



## 2022 Highlights of ACS Achievements

An annual report from Thomas Connelly  
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American Chemical Society

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

### CAS DIVISION

- **CAS Life Sciences**

[CAS](#) announced transformational capabilities to accelerate life sciences innovation, including strengthening its comprehensive, highly structured, human-curated scientific data with the introduction of life sciences assets; for rapid development to cover the end-to-end pharmaceutical R&D workflow and accelerate therapeutic innovation. A Life Sciences Industry Advisory Board comprising a world-class panel of global thought leaders from commercial, academic, and government organizations serve as trusted advisors, directing our scientific journey as we combine authoritative content with groundbreaking predictive technologies that span the spectrum of life sciences workflows.

- **[CAS Enterprise Solutions](#)**

New capabilities and improved insights from the growing compendium of the CAS Content Collection extended value to users of CAS solutions and services worldwide. Notably, engagement with the CAS SciFinder Discovery Platform<sup>®</sup> realized growth for CAS SciFinder<sup>n</sup>, largely driven by the value of retrosynthesis capabilities, formulations predictions, and methods exploration. The STN IP Protection Suite<sup>™</sup> continues to be enhanced with new content, capabilities, and services focused on IP workflows, and CAS partnered with numerous organizations worldwide to solve unique challenges through CAS Custom Services collaborations.

- **CAS Insights**

CAS introduced a single digital destination where scientific innovation leaders can find publications and expert perspectives from CAS. A global thought leadership platform at the intersection of science, technology, and innovation, [CAS Insights](#) offers a variety of media-friendly new formats spanning scientific disciplines. This initiative required investments from across CAS to deliver insightful content on topics including exosomes, microplastics, gene/cell therapy, sustainable agriculture, medical 3D printing, gut microbiome, and molecular glues.

- **CAS Content Collection**  
As scientific information continues to grow at a rapid pace, CAS extended coverage of data in the CAS Content Collection critical to the advancement of science. CAS grew patent office coverage from 64 to 109 patent offices, critical expansions in coverages of bioactivity data, including the addition of structure–activity relationship (SAR) and absorption, distribution, metabolism, excretion, and toxicity (ADMET) analyses, among others. Additions in property data also resulted in increasing property types to 43 for each substance.
- **Customer Experience Impacts**  
CAS grew support services with extended reach across other areas of Asia in plans for 2023. CAS customer and user support earned world-class Net Promoter scores, underscoring the value CAS delivers throughout the research and development pipeline.

## ACS PUBLICATIONS DIVISION

[ACS Publications](#) once again delivered a strong performance in 2022. ACS journals continued to grow in published output, usage, and citations, remaining the “most trusted, most cited, most read” for their research communities. As a leader in Open Science advancements the division expanded the reach of transformative “Read + Publish” agreements; successfully piloted transparent peer review; advanced open data initiatives, and substantially increased the content published Open Access in the portfolio of transformative journals. Many other activities, as highlighted in this report, continue to advance the influence of ACS journals and associated products and services, aligned to the mission and vision of the Society.

- **ACS journals continue global leadership and influence**  
The portfolio of ACS peer reviewed journals continued to represent the “most trusted, most cited, most read” scientific publications in their respective fields. During 2022, key editorial and quality metrics continued to show strong performance.
- **ACS Publications expands global presence and celebrates collaborative milestones**  
Reflecting the global nature of science, ACS journals once again increased their engagement with the global community of researchers through the identification and appointment of international research-active scientists to key editorial posts.

ACS Publications entered partnerships to launch three new journals with renowned universities in China to collaborate on joint activities, events, and scholarly initiatives.

Hundreds of outreach events (in-person, online or hybrid) were organized globally, oftentimes targeting an international audience.

[ACS Authoring Services](#) and [ACS Reviewer Lab](#) were further developed to support researchers globally, with specific enhancements catering to researchers in China, Japan and South Korea.

- **ACS journals enable Open Access/Open Science**  
ACS Publications continued its leading activities and engagement to enable Open Access/Open Science:
  - The Division aligned its full portfolio of more than 60 hybrid journals, which offers both open access and subscription-only content, to be transformative journals, committed to support the transition to Open Access.

- ChemRxiv celebrated its [5<sup>th</sup> anniversary](#) in 2022. The milestone was marked by the [posting of a joint editorial](#) from ChemRxiv staff and representatives of all five governing societies. This year ChemRxiv surpassed 15,000 posted preprints and 40 million views/downloads.
- The fee was removed from ACS Author Lab making the course freely accessible for all researchers.
- **ACS Publications increases market outreach and community engagement**  
Through 2022, ACS Publications organized and supported a broad range of events and activities:
  - During Peer Review Week, over 35K members of the peer review community competed in an interactive quiz linked to ACS Reviewer Lab, and shared social media posts with personal testimony about why they are proud to be a Peer Reviewer for ACS Publications.
  - The 29 [ACS on Campus](#) events were attended by 36K live and on-demand participants.
  - Numerous highly successful events, utilizing both in-person and online participation. For example, the JACS Innovation Summit in China.
- **Digital Transformation advancing new product development**  
The Digital Transformation Office scaled customer discovery activities, both with external and internal stakeholders, in order to better refine new product offerings. Strategic options and competitive analysis studies were completed to inform both technology and business model decisions.

