



## 2017 Highlights of ACS Achievements

An annual report from Thomas Connelly  
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American Chemical Society

We entered 2017 with great expectations for ACS. These expectations were largely realized, and the year set a number of records for ACS. We advanced our Vision through our work providing information, focusing on members, advancing chemistry education, and communicating chemistry's value.

Our Core Values were enriched by the actions of the Board to add Safety and Ethics to our Core Values in late 2016. During the past year, our staff has worked with our volunteers to emphasize safety and ethics in everything that we do. We are living these core values in our programming and our actions. For example, ACS established a centralized web presence for Chemical Laboratory Safety and created our first full-time staff position dedicated to chemical safety. ACS produced the *1<sup>st</sup> Edition of The Legal Resources Manual for Divisions and Local Sections* to help them operate more efficiently and ethically. C&EN published an article "Confronting sexual harassment in chemistry". 2017 was also an important year for the ACS Strategic Plan. Staff worked closely with the Board to update both the Plan and the planning process. The Change Driver methodology was introduced to be used along with our Environmental Scans to assure that we are looking broadly and far into the future. ACS Staff did its own work on planning. Using the ACS Strategic Plan as our compass, we charted our operating plans in our 2030 Future Society History. And we continued to work on our own development as a team.

In April, the March for Science gave us an additional opportunity to communicate chemistry's value. The March coincided with our usual Chemists Celebrate Earth Day (CCED) events. Many of our local sections were able to combine the two events. In Washington, in addition to the Chemical Society of Washington CCED event, our headquarters staff organized a CCED on the Mall during the March – the only venue targeting the thousands of children who were present.

We continued to make progress with our advocacy work in Washington. The Senate Chemistry Caucus was launched and grew to 14 members. Meanwhile, the House Chemistry Caucus grew to 63 members. We successfully supported three bills covering STEM-related subjects. Late in the year, ACS, among many others, supported the renewal of continued tax exemptions for grad student tuition waivers.

The new Scientific Advancement unit started well, with real progress on matters related to the ACS Green Chemistry Institute (GCI). We had a successful transition of leadership, conducted a strategy refresh, and before year end, the ACS Board voted to streamline and transition the GCI Governing Board into an advisory board. The 21<sup>st</sup> Annual Green

Chemistry & Engineering Conference was very well attended in Reston, Virginia. And, traffic on the GCI website grew 28%.

Our Education unit also had some significant milestones. AACT membership grew to nearly 5000 in 2017. For the first time ever, the U.S. team to the International Chemistry Olympiad brought home four gold medals.

We invested significantly in staff development through our HR Leadership Center. We completed our Leadership in Action training program for staff in supervisory roles. Training was done in classes that mixed leaders from multiple units, combining DC with Columbus staff. Our focus will now shift to training courses to develop our non-supervisory staff. We continued our development for our Executive Leadership, working on strategic thinking and collaboration. Over the summer, we conducted an expanded session that included about 15 additional senior leaders, to broaden the training impact and to build for the future. Our relaunched summer intern program may be an additional source of future leaders.

Both CAS and ACS Publications had very strong performance in record years. CAS continues to make progress with its new product launches. A new version of SciFinder<sup>®</sup>, SciFinder<sup>n</sup>™ received an enthusiastic response from the customers who have adopted it. CAS also commercialized the first upgrade to STN<sup>®</sup>, called STNext™. It has proven to be very well received by patent experts around the world. On the strengths of these new product introductions, plus growth of other recently-introduced products, such as PatentPak<sup>®</sup> and MethodsNow<sup>®</sup>, CAS grew 4.8% -- its fastest rate in more than a decade. 2018 should see continued growth from SciFinder<sup>n</sup> and new service offerings.

ACS Publications launched *ACS Earth and Space Chemistry* and *C&EN Global Enterprise* early in the year, and *ACS Energy Materials* and *ACS Nano Materials* late in the year. And *ACS Omega*, after a comparatively slow start in 2016, gained momentum in 2017 and finished the year strongly. Total citations and downloads of ACS Publications both set new records, as did author submissions and articles published. Our efforts to protect our copyrighted materials met with some notable successes.

ChemRxiv™, a chemical sciences preprint server that was announced as a possibility in August 2016, became a reality within 12 months. More than 100,000 accesses and downloads occurred during the last four months of 2017.

Financially, I am pleased to report that 2017 was a record year, positioning the Society on a very strong base. We ended 2017 with operating revenues of \$553.2 million, growing by 5.0% in the course of the year. Net from Operations exceeded last year's record level by 20.1%, finishing 2017 at \$28.6 million. Our operating results, combined with solid investment gains allowed ACS to end the year with unrestricted net assets of \$284.4 million, up 37.7% from \$206.5 million at December 31, 2016. Significantly, the Society is expected to achieve all five of its financial metrics for the first time in a decade. These results were enabled by a strong focus on growth, prudent cost management, and favorable capital market performance.

Significant benefits accrued from our efforts on Operational Excellence. A principle thrust of this effort was the updated financial IT systems that were introduced in April 2017, in our Enterprise Financial Systems Project. Work on our new HR information system also began in 2017, and will be completed this year. In addition to the software systems, considerable work was undertaken to standardize and simplify our underlying Finance and HR policies and processes.

A number of upgrades were completed at the ACS-Washington site. The restrooms in the Othmer Building were completely renovated. Solar panels were installed on the roofs of both buildings. Work on the new Fitness Center was completed. Significant improvements to the building access and security systems were completed at both locations. Cyber security was also an important focus. We hired our first Chief Information Security Officer and took important next steps to enhance our security.

