- **Educational Focus**: Supports learning for researchers and students on navigating diverse data types, extracting insights programmatically, and applying automated approaches for curation, dissemination, and analysis.
- **Interactive Tutorials**: Provides hands-on experience with digital data sources, tools, and workflows, enhancing understanding through executable code blocks and common cheminformatics functions.
- **Community Repository**: Offers readily accessible online tutorials for users to engage with, exemplifying FAIR principles for data reuse.
- **Online Accessibility**: Easily accessible through existing online infrastructure, facilitating widespread use and adoption.

How to use the Cookbook

This cookbook provides a range of protocols developed by active community members. These recipes target different tasks across a range of possible use cases for working with machine-readable chemical data (*i.e.*, FAIR data). The cookbook presents a collection of annotated code snippets and workflows for specific tasks in manipulating machine-readable chemical data and metadata.

- **Jupyter Notebooks:** Many of the recipes on this site take advantage of Jupyter Notebooks to run Python code in the browser for an interactive (and educational) feel for the user.
- **When is a recipe useful and for what?** Info is available in the collapsable 'header' below the title of the recipe. Header: also includes bullets for skills and learning objectives
- **Ideas to further characterize the applicability of recipes?** Ideas are welcome

Contribute to the Cookbook!

If you regularly work with digital chemical data and have useful approaches that could be demonstrated through a Jupyter Notebook, please consider contributing. Best practices for using standards and tools are emphasized and instructions for how to contribute materials are provided.

Unlock Exclusive Benefits as a Contributor to the Cookbook:

- Gain Recognition: Your contributions will be acknowledged on the Cookbook's contributions page.
- Boost Your Profile: Your ORCID will be integrated into the metadata of your contributions.
- Secure Your Work Identity: Each contribution receives a unique ID through http://w3id.org, ensuring your work is properly attributed and easily accessible to others.

More information is available in Cookbook Wiki <https://bit.ly/CookbookWiki>
Contact: FAIRChemistry@iupac.org
https://iupac.org/iupac-fair-chemistry-cookbook/

In Memoriam—Allen Joseph Bard (1933–2024)

by Larry R. Faulkner and Christopher M. A. Brett

Professor Allen J. Bard, president of IUPAC during the biennium 1991-93, died in Austin at the age of 90 on February 11, 2024. He was a world-renowned electrochemist, recognized especially for placing the study of electrochemical reactions on a level of sophistication similar to that of homogeneous chemical processes.

In more than 60 years at the University of Texas at Austin, he guided 360 PhD students and post-doctoral associates and published more than 1000 peer-reviewed papers. The large topics on which he concentrated comprise a sizable fraction of electrochemistry in his time, including the mechanisms of electrode reactions, chemiluminescence from electrogenerated species, and photoelectrochemistry at semiconductor electrodes. He co-invented immunoassay by chemiluminescence and was an essential innovator in scanning electrochemical microscopy. Both tools have become commercially available and are widely employed. In his later years, he focused on what is now known as single-molecule electrochemistry, establishing methods that could detect individual electrochemical events. He often provided the first demonstrations. Some of his most striking results involved the formation and observation of individual catalytic centers of one to several atoms.

He is remembered as a superb teacher, able to inspire students through his own excitement with science and his ability to convey the essence of a complex subject with clarity and simplicity.

He also contributed through his influential texts, including three editions of *Electrochemical Methods* (Wiley, 1980, 2001, 2022, the last with L. R. Faulkner and H. S. White). Moreover, he edited three leading series in electrochemistry and was Editor-in-Chief of the *Journal of the American Chemical Society* for 20 years.

