

## Report to the IUPAC Bureau (April 2020) on behalf of the IUPAC100 Management Committee

### Executive Summary

- IUPAC celebrated the centenary of its official foundation on 28 July 2019;
- A special logo and website for IUPAC100 was developed to facilitate engagement on four key projects: the Periodic Table Challenge, the Periodic Table of Younger Chemists, the Global Women's Breakfast, and IUPAC Stories (<https://iupac.org/100/>)
- A year-long series of events led by members of the global chemistry community marked the centenary, and the designation of 2019 as the International Year of the Periodic Table by UNESCO on behalf of the UN;
- Many IUPAC conferences and symposia celebrated 2019, for example the Summer School in Green Chemistry which aimed to mentor young African researchers and chemists and so to create new expertise in green chemistry that could enhance future research, teaching and industrial production in Africa;
- The Periodic Table Challenge energized the global outreach of IUPAC well beyond its National Adhering Organizations. It is planned to keep the competition as a permanent feature on the IUPAC website;
- The enthusiasm and interest generated by the highly successful Womens Global Breakfast networking event held in February 2019 has further potential to deliver ongoing support for IUPAC, as we review our important role as an umbrella organisation prioritizing diversity and inclusiveness;
- The project *Creation of IUPAC Global Women's Breakfast Series and a Global Network in Support of Eliminating the Gender Gap in the Chemical Sciences* (#2020-010-2-020) has recently been approved by IUPAC;
- The Periodic Table of Younger Chemists (PTYC), a joint initiative with the International Young Chemists Network, honoured a select group of 118 younger chemists, each one representing an element in the periodic table. There was a general desire among the winners to continue informal networking. There is a proposal for a monthly webinar series in which two PTYC winners will describe their research or interest in chemistry.
- The on-line presence of IUPAC was enhanced by the IUPAC100 and IYPT activities. Engagement on Twitter was a primary platform for IUPAC100 (@iupac), increasing followers from around 4000 at the beginning of 2019 to approximately 10,000 by the end of the year.

### Summary of projects/events running in the centenary year of 2019:

#### 1. Essential Tools (IUPAC Stories) – See <https://iupac.org/100/stories/>.

Led by Laura McConnell, Fabienne Meyers, and Bonnie Lawlor, this was an online program of highlighting the diverse set of essential tools that IUPAC has developed for chemistry and the chemistry community. The stories are short reads with links to additional resources. By the end of 2019, eighteen stories were published onto the site:

1. What on Earth is InChI? by Ray Boucher, John Wiley; Stephen Heller, Richard Kidd, Alan McNaught, and Igor Pletnev
2. The Wikipedia Polymer Partnership, by Michael Hess
3. Why Does the World Need a Common Language for Scientists? by Jurgen Stoener and Ron Weir
4. Why Isotopes Matter, by Peter Mahaffy
5. Nomenclature Notes, by Jeff Leigh
6. Successful Drug Discovery, by Janos Fischer
7. A Weighted Service to Chemistry, by John de Laeter and Juris Meija
8. IUPAC Distinguished Women in Chemistry, by Fabienne Meyers, Carolyn Ribes and Angela Wilson
9. A Common Language for Chemistry and More, by Bonnie Lawlor
10. IUPAC in the (real) clouds, by Anthony Cox et al.
11. IUPAC Glossaries of Terms Used in Toxicology, by John Duffus
12. The new SI, by Ian Mills and Roberto Marquardt
13. The IUPAC gold book, by Stuart Chalk
14. IUPAC Contributes to Global Chemical Safety by Training Leaders in Developing Countries, by Bernard West
15. A Partnership of Science and Diplomacy to Eliminate Chemical Weapons, by Jonathan Forman and Mark Cesa
16. Healthy Life and Active Ageing – The Contribution of Functional Food Ingredients, by Amelia Rauter, Mary Garson and Francesco Nicotra
17. Systems Thinking to Educate About the Molecular Basis of Sustainability, by Peter Mahaffy and Stephen Matlin
18. IUPAC-Solvay International Awards for Young Chemists 2000-2019, by Mark Cesa, Natalia Tarasova and Paul Baekelmans.

These stories serve as a snapshot of many of the noteworthy activities of IUPAC up until 2019.