For our Membership and Society Services (M&SS) unit, 2017 was a year of significant changes. Early in the year, Kate Fryer arrived succeeding Denise Creech. She immediately went to work understanding our membership society programs, and our internal membership opportunities. Her team identified many opportunities for improvement. And in September, significant personnel changes were made in our Membership Marketing and our Meetings and Expositions teams. In another significant change, the Web Strategy and Operations group was shifted from IT to M&SS. This move recognized that the key decisions for ACS.org are largely determined by M&SS.

Despite these renewal efforts, ACS ended the year with fewer members for the 6<sup>th</sup> consecutive year. Of greatest concern is the ‘regular dues paying’ members, which declined for the 11<sup>th</sup> consecutive year, and 15 of the last 17 years. 2018 must be the breakout year for ACS Membership Growth. I have said that ‘Membership is Everyone’s Responsibility’. With this as our rallying cry, we will reverse the decade-long decline this year.

**GOAL 1—Provide Information – Deliver the most authoritative, comprehensive, and indispensable chemistry-related information and knowledge-based solutions to resolve global challenges and to address issues facing the world’s scientific community.**

- **SciFinder<sup>n</sup>**  
After an over two-year development effort, with extensive customer input and validation, CAS’s SciFinder<sup>n™</sup> development was completed for sale in the market. It featured a completely new set of capabilities and content, including the world’s first chemical-sciences relevance engine, the PatentPak full-text solution and synthesis protocols for millions of added reactions.
- **STNext**  
CAS launched STNext<sup>™</sup> as the first major usability enhancement to the classic STN environment in more than a decade. The new STNext functionality offers significant advantages, including a modern gateway to the comprehensive content and powerful features for classic STN capabilities that enable patent search experts. STNext provides the features consistent with the widely used client software STN Express, but requires no

customer IT support and offers enhanced security, new functionality, and an intuitive interface to improve workflow efficiency.

- **ChemPlanner**

Leadership by CAS in chemical sciences information solutions, especially via SciFinder<sup>n</sup>, is a key strategy. Retrosynthesis, a software prediction of best synthetic reaction paths for previously synthesized and unknown products, provides opportunities for CAS to offer the most advanced solution to its customers. ChemPlanner<sup>®</sup> from Wiley Publishing is the leading commercial retrosynthesis capability. CAS and Wiley agreed to an exclusive license relation for ChemPlanner, and CAS has assumed exclusive responsibility for the development and distribution of ChemPlanner. ChemPlanner is currently being enhanced with a wealth of additional reaction content and associated rules and references. This powerful new version of ChemPlanner is planned to be integrated exclusively in 2018 in SciFinder<sup>n</sup>, our new research solution that exponentially elevates scientific discovery.

- **Chemistry Class Advantage**

CAS's Chemistry Class Advantage (CCA) became available at no additional cost to institutions with SciFinder subscriptions, helping to bridge the gap between the classroom whiteboard and innovations that change the world.

- **Journals Publishing Group**

ACS Publications supports the American Chemical Society's goal to be the most authoritative, comprehensive, and indispensable provider of chemistry-related information. The division publishes more than 50 peer-reviewed journals with cutting-edge articles across a broad spectrum of scientific disciplines. The breadth and scope of ACS Publications journals is unparalleled, stretching across chemistry, physics, and biology. Every year approximately 150,000 authors and their research teams from the community of scientists worldwide submit their work for consideration in these journals. Noted for their high quality, rapid time to publication, seminal, and high impact, and prevalent citation in future research, ACS journals are available at more than 5,000 academic, business, and corporate institutions worldwide.

Growth in Article Output

- 9.8% increase in Articles Published in issues

Growth in Usage

- 105M full text COUNTER downloads
- Usage surpassed 100M full text article downloads on December 14; first time this annual usage milestone was achieved
- 3.6M unique visitors
- 2.7M combined abstract + full text views of C&EN Archives and C&EN Global Enterprise
- 2.2M full text downloads via mobile devices
- 1.3M phones and tablets now paired with ACS Publications website.

### Growth in Citations / Impact Factors

- >2.94M citations reported for 2016
- 2/3 of journals had IFs >4, and 86% of portfolio in top quartile of topical categories
- *JACS* achieved IF of 13.858, its highest ever, with more than 500K citations
- *Chemical Reviews* posted record IF of nearly 48

### Expanded Global Presence

#### Editorial Appointments

- 60% of newly contracted editors in 2017 from outside of North America

### Innovation: Products & Services

#### New Journals Introduced with Rapid Success

- *ACS Earth and Space Chemistry*: first issue published in March; on schedule
- *ACS Applied Nano Materials* and *ACS Applied Energy Materials* both published online Q4, with strong submissions and accepted article output to support launch in January 2018.

#### *ACS Omega* Gaining Traction

- More than 1,000 manuscripts accepted for publication

#### *ChemRxiv* Introduced

- *ChemRxiv* was pursued as a collaborative innovation with Chemical Abstracts Service and external partners that positions ACS as industry leader. In 2017, more than 130 preprints have been published, representing all fields of chemistry, with nearly 100,000 views/downloads.

#### ACS ReviewerLab Launched

- Introduced in August, with more than 300 researchers completing the course, and more than 1000 who have begun the online instruction.

#### New *ACS Reagents Online* Published

- Published in March 2017, *ACS Reagent Chemicals Online* introduced the long-standing Reagent Chemicals resource as a digitally-native, dynamic online reference database. ACS Catalyst Award candidate.
- Online version provides a user-friendly experience that immediately directs readers to the current content, while linking to historic editions for reference.

#### Digital Enhancements to ACS Web Editions Journals

- ORCID ID (author identifier) integration across all aspects of publishing workflow.
- New features deployed for ACS Journals: Best Format linking (*DOI referrals*), Metrics section (*Altmetrics and Article Views*), responsive design and TOC graphics for e-alerts, prominent social sharing (*including WeChat*), type-ahead search suggestions for author names and keywords, and Related Content section.