## **SOCIETY PROGRAMS [INCLUDES ACS EDUCATION, ACS MEMBERSHIP, ACS MEETINGS & EXPOSITIONS SERVICES, SCIENTIFIC ADVANCEMENT, SOCIETY BUSINESS SOLUTIONS]**

- The [ACS Campaign for a Sustainable Future](#) is advancing chemistry innovations to help solve the challenges articulated in the United Nations Sustainable Development Goals, leveraging a rich collection of green and sustainable chemistry and engineering resources, activities, and partnerships. The Office of Sustainable Development was established, held a virtual 4-day [Zero Hunger Summit](#) with over 1000 registrants from industry, government and academe, and began developing a grants program that will position ACS as a funder and facilitator of investment in green and sustainable chemistry.
- The strategic initiative on [Fostering a Skilled Technical Workforce](#) is engaging a diverse network of stakeholders critical to the recruitment and preparation of students and potential employees using science and engineering skills in their jobs, but not holding a bachelor's degree. An awareness campaign to disseminate information and to request partnerships was launched.
- **Convening the Chemical Sciences Community (Also Supports Goals 2, 3, 4, and 5)**  
ACS convened sessions to share science in in-person, virtual, and hybrid formats by:
  - Engaging over 13,200 registrants from 75 countries in ACS Spring 2022
  - Engaging over 12,600 registrants from 83 countries in ACS Fall 2022
  - Supporting 7 ACS Regional Meetings that collectively attracted more than 5,500 attendees

- Supporting the [Atlantic Basin Conference on Chemistry](#) (ABCChem), which brought together 8 chemical societies to host a conference in Marrakech, Morocco for attendees from 32 countries
- Hosting and supporting a collection of 15 other specialty conferences, events, and meetings which attracted more than 3,000 attendees

ACS also brought together the volunteers and staff organizing meetings by:

- Hosting meetings for program chairs from divisions
- Providing training and a networking event with current and future regional meeting organizers

- **Shaping the Future of Green and Sustainable Chemistry and Engineering (Also Supports Goals 2, 3, 4, and 5)**

ACS advanced the practice of chemistry by:

- Launching the [ACS Campaign for a Sustainable Future](#), hosting the [Zero Hunger Summit](#), a virtual 4-day event with over 1000 registrants, and developing a grants program that will position ACS as a funder and facilitator of investment in green and sustainable chemistry
- Convening [ACS Green Chemistry Institute industry roundtables](#), including the [Pharmaceutical Roundtable](#) and the [Oilfield Chemistry Roundtable](#), which offered grants totaling over \$300,000 in 2022
- Hosting the 26th Annual Green Chemistry & Engineering Conference for over 800 attendees

- **Building Research Capacity**

In 2022, ACS activities to advance scientific discoveries included:

- Providing guidance and mentoring on grant writing
- Deciding to increase the value of PRF New Directions grants to \$125,000
- Deciding to provide new special supplemental PRF grants for undergraduate institutions
- Awarding nine 5-year [Herman Frasch Foundation Grants](#) of \$250,000 each for agricultural chemistry
- Awarding a 2-year [Irving S. Sigal Postdoctoral Fellowship](#), with a total value of \$150,000

## COMMUNICATIONS DIVISION

- **Align Webinar Programs at ACS (Also Supports Goals 2 & 4)**

In 2022, efforts focused on aligning branding and promotions, ensuring events are broadly discoverable, and assessing the content strategy for ACS Webinars and C&EN Webinars. A Webinars Roundtable was established for contributors of all ACS webinar-producing departments to share ideas, best practices, upcoming events, and collaboration opportunities. An [audience-facing production calendar](#) was published on the ACS Network.

- **High-quality, Award-winning Chemistry Journalism**

C&EN Media Group continued to provide coverage of key issues and generate advertiser and reader revenue. Highlights include:

- Won gold in the Best New Innovation category during the 2022 AM&P EXCEL awards for the e-newsletter series, "[Selling your Science: The Art of Science Communication](#)"; the series was funded by the Genentech Foundation

- Received the 2022 Folio: Eddie and Ozzie Award for Series of Articles in the association/nonprofit category for C&EN's coverage of diversity, equity, and inclusion in chemistry
- Published the Trailblazers special issue on LGBTQ+ chemical scientists
- Named the 2022 class of the Talented 12 and held a virtual symposium featuring those scientists; this effort was sponsored by Thermo Fisher Scientific
- Announced the second edition of Latin American Women in Chemistry awards

**OFFICE OF THE TREASURER AND CFO DIVISION (TCFO) [INCLUDES FINANCE, PUBLICATIONS BUSINESS SUPPORT, TREASURY/INVESTMENTS, ACS MEMBER INSURANCE, AND WASHINGTON BUSINESS SERVICES)**

• **Enabling Technologies Supporting Society Programs**

- Implemented a single e-commerce platform for the [ACS Institute](#). The ACS Institute is an online learning platform developed in collaboration with Publications and the Education Divisions. A singular e-commerce platform allows users who select courses from Publications and Education a single checkout. In addition, it integrates the course products using the content management system (CMS) and reduces technical debt.
- The New Membership Application (NMA) was launched. Following the transformation of ACS Membership, where ACS provided members with a choice of membership package depending on their needs, the application technology was transformed into a user-friendly and user-informed online application. Membership Joins and Renewals uses the platform technology to display membership pricing while making product selections and provides an improved checkout process.
- Expanded the successful virtual Council Meeting to a hybrid meeting. The Fall 2022 Council meeting allowed the council members to participate in-person at the Chicago location, while others participated virtually. The in-person and virtual participants could speak, see and vote as they would normally.

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

**SOCIETY PROGRAMS [INCLUDES ACS EDUCATION, ACS MEMBERSHIP, ACS MEETINGS & EXPOSITIONS SERVICES, SCIENTIFIC ADVANCEMENT, SOCIETY BUSINESS SOLUTIONS]**

Implementing the new membership model with three membership benefits package options was a focus of 2022, supported by units across ACS. At year end, ACS membership exceeded 173,000 members.

Building member engagement and value was also a focus of 2022. [ACS Link](#), access to LinkedIn Learning, and the ACS Speaker Directory were among the services launched. Respondents to the 2022 Membership Engagement Survey indicated that the prestige of the organization remains strong and ACS shows steady positive progress in usage and performance of most surveyed attributes.

Membership in the [American Association of Chemistry Teachers](#) (AACT) (Also Supports Goal 3) AACT member engagement and retention was increased by expanding and updating resources, aligning social media efforts, and streamlining the renewal experience.

- **Growing ACS Membership**

Transitioning to the new membership model with three membership benefits package options has resulted in membership increases in 2022.

- The overall membership count closed at 173,679 individuals.
- The Community Associate count closed at 68,615 individuals.
- Resuming travel to international events enabled the recruitment of 68 new members.

