



General Conference

39th Session, Paris, 2017

39 C

United Nations
Educational, Scientific and
Cultural Organization

Organisation
des Nations Unies
pour l'éducation,
la science et la culture

Organización
de las Naciones Unidas
para la Educación,
la Ciencia y la Cultura

Организация
Объединенных Наций по
вопросам образования,
науки и культуры

منظمة الأمم المتحدة
للتربية والعلم والثقافة

联合国教育、
科学及文化组织

39 C/60

2 November 2017

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Item 4.19 of the agenda

PROCLAMATION OF 2019 AS THE UNITED NATIONS INTERNATIONAL YEAR OF THE PERIODIC TABLE OF CHEMICAL ELEMENTS

OUTLINE

Source: 202 EX/Decision 43.

Background: At the request of Member States, an item on the proclamation of 2019 as the International Year of the Periodic Table of Chemical Elements was included in the agenda of the 202nd session of the Executive Board (202 EX/43). By 202 EX/Decision 43, the Executive Board invited the Director-General to support all efforts leading the United Nations General Assembly to proclaim 2019 as the International Year of the Periodic Table of Chemical Elements, and recommended that the General Conference adopt, at its 39th session, a resolution concerning this subject.

Purpose: This document provides an explanatory note regarding the proposal to proclaim 2019 as the International Year of the Periodic Table of Chemical Elements. Detailed information including the rationale and objectives of the Year is provided in document 202 EX/43.

Decision required: Paragraph 5.



Job: 20170291

Explanatory Note

1. An International Year of the Periodic Table of Chemical Elements (IYPTCE) in 2019 will be a recognition of the important role of the basic sciences, and especially chemistry and physics, as fundamental in providing solutions to many of the development challenges that Member States face as they implement the United Nations 2030 Agenda for Sustainable Development. The Year also will be an occasion to pay tribute to the recent discovery and naming of four super-heavy elements of the Periodic Table of Chemical Elements with atomic numbers 113 (Nihonium), 115 (Moscovium), 117 (Tennessine) and 118 (Oganesson) resulting from close international scientific cooperation.
2. An International Year of the Periodic Table of Chemical Elements in 2019 will celebrate the 150th anniversary of the establishment of the Periodic Table of Chemical Elements by the Russian scientist Dmitri I. Mendeleev, who is regarded as one of the fathers of modern chemistry. The defining 1869 breakthrough of Mendeleev was the prediction of properties of five elements and their compounds. He also left space in the periodic table for elements to be discovered in the future.
3. An International Year of the Periodic Table of Chemical Elements in 2019 will offer to UNESCO's International Basic Sciences Programme an important opportunity to fulfil its mission of promoting international cooperation in the basic sciences for sustainable development, as well as in science education and capacity-building, namely through a Microscience Programme dedicated to the periodic table of chemical elements. This International Year will also trigger a wide range of cooperative undertakings within the context of the follow-up of the 2011 International Year of Chemistry and the 2014 International Year of Crystallography.
4. The participation of UNESCO in the celebration of the International Year of the Periodic Table of Chemical Elements in 2019 will be financed mainly from extrabudgetary funding.
5. In the light of the above, the General Conference may wish to adopt a decision along the following lines:

The General Conference,

Having examined document 39C/60,

Recognizing the importance of chemistry and the advances in research and discoveries on the periodic table of chemical elements for sustainable development and for the benefit of humankind,

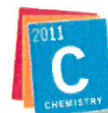
Stressing that the periodic table is widely used in vital spheres of scientific knowledge such as chemistry, physics, and biology,

Considering that the celebration of the 150th anniversary of the Periodic Table of Chemical Elements in 2019 will provide an unparalleled opportunity to highlight the continuous nature of scientific discovery in different contexts, with particular emphasis on promoting science education at all levels among young women and men, especially in developing countries, including in Africa,

