

UNIVERSITY FACULTY SENATE FORMS

Academic Program Approval

This form is a routing document for the approval of new and revised academic programs. Proposing department should complete this form. For more information, call the Faculty Senate Office at 831-2921.

Submitted by: _____ phone number _____

Department: _____ email address _____

Date: _____

Action: _____
(Example: add major/minor/concentration, delete major/minor/concentration, revise major/minor/concentration, academic unit name change, request for permanent status, policy change, etc.)

Effective term _____
(use format 04F, 05W)

Current degree _____
(Example: BA, BACH, BACJ, HBA, EDD, MA, MBA, etc.)

Proposed change leads to the degree of: _____
(Example: BA, BACH, BACJ, HBA, EDD, MA, MBA, etc.)

Proposed name: _____
Proposed new name for revised or new major / minor / concentration / academic unit (if applicable)

Revising or Deleting:

Undergraduate major / Concentration: _____
(Example: Applied Music – Instrumental degree BMAS)

Undergraduate minor: _____
(Example: African Studies, Business Administration, English, Leadership, etc.)

Graduate Program Policy statement change: _____
(**Must attach** your Graduate Program Policy Statement)

Graduate Program of Study: _____
(Example: Animal Science: MS Animal Science: PHD Economics: MA Economics: PHD)

Graduate minor / concentration: _____

Note: all graduate studies proposals must include an electronic copy of the Graduate Program Policy Document, highlighting the changes made to the original policy document.

List new courses required for the new or revised curriculum. How do they support the overall program objectives of the major/minor/concentrations)?

(Be aware that approval of the curriculum is dependent upon these courses successfully passing through the Course Challenge list. If there are no new courses enter "None")

Explain, when appropriate, how this new/revised curriculum supports the 10 goals of undergraduate education: <http://www.ugs.udel.edu/gened/>

Not Applicable

Identify other units affected by the proposed changes:

(Attach permission from the affected units. If no other unit is affected, enter "None")

None

Describe the rationale for the proposed program change(s):

(Explain your reasons for creating, revising, or deleting the curriculum or program.)

See Attachment

Program Requirements:

(Show the new or revised curriculum as it should appear in the Course Catalog. If this is a revision, be sure to indicate the changes being made to the current curriculum and **include a side-by-side comparison** of the credit distribution before and after the proposed change.)

Not Applicable

ROUTING AND AUTHORIZATION: (Please do not remove supporting documentation.)

Department Chairperson _____ Date _____

Dean of College _____ Date _____

Chairperson, College Curriculum Committee _____ Date _____

Chairperson, Senate Com. on UG or GR Studies _____ Date _____

Chairperson, Senate Coordinating Com. _____ Date _____

Secretary, Faculty Senate _____ Date _____

Date of Senate Resolution _____ Date to be Effective _____

Registrar _____ Program Code _____ Date _____


Vice Provost for Academic Affairs & International Programs _____ Date _____

Provost _____ Date _____

Board of Trustee Notification _____ Date _____

Revised 02/09/2009 /khs

TO: Faculty Senate

FROM: Michael J. Chajes, Dean
College of Engineering 

DATE: February 14, 2011

SUBJECT: Proposed Department Name Change
Chemical Engineering to Chemical and Biomolecular Engineering

The Department of Chemical Engineering has put together a proposal that builds a very strong case for changing the name of the department to the Department of Chemical and Biomolecular Engineering. On February 4, 2011, the College of Engineering held a special faculty meeting to discuss the proposed name change. Following the meeting, a college wide vote was held. The result of the vote was:

56 – For the name change
13 – Against the name change
4 – Abstentions

Based on the reasons articulated in the proposal, the desires of the department, and results of the college-wide vote, I too recommend that the department name be changed.

**Proposal for Changing the Name of the Department of Chemical Engineering to the
*Department of Chemical and Biomolecular Engineering***

For consideration by the College of Engineering

January 25, 2011

College of Engineering Faculty
University of Delaware

Proposal:

The faculty of the Department of Chemical Engineering has overwhelmingly voted to change our name to the **Department of Chemical and Biomolecular Engineering**. We request a vote by the COE faculty in support of this proposal, which will then be presented to the faculty senate for University approval.