- **Supporting the New Membership Model**

Updates to processes and underlying systems were made to enhance the membership experience, including:

- Delivering communications tailored to members with the Standard package
- Updating the content, timing, and delivery methods for the 2023 renewal communications
- Introducing auto-continuation for non-renewed members starting in March 2022
- Launching a new, more intuitive e-commerce platform for paid member joins and renewals

- **Enhancing Member Engagement and Value (Also Supports Goals 1, 3, 4, and 5)**

Collaborative efforts were taken to increase the use and value of ACS programs, products, and services, including:

- Expanding scope and use of market and user research
- Introducing new services, such as [ACS Link](#) and LinkedIn Learning
- Conducting two ACS Link In-Person Connect pilots held at ACS Spring 2022 & ACS Fall 2022, which increased industry member engagement
- Developing an integrated product strategy for key member segments

The 2022 Membership Engagement Survey was conducted. Respondents indicated that the prestige of the organization remains strong and ACS shows steady positive progress in usage and performance of most surveyed attributes.

Engaging industry members continued to be a focus in 2022. Activities included:

- Hosting Industry Networking Receptions at ACS Spring and Fall meetings
- Organizing three summits for Chief Technology Officers
- Convening leaders in the pharmaceutical industry both in-person and virtually
- Producing a conference specifically for the entrepreneurship ecosystem
- Publishing [career newsletters](#) for industry members, segmented by a version for early-career and another for mid-to-late-career

- **Recognizing ACS Member Achievements (Also Supports Goals 1, 3, 4, and 5)**

The ACS community recognized and celebrated numerous scientific and service contributions, including the 2022 [National Awards](#), [ACS Fellows](#), and [ChemLuminary Awards](#).

- **Empowering ACS Communities (Also Supports Goals 1, 3, 4, and 5)**  
Activities to enhance the impact of ACS technical divisions, local sections, international chemical sciences chapters, and student communities include:
  - Providing professional development and networking opportunities for leaders at the 2022 ACS Leadership Institute
  - Launching an ACS Speaker Directory
  - Engaging the global community in three leadership summits, as well as events at the European Chemical Society (EuChemS) Chemistry Congress and the Latin American Congress of Chemistry (CLAQ)

## OFFICE OF PHILANTHROPY

- **Priestley Medal**  
Thanks to a generous bequest from J. Lynn Fordham, a 68-year ACS Member, Priestley Medalists in the future will receive a research grant in addition to the gold medallion and certificate traditionally given to the awardee. The [Priestley Medal](#) is ACS's highest honor, and the Society is delighted that it will be able to offer a research grant to the Priestley Medalist. Lynn Fordham passed away in 2021 at the age of 97. He was a long-time resident of Lexington, KY and Northeast Ohio.
- **George C. Pimentel Award in Chemical Education**  
In 2022, the ACS Division of Chemical Education (DivCHED) endowed the [George C. Pimentel Award in Chemical Education](#). The award recognizes outstanding contributions to chemical education in honor of George C. Pimentel (1922-1989). Among his many achievements, including the invention of the chemical laser, Pimentel served as editor of the CHEM Study project, a national effort developed in the 1960s to improve high-school chemistry teaching. Pimentel also served as ACS President in 1986.
- **Henry H. Storch Award in Energy Chemistry**  
The ACS Division of Energy & Fuels (ENFL) augmented the endowment for the [Henry H. Storch Award in Energy Chemistry](#), boosting the endowment that the Division had established in 2018. The Henry H. Storch Award in Energy Chemistry recognizes distinguished contributions to fundamental or engineering energy-related research and development and education that address the world's energy and chemical challenges. The award honors Henry H. Storch, a physical chemist who made numerous contributions to coal chemistry and catalysis and who served as the Director of Research at the U.S. Bureau of Mines.

## COMMUNICATIONS DIVISION

- **Content Strategy Within the Communications Division**  
An audit of content generated by the Communications Division was conducted to understand its scope and breadth and to share best practices. The focus was to strengthen the content strategy for the Communications Division, with an eye towards supporting content efforts across ACS. An example of an assessment which led to implemented modifications was the soft launch of a more streamlined and mobile-friendly [ACS PressPac](#), which is more integrated with the acs.org website. Capabilities include a special call-out box to highlight selected C&EN content.

- **National Chemistry Week Trivia Game**

In celebration of [National Chemistry Week](#), [ACS Webinars](#) produced a live, interactive trivia game show where 105 teams comprising 839 students and early career chemists gathered with their ACS local sections, technical divisions, and student chapters and competed to bring home the title of “ChemClash” champion. The event received a 95% satisfaction rating and yielded 638 leads for Membership.

**OFFICE OF THE TREASURER AND CFO DIVISION (TCFO) [INCLUDES FINANCE, PUBLICATIONS BUSINESS SUPPORT, TREASURY/INVESTMENTS, ACS MEMBER INSURANCE, AND WASHINGTON BUSINESS SERVICES)**

- **Transformation of ACS Membership**

Successfully launched the transformation of ACS Membership. Created and revised the underlying systems that support the new three membership benefits package options.

**OFFICE OF THE SECRETARY AND GENERAL COUNSEL (OSGC) [ INCLUDING GOVERNMENT AFFAIRS, OUTREACH & ALLIANCES; LEGAL; STRATEGIC PLANNING; AND SECRETARY SUPPORT FOR GOVERNANCE]**

- **Hybrid Council (Also Supports Goal 5)**

In Spring of 2022, in collaboration with Meetings, IT, and governance stakeholders, OSGC hosted a mock hybrid meeting of the ACS Council, which allowed for credentialing, virtual and in-person participation with video and audio support, and a single, standardized voting process supporting user devices. Lessons learned were captured and leveraged to successfully host the first ACS Hybrid Council in August of 2022. The Hybrid Council format provides equitable access to our global members whether they are able to attend the meeting in person or need to participate remotely.

- **Staff Liaison Streamlining and Standardization**

Beginning in 2022, a concerted effort to streamline and standardize Staff Liaison support of ACS Governance Committees was undertaken. Communication channels and resource repositories were created leveraging Slack, Teams, and SharePoint. A OneDrive digital archive was established to address continuity of committee support. A regular cadence of support meetings, feedback sessions, and office hours was established. Templates and resources were made available to standardize committee documents.

