

The Legacy of Thomas J. Hanratty



October 27 - 28, 2017



CHEMICAL AND
BIOMOLECULAR
ENGINEERING



11:30 a.m.-1 p.m. **Check-in and informal welcome lunch**
Sandwiches and drinks will be served.
North Lobby and Room 33, Roger Adams Laboratory

1:30 p.m.-4:45 p.m. **Technical Presentations**
B102 Chemical Life Sciences Laboratory

1:30 **Welcome**
Dr. Jonathan Higdon
Dennis and Cathy Houston Professor

1:45 p.m. **Dr. Ronald Adrian**
Regents Professor
Arizona State University

2:15 **Dr. John Kuzan**
Research Manager
ExxonMobil Upstream Research Co.

2:35 **Dr. Dimitrios Papavassiliou**
C.M. Slipevcic Professor
University of Oklahoma

3:00 **Break/Refreshments**
North Lobby, Roger Adams Laboratory

3:30 **The Hanratty Travel Fund**
Dr. Paul Kenis, *William H. and Janet G. Lycin Professor and Department Head*

3:45 **Dr. Mark McCready**
Professor
University of Notre Dame

4:15 **In the Spirit of T.J. Hanratty: Current Fluid Mechanics Research at Illinois ChBE**
Dr. Jonathan Higdon

5:00-8:00 p.m. **Evening reception**
Drinks and hot appetizers will be served.
Chemistry Library, 170 Noyes Laboratory

5:30 **Remarks**
Dr. Jonathan Higdon and Dr. Peter Hanratty will deliver remarks. Participants will be invited to share their personal reflections.

SATURDAY, OCTOBER 28

9:00 a.m.

**Chemical and Biomolecular Engineering
Alumni Tailgate**

Grange Grove, tailgating area west of stadium

11:00 a.m.

Football game

Illinois vs. Wisconsin

1:00 and 3:00 p.m.

Tours of department labs and flow loop equipment

Meet in north lobby, Roger Adams Laboratory

6:00 p.m.

Evening Banquet

Room 104, Illini Union

Cocktails at 6 p.m.; dinner at 7 p.m.

Remarks by Professors Higdon and McCready





Dr. Thomas J. Hanratty, a pioneer in fluid dynamics, was a longtime Illinois chemical engineering professor who found joy in research and teaching. A respected and integral part of the department, he became an assistant professor in 1953. He formally retired in 1997, but continued his scholarship, authoring a textbook as recently as 2013. Dedicated to student success, he advised nearly 80 PhD students. His pioneering work on multi-phase flow and polymer drag reduction was the basis for many novel technologies, such as optimizing performance of the Alaskan pipeline and impacting many other industrial applications.

Key achievements included: controlling droplet size and pressure drop, predicting existence and avoidance of damaging slug flow regimes, and understanding polymer drag reduction, where addition of minute quantities of high molecular weight polymer can dramatically change turbulent structure near a wall, greatly reducing frictional drag in pipelines.

Dr. Hanratty was elected to the National Academy of Engineering in 1974 for his contributions in the analysis and design of turbulent, gas-liquid, and solid-liquid flow systems. He was elected a Fellow of the American Academy of Arts and Sciences in 1997 and became a member of the National Academy of Sciences in 1999. He was honored with numerous awards and recognitions throughout his career, including several from the American Institute of Chemical Engineers (Colburn Award, 1957; Walker Award, 1961; Professional Progress Award, 1967; and Ernest Thiele Award, 1986). In 2008, he was named one of the most influential chemical engineers in the modern era (post-WWII) at the AIChE Centennial Celebration. Other recognitions include the Curtis McGraw Award (1963) and Senior Research Award (1979) from the American Society for Engineering Education. Dr. Hanratty received his bachelor's degree from Villanova University, master's degree from Ohio State University and doctoral degree from Princeton University. He also received honorary doctorate degrees from l'Institut National Polytechnique de Toulouse and Villanova University.