1. *Noting* that the year 2019 coincides with the anniversaries of a series of important milestones in the history of the periodic table, specifically with the isolation of arsenic and antimony by Jabir ibn Hayyan circa 1,200 years ago; the discovery of phosphorus 350 years ago; the publication of a list of 33 chemical elements grouped into gases, metals, non-metals, and earths by Lavoisier in 1789; the discovery of the Law of Triads in 1829 by Döbereiner; the establishment of the periodic table by Mendeleev 150 years ago; and the discovery of francium by Marguerite Perey in 1939;

2. *Being aware* that the year 2019 provides the opportunity to observe the outstanding scientific achievements that humankind has made since the discovery of the periodic system by Dmitry I. Mendeleev in 1869;
3. *Welcomes* 202 EX/Decision 43;
4. *Invites* the Director-General to support all efforts leading to the proclamation of 2019 as the International Year of the Periodic Table of Chemical Elements;
5. *Recommends* that the United Nations General Assembly, at its 72nd session, adopt a resolution declaring 2019 as the United Nations International Year of the Periodic Table of Chemical Elements.

Office of Public Affairs Support for the International Year of Chemistry 2011—Year-end Wrap Up
(As of February 2012)

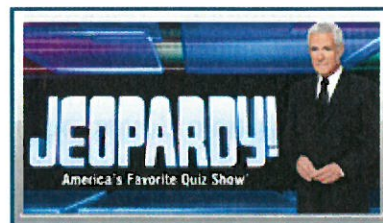


International Year of
CHEMISTRY
2011

www.acs.org/iyc2011

National Media Coverage of IYC:

- **Jeopardy!:** This #1 rated quiz show featured a category devoted to the International Year of Chemistry 2011 in their June 21 episode. With nine million daily viewers, Jeopardy! is an excellent venue for sharing the message that chemistry is fundamental to our everyday lives. The chemistry portion of the show is available [online](#). OPA publicized the episode to ACS members before and after the broadcast and encouraged members—especially Chemistry Ambassadors—to share the link and post to appropriate Web pages. It was also covered in C&EN.



- **The Best of Our Knowledge:** A two-part series of conversations with ACS President Nancy B. Jackson aired on the WAMC radio network in Albany, N.Y., on May 16 and May 23. The program discussed the role of chemistry in our modern world, chemistry ambassadors, science education, mentoring students, the International Year of Chemistry and other topics. The program was also carried by 150 NPR stations, and on the [Web](#).



- **Kids Discover Magazine:** The special chemistry/IYC issue debuted in August, and since then it has been sent to 185,000 subscribers, 40,000 schools, and distributed by ACS to nearly 20,000 teachers and students around the country through National Science Teachers Association meetings and through Chemistry Ambassadors. The target audience is students in grades 5-7, and the magazine has a shelf life of five years. It can be downloaded for free at www.acs.org/kidsdiscover, along with a teacher's guide and vocabulary supplement. Hard copies may be obtained through the [ACS store](#).



Other opportunities have come from this IYC collaboration with the KD publisher. Among them are blogging about ACS Education resources on their Web site and linking to ACS content that serves grades 5-7.

Advocacy Activities:

- **U.S. Senate Recognizes 2011 as the International Year of Chemistry:** On September 26, with bipartisan and unanimous consent, the U.S. Senate passed Senate Resolution 283, which designated 2011 as the International Year of Chemistry (IYC). The IYC Resolution received substantial support from Senator Chris Coons (D-DE) who sponsored the legislation along with Senators Lisa Murkowski (R-AK), Jeff Bingaman (D-NM), Mark Pryor (D-AR), and Debbie Stabenow (D-MI). Through the



resolution, Congress officially recognized the achievements made in the field of chemistry and the contributions of those achievements to the well-being of humankind. ACS issued a press release announcing the resolution on Sept. 27, 2011. Delaware ACS member John Gavenonis met with Senator Chris Coons (D-DE) to express gratitude for his sponsorship of the resolution, and ACS President Nancy Jackson wrote Senator Coons thanking him for his role in its passage.

