

ACS: Advocate and supporter for the chemical sciences

In a complex and ever-changing world, chemistry and the chemical sciences have become vital not just in our everyday lives but also in helping the world respond to some of its biggest challenges. Working to shape the future of the chemical sciences for the benefit of humanity is the American Chemical Society (ACS). For more than 140 years, the ACS and its members have been improving people's lives through the transforming power of chemistry. We spoke to ACS's current president **Dr Allison Campbell**, who discussed the society's role and mission in more detail.

Chemistry doesn't just happen in a lab. Chemistry is a big part of our everyday lives, although sometimes this isn't always obvious. We find chemistry everywhere, with the foods we eat, the air we breathe, cleaning products, our emotions, and literally every object we can see or touch.

Understanding the chemical makeup and workings of everyday "stuff" helps to unlock the mysteries of our world – whether small or mighty. Leading the support of innovative research in the chemical sciences and working to build awareness and promote the value of chemistry in our daily lives, is the American Chemistry Society (ACS).

Hi Dr Campbell! What does your role involve as the President of the American Chemical Society (ACS)?

The ACS president serves as the spokesperson and figurehead of the Society.

The president represents ACS in a variety of venues including national, regional and local ACS events, ACS National Historic Chemical Landmark dedications, and meeting with other international chemical societies. The ACS president often will represent ACS in commenting on Nobel Prize awards, chemical-related legislation and other events affecting the chemistry enterprise.

Additionally, the president develops an agenda that she or he wants to accomplish during her or his presidential year. In my case I am focusing on the following three initiatives:

- 1 Building advocacy for the chemistry enterprise with congressional stakeholders;
- 2 Communicating science with the general public;
- 3 Building bridges with other chemical societies to enable chemistry as a global enterprise.

The ACS mission is advancing the broader chemistry enterprise and its practitioners for the benefit of Earth and its people

Finally, the president may highlight important areas of chemistry through technical programming at ACS national meetings. During my presidency, I have organised the following technical sessions at the 2017 spring and fall ACS national meetings:

- Understanding the Chemistry of our Planet
- Chemistry for a Sustainable Energy Future
- Science Communications: The Art of Developing a Clear Message
- Building a Safety Culture Across the Chemistry Enterprise
- Holy Grails of Chemistry

What is ACS's heritage and background, and how do you advocate the progression of chemistry-related research?

ACS started off 141 years ago with a few dozen chemists founding the Society. Today, ACS has nearly 157,000 members around the globe. As the membership of ACS has grown, the Society is increasingly able to connect its members and their research through meetings and conferences, scientific journals, and chemical databases. Equally important, ACS empowers its members to connect with the general public and policymakers about the incredible advances that chemistry provides for our well-being and that of our environment.

You have been a member of ACS since 1984. How have times changed since then, in terms of ACS's strategic aims and recent successes?

The obvious, of course, is the role of the internet. As with many institutions, ACS has adopted online tools to make it easier for members to access information. This in turn has enabled the ACS to greatly expand its outreach to members.

When I joined in the late 1980s, for example, you had to go to a meeting to get help with career planning or to hear about the latest research. You also had to go to the library to access Chemical Abstracts. Today, by contrast, the ACS offers its members a large set of online tools to help them plan their careers, find jobs, network and gain research information.

On the publication side, the number of publications that the ACS offers has increased greatly – the Society now publishes more than 50 peer-reviewed journals! This increase, in many ways, reflects the growing interests and trends of members and the chemistry enterprise in general.

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I also think ACS has a much more robust outreach, education and advocacy function. It ►



Dr Allison Campbell, President of ACS

has created programs to help attract students into the field and has worked to diversify both its membership and the science profession, writ large.

Prior to becoming President of ACS, you were the Director of the Environmental Molecular Sciences Library at the Pacific Northwest National Laboratory, and you still work there as the Associate Laboratory Director for the Earth and Biological Sciences Directorate. How do you think these previous roles have helped in your current role as President?

Both roles have large leadership responsibilities. They involve setting strategy, inspiring staff to that strategy, executing against that strategy, and managing risks and budgets. Needless to say, the skills I learned in these jobs have prepared me well for my role as ACS president. For example, before running for office, I developed and outlined a clear picture of what I wanted to accomplish if elected. Once elected, I used my project management skills to develop and execute plans to accomplish my goals.

Another advantage of my positions at PNNL is the opportunity to act as a spokesperson for my organisation. This means talking with congressional stakeholders, the public, the scientific community and our DOE sponsors. The diversity of these groups allowed me to learn how to effectively communicate, understand my audience and tailor my messages accordingly.