- **C&EN Media Group**

*Chemical & Engineering News (C&EN)* is a weekly magazine published by the American Chemical Society. C&EN editors and reporters based in Europe, the U.S., and Asia cover science and technology, business and industry, government and policy, education, and employment aspects of the chemistry field. C&EN Online offers Latest News, supplementary material to C&EN print articles, back issues of the magazine since 1998, and features such as webinars, videos, blogs, and podcasts.

Innovation: Products & Services

- New institutional subscription product, developed jointly by Publications Marketing/Digital Strategy, C&EN, and IT teams, went live on January 2, 2017.
- Immediately expanded the magazine’s global readership to academic, corporate, and government researchers.
- *C&EN Archives*, integrated with *C&EN-Global Enterprise* in January 2017, provides readers with a unified UX; has resulted in added discovery via internal navigation and external referral traffic.
- Traffic to the C&EN website increased 25%, totaling more than 3 million unique users.

C&EN BrandLab

- C&EN introduced its custom publishing studio, the C&EN BrandLab, in May.
- Early adopters leveraging the services of C&EN BrandLab include the Chemours Company’s Future of Chemistry 9-part series and instrumentation maker IKA, with a custom live event and native program.

Operational Efficiencies

C&EN Digital Edition

- In May C&EN’s Digital Edition was revamped to introduce new functionality, and improved security.

Global Presence and Audience Engagement

- C&EN launched an Instagram channel at the end of October; it accrued more than 1,000 followers, and continues to grow.
- Through ACS’s WeChat channel in China, C&EN continues to promote relevant content with the goal of building a following of readers in that region. Features such as the Speaking of Chemistry videos (with Chinese subtitles), Chemistry in Pictures, Molecule of the Week as well as Nobel coverage have proven very successful. The channel now has circa 10,000 followers.
- In May 2017, C&EN established a content sharing collaboration with China’s Beauty of Science. Under this new partnership C&EN shares some of that organization’s visuals and they reciprocate by placing Chemistry in Pictures on their channels, including their very popular WeChat and Weibo accounts.
- During the ACS national meeting C&EN broadcasted 7 events via *Facebook Live*. By the end of the meeting, the online videos had accrued more than 15,000 views.

- During 2017 C&EN launched new sections and columns to promote audience engagement, including *Bench & Cubicle* (a careers-focused opinion piece written by ChemJobber), *Sketch chemistry* (a monthly chemistry cartoon series in collaboration with chemist and cartoonist Brendan Burkett) and *Molecule of the Moment* (a web-first feature that highlights a chemical in the news).

- **Marketing Outreach Programs & Advertising Sales**

ACS Publications Marketing Outreach Programs & Advertising Sales helps advance the strategic priorities of ACS Journals and the C&EN Media group through extensive global campaigns aimed to engage the numerous readers, authors, and reviewers of our titles.

Organized ACS Publications Innovation Symposia for Global Audiences

In 2017, two ACS Publications Innovation Symposia were successfully organized and hosted in China, continuing the mission to build strategic relationships and promote the ACS Publications brand in-country.

The ACS Publications Symposium: Innovation in Energy Conversion took place in Dalian, China on September 24-26, 2017, in partnership with the Dalian Institute of Chemical Physics, Chinese Academy of Sciences (DICP) and the Collaborative Innovation Center of Chemistry for Energy Materials (iChEM). The event was also held in conjunction with The Third International Symposium on Energy Chemistry & Materials (ISECM), organized every two years by iChEM. Eight ACS journals were represented at the event, with 20 world-renowned experts from five countries presenting their research findings, and over 50 attendees giving poster presentations over the course of three days. Nearly 500 students and researchers from over 20 cities in China and around the world were in attendance. Over 90 attendees became ACS members through symposium registration.

The ACS Publications Symposium: Innovation in Molecular Synthesis took place in Shanghai, China on October 22-24, 2017 in partnership with the Shanghai Institute of Organic Chemistry (SIOC). Over 200



students and researchers from 11 countries were in attendance, and were given the opportunity to present their research during poster sessions and network with speakers and ACS editors throughout the event. 19 speakers from six countries presented their findings across five plenary sessions, and

over 40 attendees gave poster presentations during the three days. Over 50 attendees became ACS members through symposium registration.

ACS Publications continued to increase its reach and engagement on social media throughout 2017, building on the team's success in 2016. There are now 46 ACS Publications Twitter handles with over 187,000 total followers. Engagement has increased as well: these handles have seen an 11% increase in the number of retweets and a 37% increase in the number of mentions. Another major engagement milestone was reached in August, when the ACS Publications Twitter handle set a record for most-retweeted post with the announcement of *ChemRxiv*, which was retweeted over 200 times.

Reader engagement efforts for C&EN had another strong year due in large part to an improved analytics dashboard, implementation of real-time analytics tools, and collaboration between digital strategy, marketing, and editorial. Usage trends are up significantly in users (29%), sessions (22%), and page views (17%). The increases are in large part due to social referral traffic to [cen.acs.org](http://cen.acs.org) that generated directly from the activity posted on our accounts. Overall Facebook engagement is up 39%, and Twitter engagements 27%.

#### Continued Recognition of ACS Authors & Reviewers

At the ACS Spring National Meeting, we revealed 2016's Most Read Author, Dr. Jacqueline Fries. An interactive mosaic aided in the reveal and users to posted photos on Instagram or Twitter using the hashtag #ACSMosaic. Over 850 photos were uploaded, which generated an impressive level of engagement: over 700,000 impressions, 7,000 likes and over 300 comments. We honored her achievement with a short ceremony in the ACS Theater, where Dr. Amos Smith, Editor-in-Chief of *Organic Letters*, introduced Dr. Fries, who talked briefly and spiritedly about her research. Her PI even Skyped in from Antarctica to offer a special congratulatory message.

