Polyploid megakaryocytes extending proplatelets. Red staining for actin and green for Beta-tubulin. Prepared by Pani Apostolidis (Papoutsakis lab) and Dr. Kirk Czymmek.
A Tradition of Excellence

Chemical Engineering at UD is ranked in the top 10 leading research programs in the US, among the top 10 programs in the US with a million dollar research and teaching budget. We lead the nation in research and teaching and are the national leaders in the field.

The University of Delaware (UD) Department of Chemical and Biomolecular Engineering (CBE) is a leading research and educational institution with a long and distinguished history. UD leads chemical engineering education and research efforts in all frontier areas in modern Biotechnology, including protein engineering, tissue engineering & drug delivery, protein biophysics, systems biology & computational genomics, and metabolic engineering.

Our core faculty have established substantial research efforts and lead in the areas of biotechnology, metabolism, systems biology, and biotechnology, and expanding further CBE research activities in other frontier areas in medicine. CBE has one of the largest and strongest programs available both nationally and internationally.

The Chemical Engineering Department at the University of Delaware (UD) Building on its long tradition of research and education excellence, the UD faculty and students publish over 150 scientific manuscripts each year, drawing from an impressive research portfolio. UD faculty and their students consistently rank among the best and most motivated peers and faculty mentors to develop into the future leaders in research, education and innovation.

The Colby lab is a cellular and molecular engineering laboratory that addresses the discovery and development of new materials for use in drug and gene delivery, tissue engineering, and stem-cell bioengineering for production of platelets and solid tissues. The work includes the development of novel, advanced biomaterials and cell-based therapies for the treatment of certain diseases and conditions.

The Robert group focuses on pharmaceutical design, development and drug delivery. They develop new materials and technologies for the delivery of drugs and proteins in a controlled and targeted manner, as well as the development of new drugs and therapeutic approaches.

The Kegg group uses high-precision mass spectrometry to characterize and target proteins, enzymes, and other biomolecules in complex biological samples. The lab uses high-performance liquid chromatography and mass spectrometry to analyze complex biological samples and identify peptides, proteins, and other biomolecules.

The Sullivan group develops new, biocompatible materials for use in drug and gene delivery. They develop new materials and technologies for the delivery of drugs and proteins in a controlled and targeted manner, as well as the development of new drugs and therapeutic approaches.

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GRADUATE EDUCATION
Graduate education at Delaware offers unique opportunities for professional development and growth, including:

- an environment of motivated, engaged peers and faculty mentors;
- the Fraser and Shirley Russell Teaching Fellows program
- biannual departmental symposia, with strong Industrial participation; and
- an active graduate student organization, the Colburn Club, which plans social activities and other events within the Department.

Note: All graduate students are supported as research assistants, and receive a comfortable stipend for living expenses. Special competitive fellowships are available to the most qualified applicants.

Industrial Collaborations
Industrial collaborations are a hallmark of UD’s Chemical Engineering department. The University’s close proximity to major chemical, energy and pharmaceutical industry leaders is a key asset to our programs. Many research groups work in partnership with top national industrial laboratories, offering students a unique perspective on future careers in both academia and industry through a blend of academic study and applied research opportunities.

CENTERS AND PROGRAMS
Centers and programs at UD provide rich environments and experiences for graduate students. These include:

- Delaware Biotechnology Institute (DBI)
- UD Energy Institute (UDEI)
- Center for Catalytic Science and Technology (CCST)
- Catalysis Center for Energy Innovation (CCEI)
- Center for Molecular and Engineering Thermodynamics (CMET)
- Center for Neutron Science (CNS)
- Institute of Energy Conversion (IEC)
- Center for Composite Materials (CCM)
- Chemistry-Biology Interface (CBI)
- Solar Hydrogen IGERT

INTERDISCIPLINARY RESEARCH
Interdisciplinary work between major research fields is a hallmark of successful innovation. UD encourages such teamwork through close collaborations among the chemical engineering faculty and departments across the University, and local biomedical institutions such as Christiana Care Health System (CCHS) and Thomas Jefferson University Hospital (TJU).

AFTER GRADUATION
Our graduates find fulfilling careers in academia and industrial research, as well as in law, medicine and business.

- ACADEMIA – Our graduates hold positions at top-ten research institutions, as well as in many other programs world-wide.
- INDUSTRY – Delaware students are sought after by national and international enterprises of all sizes.

DEPARTMENT RECOGNITION

- #10 (2010 U.S. News & World Report)
- 17 NSF CAREER and PYI Award Winners: 2 PECASE Award Winners
- 3 National Academy of Engineering (NAE) Members
- 12 Named Professorships
- Numerous National and International Awards (AIChE Institute Awards and American Chemical Society Awards)

APPLICATION www.udel.edu/gradoffice/applicants

HOW TO APPLY Application to the graduate program is coordinated through the University’s Office of Graduate Studies. The application can be found at www.udel.edu/gradoffice/applicants. To view updated news and information on our graduate program, faculty research and student and alumni achievements, visit the Chemical Engineering webpage at www.che.udel.edu.
The University of Delaware is centrally located between New York City and Washington D.C. at the heart of the east coast’s chemical and pharmaceutical industries. The campus boasts a college-town atmosphere surrounded by exceptional nature, woods and state parks, and within easy driving distance to beaches and historic towns.

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