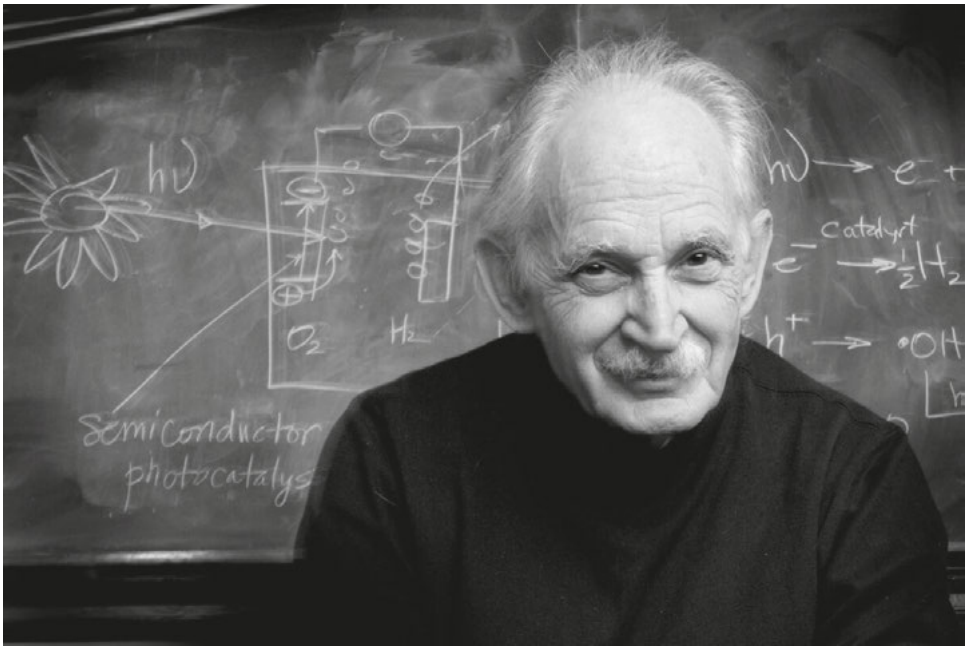

Photo © The University of Texas at Austin. Photo by Marsha Miller

Allen Bard's activity in the 1980s within IUPAC was very much associated with IUPAC's mission of a common language and the free exchange of information. He was a member of the Commission on Electrochemistry (1975-1983), being Vice-Chairman 1981-1983 and of the Commission on Chemical Kinetics (1983-1987). During this time, the book *Standard Potentials in Aqueous Solution* (A. J. Bard, R. Parsons, and J. Jordan, Eds., Dekker, 1985) was published as an IUPAC-based project. It continues to be an excellent source of data on standard potentials or species of most of the chemical elements.

The future developments predicted in his article "New challenges in electrochemistry and electroanalysis" in the IUPAC journal *Pure and Applied Chemistry* [64 (1992) 185-192; https://doi.org/10.1351/pac199264020185, based on his lecture at the 33rd IUPAC Congress, held in Budapest, Hungary, in August 1991] are the challenges felt today, over 30 years later.

In 1989, Bard was elected to be IUPAC Vice President, followed by President in 1991-1993 and Past President 1994-1995. He presented his Vice President's Critical Assessment in the Hamburg General Assembly (1991), which assessed whether work that had been carried out with IUPAC sponsorship was all appropriate and recommending that a move should be made towards a more dynamic structure involving fewer permanent commissions, amalgamation of existing bodies where appropriate, and development of mechanisms for speeding up approval and publication of IUPAC recommendations.

His Critical Assessment commenced discussions that carried into later biennia regarding the IUPAC structure. Only in 2001 was organisational change implemented, with the abolition of most commissions and the creation of a more streamlined division structure in order to respond to the challenges of the 21st century in the chemical and related sciences.

Professor Bard was recognized broadly for his vast contributions. Among the distinctions were the U. S. National Medal of Science, the Priestley Medal, the Enrico Fermi Award, the Wolf Prize, the Welch Award, and the King Faisal International Prize. He was a member of the U. S. National Academy of Sciences.

A tribute to Christo Balarew on the occasion of his 90th birthday

The eminent Bulgarian chemist Christo Balarew was born on June 23, 1934 in Sofia. He received his MSc degree in chemistry from the Sofia University. Balarew devoted many years of his life to the service of Bulgarian chemical science and education. For most of his life he worked at the Institute of General and Inorganic Chemistry of the Bulgarian Academy of Sciences. He was a scientist, teacher, public figure, member of a number of international organizations, editorial boards of scientific journals, organizing and scientific committees of international scientific forums.