- **Nominations Portal (Also Supports Goal 5)**

OSGC Governance staff, in partnership with key governance stakeholders, collaborated with an external vendor to create and pilot a custom system that will enable the Committee on Nominations and Elections (N&E) and the Council Policy Committee (CPC) to execute the critical governance process of creating voting slates in a secure online environment. The new system has improved the efficiency of the process by automating critical tasks previously done manually therefore reducing effort and errors, protecting confidential and sensitive information in a secure online environment, reducing time spent by staff coordinating and supporting the process, and allowing ACS to have a better insight on data trends over time. These insights will strengthen our ability to identify and elect more diverse candidates.



- Committee Preference Form (Also Supports Goal 5)**  
OSGC Governance staff, in partnership with key governance stakeholders, collaborated with Information Technology to develop a new version of the Committee Preference Form that leverages Salesforce® to power the system interface that volunteers use to submit their committee preferences and biographical information. The new system allows volunteers to review each committee by its main topic and focus, along with the skills and expertise needed to serve. Volunteers must also submit a skills assessment that will be used to help determine which committees may best suit their talent. This improvement better positions OSGC to grow the system to be inclusive of the entirety of the committee appointment process and deliver additional gains in efficiency for governance. It will also allow ACS to diversify the committee member pool by making the preference form globally accessible through the ACS website.
- Governance Operations Manuals**  
OSGC Governance staff, created detailed operations manuals to document and clarify the processes associated with ACS governance support of N&E, CPC, Council, and the Board of Directors. Historically, processes were held by people/subject matter experts and were not documented in a way that supported succession and backup planning. These documents will be evergreen and continuously updated to ensure clear processes, roles/responsibilities, and ease personnel transitions.
- The ACS STAR Award Program (Also Supports Goal 5)**  
The Society’s peer-to-peer staff recognition program known as the ACS STAR Award ended in June 2022 after eight years. Since its launch in June 2014, more than 2,100 awards were presented – more than 500 were given in 2020 for extraordinary accomplishments made during the pandemic. The STAR Awards was replaced by the Bravo! Rewards & Recognition Program.
- Legal Team Successfully Onboarded Two New Attorneys; Supported 250+ Legal Requests and over 2K Intellectual Property Matters**  
ACS Legal onboarded two new attorneys and implemented a new intake procedure that ensures centralized receipt and tracking of legal requests from divisions, teams, and components. “Business as usual” matters include reviewing and revising contracts; updating agreements to reflect recently required GDPR provisions; advising on sanctions compliance; supporting HR on labor and employment actions; and counseling on issues arising from ACS meetings and other educational outreach activities.

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

**SOCIETY PROGRAMS [INCLUDES ACS EDUCATION, ACS MEMBERSHIP, ACS MEETINGS & EXPOSITIONS SERVICES, SCIENTIFIC ADVANCEMENT, SOCIETY BUSINESS SOLUTIONS]**

ACS advanced lifelong learning, continuing to integrate and improve access to ACS resources. New courses and an eighth center, the [Center for Entrepreneurship Education](#), were added to the [ACS Institute](#), an online learning portal offering a robust collection of learning and training

resources. [Virtual Office Hours](#) and the [ACS Career Consultants program](#) were expanded, adding consultants for China, India and Nigeria.

New and existing activities focused on broadening participation in the chemical sciences. The [ACS Lasting Encounters between Aspiring and Distinguished Scientists \(LEADS\) Conference](#), held in-person, was a 3-day event designed to prepare high-potential young professionals and students for successful and impactful careers that address global grand challenges. In-person and virtual activities were integrated into the [ACS Project SEED](#) program for high school students with diverse identities and socioeconomic backgrounds. The reach of the [ACS Bridge Project](#) was extended to include 44 chemical sciences departments, over 90 ACS Bridge Fellows, and a collection of professional development activities supported by the National Science Foundation.

- **Cultivating Communities of Learners and Educators (Also Supports Goals 1, 2, 4, and 5)**

In 2022, ACS provided programs, products, and services that responded to a wide range of academic, scientific, career development, and mentorship needs. Highlights include:

- Increasing member engagement and retention in the [American Association of Chemistry Teachers](#) (AACT) by expanding and updating resources, aligning social media efforts, and streamlining the renewal experience
- Having the [US National Chemistry Olympiad](#) Team USA earn a gold and three silver medals at the 54<sup>th</sup> International Chemistry Olympiad
- Offering electronic credentials for over 1,200 certified graduates of ACS-Approved programs
- Holding three mentorship workshops for graduate students and postdoctoral scholars
- Continuing to offer quarterly meetings for department chairs, including a luncheon during ACS Spring 2022

Collaborative efforts continued to build student communities in 2022, including:

- Increasing the number of ACS [Graduate Student Organizations](#) to 15
- Supporting ~1,200 domestic [ACS Student Chapters](#) and 109 [ACS International Student Chapters](#) in 34 countries
- Funding 205 [mini-grants](#) for ACS Student Chapter and Graduate Student Organization engagement
- Offering digital badges to 224 [award-winning ACS Student Chapters](#) and recognizing the green chemistry accomplishments of 36 ACS Student Chapters
- Piloting a new virtual platform for advisers of high school [ACS ChemClubs](#) and a scholarship program for ChemClub students

- **Advancing Lifelong Learning (Also Supports Goals 1, 2, 4, and 5)**

Lifelong learning was advanced by integrating and improving access to ACS resources:

- Promoting and expanding the [ACS Institute](#), an online learning portal offering a robust collection of learning and training resources
- Increasing the number of centers in the ACS Institute to eight, adding the [Center for Entrepreneurship Education](#)
- Relaunching [Get Experience](#), a website to search and apply for research experience, internship, co-op, and fellowship opportunities
- Adding myVitae to [ChemIDP](#), the online career planning and preparation tool
- Expanding [Virtual Office Hours](#) and the [ACS Career Consultants program](#), adding consultants for China, India and Nigeria.