HOME / Stories

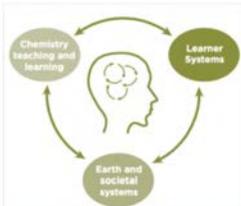
## IUPAC Stories



**STORY 0.18**  
IUPAC-Solvay International Award for Young Chemists 2000-2019

IUPAC and Solvay have a history of recognizing and rewarding excellence in chemical research in the next generation of scientists

DECEMBER 31, 2019



**STORY 0.17**  
Systems Thinking to Educate about the Molecular Basis of Sustainability

Can chemistry education reset to more meaningfully equip students and the public to address emerging global challenges?

DECEMBER 11, 2019



**STORY 0.16**  
Healthy Life and Active Ageing — The Contribution of Functional Food Ingredients

OCTOBER 2, 2019

### Stories Directory

2019-12-31  
**IUPAC-SOLVAY INTERNATIONAL AWARD FOR YOUNG CHEMISTS 2000-2019**  
by Mark C. Cesa, INEOS USA LLC (retired), 2014-2015 President, IUPAC, Natalia Tarasova, D. Mandeliev University of Chemical Technology, Director, Institute of Chemistry and Problems of Sustainable Development, 2016-2017 President, IUPAC, Paul Baekelmans, Science Advisor, Solvay Chair, National Committee for Chemistry, Belgium, Titular Member, IUPAC Committee on Chemistry and Industry

2019-12-11  
**SYSTEMS THINKING TO EDUCATE ABOUT THE MOLECULAR BASIS OF SUSTAINABILITY**  
by Peter Mahaffy, Professor of Chemistry at the King's University, Edmonton, AB (Canada), and Director, the King's Centre for Visualization of Science, Stephen Matlin, Adjunct Professor, Institute of Global Health Innovation, Imperial College London, and International Organization for Chemical Sciences in Development, Namur (Belgium)

2019-10-02  
**HEALTHY LIFE AND ACTIVE AGEING — THE CONTRIBUTION OF FUNCTIONAL FOOD INGREDIENTS**  
by Amelia P. Rauter, Mary J. Garson, Francesco Nicotra

2019-09-18  
**A PARTNERSHIP OF SCIENCE AND DIPLOMACY TO ELIMINATE CHEMICAL WEAPONS**  
by Jonathan Forman, Science Policy Adviser and Secretary to the OPCW Scientific Advisory Board Organization for the Prohibition of Chemical Weapons, Mark C. Cesa 2016-2015 IUPAC President

Screenshot from IUPAC Stories page at <https://iupac.org/100/stories/>

**2. Periodic Table of Younger Chemists.** See <https://iupac.org/100/pt-of-chemist/>. This project was conceived by members of the International Young Chemists Network (IYCN) during the IUPAC General Assembly in Brazil in August 2017, and led by Christine Dunne. Their aim was to highlight early career chemists (from high school to established career scientists) by linking them to an interactive Periodic Table. The intended outcomes were to show the diversity of chemistry (country, language and career), to increase the visibility of IYCN and of IUPAC, as well as to engage countries outside the National Adhering Organizations belonging to IUPAC in order to encourage participation in future IUPAC World Chemistry Congresses/General Assemblies. It was also planned that the project would raise awareness of STEM educational issues.

Beginning in July 2018 and ending in July 2019 at the World Chemistry Congress and IUPAC General Assembly, a diverse group of 118 outstanding chemists under 40 years of age from around the world who embodied the mission and values of IUPAC were individually awarded an element of the Periodic Table. The resulting periodic table highlighted the diversity of careers, creativity, and dedication of the young chemists leading us into the next century. The elements were revealed over time in order of scientific discovery. For each element, a profile of the selected chemist was uploaded along with links to additional scientific information on each element. Winners were profiled on the IUPAC100 website and received a certificate from the IUPAC. Nominees were required to be under the age of 40, either pursuing an undergraduate or graduate degree, or holding an undergraduate/graduate degree, or working within the field of chemistry or a related field.