- **State Resolutions for IYC:** The Tennessee General Assembly passed a resolution, “Tennessee Celebrates Chemistry – Our Life, Our Future Year,” commemorating IYC in response to meetings with the Tennessee GAC. Resolutions of support also passed in Ohio, Pennsylvania, and Minnesota, with state Government Affairs Committees and OPA staff contributing to the success of these resolutions.



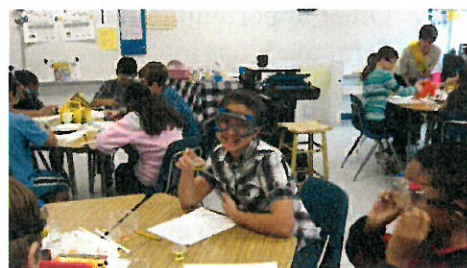
- **State GAC Activities Picked-up by Local Press:** On May 27, the Cumberland Times and the Murfreesboro Daily News Journal printed news articles about ACS members, the International Year of Chemistry and the ACS Tennessee State Government Affairs Committee (TN-GAC) legislative summit. Representatives from TN-GAC, The Nashville Local Section GAC, and the Local Section leadership, met with Governor Bill Haslam and Rep. John Ragan of Tennessee about the International Year of Chemistry.

On March 14, 2011, First Science, Health World and Scientific Computing issued news articles about ACS members, the International Year of Chemistry and the ACS Minnesota State Government and Legislative Affairs Committee (MN-GALA) legislative summit.

Global Water Experiment:

- **Enlisting U.S. participation:** OPA publicized the water experiment through email campaigns to high school and middle school science teachers, by exhibiting at several science teacher conferences around the country, and through promotions to Chemistry Ambassadors, local section public relations chairs and ACS members in general.

With the assistance of ACS Web Strategy and Operations, a **workaround website** was created to make it easier for U.S. teachers to upload data for the Global Water Experiment. Approximately 150 different schools in the U.S. have data on the world map along with many other organizations like Boys and Girls Clubs, scouts, and libraries. Collaboration with the ACS Education Division’s **ChemClub** high school chemistry program was an important part of the overall success of the activity.



- **News Coverage of participating schools:** As schools were posted to the map, OPA issued news releases to the media in their community, along the lines of “Chemistry Students put Stuart High School on the World Map.” The releases had a high pick-up rate by newspapers, and

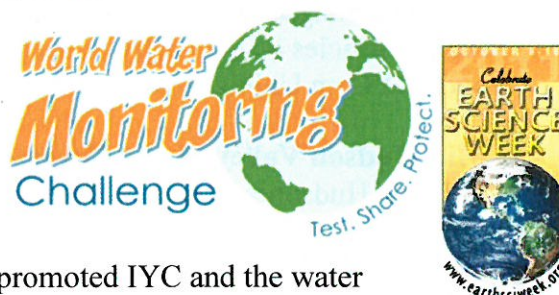


the resulting coverage gave recognition to the teacher, students and ACS ChemClubs and carried messages about IYC and the role of chemistry in providing clean water to the world. OPA also helped local section public relations committees secure coverage for their members who performed the water experiment with local schools.

- **NASA and the IYC Global Experiment:** NASA and ACS staff from OPA and the Education Division teamed up to present a webinar on Sept. 22 through NASA's Digital Learning Network. Chemistry Ambassador Valerie Moore was in-studio to perform the IYC water purification experiment with space scientists at the Johnson Space Center in Houston. The webinar was promoted via email and Twitter to tens of thousands of teachers across the country, and three ChemClub schools were selected for a "live" interaction with NASA. OPA generated publicity for the schools and IYC in newspapers and on television.



- **Other Water Partners:** OPA partnered with a number of water and education organizations to promote the water experiment. For example, the **National Education Association** highlighted it as a Classroom Activity of the Week on their website, and the **World Water Monitoring Day** group invited us to participate in their event for 250 school children on Hains Point in Washington, D.C. Also, **D.C. Water**, the Washington-area water utility, promoted IYC and the experiment in the newsletter that goes to their 600,000 customers. The **American Geological Institute** promoted IYC and the water experiment as activities for Middle School teachers to take part in during the AGI-sponsored Earth Science Week, Oct. 9-15. OPA worked with ACS Education Division colleagues to provide AGI with relevant web content and hard copy information.



