## **LECTURE ABSTRACT**

Although the chemical, physical, and mechanical properties of a polymer are the most vital factors in determining utility, another important constraint that must be considered is the cost of the material. The best way to create inexpensive new polymers is to start with large-scale commodity monomers, rather than rely on the development of new-to-the-world monomers.

The focus of our work is the development of new synthetic methods for polymer synthesis, where known organic feedstocks are combined in alternative ways to make new macromolecular materials. We accomplish this through the development of metal-based catalysts that exhibit unique reactivity. In this presentation, the discovery, development and application of new catalysts for polymerization will be presented. The development of new methods for the synthesis of sustainable polymers will also be discussed.

## SCHEDULE

3:30—4:00 PM, CP-114 **Reception for Geoffrey Coates** Enjoy refreshments and informal conversation with our speaker.

> 4:00 PM, CP-139 Introduction of our speaker by Professor Susan A. Odom

4:00—5:00 PM, CP-139 New Polymers from Old Monomers: Advances Enabled through Catalyst Design

Geoffrey Coates Professor at Tisch University, New York, NY Associate Editor of Macromolecules

The Department of Chemistry wishes to acknowledge the generous support of the Lyle Ramsay Dawson Lecture Series by Venita Dawson Curry. All events are being held in the University of Kentucky's Chemistry-Physics Building.

Maps of the campus and parking information are available on the web at: www.uky.edu/CampusGuide

For more information on the Dawson Lecture Series visit our web site at: chem.as.uky.edu/lyle-dawson-lecture-series

Questions and comments can be directed to Professor Susan A. Odom. susan.odom@uky.edu

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THE EIGHTEENTH ANNUAL
LYLE RAMSAY DAWSON LECTURE

Established in the memory of Lyle Ramsay, Dawson Distinguished Professor and former Head of the Department of Chemistry

NEW POLYMERS FROM OLD MONOMERS: ADVANCES ENABLED THROUGH CATALYST DESIGN

## **Geoffrey Coates**

Tisch University Professor at Cornell University Associate Editor of *Macromolecules* 

> Friday, October 17, 2014 4:00 PM Chemistry-Physics Building Room 139 Lexington, KY

UNIVERSITY OF KENTUCKY

CHEMISTRY COLLEGE OF ARTS & SCIENCES CHEM.AS.UKY.EDU



## Lyle Ramsay Dawson

was a native of Illinois and received his undergraduate degree from the University of Illinois in 1932. He received his Ph.D. degree in 1935 from the University of Iowa.

Dr. Dawson served in several academic positions in Illinois, Wisconsin, Nebraska and Louisiana and also worked on the Manhattan Project as a Research

Chemist and Group Leader in the Metallurgical Laboratory at the University of Chicago. In 1946, he was awarded the War Department's Certificate of Merit and a U.S. Patent for his efforts on the Manhattan Project, which led to the discovery of a fundamental process for the extraction and purification of the elements plutonium and neptunium. He was a member of the committee that organized the Oak Ridge Institute of Nuclear Studies and was a council member of the Institute.

Professor Dawson came to the University of Kentucky in 1945 as Head of the Department of Chemistry. He provided key leadership in initiating and building the doctoral program in Chemistry at the University. For example, in his first decade in the department, he individually obtained the major portion of extramural research support. During his 25 years with the Department, he held contracts for fundamental chemical research with the U.S. Army, the National Science Foundation and the Atomic Energy Commission.

He directed or co-directed 17 Ph.D. dissertations and nine M.S. theses. He was a talented research director and had a special ability to imbue his students with a concise, clear and complete scientific writing style. He published more than 50 research papers dealing with the chemistry of nonaqueous solutions and coauthored a reference book on the subject.

Dr. Dawson was a master teacher both in the classroom and in less formal conferences and discussions. His leadership and mentoring led many

graduate teaching assistants and junior faculty members to become more effective teachers. His uncompromising devotion to high achievement standards in course-work, research, education and training set the tone for our department for years to come.

Another significant contribution, was Professor Dawson's indefatigable advocacy for a new chemistry building. His leadership in soliciting and designing a replacement for the former chemistry building, Kastle Hall, culminated in the opening of the current Chemistry-Physics Building in 1963.

He also served the campus community in other ways. Dr. Dawson was elected a Distinguished Professor in the College of Arts and Sciences in 1954—1955, and was appointed to the rank of Distinguished Professor in the field of Physical Chemistry by the University of Kentucky Board of Trustees in 1956. He served as Acting Dean of the Graduate School in 1954—1955, 1956 and 1960—1961.

Dr. Dawson's contributions outside the University were well recognized. He was a Fellow of both the American Institute of Chemists and the American Association for the Advancement of Science. He was a member of the American Chemical Society, Electrochemical Society, Sigma Xi, Omicron Delta Kappa, Alpha Chi Sigma and Kappa Delta Pi, serving leadership roles in each of these organizations. He served several times as a Tour Lecturer and Visiting Scientist under the sponsorship of the American Chemical Society. He was also active in a variety of other nonacademic organizations.

Dr. Dawson's 25 years in the department represent a truly outstanding combination and balance of administrative leadership, teaching, research and service. Although Dr. Dawson passed away in 1976, his impact on the department continues to this day as we continue our evolution into a toptwenty research institution. The endowment of the Lyle Ramsay Dawson Lecture Series by his beloved daughter, Venita Dawson Curry, permits us to rejoice in this legacy and to continue our tradition of world-class chemical research.



**Geoffrey W. Coates**, an Evansville, Indiana native, graduated from Wabash College in 1989. He received a Ph.D. in organic chemistry with Robert Waymouth at Stanford University in 1994, and was an NSF Postdoctoral Fellow with Robert Grubbs at the California Institute of Technology.

Professor Coates joined the Cornell University faculty in 1997, where he is now the Tisch University Professor. He has received many awards, including the A. C. Cope Scholar Award, ACS Awards in Affordable Green Chemistry and Applied Polymer Science, and the Carl S. Marvel Creative Polymer Chemistry Award. In 2011 he was identified by Thomson Reuters as one of the world's top 100 chemists on the basis of the impact of his scientific research, and was inducted into the American Academy of Arts & Sciences. He is the scientific cofounder of Novomer Inc., and is an Associate Editor of Macromolecules.

"The research focus of my group is the development of new synthetic strategies for producing polymers of defined structure. "