During 2018, announcements were made at international meetings in Australia (July), Japan (August), USA (August), Thailand (September), Italy (September), Botswana (October), Cuba (October), and Greece (November). The December and January winners were announced from the IUPAC Secretariat as preview events for 2019, while the February winners were announced at the international symposium on Women and the Periodic Table held in Murcia, Spain on February 11-12, an activity linked to the UNESCO International Day for women and Girls in Science. The next groups of winners were announced at the ACS meeting in Orlando (March), as a webinar (April), at the 14<sup>th</sup> International Conference on Crop Protection and Pesticides (Belgium, May), the Canadian Chemical Society Congress (June), and the 14<sup>th</sup> International Symposium on Macromolecular and Supramolecular Chemistry (Italy, June). The final six winners, representing elements 113 - 118, were presented with their awards at ceremony held on July 8 at the Paris 2019 Congress/General Assembly of IUPAC. Individual winners received certificates, letters, paperweights, pins and stickers. The table below provides an indication of the distribution of awardees by country and whether these countries are currently IUPAC NAOs. Awardees were representative of 36 of our 58 NAOs. This list may be useful information to IUPAC leaders seeking to recruit new member countries.

## List of PT Chemist Awardees by Country

Country	# Awardees	IUPAC Member?	Country	# Awardees	IUPAC Member?
Argentina	1		Mauritius	1	
Armenia	1		Mexico	1	
Australia	5	NAO	Netherlands	4	NAO
Austria	2	NAO	New Zealand	2	NAO
Belgium	1	NAO	Nigeria	1	NAO
Benin	1		Pakistan	1	
Brazil	2		Papua New Guinea	1	
Brunei	1		Philippines	1	
Bulgaria	1	NAO	Poland	1	NAO
Canada	6	NAO	Portugal	2	NAO
China	9	NAO	Romania	1	NAO
Cuba	1		Russia	5	NAO
Egypt	1	NAO	Singapore	1	NAO
France	1	NAO	Slovakia	2	NAO
Germany	1	NAO	South Africa	1	NAO
Ghana	1		South Korea	1	NAO
Greece	3	NAO	Spain	5	NAO
India	2	NAO	Sweden	1	NAO
Ireland	1	NAO	Switzerland	2	NAO
Israel	1	NAO	Syria	1	
Italy	2	NAO	Thailand	1	NAO
Japan	2	NAO	United Kingdom	6	NAO
Jordan	1	NAO	United States	14	NAO
Kazakhstan	1		Uzbekistan	1	
Lebanon	2		Venezuela	1	
Malaysia	3	NAO	Zimbabwe	2	

The winners ranged from undergraduate students to full professors and industry researchers. There were equal numbers of male and female winners, representing over 50 different countries from all parts of the world. The IYCN group made videos about the Periodic Table of Younger Chemists, and also about how individual Young Chemists got involved with IUPAC. The videos were posted on a YouTube channel at <https://www.youtube.com/watch?v=SbL8ttWlides>. The completed Periodic Table is available at <https://iupac.org/100/pt-of-chemist/> and a list of the winners is available on request. At the conclusion of the announcements, there was general agreement among many of the winners that they would like to continue informal networking. A small team are developing proposals for a webinar series, hosted by IUPAC, in which each month two winners will describe their research or interest in chemistry.

This project was admirably led by a team from the International Young Chemists Network (IYCN) led by Dr Christine Dunne (USA) with participation by Leonardo Scarabelli (USA), Irene Rodriguez Meizoso (Sweden), and Nnanake-Abasi Offiong (Nigeria). They were assisted by IUPAC volunteers Dr Laura McConnell, Professors Hemda Garelick and Mary Garson, as well as by Dr. Lynn Soby, Enid Weatherwax, and Dr Fabienne Meyers from the IUPAC Secretariat.

## Periodic Table of Younger Chemists



Screenshot from Periodic Table of Younger Chemists webpage

<https://iupac.org/100/pt-of-chemist/>



Photo of many Periodic Table of Younger Chemists awardees attending Paris World Chemistry Congress in Paris.

### 3. Global Periodic Table Challenge – See <https://iupac.org/100/pt-challenge/>

An important goal of IUPAC100 was to involve students and the general public. A decision was made to create an online global competition centered on the Periodic Table to raise awareness of the importance of chemistry in our daily lives, the richness of the chemical elements, and the key role of IUPAC in promoting chemistry worldwide. The Periodic Table Challenge, developed by Professor Jan Apotheker (the Netherlands) and Dr Juris Meija (Canada), aimed mostly at the secondary

school sector, was then launched in January 2019 as an online competition (see <https://iupac.org/100/pt-challenge/>).

