (which functions like an unrestricted endowment supporting the important mission activities of the Society). In addition, it allowed us to set aside \$9 million into a sinking fund for the ultimate repayment of the debt issued in May 2020.

- **ACS Financial Model**

An ACS-wide financial forecasting model was developed in close collaboration with senior management from the Information Services and Society Program & Administrative (SP&A) units in conjunction with an external consulting partner. This model allows ACS to take a high level strategic view of future revenue growth and cost savings opportunities with the goal of defending and capitalizing on a strong financial position in the face of potentially significant disruptive challenges. Key business drivers and levers were developed for the SP&A units to aid in modeling various scenarios. This model will continue to be refined, updated and revised with more data and ultimately is intended to aid executive leadership on the financial impacts of decisions, investments, and initiatives through scenario modeling.

- **Redesign/Creation of New Portfolio Evaluation & Optimization (PEVOP) Process**

During 2020, the Budget & Finance Committee engaged in a process to reimagine the Society Program Portfolio Management process, leading to a new, streamlined and more strategic resource allocation assessment in fulfillment of one of its primary responsibilities. Two legacy Subcommittees merged into the new single PEVOP Subcommittee encompassing both evaluation of existing mission programs and consideration of proposed new programs. The new focus of PEVOP will be at the portfolio level—that is, evaluation of program portfolios that are aligned with the ACS Strategic Plan Goals. This outcome was enabled through a collaborative process between the Committee and the senior ACS staff leaders overseeing Society Programs. The new

process will be implemented in 2021 with the promise of less work for staff and more effective use of volunteer time.

- **Insurance Trust Expanded Member Offerings and Distributed \$1 million to ACS**
Two new insurance products were launched in 2020 to ACS members, Emergency Assistance Plus (EA+) and eHealth. EA+ is an emergency travel assistance plan that provides emergency travel, evacuation/repatriation, transportation and medical assistance services. eHealth is an online health insurance marketplace that offers access to Medicare Advantage, Medicare Supplement, Dental, Vision and other health products.

During 2020, the Member Insurance Board of Trustees approved a \$1 million distribution to the Society. This important contribution will be used to further ACS's commitment to Diversity, Equity, Inclusion and Respect.

- **Office Supply Stipend**
Within a few weeks, Purchasing staff initiated, monitored, and rolled out an employee office supply stipend with ACS vendor Millers Office Supply. The program was offered to all domestic employees who received a credit of \$300 which could be used across the Millers' site in order to enhance their home office setup. (An alternative program was rolled out in conjunction with CAS teammates for international staff that could not order from Millers.) The program was extremely successful with 1,653 employees (approximately 90 percent of those eligible) ordering through the program.
- **Supported Activities Tied Directly to COVID Response**
Human Resources helped to transition ACS workforce to remote work; supported physical and mental health of staff members in isolated, remote conditions; pursued all HR plans for 2020 except for one new program initiative; planned and executed administrative changes resulting from CARES Act; analyzed COVID spend and impact on budgeting process; and participated in multiple surveys on pay and benefits practices to guide decisions.
- **Aspiring Manager Group**
Human Resources extended the Aspiring Manager Group by creating a DC chapter. Piloted in the CAS division, this program is designed to provide early training and experiential learning for the next generation of ACS leaders. While no commitment of future promotion is made, the aim is to establish a pool of well-skilled individuals who demonstrate the range of competencies required for effective leadership.
- **Employee Engagement Survey**
ACS conducted the semi-annual survey of employee engagement which yielded the highest level results in ACS history.
- **2020 Intern Program**
ACS Human Resources hired 25 interns for the 2020 Intern Program and then managed the cancellation of the program for 2020 (rescinding offers). Feedback received from

both hiring managers and interns was positive and understanding of the exceptional situation driving the decision.

- **Implemented New Family Friendly Benefits Programs and Enhanced Leave Process**
DC Paid Family leave effective July 2020; ACS Paid Parental Leave effective January 2021; ACS Adoption Assistance effective January 2021; Developed leave toolkits (DC-based and non-DC) that provided readily available, comprehensive details of the leave policies and processes.