“Who Will Win the #ChemNobel? Predicting the 2016 Nobel Laureate(s) in Chemistry”

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Slides and recording available soon at cen.acs.org.

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Who Will Win the #ChemNobel? Predicting the Next Nobel Laureate(s) in Chemistry

Share your comments in the webinar question window or tweet at us using the hashtag.

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The capital, invested in safe securities by my executors, shall constitute a fund, the interest on which shall be **annually distributed** in the form of **prizes to those who**, during the preceding year, shall **have conferred the greatest benefit to mankind**.

The said interest shall be divided into five equal parts, which shall be apportioned as follows: … **one part** to the person who shall have made the most important chemical discovery or improvement...

It is my express wish that in awarding the prizes **no consideration whatever shall be given to the nationality of the candidates**, but that the **most worthy shall receive the prize**, whether he be a Scandinavian or not.

–Alfred Bernhard Nobel, 1895

*Source: NobelPrize.org*
Meet the Nobel Chemistry Committee

Sara Snogerup Linse
Chair
Professor of physical chemistry & molecular protein science
Lund University

Peter Brzezinski
Professor of biochemistry & biophysics
Stockholm University

Claes Gustafsson
Professor of medical biochemistry
University of Gothenburg

Olof Ramström
Professor of chemistry (organic chemistry)
KTH – Royal Institute of Technology
Stockholm

Johan Åqvist
Professor of cell & molecular biology
Uppsala University

Gunnar von Heijne
Secretary
Professor of theoretical chemistry
Stockholm University

Source: Nobel.org/Listed institutions
The #ChemNobel Nominations Database

This is one nomination for the Nobel prize in Chemistry.

There were 1,987 nominations submitted for the Nobel Prize in Chemistry between 1901 and 1950.

http://cen.acs.org/nobel-data.html
The #ChemNobel Nominations Database

Seven women were nominated for the chemistry prize 32 times between 1901 and 1950. Two won.

http://cen.acs.org/nobel-data.html
The #ChemNobel Nominations Database

**Explore the data**

Want to know more about the first 50 years? Click the arrows to reveal additional information about a chemistry nominee, or click a year tag to see a list of nominees from that year. Click other tags to filter the data in different ways.

See our [methods and credits](http://cen.acs.org/nobel-data.html).

Showing 20 of 323 Results

<table>
<thead>
<tr>
<th>Name</th>
<th>Years</th>
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<td>Svante Arrhenius</td>
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<td>Zdenko Skraup</td>
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<td>William Pope</td>
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<td>William Ramsay</td>
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<td>Armand Gautier</td>
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<td>2 Nominations</td>
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<td>Rudolf Knietsch</td>
<td>1902</td>
<td>1 Nomination</td>
</tr>
<tr>
<td>Wolcott Gibbs</td>
<td>1902</td>
<td>1 Nomination</td>
</tr>
</tbody>
</table>

http://cen.acs.org/nobel-data.html
Who would you nominate for a #ChemNobel if you could?

- Harry Gray, Richard Holm & Stephen Lippard for bioinorganic chemistry
- Jennifer Doudna, Emmanuelle Charpentier, & Feng Zhang for CRISPR/Cas9
- Rolf Huisgen, Barry Sharpless, Carolyn Bertozzi, et al. for “click chemistry”
- Ben Feringa, Fraser Stoddart & David Leigh for molecular machinery
- JoAnne Stubbe for uncovering the mechanistic secrets of enzymes

Vote and then share your own answer with us in the webinar chat or on Twitter with the #ChemNobel hashtag!
Alex’s Nomination

Harry Gray for his work in the field of inorganic chemistry.

“His contributions to the field are vast and absolutely unmatched.” – Alex Spokoyny

Harry Gray
Professor of chemistry
Caltech

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Carmen’s Nomination

Jennifer Doudna, Emmanuelle Charpentier, & Feng Zhang for CRISPR/Cas9

“There's been an explosion of applications of this CRISPR/Cas9 gene editing technology, though I wonder whether the Nobel Committee will wait on this one until the patent squabbles have settled down.” – Carmen Drahl
Stu’s Nomination

Option 1

*Rolf Huisgen, Barry Sharpless, Carolyn Bertozzi, Morten Meldal, MG Finn, & Valery Fokin* for the study, development, and application of dipolar cycloadditions and other 'click' reactions.

