

Лехигх Жаллеъ АЦС Фебруаръ Вебинар анд Жиртуал Сецтион Меетинг
(Lehigh Valley ACS February Webinar and Virtual Section Meeting)

"A hatred that still haunts undergraduate organic chemistry 150 years later."



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Every student of organic chemistry for the last four decades, at least, has learned two empirical rules: Markovnikov's Rule for electrophilic addition to alkenes, and Zaitsev's Rule for base elimination of alkyl halides. Although few remember the rules themselves, Markovnikov's name appears to be one that is not forgotten easily. What fewer people know is that both these chemists were contemporaries (Markovnikov was 3 years older) at Kazan Imperial University. By the 1860s, when both were undergraduate students, Kazan had become the pre-eminent chemistry school in Russia thanks to discoveries by Zinin (reduction of nitrobenzene) and Klaus (ruthenium; pure osmium tetroxide). Both studied under Aleksandr Mikhailovich Butlerov, the successor of both these chemists, who had inherited the mantle of Archibald Scott Couper and developed Couper's original version of the Structural Theory of Organic Chemistry into a version so useful and workable that it quickly became part of the conventional wisdom—nobody bothered to refer to Butlerov's original work. The other thing about Markovnikov and Zaitsev is that they hated each other, carrying on a life-long feud that I contend led, in part, to Zaitsev's Rule. The careers of these two fascinating individuals will be highlighted in this talk, along with my perspective on the origins of their eponymous rules and of the feud.

David E. Lewis is a native of Australia who became a naturalized U.S. citizen on his mother-in-law's birthday, 2004. He was born in South Australia in a railway town on Australia's Murray River, and began his schooling in 1957 in the mid-north town of Snowtown. After his family had moved to Salisbury, a northern suburb of Adelaide, he completed his primary and secondary education there. He entered the University of Adelaide in 1969, and graduated with his B.Sc. in chemistry (1972) and his Ph.D. in organic chemistry (1980). He moved to the U.S. in December 1976, and spent the next three and a half years at the University of Arkansas, where he also began his teaching career. Following a temporary position at Illinois, he joined the faculty of Baylor University (May 1981), South Dakota State University (January 1989) and then the University of Wisconsin-Eau Claire (June 1997), where he has been ever since as Professor of Chemistry. Lewis' research interests are in synthetic and physical organic chemistry, and in the history of organic chemistry in Russia. He has published over 100 refereed journal articles and book chapters and six books, and he writes a regular column on organic name reactions for Synform. He holds 18 U.S. patents. His work in the history of chemistry has been recognized by the 2018 HIST Award (ACS HIST Division) and a 2019 Markovnikov Medal (Lomonosov Moscow State University).