In the first online challenge round, students were required to select an element as an avatar, and then to answer a set of 15 multiple choice questions about all of the chemical elements selected randomly from a pool of about 150 questions. Participants who answered 60% of their questions correctly were eligible to take part in the second round of the challenge, dubbed the Nobelium Contest. In this part of the contest the participants were asked to share their passion and creativity for chemistry by identifying an element, and then making a picture, a physical object, a poster, a short story, a video, that demonstrated why this element is special for them. The prizes included a periodic table signed by thirteen Nobel Laureates; IUPAC heartily thanks Roald Hoffmann (Nobel Prize 1981), Jean-Marie Lehn (1987), Barry Sharpless (2001), Kurt Wüthrich (2002), Peter Agre (2003), Robert H. Grubbs (2005), Martin Chalfie (2008), Ada Yonath (2009), Robert J. Lefkowitz (2012), Ben Feringa (2016), Sir Fraser Stoddart (2016), Joachim Frank (2017), and Frances Arnold (2018) for their support.

One of the most attractive and engaging features in the website of the Periodic Table Challenge, was the world map showing the location of all participants around the world. Over 100 countries were reached in the first month of the Challenge. In July, shortly before the IUPAC General Assembly in Paris, Trinidad and Tobago became the 118th country to join the activity thus providing a symbolic milestone of one country per element. By the end of the year, 136 countries had participated, closing with Angkor, Cambodia. Every continent was represented, including Antarctica. More than 20 countries in Africa and every single country in South America participated. A Chinese translation of the PT Challenge was created by the China Digital Science and Technology Museum and the Chinese Chemical Society ([chemicaldati.dg.cdstm.cn/admin/api/](http://chemicaldati.dg.cdstm.cn/admin/api/)) in June 2019, and the Chinese version was played over 30 000 times over the period of five months.

More than 8 000 players joined in the competition. Over 60 000 tests were taken and 8 000 certificates earned. In some cases, whole school classes took part in the challenge, with many school teachers choosing to include the PT Challenge in their classroom activities. These figures send a clear message that online activities, such as this, can make a global impact to promote science education worldwide.

India led the round one country rankings (most correct answers) followed by Canada and USA. In the second round (Nobelium) contest, over 160 submissions were received from 30 countries, all of which were hosted online at [iupac.org/100/pt-challenge](https://iupac.org/100/pt-challenge). 30 submissions were selected as Nobelium Contest Winners and a further 9 were selected for People's Choice award based on their popularity. The Nobelium Contest entries were viewed over 80 000 times throughout the year and these winners were all sent the Nobel-autographed IUPAC Periodic Table.

The four most popular elements chosen as avatars were elements most closely related to life—hydrogen, carbon, and oxygen. But the hands-down winner, the most

popular element of them all, was mendelevium; a very appropriate recognition of the contribution of this great Russian chemist to the development of the Periodic Table.

The Periodic Table Challenge energized the global outreach of IUPAC well beyond its National Adhering Organizations. This success motivated IUPAC to keep the Periodic Table Challenge beyond 2019 as a permanent feature on the IUPAC website. The Challenge will thus become one of the outreach activities of IUPAC and a wonderful legacy of 2019. Many individuals, including IUPAC staff and volunteers, as well as the participants contributed to the success of this initiative, and to a celebration of the Periodic Table which reached every corner of the world. Further information is available from the website or from an upcoming article to be published in *Chemistry International*.



Screenshot of the Periodic Table Challenge Map (<https://iupac.org/100/pt-challenge/>)

**Get in Your Element**

Join in to celebrate the International Year of the Periodic Table and help us reach players from every country. Winners will receive a certificate from IUPAC and can advance to the Nobelium Contest. Here's how to play:

- 1 Pick your avatar element
- 2 Test your knowledge with the Periodic Table Challenge
- 3 Do well and advance to the Nobelium Contest for a chance to win a limited edition Periodic Table autographed by a Nobel Laureate in Chemistry!
- 4 Entries in the Nobelium Contest will be posted on the website and will be eligible for a popular vote in Science, Art, and Education categories.