Justification:

Over the past decade, the Department of Chemical Engineering has evolved markedly such that it now includes significant activities in molecular-level engineering education and research rooted in the biological sciences. Associated with this shift, the Department now has ten core and seven allied faculty working in biomolecular research areas, of which eight were added in the last ten years; seven hold named professorships. Nine of these faculty are at the senior level, one (Kelvin Lee) of whom is Director of the Delaware Biotechnology Institute (DBI). The faculty and their research areas are detailed in the attached Biochemical and Biomolecular Engineering graduate brochure. Over the last seven years the Department has grown a significant focus on the life sciences, with twelve of its faculty (~40%) active in biomolecular engineering research. In FY 2010, these faculty members¹ have generated over \$3.5M in total research expenditures. These faculty are PIs or co-PIs on many major grants with a biomolecular engineering focus (see partial list below). NIH funding is now a significant fraction of the total research portfolio of the Department (see chart below). This research enterprise currently supports over 45 doctoral students and 10 postdoctoral fellows. In the undergraduate program, the **biochemical engineering minor** has been highly successful, with nearly 50% of the graduating ChE seniors (20-25 every year) completing this minor since its inception in 2003, with an average GPA equivalent to or above the Department average (3.3-3.5 vs. 3.15-3.35). Further, we as a faculty have taken major steps to infuse the biological sciences throughout our curriculum. In addition to adding a new bioprocessing senior laboratory and graduate and undergraduate elective courses, in 2010 we voted to add the biological science as a fourth “scientific pillar” of our undergraduate curriculum, on par with chemistry, physics, and mathematics. Thus, the entering class of 2010 now has a mandatory biological science requirement. After careful review and discussion at a multiple faculty retreats over the past few

¹ Excluding Wilfred Chen, David Colby, and April Kloxin

years, it is the consensus of our faculty that the name **Chemical and Biomolecular Engineering** best echoes the teaching and research activities of the Department.

The choice of name reflects the research activities, teaching, and mission of our Department. For reference, the U.S. Dept. of Education defines **CIP Code 14.0702: Chemical and Biomolecular Engineering** as:

A program that prepares individuals to apply mathematical and scientific principles to the design, development and operational evaluation of systems at the interface of chemical engineering and biology, with an emphasis at the molecular level, such as biopharmaceutical processes, protein engineering, metabolic engineering, gene therapy, biomaterials, cell and tissue engineering, and drug delivery. Includes instruction in chemical engineering, thermodynamics, organic chemistry, biochemistry, momentum and heat transfer, cellular and molecular biotechnology, process design, and chemical reactor design.

As Chemical and Biomolecular Engineering best reflects the teaching and research activities nationally for our discipline, analysis of our graduate recruiting shows that our ability to attract graduate students with an interest in biological sciences and engineering has been hampered by the lack of visibility of the Department in this area, despite the strength and number of faculty with research efforts in bioengineering. Thus, in order to improve our competitiveness in attracting outstanding bio-oriented graduate and undergraduate students, it is the consensus of our faculty that name change is merited at this time.

Impact on related COE and UD Programs:

We anticipate that the name change will greatly complement and strengthen the emerging Biomedical Engineering degree program by providing an identifiable, allied program with substantial resources and educational offerings that can be used to help market Biomedical Engineering to prospective students and parents of those students, as well as attract more bioengineering faculty to UD. Indeed, many top BME departments synergize with Chemical and Bio(molecular/chemical/biological) engineering programs around the country. Biomedical engineering (BME) is distinguishable from biomolecular/biochemical engineering (BMoE/BChE) in both curriculum and employment opportunities. BME students are most often employed by the biomedical device and materials industries (e.g. Medtronic, 3M, Siemens, Gore, etc...), while BMoE/BChE students by companies like Amgen, Merck, GSK, Genentech, Abbott, Genzyme, BMS, the new biofuel and genomics companies, etc). Significantly, national data shows that the best BME/bioengineering departments in the country co-exist in a synergistic and complementary way with Chemical & Biomolecular/Biological engineering departments. Examples include: Johns Hopkins Univ. (JHU; the top ranked BME program in the country), UC Berkeley, Univ. Pennsylvania, Georgia Inst. Tech, Northwestern Univ. (the oldest BME department in the country), Rice Univ., UCLA, Univ. Illinois U-C, Univ. Wisconsin, Madison, and many other top programs nationally. In fact, a detailed study by JHU has shown that both programs have benefited enormously when Chemical Engineering was renamed Chemical & Biomolecular Engineering in terms of student recruiting, funding, collaborations and overall research and teaching synergism.

This name change is also intended to catalyze new educational and research efforts within the College and University, and improve our stature and impact both within UD and globally. Evidence of the broad and strong support from related programs across the University for this name change are detailed in the attached letters from:

- Robin Morgan, Dean of the College of Agriculture and Natural Resources
- Klaus Theopold, Chair of the Department of Chemistry and Biochemistry
- Randy Duncan, Chair of the Department of Biological Sciences

On behalf of the faculty of the Department of Chemical Engineering, I thank you in advance for your consideration of this initiative, ask for your support, and welcome your questions and comments.