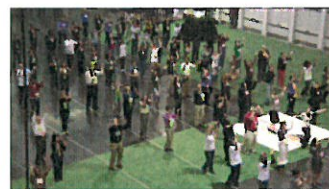
Member Involvement and Local News Coverage:

Member Involvement:

- **'Speaking Simply about IYC' videos:** Staff produced and edited 61 videos for the "Speaking Simply" series from footage in Denver. Members were asked to describe in simple terms, for a non-scientist, how chemistry is providing advances across the IYC themes (water, materials, health, environment, and energy) and how their Local Section, Division, or Committee is celebrating IYC. The videos are posted online under [IYC-Tell Others](#) and [IYC-Take Action](#) and serve as examples of how to talk in understandable language about how chemistry improves our lives, and they provide ideas for outreach that can be used now and beyond IYC. Many of the videos are also posted on the local section, committee or division web sites of the ACS members who are featured.



- **Chemists Can (and did) Dance in Denver:** The IYC chemistry rap song and dance that OPA created with Chemistry Olympiad students debuted at the ACS national meeting in Anaheim and was performed at the ChemLuminary Dance in Denver. YouTube views of the dance now top 24,000.



http://www.youtube.com/results?search_query=chemists+can+dance&oq=chemists+can+dance&aq=f&aqi=g1&aql=&gs_sm=3&gs_upl=1123132291013338118115101818101125153115.21710

Local Section Media Coverage Highlights:

- **Chicago Local Section Media Coverage:** ACS member and 2003 Helen Free Award winner Lee Marek appeared with Donald Wink of the University of Illinois at Chicago for a local television segment on WGN9 about renewable fuels and the International Year of Chemistry. Of particular note is that Marek is a true Chemistry Ambassador—not just doing the demo, but explaining what it means about the role of chemistry in everyday life.
- **Puerto Rico Local Section Media Coverage:** In recognition of IYC, PR chair Ingrid Montes arranged to have a prominent Puerto Rico newspaper, *El Nuevo Dia*, publish weekly articles on chemistry in daily life. Montes also was scheduled to be interviewed about IYC on Univision and local radio.
- **Mid-Hudson Valley Media Coverage:** Chemistry Ambassador George Ruger promoted IYC at a Hudson's Renegade Baseball game, with IYC baseball cards, a television interview and the first pitch.
- **Other Local IYC Media Coverage:** In addition to the stories OPA generated about the IYC water experiment, another 120 stories about IYC in general appeared in print, online and on television. Many of these were generated by local section public relations chairs who mentioned it in their news releases and promoted it as part of their events for the public.

Other OPA Activities in Support of IYC:

- **Generating member awareness:** During 2010 OPA promoted member awareness for IYC through newsletters, C&EN ads and interviews, web content, Chemistry Ambassadors, and national meeting promotions. In November 2010 the ACS Office of Public Affairs and the ACS Office of Member Research and Technology conducted a member survey to gauge awareness for IYC. Results indicated that over half of respondents (57.6%) were aware of IYC. Respondents were asked to contribute their own plans and ideas for promoting chemistry during 2011 and many were forthcoming.
- **IYC Launch Event:** OPA worked closely with partners from the Chemical Heritage Foundation, ACC, AIChE, and The Dow Chemical Company to generate press coverage of the U.S. launch of the International Year of Chemistry that occurred in Philadelphia on February 1. ACS was responsible for pitching 20 major news outlets about IYC and the launch event that featured a panel of leaders from the chemistry community. As a result of

ACS staff work, the *Philadelphia Inquirer*, Pennsylvania's largest daily newspaper with a circulation of over 342,000, featured IYC and the launch on the front page of the Feb. 2 business section.