**TAKE THE CHALLENGE**

**Leaderboard**  
Periodic Table Challenge

#	Element	Points
1	<b>Md</b> mendelevium 210 players	14402
2	<b>H</b> hydrogen 950 players	12552
3	<b>C</b> carbon 512 players	6775
4	<b>O</b> oxygen 402 players	4985
5	<b>Li</b> lithium 156 players	3579

See all | Check your score

## Screenshot of the Periodic Table Challenge Leaderboard Scores (<https://iupac.org/100/pt-challenge/>)

HOME / PERIODIC TABLE CHALLENGE / Nobelium Contest

### Nobelium Contest

Share your passion and creativity about Chemistry with the world community!

In the Nobelium contest we ask you to celebrate the Periodic Table. In the International Year of the Periodic Table, we invite you to share your passion and creativity about the chemistry with the world. The entries of this contest should highlight the role of the Periodic Table in a creative manner. Due to the creative nature of this contest, the types of submissions can be varied. As an example, you can make an educational video about an element, you can write a [story](#) (fiction or otherwise), you can write a [haiku](#) or a [poem](#), make a [song](#) or a [painting](#). Entries can also highlight your outreach or community service in chemistry or chemistry education. The choice is entirely yours!

PERIODIC VIDEOS

VIDEO SHOWN BY SIB MARYN POLIAKOFF DURING THE OPENING CEREMONY OF THE INTERNATIONAL YEAR OF THE PERIODIC TABLE ON 29 JAN 2019 (UNESCO, PARIS)

IUPAC PERIODIC TABLES SIGNED BY CHEMISTRY NOBEL LAUREATE ROALD HOFFMANN

**Submit Your Nobelium Contest Entry**

What can people submit (examples)?

- ✓ Words – poetry, essays, fiction or nonfiction stories
- ✓ Images – paintings, exhibits or installations
- ✓ Video – a story or presentation
- ✓ Music – a song about an element

**LET'S GET STARTED**

[Read full rules and procedures](#)

**Vote for People's Choice**

How to vote?

## Screenshot of the Nobelium Contest Page (<https://iupac.org/100/pt-challenge/nobelium-contest/>)

HOME / Challenge Entries

### Challenge Entries

**ART** 381 50 20  
**Periodic Table of Elements Reading Lights**  
by Monique Boodram 06 January 2020

**ART** 568 207 11  
**Chemistree - a Christmas tree with lots of chemistry**  
by Cristina Albino 06 January 2020

**SERVICE & EDUCATION** 644 510 12  
**Chemistry is in Fashion!**  
by Cristina Isabel Pedro de Paiva da Costa Albino 06 January 2020

**ART** 334 101 115  
**Periodic Table of Chemistry**  
by Yihan Wang 05 January 2020

**SCIENCE** 288 13 5  
**The Periodic Table: a poem**  
by Shradha Rajeev 05 January 2020

**SCIENCE** 220 23 6  
**CYPRUS**

**SERVICE & EDUCATION** 207 10 3  
**Χαλκός**

**ART** 215 59 2  
**SERVICE & EDUCATION** 241 25 12  
**SERVICE & EDUCATION** 108 3 2

## Screenshot of Nobelium Contest Entries Page (<https://iupac.org/100/pt-challenge-entry/>)

### 4. Summer School in Green Chemistry. See <https://iupac.org/event/iupac-for-africa-postgraduate-summer-school-on-green-chemistry/>.

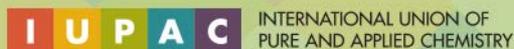
The summer school ran between 12-19 May 2019 in Dar es Salaam with ~ 200 participants, and was hosted by the University of Dar es Salaam (UDSM), University of Dodoma (UDOM) and the Tanzania Bureau of Standards (TBS) in collaboration with the Tanzania Chemical Society (TCS). The event provided the participants with an understanding of the latest developments in green/sustainable chemistry and pollution control, with the aim of mentoring talented young African researchers and chemists to create new expertise in Green Chemistry that can enhance future research, teaching and industrial production in Africa. The associated IUPAC project was #2018-017-1-041 IUPAC for Africa – Postgraduate Summer School on Green Chemistry.