Finally, being a line manager teaches you



Dr Campbell is an avid cyclist, riding to and from work regularly

how to understand and work with a variety of people – introverts and extroverts; collaborative-minded staff and individual contributors. You must understand how to motivate the individual and communicate with them on their level.

ACS offers several wonderful publications to their 157,000 global members, including ACS journals and C&EN. What influence do these publications have on spreading ACS-related news and updates?

ACS uses a variety of mechanisms to communicate with members. Publications are a great way to transmit the latest in research. Chemical & Engineering News, the independent news magazine published weekly by ACS, offers something for everyone in the chemistry enterprise – the latest chemical-related news from business, government and research; career features and related content; and classifieds. And then there are other online vehicles, such as its website and various webinars, that ACS uses to share near-real-time information with its members and other chemistry interested parties.

The ACS's vision is to improve people's lives through the transforming power of chemistry



As one of the world's largest societies, ACS provides substantial funding and reward opportunities to dedicated researchers. Why is it so important to have these opportunities on offer, in terms of developing the next generation of researchers?

It is essential to be able to provide member funding to scientists, which ACS does through several grants, such as the ACS Petroleum Research Fund, the Green Chemistry Grants, and the TEVA Pharmaceuticals Scholars Grants. These grants are especially important to early career scientists. The competition for federally funded research grants is intense. ACS grants offer opportunities for scientists to get seed funding to start projects that will help position them for larger federally funded grants.

The many award programmes ACS offers are also very important. For example, ACS provides national awards, industry awards, and green chemistry awards. ACS awards do a great job, I believe, in spanning time points in one's career, from early career to seasoned and established. They are a symbol

of what an organisation values – excellence, service, etc. But, perhaps most importantly, the awards acknowledge and celebrate the accomplishments of ACS members and show appreciation for their hard work and volunteerism. Awardees often give back to the community by serving as examples and mentors for young scientists, who aspire to one day win one of these awards themselves.

Education appears to be vital to ACS. What benefits have your community outreach programmes, including your National Chemistry Week, had on improving access to chemistry from a young age?

First and foremost, we want kids to fall in love with chemistry. ACS does a tremendous job of reaching out to parents, teachers and communities at large to encourage participation in the outreach events. As an ACS volunteer, I have participated in educational outreach events involving chemistry experiments. My favourite part of helping with such events is watching the children's faces light up when they see the result of a reaction. To further spark a love of science, and chemistry in particular, ACS creates an array of free resources for elementary school educators to engage with their students in the classroom.

ACS has also established the American Association for Chemistry Teachers (AACT) to provide additional support for chemistry educators. This community is dedicated solely to supporting K–12 teachers of chemistry. AACT allows chemistry teachers to share strategies and ideas. It also provides professional development opportunities for educators.

Green Chemistry is one of ACS's latest brilliant initiatives. Could you elaborate on what the aims are for this initiative?

From its earliest days, the ACS Green Chemistry Institute (ACS GCI) has sought to be the premier change agent that has the knowledge, expertise and capabilities to catalyse the movement of the chemistry enterprise toward sustainability through the application of green chemistry principles. To fulfill its mission, ACS GCI supports research, works to integrate green chemistry into all levels of chemical education, aids companies with industrial implementation, hosts conferences and coordinates efforts with an international network of green chemistry advocates.

The mission of ACS GCI is to catalyse and enable the implementation of green chemistry



and engineering throughout the global chemistry enterprise. The strategic goals for the ACS GCI are to advance scientific research and innovation for sustainability, advocate progress in education and communication of the principles of green chemistry, and accelerate the industrial adoption of green chemistry.

Where do you hope to see chemistry-related research going over the next ten years or so? Are there any areas that you are particularly excited about?

In the future, I see the continuation of a strong trend towards adopting practices that align with green or sustainable approaches to chemistry. Throughout my many meetings and interactions on behalf of ACS, I am increasingly aware of researchers approaching their projects with sustainability and green practices as a default.

I am also very excited to see the amazing innovations in chemistry as a result of integrated multi-disciplinary teams coming together to solve problems. There is tremendous value in having scientists from more than one discipline look at complex issues and develop a solution that brings forth the best elements of their respective fields.

Lastly, with the accelerating speed of computer processing and capabilities, I see a

much bigger role for advanced computation providing faster and more accurate data sets. This will also lead to greater possibilities for lab assistants run by Artificial Intelligence, an area we are just beginning to explore.

• If you would like to find out more information on the ACS, membership and their magazine Chemical & Engineering News, please visit their website at www.acs.org.



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