

A Periodic Table of Chemistry in the Movies

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Hollywood loves the chemical elements. Or, certain elements anyway. In this presentation, you'll watch ten movie clips separated into four themes. In each clip, one of the characters says something about an element or elements. After each clip, we'll explore whether the element was described correctly or not and what might have inspired the screenwriter to include it. The four themes are Multiple Elements, Classical Elements, Hydrogen Isotopes, and Science Fiction Elements. This presentation is given in celebration of the 150th anniversary of Mendeleev's publication of the periodic table of elements. Mendeleev spent a lot of time identifying the most accurate atomic masses of the elements and would probably be surprised by how creative screenwriters can be.



Bio: Mark Griep is professor of chemistry at the University of Nebraska-Lincoln. He earned his BS and PhD in biochemistry from The University of Minnesota. His dissertation concerned the activation of human blood coagulation proteins from zymogens to enzymes when they bind to lipid micelles and interact in two dimensions. He simplified his research to a one-dimensional system for his American Cancer Society-supported postdoctoral research on bacterial DNA replication enzymes that travel along a linear strand of DNA. In 1990, he joined the Chemistry Department at the University of Nebraska-Lincoln where his research has mostly focused on the interaction between bacterial primase and helicase, two enzymes that act on the lagging strand during DNA replication. Griep's instructional and outreach foci are on making connections between science and everyday life. Since 2000, Griep has been researching and writing about chemistry in movie clips, feature films, and documentaries and has given dozens of invited talks on this topic. He is the co-author with his wife Marjorie Mikasen of several highly downloaded papers in the *Journal of Chemical Education*, of several book chapters, and of the book *ReAction! Chemistry in the Movies* (Oxford University Press). Since 2010, Griep has coordinated the chemistry department's NSF-funded grant in Research Experiences for Undergraduates. Its focus on science communication as a complement to cutting edge research places it among the highest rated programs. In 2018, Griep co-edited a book with Linette Watkins from James Madison University about *Best Practices for Chemistry REU Programs* (American Chemical Society Press). In 2016, Griep began a collaboration with Nebraska's two tribal colleges to increase the number of their students who take a chemistry course. They won the award for best paper published in the *Great Plains Quarterly* for describing their successful method of connecting chemistry to tribal sovereignty. In 2017, Griep received the Helen M. Free Award for Public Outreach from the American Chemical Society for his movies project and for his long-term efforts to raise awareness about the life and career of Dr. Rachel Lloyd. Griep successfully nominated Lloyd for status as a National Historic Chemical Landmark in 2016 and published a biography about her. Griep serves on the boards of the Nebraska Section of the American Chemical Society and on the Lincoln Children's Museum.