# Advanced Analytical Ultracentrifugation Workshop:  Theory and Practice
## October 16 – 19, 2016
### Boehringer Ingelheim Pharmaceuticals Inc.
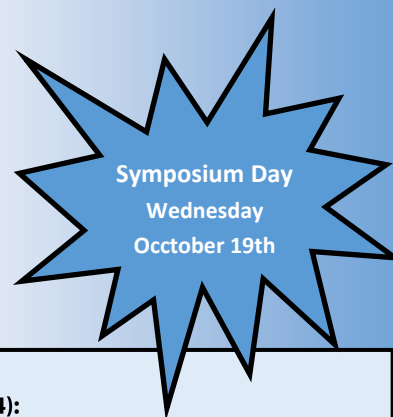**IMBD Department**
**175 Briar Ridge Road**
**Ridgefield, CT  06877**

**Register Online**:  http://www.udel.edu/bitc-auc
If you cannot register online, please contact:
David Hayes: **David.Hayes@boehringer-ingelheim.com**
Kristi Halberg: **khalberg@udel.edu**

**Symposium Day**
**Wednesday**
**Occtober 19th**

**Instructors:**

**Walter Stafford, PhD, BBRI**

**Thomas Laue, PhD, BITC/UNH**

**James Cole, PhD, Univ. of Connecticut**

**Jack Correia, PhD, Univ. of Mississippi Medical Ctr.**

**Michael Brenowitz PhD, Albert Einstein**

**David Hayes, PhD, Boehringer Ingelheim**

**Registration Fees:**
**3 day workshop (limit of 14):**
  **Corporate:**  **$2,500**
  **Academic:**  **$1,250**
**1 day symposium only (included in 3 day workshop)**
  **Corporate:**  **$500**
  **Academic:**  **$100**
**Please enquire about Academic scholarships for students and postdocs:  David.Hayes@boehringer-ingelheim.com**

**Purpose:**
- Interact with experts in analytical ultracentrifugation
- Learn to characterize macromolecular interactions and complex mixtures
- Receive training in the latest experimental approaches and data analysis methods
- Discuss advanced analytical ultracentrifugation topics and specialized methods
  Bring your own data for on-site analysis and consultation

**Description:**
Analytical Ultracentrifugation (AUC) is a powerful method for the determination of absolute molar mass, shape and for the analysis of reversible interactions and irreversible aggregation formation involving macromolecules in solution.  A combination of modern instrumentation, fast computers and new data analysis algorithms has led to an ever-increasing use of AUC in basic research, process development and biotherapeutic formulations.

**Scope:**
This is an **advanced** AUC workshop and is appropriate for academic and industrial scientists who are already familiar with basic experimental and data analysis methods..

**Program:**

**Fundamentals:**
- Basic theory and overview
- Sedimentation velocity
- Sedimentation equilibrium
- Practical Analytical Ultracentriifugation

**Equillibrium:**
- Self-association
- Hetero-association
- Thermodynamic nonideality
- Global multisignal analysis

**Demonstrations:**
- Experimental design and sample preparation
- Use of specialized centrifuge cells
- Operation of the Beckman-Coulter XL-I instrument
- Operation of AVIV AU-FDS detection on Beckman-Coulter XL-I
- Operation of Spin Analytical CFA instrument with absorbance scanning
- Interference optics: adjustment and optimization

**Velocity:**
- Modeling by Lamm equation solutions Sedimentation velocity
- Time derivative methods
- Continuous distributions systems
- Sedimentation

**Data Analysis & Interpretation:**
- Sedimentation

**Advanced Topics & Specialized Approaches:**
- High Concentration Sedimentation
- Statistics of Replicates and Large Number of Related Samples
- Evaluation of participant data: On-site data analysis – bring your own data