## IUPAC FOR AFRICA

### Postgraduate Summer School on Green Chemistry

Inspired by IUPAC Centenary and the International Year of the Periodic Table Celebrations

IUPAC Interdivisional Committee on Green Chemistry for Sustainable Development



12<sup>th</sup> - 19<sup>th</sup> May 2019,

Dar es Salaam, Tanzania

Online registration open until 30th April 2019:

<http://www.tcs-tz.org/iupac2019/>

Abstracts submission deadline 14th April 2019

Grant Application Deadline 28th February 2019



Screenshot from summer school website: [http://www.tcs-tz.org/iupac\\_summer\\_school\\_2019.htm](http://www.tcs-tz.org/iupac_summer_school_2019.htm)

#### 5. Global Women's Breakfast See <https://iupac.org/100/global-breakfast/> .

The Global Women's Breakfast (GWB) with the theme, *Empowering Women in Chemistry: A Global Networking Event*, was developed from an earlier networking activity held in 2011 to celebrate the International Year of Chemistry. During IUPAC, the GWB took place on Tuesday February 12 of 2019. Worldwide there were over 200 breakfasts, with more than five thousand women involved, almost certainly making it the largest "virtual" gathering of women chemists worldwide. A global breakfast map was created which illustrated the location of each registered breakfast with contact information for the organizers. Fifty-four countries and 33 NAOs participated by organizing events and registering them on the website. The first events were held at 7AM local time in New Zealand while the final breakfast was launched in Hawaii 22 hours later. Dunedin, New Zealand, and Gothenburg, Sweden, hosted the most southerly and northerly breakfasts, respectively. A collection of flyers, videos, photos, and tweets from the event are available on the event website.

Table of GWB Events Organized by Country

Country	# of Events	NAO Country?	Country	# of Events	NAO Country?
Argentina	1		Malaysia	1	NAO
Australia	13	NAO	Mauritius	1	
Belgium	1	NAO	Mexico	6	
Botswana	1		Netherlands	2	NAO
Brazil	9		New Zealand	6	NAO
Bulgaria	1	NAO	Nigeria	15	NAO
Canada	9	NAO	Pakistan	1	
China	10	NAO	Paraguay	1	
Colombia	1		Peru	2	
Costa Rica	1	NAO	Philippines	2	
Croatia	2	NAO	Portugal	12	NAO
Cuba	1		Puerto Rico	1	NAO
Czech Republic	1	NAO	Romania	1	
France	3	NAO	Russia	3	NAO
Germany	5	NAO	Serbia	1	NAO
Greece	2	NAO	Singapore	1	NAO
Hungary	1	NAO	South Africa	3	NAO
India	5	NAO	Spain	1	NAO
Indonesia	3		Sweden	1	NAO
Iran	1		Switzerland	2	NAO
Ireland	1	NAO	Thailand	1	NAO
Italy	7	NAO	Tunisia	1	
Jordan	2	NAO	Turkey	13	NAO
Korea	3	NAO	Ukraine	1	
Lebanon	1		United Kingdom	7	NAO
North Macedonia	1		United States	32	NAO

Breakfast organizers were encouraged to reach out and connect with each other as a way to broaden their networks. As groups introduced themselves on the website, blue circle map pins corresponding to their locations were converted into red hearts; In this way, a virtual 'handwave' was created that travelled around the globe. A Twitter message feed with the hashtags #IUPAC100 and #globalbreakfast shared photo images and short videos in real time, and also presented an opportunity for those who could not join in directly to connect to the event. Individual breakfast groups were encouraged to bring their own creative ideas to designing their individual event, and ranged from talks by or about inspirational woman figures to team building activities (Lego® ducks, buckminsterfullerene models). Some breakfasts were able to attract sponsorship and provide prizes or takeaway "goodie" bags. Catering was equally creative; individual cupcakes iced with the symbols of individual chemical element, sponge cakes with Periodic table designs (celebrating IYPT).

Although every country arranged their events to suit the needs of their own local audience, it was envisaged that a focal point for individual breakfasts would be to explore career progression for women chemists. A set of questions was shared with individual breakfast organisers worldwide to assist them in constructing panel discussions or question and answer sessions. Two webinars were made available, one with Dr Raychelle Burks (St Edwards University, Texas, USA) explored the use of social media to expand career networks, while a second webinar was of a conversation with Prof Kate Jolliffe (University of Sydney) in which Mary Garson (University of Queensland) asked her about her career history and her tips on career advancement.