In celebration of Peer Review Week 2017, we awarded personalized reviewing certificates to over 100,000 ACS reviewers, thanking them for their continued contributions to ACS Publications. Lastly, the marketing team produced a series of three videos featuring ACS authors from Germany, Taiwan, and Singapore. The series was promoted via an ACS Axial article, on Facebook, YouTube, and WeChat. The video series has been viewed over 400,000 times.

#### Introduced C&EN BrandLab

The advertising sales and marketing team launched the C&EN BrandLab. A custom content studio, the BrandLab aims to develop content driven campaigns directed at the 27 million researchers that leverage ACS Publications & C&EN.

The marketing rollout for C&EN BrandLab began in April, and included: a custom microsite, email and content marketing, a press release, video and targeted digital advertising campaigns. These efforts have resulted in 38% of all traffic to the [cenbrandlab.org](http://cenbrandlab.org) microsite since inception. The team developed a quarterly newsletter highlighting native advertising best practices and case studies of work from the BrandLab.

- National & Regional Meetings (Supports Goals 1 & 2)**  
 More than 31,000 people combined attended the ACS national meetings in San Francisco, CA and Washington, DC in 2017. The San Francisco national meeting had record breaking attendance with 18,898 attendees, the largest in ACS history. The budget target for these meetings was achieved. In all, more than 24,000 scientific papers were delivered. The Kavli lectures once again met high standards for both content quality and participation. The national meeting app was used by a growing majority of attendees. ACS also enabled the organization of eight ACS regional meetings in 2017, which attracted 5,881 attendees combined, with 3,895 scientific papers, and 229 exhibiting companies.
- Delivering Learning Opportunities to Members' Desks (Supports Goals 1 & 2)**  
 The live broadcasts of 44 [weekly webinars](#) for members and prospective members drew more than 20,000 participant sites (many of which had groups of individuals participating). The ACS Webinars Archive of edited recorded webinars attracted more than 10,000 views — a benefit reserved for ACS members. In addition to the weekly ACS Webinars, 11 ACS Division Webinars were produced as well as 7 [Spanish language webinars](#) in collaboration with the Sociedad Química de México and *C&EN*.
- Preparing for Inaugural ABCChem (Supports Goals 1 & 2)**  
 The inaugural Atlantic Basin Conference on Chemistry (ABCChem) will take place in Cancun, Mexico, January 23-26, 2018. The conference, a combined effort of eight national chemical societies (ACS, CSC, EuCheMS, FASC, FLAQ, SACI, SBQ, and SQM), will bring together researchers from Africa, Europe, and North and South America for four days of sharing, networking, and collaboration in an intimate setting. More than 250 attendees from more than 20 countries are expected with around 40% of the attendees being younger chemists. Over 150 scientific papers will be presented within four conference themes representing a mixture of both oral and poster sessions.
- Providing Tools to Support Outreach and Education (Supports Goals 1, 2, & 3)**  
 ACS produced two “Program-in-a-Box” events in 2017: the spring [“Chemistry of Sports: Smarter, Safer, Faster”](#) and the fall [“Chemistry Rocks: Exploring the Chemistry of Rocks and Minerals.”](#) ACS Program-in-a-Box provides groups of young chemists with the opportunity to enjoy an interactive broadcast featuring stimulating science by subject matter experts, live Q&A, and social media interaction using #ACSPIB with thousands of students around the nation and world. In 2017, these two events attracted over 400 ACS student chapters, local sections, and high school ChemClubs totaling more than 7,000 participants for the live events.
- Established Centralized Online Presence for Chemical and Laboratory Safety**  
 The site [www.acs.org/safety](http://www.acs.org/safety) launched in March 2017, providing a central home for Chemical Safety as part of the ACS web presence. Formerly the home for the Committee on Chemical Safety, “/safety” site is the go-to destination for safety resources, aggregating authoritative, curated content. Constantly-evolving, /safety will be integrating web content with social media and community engagement. Material is

developed with volunteer member subject matter experts to support practitioners and educators with high-quality resources. A top-3 result in Google searches, the material hosted under /safety was visited more than 140,000 times in 2017.

- **Expanded Use and Awareness of the Online Career Planning Tool ChemIDP™**  
ChemIDP™ became fully mobile compatible in 2017. Ten workshops, a poster and two symposia presentations were held at ACS national and regional meetings and at universities across the country, along with an ACS Career Consultants training webinar. New users increased 100%, with 2,623 users at the end of 2017, compared to 1,311 at the end of 2016.
- **Conversion of *inChemistry* Magazine to a Digital Publication**  
The ACS student member magazine, *inChemistry*, was redesigned for digital delivery to better engage undergraduate student members and permit rapid changes to meet evolving audience preferences. Tailored for students, it features frequently updated content in a modern, mobile-friendly presentation that accommodates phones, tablets, and other devices.
- **ACS International Student Chapters Reach 23 Countries**  
Since the launch of the pilot program in March 2014, 46 ACS International Student Chapters have been chartered in 23 countries. A total of 17 chapters received grants for events and national meeting travel in 2017.
- **Grants Support Global Outreach at Chemistry Festivals**  
Since becoming an official ACS program in 2010, 54 Chemistry Festivals have been held by over 4,700 volunteers and reached nearly 59,000 participants. This year, ACS Festival Grants were awarded for 12 events, supporting new programs in Australia, Brazil, South Korea, Tanzania, and Thailand and continuing outreach programs in Chile, China, Colombia, Hungary, Malaysia, Mexico, and Peru.
- **ACS Petroleum Research Fund**  
The ACS Petroleum Research Fund awarded 173 grants in 2017, providing a total of \$17.075M in research funding. Since the first grants were awarded in 1954, PRF has awarded a cumulative total of \$668M for “advanced scientific education and fundamental research in the petroleum field.”
- **Herman Frasch Foundation Grants Awarded**  
The ACS Office of Research Grants awarded \$2M in Herman Frasch Fund for Chemical Research Grants. Each Frasch grant provided \$250K for a five-year period to investigators at nonprofit incorporated institutions, in support of research in the field of agricultural chemistry which will be of practical benefit to the agricultural development of the United States.
- **Green Chemistry & Engineering Conference**  
The ACS Green Chemistry Institute hosted the 21<sup>st</sup> Annual Green Chemistry & Engineering Conference that was held June 13-15, 2017 in Reston, Virginia. The

