



American Chemical Society

Central Pennsylvania Local Section

Short Cuts: Stories from a Life in Chemistry

Professor Ian Fleming, FRS

Emeritus Professor of Organic Chemistry

Emeritus Fellow Pembroke College

Cambridge University

Juniata College – Tuesday March 3rd, 2015 – 5:30 PM



Seminar Abstract: A number of strands in my early forays into chemical research, coupled with some entertaining mishaps, combined to give me a background in a wide range of chemistry. This lecture, illustrated with anecdotes and digressions, will recount some of those events. You will not absolutely need any chemical knowledge in order to follow the gist of the stories, but there will be chemistry for those of you who can appreciate it.

Biographical Sketch: Ian Fleming is an Emeritus Professor in the Department of Chemistry in the University of Cambridge, and an Emeritus Fellow of Pembroke College. Dr. Fleming received his education from Pembroke College, Cambridge, earning a B.A. degree in 1959 and a Ph.D. in 1962 working with J. Harley-Mason. He enjoyed a highly productive postdoctoral year at Harvard University, working with R. B. Woodward on the total synthesis of vitamin B₁₂. In 1967, at the beginning of his independent career, Dr. Fleming provided the first full structural determination of chlorophyll, after proving the absolute stereochemical configuration of the macrocyclic ring. In addition, he was the first to make the 8-cycloheptatrienylheptafulvenyl cation, which at the time held the record as the most stable hydrocarbon cation.

Dr. Fleming is perhaps best known for his work on organosilicon chemistry and its applications to organic synthesis, with which he has been heavily involved since 1972. He has consistently and extensively created solutions to problems in organic synthesis using organosilicon chemistry. His most recent work has concentrated on using the silyl group to influence the stereochemical course of the events in its neighborhood.

Dr. Fleming is a world renowned author who has written important reviews on organosilicon chemistry, most notably in the pioneering encyclopedia, *Comprehensive Organic Chemistry*, a major *Organic Reactions* chapter of over 500 pages on the electrophilic substitution of allyl and vinylsilanes and a mammoth review on the uses of silicon compounds in the control of stereochemistry in organic synthesis in *Chemical Reviews*. Most chemistry students are familiar with Dr. Fleming as the author of invaluable textbooks including *Spectroscopic Methods in Organic Chemistry*, (with Dudley Williams); *Spectroscopic Problems in Organic Chemistry*, (also with Dudley Williams) and *Selected Organic Syntheses*. His most influential textbook, *Frontier Orbitals and Organic Chemical Reactions* was the first to alert the organic chemistry community to the utility and applicability of a qualitative understanding of molecular orbital theory.

Dr. Fleming was awarded the Tilden lectureship of the Royal Society of Chemistry in 1981 and the Prize for Organic Synthesis in 1983 for the early stages of this work, and in 1993 he was elected a Fellow of the Royal Society largely on the strength of his continuing contributions in the area of organosilicon chemistry.

Location: Juniata College – von Liebig Center for Science – Neff Lecture Hall (first floor room 1098)

Street Address: 1700 Moore Street, Huntingdon, Pennsylvania

GPS Address: Latitude : 40.499351 / Longitude : -78.015963

Date/Time: Tuesday March 3rd, 2015; Seminar begins at 5:30 with dinner following the seminar.

Dinner: Buffet style: vegetarian, vegan, and gluten free options available upon request.

Cost: ACS members and guests \$20; Graduate students \$10; Undergraduate students \$5; High school students and teachers free; payable by check or cash at the dinner.

RSVP: Send an e-mail to John Unger at unger@juniata.edu no later than **noon, Monday, February 23, 2015**.