

April Section Meeting: “Fritz Haber: A Great but Flawed Genius of Chemistry and History”

German chemist Fritz Haber (1868-1934) earned his doctorate in 1891 in organic chemistry. In 1893 he converted from Judaism to Christianity. In 1894 he began an academic career, switching to physical chemistry and electrochemistry. In 1901 Haber married Clara Immerwahr, also a chemist with a doctorate. In 1910 he achieved his first great success: the synthesis of ammonia from its elements, an invention that has saved millions from starvation and death by providing unlimited quantities of nitrogen fertilizer. In 1911 Haber was appointed director of the Kaiser Wilhelm Institute for Physical Chemistry and Electrochemistry in Berlin. During World War I Haber's ammonia became indispensable to Germany's war effort since it can be converted to conventional explosives. During the war Haber led the development of chemical weapons (“poison gases”). Approximately 90,000 were killed by the poison gas in WWI and 1.2 million were injured. Many scientists participated in chemical-weapons work, e.g., chemists W. Nernst (Nobel 1920), O. Hahn (Nobel 1944), V. Grignard (Nobel 1912), W.J. Pope, G.N. Lewis, etc. But some refused to participate, e.g., H. Staudinger (Nobel 1953) and E. Rutherford (Nobel 1908). Haber's wife Clara, bitterly opposed to his poison-gas work, committed suicide shortly after the first poison-gas attack by Germany. Haber received the 1918 chemistry Nobel Prize for the ammonia synthesis. After

April Section Meeting

- Topic:** Fritz Haber: A Great but Flawed Genius of Chemistry and History
- Speaker:** Dr. Joseph (Joe) Gal
- Date:** Tuesday, April 13th
- Time:** 6:00 – Career Discussion
6:15 – Presentation and Q & A
- Cost:** Free, Registration Required
- Location:** Online Zoom meeting

REGISTRATION REQUIRED. More information can be found on our [website](#).

[Register](#)

After your request has been approved, you'll receive instructions via email for joining the meeting.

WWI Haber engaged in (illegal) chemical weapons development and developed pesticides, including Zyklon B, later used to murder around 1.2 million victims in the Nazi concentration camps of the Holocaust. In 1933 Haber left Germany and died in 1934. He was a brilliant chemist but lacked ethics and morality and was blind to the realities of the society around him. His life raises complex questions of morality in science.



Joseph Gal, PhD, is Professor Emeritus retired from the University of Colorado School of Medicine (SOM). Joe completed his high-school education in Budapest, Hungary, and graduated with a B.Sc. in chemistry from the American University of Cairo, Egypt. He earned a PhD in organic chemistry at UCD – that is, the University of California, Davis. In 1977 Joe began his career at CU SOM as an Assistant Professor. Joe's career at the CU SOM included teaching, research, and directorship of the toxicology section of University of Colorado Hospital's clinical laboratories. His research activities focused on the fate of drugs in the body. About 15 years ago Joe changed his scholarly interests and has been focusing since then on the history of science. He has been examining the chemistry work of Louis Pasteur, and has also been studying the history of modern chemical warfare, especially the "poison gases" of World War I. In retirement Joe is continuing his studies of the history of science, publishing and lecturing on these topics.

March Meeting Recording

View our RMLS March Meeting recording on [Ozone Application in the Food Industry presented by Dr. Reza Zahedi.](#)

Colorado Science Fair Update

Michael Mutnan, Rebecca Spearott, and Doug Brown are hard at work with judging at this year's science fair.

Due to Covid concerns, all judging is done virtually. Students have prepared project abstracts which were placed into a science fair database. The projects were divided into Junior and Senior Divisions. The team has reviewed the abstracts and identified projects of interest.

Student project materials were subsequently entered into a system named "zFairs". The team will review material for our projects of interest using "zFairs". Interviews will be scheduled for the finalists in Mid-April. The four winners (1st and 2nd Place in each Division) will be announced in our May Newsletter.

The team thanks the membership for awarding cash prizes to our winners. Each 1st Place winner receives \$100.00 and each 2nd Place winner receives \$75.00.

STEM Outreach to Future City

As part of our STEM outreach, AIChE RMLS donated \$250 to award the winners of a regional middle school competition called Future City in both Colorado and New Mexico. The challenge, Living on the Moon, asked teams of students to design a future city on the moon, thinking about all the challenges that would be encountered. The teams built model cities, created PowerPoint presentations and recorded 7-minute videos. The judges had a chance for a Q&A with each team before scoring on multiple criteria. Several AIChE RMLS board members were judges. The RMLS also donated another \$250 to the winner of a special challenge for helium recovery on the moon. The presentations were very entertaining and creative. The regional winner was Mangata Subexo from Colorado Academy. [Click here to watch the finals video.](#) If anyone is interested in judging next year, you can sign up on [FutureCity.org](#).

AIChE Meetings

2021

- April 2-3 [2021 Rocky Mtn Student Regional Conference](#)
Virtual – hosted by Colorado State University
- April 7 [Smart Manufacturing for the Chemical Process Industries](#)
Online Webinar
- April 13-15 [Competitive Energy Systems Symposium](#)
Virtual
- April 18-23 [Spring Meeting and 17th Global Congress on Process Safety](#)
Virtual

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The objectives of AIChE are to advance chemical engineering in theory and practice, to maintain a high professional standard among its members, and to serve society, particularly where chemical, engineering can contribute to the public interest.
AIChE Rocky Mountain is a public non-profit 501(c)(3)

MEETING SCHEDULE

The Rocky Mountain Local Section (RMLS) of AIChE generally meets the second or third Tuesday of every month, September through May.

CALL FOR PRESENTERS

Do you have a presentation to share with our AIChE group? We are looking for presenters for our May meeting. Contact [Nick Thornburg](mailto:nicholasthornburg2017@u.northwestern.edu) at nicholasthornburg2017@u.northwestern.edu