conference was well attended and highly regarded by the 507 attendees. This year's conference featured a total of 264 oral presentations and 81 poster presentations across 44 technical sessions. Total sponsor and exhibitor revenue equaled \$117,350. ACS GCI partnered with the *ACS Sustainable Chemistry & Engineering* journal to solicit papers from conference presenters for a special virtual issue on green chemistry metrics, which will be published in Spring 2018.

- **Kavli Lectures**

At the Spring ACS National Meeting in San Francisco, CA, the Kavli Foundation Emerging Leader in Chemistry Lecture was delivered by Dr. Bradley D. Olsen, Massachusetts Institute of Technology. The Fred Kavli Innovations in Chemistry Lecture was presented by Professor Jennifer A. Doudna, UC Berkeley. At the Fall National Meeting in Washington, DC, the Kavli Foundation Emerging Leader in Chemistry Lecture was delivered by Dr. Prashant K. Jain, University of Illinois at Urbana-Champaign. The Fred Kavli Innovations in Chemistry Lecture was presented by Dr. Joanna Aizenberg, Harvard University.

- **Thematic Programming at ACS National Meetings**

The Multidisciplinary Program Planning Group (MPPG) sponsored three and cosponsored 29 symposia focused on the theme "Advanced Materials, Technologies, Systems & Processes" at the Spring National Meeting. Division program chairs self-identified 147 sessions related to the national meeting theme. At the Fall National Meeting, MPPG sponsored six and cosponsored 23 symposia that addressed the theme "Chemistry's Impact on the Global Economy". Division program chairs self-identified 173 sessions related to the national meeting theme.

**GOAL 2—Empower Members and Member Communities – Provide access to opportunities, resources, skills training, and networks to empower our members to thrive in the global economy. Encourage and support member communities worldwide – both traditional, established communities, as well as limited-lifetime, self-organizing communities – as they work to achieve ACS goals.**

- **A Robust ACS Membership**

The Society ended 2017 with 150,862 members.

- **Bringing Together Chapters in Asia**

The inaugural ACS Asia-Pacific International Chapters Conference was held in November at the International Convention Center in Jeju, South Korea. The general chemistry conference was organized by the 10 ACS International Chemical Sciences Chapters in the Asia-Pacific region, with each chapter having a presiding session role. At the conclusion of the conference, 16 participants from six International Chemical Sciences Chapters and three International Student Chapters participated in the first-ever International Chapters Summit, featuring sessions on leadership & succession planning, collaborative engagement, ACS resources, and others.

- Fostering Diversity in the Chemical Enterprise (Supports Goals 2 & 3)**  
 Through the course of the year, ACS organized several outreach events for students in underrepresented groups. During these events, including events at national conferences and at local middle and high schools, ACS fostered a passion for chemistry within 1,140 students, representing a nearly 50% increase over 2016. A two-hour diversity and inclusion workshop was developed and delivered to a number of chemistry departments throughout the year. Additionally, the ACS Board of Directors met with the Board of the National Organization for the Professional Advancement of Black Chemists & Chemical Engineers (NOBCChE) and identified a number of potential areas of collaboration that are currently being explored.
- Supporting Students and Student Chapters**  
 In 2017, 43 new ACS Student Chapters were added bringing the total number of active student chapters to 504. Among the active chapters, 180 participated in six different grant programs including a piloted Undergraduate Research Symposium Grant. The pilot phase for the symposium grant will continue in 2018.
- Helping Members Navigate Their Careers**  
 The ACS Career Navigator™ achieved more than 8,500 substantial interactions with ACS members and potential members worldwide to meet their professional needs, exceeding the 2016 goal. This represents over 27,000 hours (the equivalent of approximately three years) spent in the classroom and in consultation with ACS members and stakeholders among the following offerings: career services (6,700 participants), professional education (1,000 participants), and leadership development (800 participants). Also the ACS Career Fair was refreshed in 2017 and hit new attendance records.
- inChemistry* Magazine Moved to Digital (Supports Goals 2 & 3)**  
 The ACS's student member magazine, *inChemistry*, was redesigned for digital delivery to better engage undergraduate student members and permit rapid changes to meet evolving audience preferences. Tailored for students, it features frequently updated content in a modern, mobile-friendly presentation that accommodates phones, tablets, and other devices. This digital magazine is better aligned with other core ACS resources (e.g., *C&EN* and *College to Career*) and permits content sharing and collaboration.

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

- ACS Strengthened and Diversified Safety Presence in Digital Channel**  
[Digital evolutions](#) of *Guidelines for Chemical Laboratory Safety in Secondary Schools* and *Guidelines for Chemical Laboratory Safety in Academic Institutions* were launched this year, continuing the digital development and delivery of curated information solutions. Focused on best practices, the guidelines assist educators with integrating safety throughout chemistry curricula. Online enhancements enable searchability and findability of this curated content. Appearing on the first results page in Google searches, the “/guidelines” site was visited more than 42,000 times since its March launch.