ACS partnered with others across the chemical sciences community to advance lifelong learning, including:

- Continuing the [Colloquia on Chemistry and Food Safety](#) with the U.S. Food & Drug Administration
- Participating in the Patent Examiner Technical Training Program of the U.S. Patent and Trademark Office
- Hosting the ACS Summer School on Green Chemistry & Sustainable Energy, attended by ~60 students from across the Americas, at the Colorado School of Mines

- **Developing and Deploying Resources to Build Chemistry Education Capacity**

Approaches used to build chemistry education capacity included:

- Expanding and updating items in the [AACT](#) online resource library and redesigning the [ChemMatters](#) magazine website
- Finalizing the revisions to the ACS Guidelines for Bachelors' Degree Programs in Chemistry
- Completing and assessing the 2021-2022 academic year [mini-grant program](#) that supported the facilitation of 44 short courses, as well as a template and modules, to help general and organic chemistry students returning from remote instruction develop hands-on laboratory skills
- Piloting 15 Green & Sustainable Chemistry Education modules for undergraduate students studying general and organic chemistry
- Initiating the strategic initiative Fostering a Skilled Technical Workforce, launching an awareness campaign to disseminate information and to request partnerships

- **Shifting the Safety Paradigm from Rules-based to Risk-based**

ACS furthered the safe practice of chemistry by:

- Producing an online catalog of chemical safety programs and resources at [www.acs.org/rampupsafety](http://www.acs.org/rampupsafety)
- Focusing the 2022 ACS Presidential Safety Summit on actionable strategies for ACS resources and programs related to safety preparation of Ph.D. chemists for industrial careers
- Releasing six ACS College Safety videos on the [ACS Chemical Safety Playlist](#)
- Offering [Foundations of Chemical Safety and Risk Management](#) to over 4,000 people from over the world to date, with over 1,500 successfully completing the full set of 16 modules
- Developing a new course on Foundation for Storing, Organizing and Disposing Chemicals in Educational Settings to be released in January 2023

- **Broadening Participation in the Chemical Sciences**

ACS took inclusive and holistic approaches to improve the recruitment and retention in the chemical sciences, including:

- Hosting the [ACS Lasting Encounters between Aspiring and Distinguished Scientists \(LEADS\) Conference](#), an in-person 3-day event focused on preparing high-potential young professionals and students for successful and impactful careers that address global grand challenges
- Supporting 344 ACS Scholars, continuing a [program](#) that has supported over 3,600 scholarship recipients since 1994
- Integrating summer in-person and virtual activities into the [ACS Project SEED](#) program for high school students with diverse identities and socioeconomic backgrounds

- Extending the reach of the [ACS Bridge Project](#), leveraging the [Inclusive Graduate Education Network](#), to include 44 chemical sciences departments, over 90 ACS Bridge Fellows, and a collection of professional development activities. In 2022, Eli Lilly pledged its support for the ACS Bridge Project, joining the National Science Foundation, the Genentech Foundation, DuPont, Bristol Myers Squibb, and PPG Industries Foundation as the project's funders.

#### **OFFICE OF THE TREASURER AND CFO DIVISION (TCFO) [INCLUDES FINANCE, PUBLICATIONS BUSINESS SUPPORT, TREASURY/INVESTMENTS, ACS MEMBER INSURANCE, AND WASHINGTON BUSINESS SERVICES)**

- **Implement and support the e-commerce launch of ACS Institute**

The launch of the ACS Institute's new e-commerce platform provided customers with the singular e-commerce payment process during checkout. Moving to this platform allows for a streamlined process from products to payment. The technology teams continue to provide the necessary support and future improvements of the ACS Institute.

- **Enable Education application development and enhancements**

In support of Education, the following technologies and enhancements were deployed.

- New Scholar Program – An application built using the Salesforce platform that provides students with comprehensive applications for renewable scholarships to undergraduate chemistry students from historically underrepresented groups.
- Project SEED – Built enhancements to the existing Project SEED application.
- Chemistry Program Approval and Review System (CPARS) - Continuous improvements to the CPARS application operations and maintenance of the CPARS Salesforce application.
- Creation of program forms in DocuSign to better serve the collection of student information and parent review and approvals.

**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.**

#### **SOCIETY PROGRAMS [INCLUDES ACS EDUCATION, ACS MEMBERSHIP, ACS MEETINGS & EXPOSITIONS SERVICES, SCIENTIFIC ADVANCEMENT, SOCIETY BUSINESS SOLUTIONS]**

- **Raising Awareness of Chemistry through Outreach**

ACS supported outreach and public awareness campaigns by:

- Piloting the partner outreach framework at several ACS regional meetings, the European Chemical Society (EuChemS) Chemistry Congress, and American Indian Science & Engineering Society (AISES)
- Celebrating [Chemists Celebrate Earth Week](#) 2022 in April with the theme “The Buzz About Bugs – Insect Chemistry”
- Celebrating [National Chemistry Week](#) 2022 in October with the theme “Fabulous Fibers: The Chemistry of Fabrics”
- Awarding 36 grants for [Chemistry Festivals](#)

- **Recognizing the Contributions of Chemistry**  
Research and products that have led to significant advancements in sustainability, health, medicine and more have been highlighted by:
  - Partnering with the U.S. Environmental Protection Agency on the 2022 [Green Chemistry Challenge Awards](#)
  - Celebrating the [2022 Heroes of Chemistry](#), which included treatments for COVID-19 and breast cancer among other innovative chemistries that benefit humankind

## COMMUNICATIONS DIVISION

- **Promote Chemistry and Its Practitioners to Media and the Public**  
For 2022, the Communications Division provided chemical information and news about ACS to the media, ACS members and directly to the public.
  - Produced and distributed, 44 weekly ACS PressPacs, 47 embargoed press releases, and 65 other releases highlighting more than 200 ACS journal articles, news stories and Society news items and resulting in more than 74,500 stories in newspapers, magazines, radio/television broadcast, online news and other websites.
  - Published, 21 episodes of Reactions, 20 other science-based videos, 26 podcast episodes of Tiny Matters and 72 external ACS Webinars.
- **Communicating the 2022 Nobel Prize in Chemistry**  
As part of the annual ACS efforts related to the Nobel Prize in Chemistry, a [press release](#) was issued with comments by ACS President Angela Wilson about the Nobel Prize in Chemistry. Wilson gave 10 media interviews that morning, and all of the ACS coverage was amplified on social media. C&EN hosted a prediction webinar before the announcement and, after the announcement, it explained the work via breaking news and a podcast. Over 350 news stories mentioning Dr. Wilson or ACS resulted.