“I'd suggest all six and let the Nobel Committee figure it out!” –Stu Cantrill

Option 2*

*Ben Feringa, Fraser Stoddart, & David Leigh* for the development of molecular machines.

“The case for real-world applications of these molecules is hard to make, but they're just so clever/cool and it's incredible what you can force a molecule to actually do.” –Stu Cantrill

*NOTE: Incredibly biased pick in that I got my PhD with Fraser*
Lauren’s Nomination

**JoAnne Stubbe, MIT**

“Her work in uncovering the mechanistic secrets of enzymes has laid the groundwork for all kinds of future drug discovery and bacteria-based chemical production.” –Lauren Wolf

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**Robert Langer, MIT**

“We’ve discussed whether the Nobel Committee gives lifetime achievement prizes. Some say yes, others say no. If ever there were a person who deserved one, I’d say it’s Langer.” –Lauren Wolf

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Stu’s 2016 #ChemNobel Pick

Stanley Whittingham  
Binghamton University  

John B. Goodenough  
University of Texas at Austin  

Akira Yoshino  
Asahi Kasei Corp.  
LIBTEC

For the invention and development of Li-ion batteries
Carmen’s 2016 #ChemNobel Pick

Krzysztof Matyjaszewski
Carnegie Mellon

Ezio Rizzardo
CSIRO

David Solomon
University of Melbourne

“The polymer-building methods they pioneered have made it easier and less expensive to build highly tailored materials that we use today in electronics, cosmetics, coatings, and beyond.”
Alex’s 2016 #ChemNobel Pick

Leroy Hood
Institute for Systems Biology

Marvin H. Caruthers
University of Colorado, Boulder

For automated synthesis of oligonucleotides.

“This work has enabled many important discoveries both in pure research fields spanning from nanotechnology to biology as well as in biotech and pharma. I think it is long overdue.”
Lauren’s 2016 #ChemNobel Pick

Stanley Whittingham
Binghamton University

John B. Goodenough
University of Texas at Austin

Akira Yoshino
Asahi Kasei Corp.
LIBTEC

For the invention and development of Li-ion batteries
“The fundamental work he’s done in understanding electron transfer in chemical reactions and the electrochemistry going on at electrode surfaces has laid the groundwork for much of the other work in energy-based materials.”
Matt’s 2016 #ChemNobel Pick

Mildred Dresselhaus
Professor of physics, MIT

Sumio Iijima
NEC Corporation

“…to lock down nanocarbon for chemistry.”
In your opinion who will win the next Nobel Prize in Chemistry?

- Goodenough, Whittingham, & Yoshino for Li-ion batteries
- Matyjaszewski, Rizzardo, & Solomon for pioneering work in polymers
- Hood & Caruthers for automated synthesis of nucleotides
- Allen Bard for contributions to electrochemistry
- Mildred Dresselhaus and Sumio Iijima for carbon nanotubes

Vote for which one of these you think is most likely to claim the Nobel, then share your own picks in the chat box or on Twitter with the #ChemNobel hashtag.
Mapping the Lives of Laureates

http://cen.acs.org/nobels.html
Mapping the Lives of Laureates

Nobel medal count by affiliation at time of award

Europe
31 Germany
26 England
9 France
6 Switzerland
5 Sweden
1 Austria
1 Belgium
1 Czech Republic
1 Denmark
1 Finland
1 Italy
1 Norway
1 Scotland

North America
73 U.S.
3 Canada

Asia
5 Japan
4 Israel
1 Russia

South America
1 Argentina

http://cen.acs.org/nobels.html
Introducing C&EN’s Interactive Nobel Map

http://cen.acs.org/nobels.html
How long will it be before we see more greater geographic diversity on our map?

- Less than 5 years
- 5-10 years
- 11-20 years
- Greater than 20 years
- Never
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Nobel Nominations Database
The who’s who of chemists involved in nominating the first 50 years of chemistry’s Nobel Prize winners.

http://cen.acs.org/nobels.html