- ACS Workshops Focus on Faculty Development**  
 In 2017, 73 recently-hired faculty members participated in the 6th Cottrell Scholars Collaborative New Faculty Workshop held at ACS. ACS also hosted a second workshop on General Chemistry Performance Expectations for 37 faculty members from 15 institutions selected by a competitive application process. Teams were guided through activities for creating and implementing performance expectations on their campuses.
- Workshops Prepare Applicants for Faculty Positions**  
 The 9<sup>th</sup> Postdoc to Faculty (P2F) workshop, held immediately prior to the 254th ACS National Meeting, attracted 107 applicants and helped 40 attendees prepare to apply for and succeed in faculty positions. Predominantly undergraduate institutions were the focus of the Postdoc to PUI Professor (P3) workshop hosted by Trinity University in San Antonio, TX from March 3-4. In 2017, the P3 workshop opened up participation to senior graduate students and attracted 70 applicants, 35 of whom were selected, and 33 of whom attended. The average rating for “This program helped me become better prepared to submit academic job applications.” was a 4.8 on a 5-point scale.
- Impact of ACS Scholars Program Grows**  
 The ACS Scholars Program continues to help African-American, Hispanic/Latino, and Native American students achieve their dreams of degrees and careers in a broad range of chemical sciences. Since 1995, nearly 3,000 students have participated. Of these, 1,651 have earned bachelor’s degrees and more than 280 have earned doctoral degrees in chemistry, chemical engineering, or a related discipline.
- ACS Project SEED Continues to Support Economically Disadvantaged Students**  
 Since 1968, Project SEED has placed nearly 10,600 students from economically disadvantaged backgrounds in academic, industrial, and governmental laboratories for research experiences. In 2017, 411 high school students were placed with over 400 volunteer scientists and coordinators from more than 130 institutions in 36 states. At the 254th ACS National Meeting, 35 students from seven local sections presented their research. Project SEED College Scholarships were awarded to 27 alumni entering their freshman year, and three-year renewable Ciba Specialty Chemicals scholarships were awarded to three Project SEED College Scholars beginning their sophomore year.
- U.S. Chemistry Olympiad Sets New Record with Four Gold Medals**  
 The U.S. team, sponsored by ACS, competed in the 49<sup>th</sup> International Chemistry Olympiad in Nakhom Pathon, Thailand with 293 other students from 75 nations. For the first time in the program’s history, the U.S. team won four gold medals, including the fifth highest ranking gold medal.
- AACT Membership and Resources Expand**  
 AACT membership reached 4,821 as of year-end 2017 compared to 4,052 in 2016. The number of teacher members with fewer than five years of teaching experience increased nearly 7%—from 27.3% to 34.1%. In February, AACT officially launched Science Coaches Teams, a virtual forum for coaches and teachers. The fourth Dow & AACT

teacher summit was held in the Delaware Valley area in June, and 25 teachers participated, 150 teaching resources were created, and attendees rated their summit experience and overall impression of AACT a 4.9 on a 5-point scale.

- **ACS ChemClubs Introduce Virtual Book Club**

The 2016-2017 academic year finished with ACS ChemClubs at 540 high schools. Of these, 29 clubs have been in place for over 10 years, and 140 clubs for over 5 years. During this time, 38 clubs participated in the inaugural ChemClub Virtual Book Club. The 2015-2016 school year finished with 525 ACS ChemClubs.

- ***Chemistry in Context (CiC)* 9<sup>th</sup> Edition Released**

ACS published the 9th edition of *Chemistry in Context* in January 2017. The new edition of this college textbook for non-science majors features new contexts as well as the text's traditional focus on sustainability. Video-openers and simulations have been added to the e-book version. A lab manual featuring new investigations also accompanies the text.

- **Twelve Millionth Visit to ACS's Middle School Chemistry Website**

Since launching in the fall of 2010, the Middle School Chemistry website has received a total of 12,716,921 visits. The entire book has been downloaded 49,975 times.

- **New Edition of *Safety in Academic Chemistry Laboratories (SACL)* Published**

ACS published the 8th edition of *Safety in Academic Chemistry Laboratories. Best Practices for the First- and Second- Year University Students*. This edition includes new sections on safety culture, changes in the OSHA Hazard Communication Standard to reflect the use of the Globally Harmonized System (GHS), and other additions and reorganizations. The content has evolved from safety based primarily on rules to learning about safety through the RAMP principles. The 8<sup>th</sup> edition has been translated into Arabic and used by students in Saudi Arabia and Jordan. Over 4,000 copies of SACL were sold in 2017.

**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.***

- **National Chemistry Week Celebrates Its 30<sup>th</sup> Anniversary**

In 2017, 149 of 185 ACS local sections (81%) named National Chemistry Week coordinators. A cohesive branding kit encouraged participation by all staff units in the 30<sup>th</sup> Anniversary Celebrations.

- **Chemists Celebrate Earth Day Brings Hands-on Activities to the March for Science**

In 2017, 113 of 185 ACS local sections (61%) designated Chemists Celebrate Earth Day coordinators. The ACS Kids Zone hosted the only hands-on activities for children on the National Mall during Earth Day 2017 as part of the March for Science, attracting 372 children and 532 adults.