## OFFICE OF THE TREASURER AND CFO DIVISION (TCFO) [INCLUDES FINANCE, PUBLICATIONS BUSINESS SUPPORT, TREASURY/INVESTMENTS, ACS MEMBER INSURANCE, AND WASHINGTON BUSINESS SERVICES)

- **Green Chemistry Awards**  
Partnered with ACS Green Chemistry Institute (GCI) on the Green Chemistry Award Automation platform, RhythmQ-RQ Awards, which provides a single online platform to manage the award application, nomination, and review process.

## OFFICE OF THE SECRETARY AND GENERAL COUNSEL (OSGC) [INCLUDING GOVERNMENT AFFAIRS, OUTREACH & ALLIANCES; LEGAL; STRATEGIC PLANNING; AND SECRETARY SUPPORT FOR GOVERNANCE]

- **ACS Strategic Plan Adopted**  
The [ACS Strategic Plan](#) was amended and approved by the ACS Board of Directors at its December 2022 meeting and will launch on the web in January 2023. It provides the basis for all 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.

- **Engaging ACS Members/Climate Change Advocacy Workshop Launches**

Government Affairs staff recently launched the ACS Climate Change Advocacy Workshop. The course allows any ACS member (or individual with an ACS ID) interested in being an advocate on climate change issues, to enroll for this on-demand, online, and free course. It includes six modules covering the science and societal impacts of climate change, government bodies addressing the issue, and communication skills needed for the purposes of advocating for climate change action at the federal level. The workshop took more than a year to develop and involved collaborations between Marketing, Communications, ACS Institute, and others to advertise the workshop after launch. Since its launch, 526 individuals have enrolled.

- **Advancing the ACS Policy and Legislative Agenda**

On August 9, 2022, President Biden signed the CHIPS and Science Act, H.R. 4346. The bill was a top priority for ACS's Government Affairs Unit within OSGC. Included in broad ACS member engagement was a specific targeted effort by ACS members in Louisiana and Indiana who directly engaged with their lawmakers, asking them to support final passage of the bill. The Act was the product of multiple years of work by the U.S. House of Representatives and the U.S. Senate and incorporated priority provisions from many ACS priorities, including DOE Science for the Future, National Science Foundation for the Future, National Institute of Standards and Technology for the Future, STEM Opportunities Act, Rural Stem Education Research, Minority Serving Institution STEM Achievement, and Combating Sexual Harassment in Science.

- **Communications to our Members on Policy Topics**

ACS OSGC Government Affairs Unit leveraged connections with the Government Accountability Office (GAO) to conduct an ACS webinar on the latest chemical safety and climate change report, "Chemical Accident Prevention: Environmental Protection Agency Should Ensure Regulated Facilities Consider Risks from Climate Change." More than 300 attendees joined the July 7 webinar which featured speakers from GAO and the ACS Committee on Environmental Improvement and received a 98% satisfaction rating.

In addition, on December 8, ACS hosted an ACS Webinars with experts from the FBI on industrial espionage and how to best protect IP trade secrets. The webinar was a collaboration with the ACS Communications Division and the Office of Industry Relations.

- **Cross-divisional Collaborations**

On October 9, OSGC staff helped celebrate National Nanotechnology Day. To showcase ACS resources, staff updated the ACS Nanotechnology webpage ([www.acs.org/nano](http://www.acs.org/nano)), alerted staff in ACS Publications about the day and coordinated with ACS Communications on social media. National Nanotechnology Day is promoted by the White House Office of Science and Technology Policy and the National Nanotechnology Coordinating Office.

**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.**

## ACS PUBLICATIONS DIVISION

- **ACS Journals prioritize diversity, equity, inclusion, and respect (DEIR)**  
The Division continued to advance the commitments made in 2020 to [Confront Racism in Chemistry Journals](#) and contribute to a more inclusive research system:
  - Published the 2nd [ACS Publications Diversity Data Report](#), presenting 2022 demographics of ACS Publications contributors, updates on active DEIR initiatives, and the [first Ombuds report](#) from ACS Ombudsperson Dr. Kathleen Canul.
  - Over 100 requests were received under the [Author Name Change Policy](#), reaching over 400 total requests since launch in 2020.
  - Launched a new online DEIR course and toolkit for ACS Journal Editors, focusing on identifying and avoiding bias in the peer review process.
  - The Division embarked on a pilot of CRediT (Contributor Roles Taxonomy) in 18 ACS journals with over 44% of submitting authors supporting this activity.
  - Expanded outreach and feedback mechanisms to better understand the chemistry community’s needs around DEIR.

## COMMUNICATIONS DIVISION

- **Promoting DEIR**  
The ACS Inclusivity Style Guide (details below) was honored with the inaugural Software & Information Industry Association (SIIA) IMPACT Award in the “Team award: 150+ employees” category for outstanding leadership in the publishing industry for champions of emerging talent and equity.

## OFFICE OF DIVERSITY, EQUITY, INCLUSION, AND RESPECT (DEIR)

- **New Member Resources Released**  
The updated ACS Office of Diversity, Equity, Inclusion, and Respect (DEIR) [webpage](#) supports members and the public in understanding and incorporating DEIR into their work. New resources in 2022 include the [ACS Inclusivity Style Guide](#), which helps people use language and images that respect diversity in all its forms. It was developed in collaboration with the Communications Division. The Office also published the [DEIR Educational Resource Guide](#), which shares information on topics such as allyship, cultural competence, and unconscious bias. Guides on [inclusive in-person events](#) and [inclusion moments](#) were also released in 2022.
- **New Trainings for Governance and Volunteers on Inclusive Leadership**  
The Office of DEIR took over DEIR trainings for ACS governance, volunteer leaders, and staff in 2022. The team transformed Leading Inclusively: Beyond Lip Service, which serves as a foundation to create shared understandings of DEIR at ACS, into an on-demand, self-paced course hosted at the ACS Institute so that volunteer leaders can take the course on their

own time. The Office also held a live, interactive course titled Transforming Microaggressions into Micro-Inclusions for ACS volunteers and leaders and will continue offering this course into 2023. When attendees were asked if they would recommend the microaggressions course to a colleague, 91% of respondents “agree” or “strongly agree.”