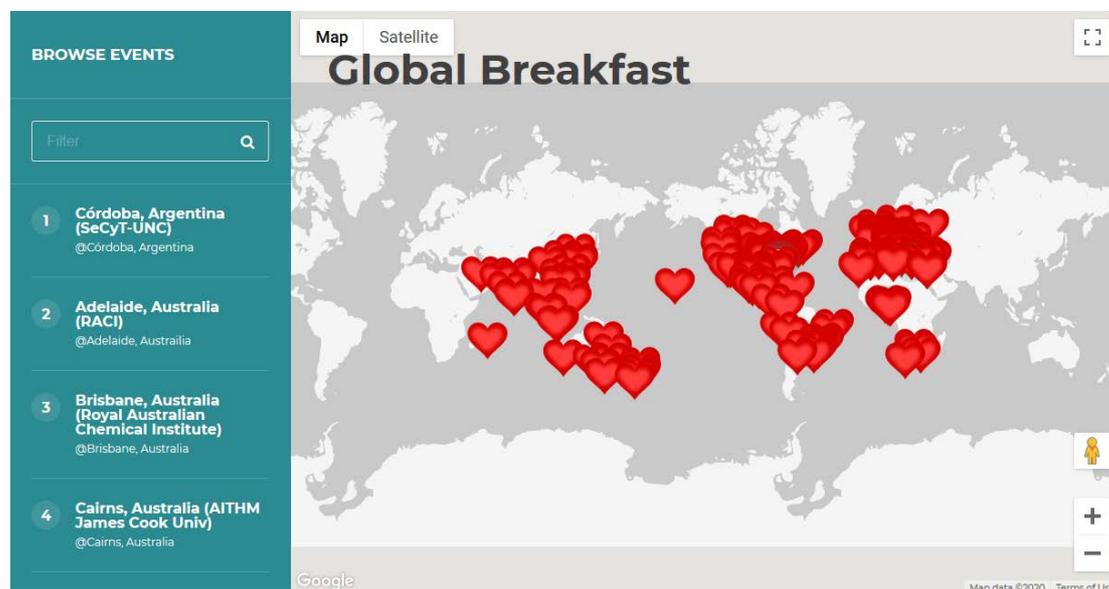
An editorial in the *Journal of Chemical Education* by Marcy Towns explained the benefits of joining in one of these global breakfast events. She summarised research on the benefits of networking for persistence within the STEM field, and gave insight into how a mentoring experience had been beneficial in her own career development.

From the many messages received since the event, it was clear that there has been a genuine mood of togetherness, as well as excellent visibility for the IUPAC brand. A major factor that contributed to the success of the event, and the ease of communication between different events, was the interactive website set up by IUPAC.

Afterwards, a follow up request for information from organizers was circulated by Dr Laura McConnell to gauge interest in running the event again in 2020 and to create a global organizing committee. The global event gave considerable exposure to the centenary of IUPAC as well as to IYPT, and a number of countries who have not recently networked with IUPAC participated. The enthusiasm and interest generated by the event has further potential to deliver ongoing support for IUPAC, as this global organisation reviews its developing role as an umbrella organisation prioritizing diversity and inclusiveness. An important outcome is the reminder to women chemists that they should step up and take a role in their own professional societies; the leadership opportunities that are created by working on professional society business are worthwhile since they are so often beneficial to career development. By coming together, participants gained exposure to new role models or research, industrial and educational contacts, thereby expanding their own individual networks.

A story describing the 2019 GWB has recently been published in *Chemistry International* (<https://doi.org/10.1515/ci-2020-0107>). More recently, building upon momentum from the 2019 event, a GWB2020 has been carried out with excellent results (see separate report from L. McConnell). Furthermore, the new IUPAC project "*Creation of IUPAC Global Women's Breakfast Series and a Global Network in Support of Eliminating the Gender Gap in the Chemical Sciences*" (#2020-010-2-020) has recently been approved by IUPAC. It is supported by funding from Bayer and did not require direct project funding from IUPAC. In addition to hosting the Global Breakfast series through to 2023, the project will develop new materials and resources for the GWB community, including a GWB webinar series for topics on gender equality and to highlight the research accomplishments of women leaders in

the chemical sciences. Additional collaborative initiatives will be pursued related to the Gender Gap study, the IUPAC Distinguished Women award winners; other female IUPAC award winners (i.e., Solvay); and IUPAC leaders in the Bureau and in Divisions/Committees.