OPA also secured design work for the launch invitations and related print materials and for IYC banners on the ACS buildings. OPA also prepared ACS/IYC branded templates for use during 2011.

- ***A Day without Chemistry* video:** This online animated [video](#) has been viewed more than 65,000 times on YouTube. A joint collaboration between YCC and ACS staff, it follows a person through a “day without chemistry” as he watches more and more necessities and conveniences disappear before his eyes.



- **IYC Video Series: *Spellbound: How Kids Become Scientists*** The project launched August 15, 2011. The series features Ahmed Zewail, Kristala Jones-Prather, Bassam Shakhshiri, and Helen Free, among other renowned chemists. The series has received over 4,000 views since its launch, and was prominently featured on NSF's Science360 website.



- **General promotion to teachers:** Staff emailed 18,500 high school chemistry teachers a list of ACS resources for IYC, including the Philadelphia Launch Webcast URL, the 365 calendar, “A Day without Chemistry” video, an alert for the Worldwide Water Experiment, Landmarks, and Education Division materials.
- **COP 17 – Students blog climate change talks:** For the second year, ACS partnered with York College in Pennsylvania, and other universities, to offer a unique educational opportunity for students to learn more about climate change policy development and communicating science issues to the general public. Under the banner of IYC, five students traveled to Durban, South Africa, Nov. 28 - Dec. 9, 2011, where they attended symposia, lectures, and events, held personal interviews with leaders in climate change issues, and wrote about the news, issues, and perspectives that they encountered. In 2011, OPA communications staff led a media training to provide the students with essential interviewing skills and the basics of writing news for a general audience as distinct from an academic audience. The students posted their blog reports at: <http://acsstudents.weebly.com/>

New Jersey Star Ledger reporter Eugene Paik wrote an article about the students and their experience in Nov. 11, 2011, issue.

- **IYC Symposium on Stratospheric Ozone and Climate Change:** OPA staff wrote the speech ACS President Nancy Jackson used at this four-day conference. Her talk, titled “Chemistry and Our Planet,” was the first speech following opening remarks by Mario Molina. *New York Times* climate blogger Andrew Revkin requested a copy of her speech.

- **IYC in University of Phoenix:** Nancy Jackson was interviewed about IYC by the University of Phoenix, the largest private university in North America. The story was posted on their [Website](#).
- **National Historic Chemical Landmarks:** Landmark re-celebrations during IYC were conducted for “The Development of Diagnostic Test Strips” (Elkhart, Ind.), “Production of Aluminum Metal by Electrochemistry” (Oberlin, Ohio), and “Beckman pH Meter” (at Western Regional Meeting). This was another opportunity to reach the public and recognize the role of chemistry in our lives and in the community.
- **Articles on Chemistry Innovations from Federally Funded Research:** OPA staff interviewed scientists for a series of short articles that highlight federally funded research leading to important, high-value innovations in chemistry. Articles are written or planned with scientists from NRL, DOE, NIST and NIH. All will be promoted to the news media and science-focused web sites. 
- **IYC Promotion at AAAS Exposition:** OPA staffed a booth at the 2011 AAAS annual meeting and promoted Chemistry Ambassadors, Landmarks, IYC 2011 and the IYC Global Water Experiment to several hundred visitors. Staff conducted 15 video interviews on IYC Speaking Simply.
- **365 Chemistry for Life:** OPA was responsible for the IYC daily calendar profiles at www.acs.org/iyc2011. A particularly thoughtful piece on the Elements of the September 11th Memorial to be dedicated in New York City for the 10th anniversary, written by ACS member Laura Pence, a chemistry professor at the University of Hartford, merited special consideration. The piece was submitted as an op-ed to multiple media outlets and received serious consideration by: *The New York Times*, the *Wall Street Journal*, the *Boston Globe*, the *Hartford Courant*, the *Albany Times-Union*, *Living on Earth* radio, and NPR radio station WAMC in Albany, NY. Editors said this was an unusual and thought-provoking piece, although timing limited placement; ACS has been urged to submit future op-eds.