- **New Trainings for Staff on Allyship and Inclusion**

The Office of DEIR engaged 200 staff members in the course Introduction to Racial Equity: Inclusion in Action, which was hosted by the IBIS Consulting Group. The workshop explores how racial inequities and racism show up today, both in the workplace and in our communities, and what can be done to advance racial equity, allyship, and belonging. When participants were asked if they “believe the training will have a positive impact on workplace culture at the American Chemical Society,” 84% of respondents “agree” or “strongly agree.”

- **ACS Webinars on DEIR Engage ACS Members**

The Office of DEIR hosted three member webinars in 2022: [The Inclusivity Triangle: Approaching DEIR in Chemistry through Academia, Industry, and Community](#), honoring Black History Month; [From There to Here—My Asian American Journey](#), recognizing Asian and Pacific Islander American Heritage Month; and a webinar exploring nuances in global underrepresentation in chemistry titled [More than One Route to Inclusion: How Different Demographic Groups Confront Global Underrepresentation](#).

- **Partner Organizations Advance DEIR in STEM**

The Office of DEIR serves as liaison to three of ACS’s partner organizations: The American Indian Science and Engineering Society (AISES), the National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NOBCChE), and Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS). ACS recently renewed chemistry enterprise partnerships with NOBCChE and SACNAS and established a new chemistry enterprise partnership with AISES.

- **Open Board Meeting Discussion on Inclusion**

On August 22, 2022, the Chair of the ACS Board of Directors Paul Jagodzinski and attorney Hannibal Johnson, author of *Black Wall Street 100: An American City Grapples with its Historical Racial Trauma*, hosted a conversation around inclusive leadership at the Open Board meeting at the Fall 2022 Meeting. The discussion centered around barriers to inclusivity that could be addressed by leaders and how equity and inclusion can be built into governance.

- **DEIR Experts Panel Launches**

In 2022, the Office of DEIR established a new external advisory board for ACS’s work toward Strategic Goal 5. The DEIR Experts Panel advises the Office of DEIR on issues and challenges of diversity, equity, and inclusion in the chemistry enterprise. In addition, the panel may review materials related to ACS metrics and progress and provide external benchmarking, as needed. The panel has representatives from the ACS Board of Directors, the ACS Committee on Minority Affairs, NOBCChE, AISES, SACNAS, OutToInnovate, Chinese American Chemical Society, and a DEI expert from the chemicals industry.



- **DEIR Roundtable Established to Support DEIR throughout Membership**

In 2022, the Office of DEIR created the ACS DEIR Roundtable, a gathering of ACS national committees and units that represent various interests of ACS members. The aim of this group is to identify shared challenges and collaborate on overcoming them throughout ACS membership. The representatives of the 17 committees and units, known as DEIR Champions, shared their committee/unit barriers and challenges around diversity and inclusion with the Office of DEIR. Together we mapped out their DEIR strategies and tactics and forged connections with one another. The DEIR Roundtable met twice in 2022.

**OFFICE OF THE TREASURER AND CFO DIVISION (TCFO) [INCLUDES FINANCE, PUBLICATIONS BUSINESS SUPPORT, TREASURY/INVESTMENTS, ACS MEMBER INSURANCE, AND WASHINGTON BUSINESS SERVICES)**

- **Diversity, Equity, Inclusion & Respect**

As a key part of the ACS focus on DEIR, work continued on measuring vendor diversity. A survey was conducted of top suppliers in 2021 and 2022 YTD, analyzed results, and reported findings. The 2022 survey had a high response rate of 64%. Of these respondents, 94% have programs or initiatives in place to increase the diversity of their employee population. In addition, we published revised contract templates incorporating recommendations from the *ACS Inclusivity Style Guide*.

- **Investments and Insurance**

- Improved onsite staff engagement through return to office initiatives including various food centric events and the ACS Scavenger Hunt.
- Supported ACS International Business operations by opening and maintaining bank accounts sufficiently capitalized in locations such as India.
- Improved Free Cash Flow reporting providing greater monthly detail to better assist with planning and cash management.

- **ACS Inclusivity Style Guide – IT Inclusive Language**

Partnered with the Office of DEIR to incorporate IT-inclusive language in the [ACS Inclusivity Style Guide](#). The IT inclusive language document is a guide used to provide choices in IT-speak, documentation, codebase, and discussions. Its aim is to create an inclusive environment where everyone feels welcome.

**ALL STRATEGIC PLAN GOALS—Support for ACS Governance and Operations**

**OFFICE OF PHILANTHROPY**

The Society was the grateful recipient of several large gifts of endowment which will provide enduring support for key ACS programs. Three awards in the ACS National Awards Program received endowed support in 2022: the Priestley Medal; the George C. Pimentel Award in Chemical Education; and the Henry H. Storch Award in Energy Chemistry. Additionally, donors gave generously to the endowments for the ACS Scholars Program and ACS Project SEED. Several of these endowment gifts were made through bequests and the long-term philanthropic plans of donors.

## COMMUNICATIONS DIVISION

- **Align ACS Web Presence** – Efforts continued to strengthen ACS’s web presence by aligning the main ACS website, acs.org, and C&EN’s website, cen.acs.org, with a focus on taxonomy, analytics and search, and the use of the ACS Network. In addition, all efforts aligned with the implementation of the new membership model, with a view to reflect evolving upgrade strategies.
- **Launch of E-Commerce Platform** – Web Strategy & Operations in collaboration with IT Development team launched the new ACS Institute/e-commerce platform. The new e-commerce platform provides new capability for a seamless, combined cart purchase experience for members/users for Society Programs and Publications learning assets.
- **Support of Internal Communications**– To keep staff informed of key information, 10 issues of *The Phoenix* were produced and distributed electronically, 48 broadcast messages were issued, and 52 Weekly Digest newsletters were distributed.