- Advancing Chemistry & Policy at the Federal Level**  
 Office of the Secretary and General Counsel (OSGC) government affairs staff, working with its partner organizations in support of science, technology, engineering and math (STEM) education, were successful in a tough political climate with securing the passage of three STEM bills that were signed into law consistent with ACS policy priorities – The Inspiring the Next Space Pioneers, Researchers and Explorers Women Act; The Promoting Women in Entrepreneurship Act and The Harry Colmery Veterans Educational Assistance Act. We also successfully nominated more than 50 ACS members for seven federal science advisory committees. Three have been appointed so far.
- Promoting Chemistry & Responsible Conduct Globally**  
 Funded by a grant from the U.S. State Department, OSGC international staff, in conjunction with staff from the Pacific Northwest and Sandia National Laboratories, conducted three successful Global Chemists Code of Ethics workshops in 2017 in Nairobi, Kenya; Rabat, Morocco, and; Melbourne, Australia. In total the workshops trained 60 chemists, chemical engineers and allied professionals. A key requirement for each trainee is that they also conduct their own workshops for colleagues upon returning to their home country. By yearend 8000 individuals have been trained.
- Communicating Chemistry’s Value**  
 The OSGC video series Reactions surpassed 500,000 followers on its social media channels on YouTube, Facebook, Twitter and Instagram. Reactions is, by a large margin, the ACS’s second largest social media brand after the main ACS account, and has become one of the most popular video series ever launched by a scientific organization. The series is regularly featured in major media outlets such as The Washington Post, The Today Show and others. Since the series was launched in 2014, these videos have been viewed more than 35 million times.
- Launch of Senate Chemistry Caucus**  
 In March, the ACS in partnership with the American Chemistry Council (ACC) and the National Association of Chemical Distributors (NACD), launched the Senate Chemistry Caucus. To date, the Congressional Chemistry Caucus consists of 15 bipartisan members of the Senate, and 63 bipartisan members of the House.
- International Chemical Sciences Chapters**  
 With the ACS Board approving three new ACS Chapters at its December 2016 meeting, the number of ACS Chapters now stands at 19, with the additions of Greater Beijing/Tianjin, Southwest China and Iraq. Two new chapter applications from Qatar and Jordan were presented to and acted upon by International Activities Committee (IAC) at its meeting in Washington, DC.
- Chemical Sciences and Society Summit (CS3)**  
 ACS completed its seventh year of participating in the Chemical Sciences and Society (CS3) summit which explores topics in frontier chemistry which have global impact and typically are relevant to food, energy, health or water. CS3 is unique in its organization in that it involves a trifecta of participants-chemical societies, funding agencies, and leading

researchers. The 2017 program on Solar Energy and Photonics was hosted by the Chinese Chemical Society September 5-8 in Dalian, China.

- **ACS National Historic Chemical Landmarks**

Two National Historic Chemical Landmark designations were held in 2017. On April 18, a dedication ceremony of the University of California, Irvine Landmark for CFCs/ozone depletion took place as the centerpiece of a day-and-a-half symposium. On May 15, a dedication ceremony for the University of California, Berkeley Landmark for the Mars Mariner Infrared Spectrometer took place in conjunction with the College of Chemistry's commencement ceremony. There are now more than 80 NHCL in the U.S. and globally.

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

For 2017, OSGC media outreach resulted in more than 13,000 articles in print and online news media outlets. These articles appeared on websites with a total of 20.7 billion *potential* unique monthly visits. ACS Experts engaged more than 240 times with the news media and general audiences including The Today Show, Good Morning America, CBS Evening News, CNN and the WSJ.

<b>ALL STRATEGIC PLAN GOALS—Support for ACS Governance and Operations</b>
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- **ACS Maintains a Robust and Evolving Strategic Plan**

The *ACS Strategic Plan for 2018 and Beyond* was approved and will launch on the web (at <http://strategy.acs.org>) in January. It provides the basis for all of the Society's work in support of the Vision, Mission, and Core Values. The four Goals are each supported by a new set of objectives representing the most important priorities for the ACS to pursue. The strategic plan is the result of broad engagement with governance and staff members, consolidated by the Planning Committee, and approved by the Board of Directors.

- **Ongoing Environment Scan Informs ACS Strategy and Operations**

In 2017, we expanded our ongoing scan of the external environment for chemists, chemistry, and the ACS, by partnering with Foresight Alliance on the Futures Project with the goal of making ACS environment scanning and futures forecasting more robust. During Phase 1 of the project, a domain map of areas of significant impact on ACS strategy was completed. In Phase 2, a trends inventory consisting of approximately 80 ACS Signals (forecasts, trends, issues, innovations), was established. In Phase 3, eight change drivers of critical importance to ACS were developed, that identify where relevant change is taking place and the implications for ACS strategy. In November the Strategic Planning Committee met and had initial discussions about each of the change drivers and identified their perceived level of impact on various sectors of the ACS including the Society as a whole, the Board of Directors, the Executive Leadership Team, the Committees and Advisory Boards and Grassroots Units (Local Sections, Technical Divisions, International Chapters and Students).

- **Enterprise Financial Systems Program (EFSP) Initiative for Operational Excellence**

Strong collaboration and cooperation between ACS Washington and Columbus Finance teams continued into 2017. During this past year, the Finance team successfully

implemented and launched an enterprise-wide financial accounting and reporting system, the new PeopleSoft 9.2, as well as, the Hyperion Planning system for budgeting. The project provides a common hardware and software environment, a unified chart of accounts structure and consistent business processes to support financial accounting and reporting for ACS operations in all locations. Both of these projects were successfully completed on-time and on-budget.

- **Governance Design Task Force**

During 2017, the Office of the Secretary and General Counsel provided administrative support and worked collaboratively with the Joint Board-Council Policy Committee (CPC) Task Force. The task force was charged to position the American Chemical Society for the future by reviewing and recommending actions to improve the current national governance structure, which dates to 1948. The task force met by teleconference or in face-to-face meetings on seven occasions in 2017; made presentations at dozens of committee meetings and district and division caucuses at the spring national meeting, and conducted a special discussion on the topic of governance design at that Council meeting. In December, the task force report was presented to both the Board of Directors and the Council Policy Committee and both reached consensus in support of having the task force provide a proposed simplification of the Constitution and Bylaws, and engaging other ACS units to bring back the next level of actionable proposals to redesign the committee structure and clarify the Board and Council's roles and responsibilities.