Screenshot of IUPAC100 GWB Global Map at <https://iupac.org/100/global-breakfast/>



Screenshot of the photo gallery from IUPAC100 GWB which includes a collection of videos, flyers, and group photos from breakfast events around the world.

## 6. Events held at the 47th World Chemistry Congress and 50<sup>th</sup> General Assembly in Paris July 2019

A two-hour commemorative ceremony was arranged as a combined session for delegates to the 50th General Assembly/47th World Chemistry Congress in Paris on Monday July 8. Dr Jean-Marie Solvay spoke first on behalf of the Solvay Foundation, and after some explanatory words about the origins of IUPAC and the link to the Solvay Foundation he explored the theme of chemists working towards common

international goals. Together with Prof Qifeng Zhou, President of IUPAC, he then presented awards to the 2018 and 2019 winners of the IUPAC-Solvay awards. The next two presentations, given by Dr Robert Anderson (Chemical Heritage Foundation) and Dr Danielle Fauque (International Union of History and Philosophy of Science and Technology), continued the theme of linking IUPAC's previous history to its ongoing and future global role. Dr Fauque's presentation *IUPAC: from Genesis through Maturity* was accompanied by visuals from the IUPAC archives.

Next, a group representing IUPAC gave a presentation *IUPAC: Today informs Tomorrow* highlighting the role of IUPAC over the last 100 years, and in building a common language for chemistry. This was followed by a brief description of activities during the centenary year, from which was developed an inspirational message for the future role of chemistry. Profs Javier Garcia Martinez and Supawan Tantayanon "compered" the item, and introduced Dr Juris Meija (Periodic Table Challenge), Prof Mary Garson & Dr Laura McConnell, (Global Breakfast), Dr HooLing Lee/Mr Nnanake Abasi-Offiong (International Young Chemists Network), and Dr Christine Dunne (Periodic Table of Younger Chemists). After an announcement celebrating the chemists representing the final six elements (113-118), meeting delegates who were previously announced awardees of the Periodic Table of Younger Chemists were then acknowledged. The event concluded with the inaugural reveal of the completed Periodic Table of Younger Chemists, followed by some concluding remarks from Profs Jean-Marie Lehn and Clement Sanchez (representing the Paris organising team) and Prof Qifeng Zhou representing IUPAC. In the months leading up to Paris, a working group met regularly by video conference to develop the script for this item and selected accompanying images and music.



Photo of presenters during "Today Informs Tomorrow" in Paris.

On the evening of Tuesday July 9, a second ceremony was organised at the Sorbonne by France as host country of the World Chemistry Congress/General Assembly. Due to the presence of French and diplomatic authorities, and other VIPs, the program had a distinctive official and ceremonial character. Professor Qifeng Zhou, IUPAC President, and Professor Christopher Brett, IUPAC President-Elect, spoke on behalf of IUPAC on the role and achievements of IUPAC and a futuristic vision of IUPAC, respectively.

The ceremony was followed by a reception.

### **7. Events planned for July 28 (anniversary date)**

A meeting held at the Palais de Congres in Brussels on 28 July 1919 formally approved the statutes that initiated IUPAC. The statutes were drafted during the months before in several places, including Paris and London, and discussed in Brussels during 18-28 July.

Initial contact was made in 2018 with the French organisers of the International Chemistry Olympiad held in Paris between 21-30 July of 2019. Sunday 28 July was a competitor social day while the international jury were locked in deliberation. Professor Qifeng Zhou represented IUPAC at a meeting of the student participants and other team leaders, and gave a short presentation. He also represented IUPAC at the awarding of medals ceremony on Monday 29 July.

### **Communication**

The website (<https://iupac.org/100/>) was regularly updated, and is in the process of being archived. The generic email address [iupac100@iupac.org](mailto:iupac100@iupac.org) was used. The IUPAC Twitter account (<https://twitter.com/iupac>) was also used for IUPAC100 activities, with #IUPAC100 as the associated hashtag.

**Mary Garson**

**Laura McConnell**

(April 2020)