## OFFICE OF THE TREASURER AND CFO DIVISION (TCFO) [INCLUDES FINANCE, PUBLICATIONS BUSINESS SUPPORT, TREASURY/INVESTMENTS, ACS MEMBER INSURANCE, AND WASHINGTON BUSINESS SERVICES)

- **ACSi Reports Developed**  
Developed ACSi reports for department managers, including budget and actuals with detail by country and department. Reports have been shared with pilot users and will launch to a wider audience in December. As ACS Publications continues to grow globally, this will provide visibility to expenses that can identify trends/issues at the country level.
- **Hyperion Forecast Created**
  - Created Hyperion Forecast for ACS Publications.
  - Tested and implemented salary planning.
  - Linked forecast to monthly reports.
  - Next step for 2023 is to integrate feedback from the division into the forecast and establish a monthly process.
- **ACS Publications Accounts Receivable Reporting Enhancements**
  - Monthly reports are now system generated vs. manually created, saving three business days of work.
  - Automated weekly open accounts receivable by delivery country was created to provide clear insight of potential risks related to current events.
- **Successful Return To Office**  
Prior to the start of official return to office in April, ACS Facilities prepared for re-entry of ACS staff to on-site work. Work continued to build on previously implemented safety protocols to enhance safety for returning staff. Items included enhanced cleaning, regular sanitizing of high touch areas, installation of ionization units for the HVAC systems in Hach and Othmer and indoor air quality testing.

- **Conferencing Upgrades**  
Consolidated all conference rooms in the Hach and Othmer buildings for conferencing to manage. In addition, installed easy to use WebEx boards that bring high quality video and audio for hybrid meetings.
- **Digital Floor Directories**  
New digital floor touch screen monitors display Division/Department information and the location of staff members for ease of navigation on floors.
- **Enhance Sustainability Efforts**  
Office Services added off-site shredding to go along with inventory storage contracts with Iron Mountain Storage. Shredding services, which were once regulated to specific departments is now available for all to utilize. In 2022, the Society undertook several employee and department moves and relocations which allowed for the purging of a multitude of hardcopy documents. The available shredding services had a major impact with purging and the destruction of the overflow hardcopy documents.
- **Emergency Response Plan Training**  
Office Services coordinated efforts with Facilities to update the ACS Emergency Response Plan for conversion to a mandatory online eLearning module. With the initiation of the ACS Return to Office taking affect, an increasing number of staff were occupying the office on a regular basis. With that as the framework, the need to refresh and remind staff of safety and security policies were necessary.
- **Administrative and Customer Service Process Improvements**  
The following improvements were made.
  - Redesigned, revised, and published all TCFO Nucleus pages in first quarter completing our project to follow best practices in customer experience and user-centered design to make important content on the Nucleus easier to find and digest, while also supporting efficient content creation and maintenance.
  - Designed and launched a customer service process to provide cohesive support to users of the Basware system from multiple groups across the division.
  - Researched ticketing systems to facilitate cohesive email-to-ticket customer support for the TCFO Division. Evaluated existing in-house software and external providers and made the business decision to procure Zendesk. Completed the procurement process and developed a phased implementation plan with the first phase, support for Procure to Pay, being launched by the end of the year.
  - Developed and implemented a regular process of Internal Business Reviews to facilitate improvements with high spend vendors. Of note, the review for Adobe resulted in favorable contractual terms on an enterprise account with \$550,000 (38%) in cost savings.
  - Participated in multiple RFPs in 2022 and consulted with departments to develop the appropriate negotiation strategy based on RFP responses. In two separate RFPs, the suggested negotiation strategy enabled ACS to improve the initial terms from the preferred vendor so that we achieved both best technical competency and best value. Automated the process of requesting supplier forms for new vendors as part of the contracts process in alignment with the new requirements using the Secure Portal for uploads.
  - New workflow to allow publishing changes to the contracts repository after an agreement has been executed.

- Proposed revised approval authority matrix as part of the Procure to Pay Program which was accepted and implemented. The revised matrix relies on supervisory chain and eliminated the manual process of mapping approvers to specific departments and amounts.
- **Nucleus Platform Move**  
Successfully made the business case to move Nucleus to a cloud-based solution for access to a more state-of-the-art intranet features, reduced reliance on limited internal technical support, and closer alignment with CAS intranet and communications.
- **Basware P2P Implementation**  
Successfully implemented software and society-wide processes for purchasing and accounts payable transactions. Basware automated procure to pay software provides end-to-end visibility between POs, goods receipts, invoices, and other documents to ensure goods are as per specification before issuing payment. By providing real-time data to both buyers and suppliers, it offers better spend visibility for the Society.
- **Account Reconciliation Tool**  
Rationalization of data in the account reconciliation tool - eliminated redundancies, established automatic notifications to ensure completeness of population and assignment of accounts, and started to report on progress using metrics from the tool.
- **ACS Cloud Strategy**  
Execute a cloud strategy to guide ACS through the transition to the cloud by balancing technology benefits with organization needs. The “cloud” refers to servers that are accessible over the internet and the software and databases that run on those servers. The following are core components to the cloud strategy:
  - Collaboration with business and technology partners to create cloud strategy to support future digital business needs.
  - Formed Cloud Advisory Council to advise on the architecture model, implementation and operations.
  - Identified and shared cost-saving information.
  - Created migration roadmap.
- **Secure Remote Access – Multifactor Authentication**  
Implemented Multifactor Authentication (MFA) on the ACS internal systems. MFA is an authentication method that requires the user to provide additional verification factors, other than username and password, to gain access to an ACS resource, application, online account, or a VPN. MFA is a core component of a strong identity and access management (IAM) policy. Additionally, it decreases the likelihood of a successful cyber-attack.
- **Covid 19 Response and Return to Office (RTO) Initiative**  
Washington IT partnered with other areas of the organization to ensure physical technology was in place for employees to continue productivity when they returned to the office. This included network printers, workstation configurations, Internet access, etc.