- ***The Legal Resource Manual for Divisions and Local Sections***

OSGC attorneys produced *The 1st Edition of The Legal Resource Manual for Divisions and Local Sections*. The *Manual* provides these units with critical legal resources, and has been posted on the Councilor's website. Eight online podcasts for Local Section and Division chairs have been produced as training materials.

- **ACS Entrepreneur Summit**

The 2017 Entrepreneur Summit was successfully held November 15-16, 2017, between OSGC and Membership staff. The Summit achieved 46 new members, a first-ever net contribution, nearly triple the number of sponsors from prior Summits, and a strong attendee rating that they found the speakers knowledgeable and professional and would recommend the ACS Entrepreneur Summit to a chemical entrepreneur.

- **Launched Safety First Initiative**

Providing a secure and safe environment for ACS employees, visitors and the property of ACS, is a constant goal for Administrative & Customer Services. In Q2 2017, the Safety First Initiative was successfully launched to all ACS Washington staff. The initiative was rolled out in three phases to provide an appropriate amount of time to disseminate information and provide training to staff. The first and key component of the initiative was the introduction of the Envoy Visitor Management System. This was followed by the distribution of new advanced photo I.D. badges for staff and contractors. The third and final stage involved implementing the badge-in/badge-out anti-pass back protocol. The Safety First Initiative has provided a safer and more secure environment for ACS employees, contractors and visitors.

- **Launched the ACS Washington Intranet Refresh**  
 The ACS Intranet Refresh launched in Q1 2017 and provided ACS Washington employees with an improved visual experience while also addressing many needs identified in user research. This included expertise location, tools for finding staff within the organization, highlighting news and events from enterprise-wide communication channels such as the ACS Weekly Digest, streamlined editing for content editors, and responsive design for mobile use. The initiative sparked greater direct collaboration and coordination between the business owners of the ACS Intranet for Washington and iCAS for Columbus, all in support of operational excellence.
- **Solar Panels Installed on the Hach and Othmer Roofs; LED Lighting Installed in Othmer Building**  
 Facilities continued the ACS Washington sustainability by completing two projects in 2017. Solar canopies were installed on the Hach and Othmer roofs; and a solar wall was installed on the Hach Roof. The energy generated by these systems will be credited back to the ACS Washington electric bill. In addition, LED lighting was installed in the Othmer Building, which will provide additional year-over-year energy savings.
- **Automated Travel Expense Reimbursement Software Implementation**  
 In Q4 2017, the Society began a Pilot Program to implement a cloud-based automated travel expense management solution. Chrome River was selected for its user-friendly interface, ability to capture digital receipts, and robust reporting capabilities. Following completion of the Pilot Program in Q1 2018, ACS staff in all locations will begin using Chrome River to submit travel and expense reports. The new solution will transform an arduous manual task into an easier, faster process for both submitters and approvers, while also reducing errors and improving operational efficiency for the Accounts Payable team.
- **ACS Exceeds 2017 Board-Approved Fundraising Goal (Financial Sustainability)**  
 The Development Office surpassed the 2017 stretch goal (\$3.3M) set by the ACS Board of Directors with total new gifts and pledges exceeding \$3.4M.
- **Engaged KPMG to Conduct an Audit of its 2016 Financial Statements**  
 The ACS Insurance Trust had an independent audit conducted on its financial statements for the fiscal year ended December 31, 2016. The ACS Insurance Trust received an unmodified (clean) opinion from KPMG.
- **Streamlined the ACS Society Program Portfolio Management (SPPM) Process**  
 Beginning in Q4 2016, targeted actions were taken to modify the data collection and assessment processes within SPPM to affect a more efficient process in 2017. In Q1 2017, these modifications were incorporated into the 2017 calendar of events and communicated to both Society Program staff and Governance (B&F Committee). In Q3 2017, the Executive Director & CEO reported significant reductions in staff and Governance time dedicated to the SPPM process (on the order of a 40-50% reduction). There was also a significant increase in the volume of portfolio turnover/changes

(3-4 times the level experienced in 2015-2016). The portfolio adjustments were also viewed as more strategic than the changes initiated in prior SPPM cycles.

- **Information Technology Security Enhancements**

In early 2017, the security units from Washington IT and CAS IT were merged under the leadership of ACS's first Chief Information Security Office. Over the course of the year, many practices and policies were aligned and new security technologies were implemented. A Security Advisory Board was established with representatives from all divisions to guide our evolving investments in this area. Further opportunities for improvement have been identified and work will continue in 2018 to enhance IT security. Based on emerging threats the organization is investing significantly more to protect ACS data and computer resources.

- **Operational Excellence**

Focused efforts to improve operations across all ACS units continued. The two finance units worked together to implement ACS first common financial system for all divisions. This set the stage for further automation and the first follow on initiative to automate expense reporting and reimbursement is already being piloted. The human resource units in Columbus and Washington aligned their policies and practices. A project is underway to replace ACS aging human resource systems with a modern human capital management system; this project is expected to be completed in 2018. Management for IT shared services has been aligned under a single leader. Work has already begun to draw these units closer together, establish enterprise wide standards and to seek opportunities to leverage this new structure to ACS's advantage. Society program staff executives are working together to identify opportunities to work more effectively together and find ways to leverage expertise and services across these units that focus on delivering programs to members and prospective members.