Sincerely,



Norman J. Wagner
Alvin B. and Julia O. Stiles Professor and Chair
Department of Chemical Engineering

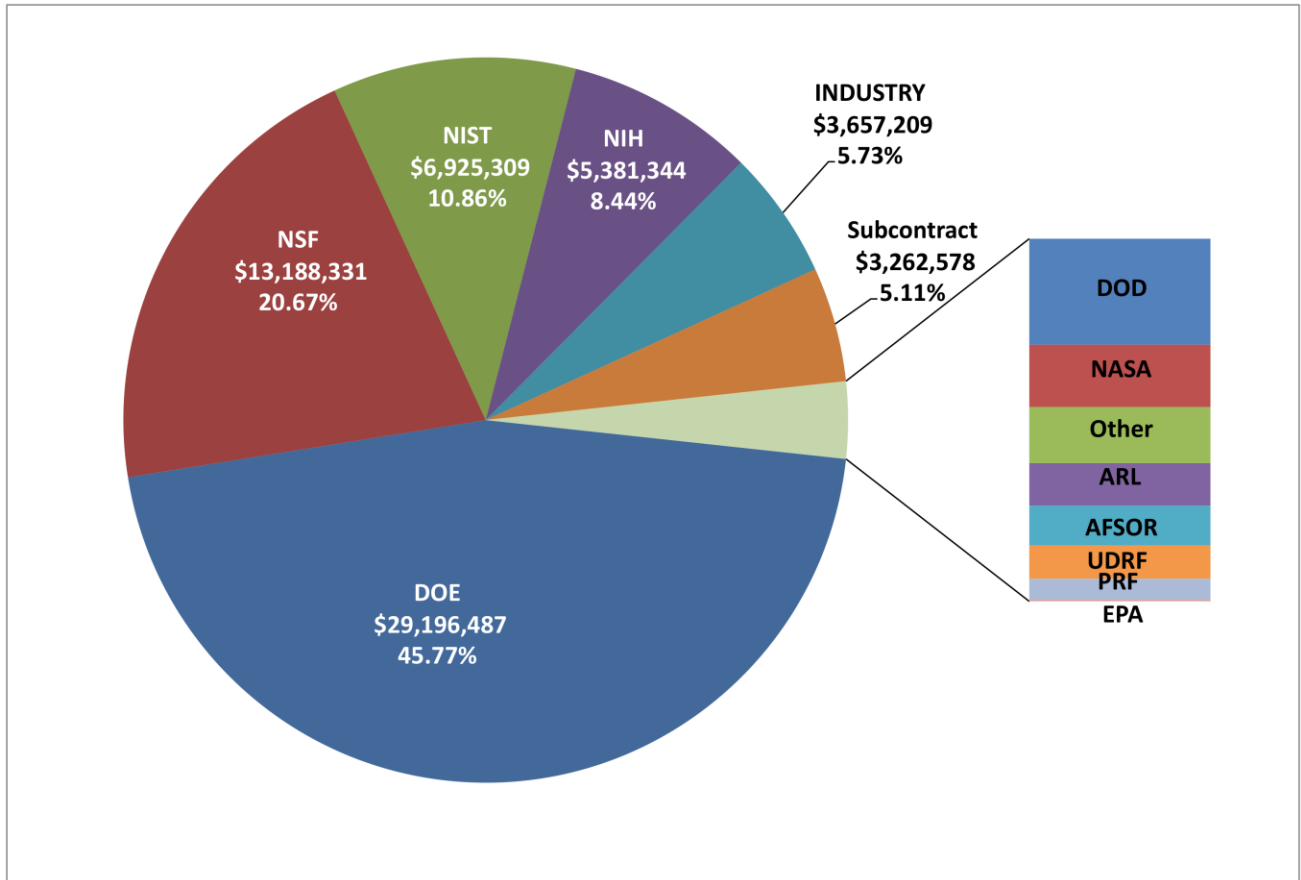
Attachments:

- Letter of support from the Department of Chemistry and Biochemistry
- Letter of support from the College of Agriculture and Natural Resources
- Letter of support from the Department of Biological Sciences
- Biochemical and Biomolecular Engineering Graduate Studies brochure

Research Program Funding in Biomolecular Engineering >\$1MM:

- *COBRE: Molecular Design of Responsive Biomaterials*, **Epps** (Co-PI) & **Sullivan** (Co-PI), National Institutes of Health, 9/15/2008 - 3/31/2013, **\$10,500,000**
- *COBRE: Membrane Protein Production and Characterization*, **Lenhoff, Robinson, & Vlachos**. National Institutes of Health, 6/1/2005 - 5/31/2011, **\$9,567,033**
- *Multiscale Modeling of Spatially Distributed Biological Systems*, **Vlachos**, Department of Energy, 8/15/2005 - 8/14/2011, **\$1,481,137**
- *Detection and Structural analysis of misfolded proteins causing neurodegeneration*, **Colby**, National Institutes of Health, 7/1/2010 – 6/30/2013, **\$1,234,823**
- *Collaborative Research: The Thermodynamics of Protein Separations*, **Lenhoff**, National Science Foundation, 9/15/2005 - 8/31/2010, **\$1,152,497**
- *Activating Factor*, **Lenhoff**, Public Health Services, 6/15/2007 – 5/31/2010, **\$1,006,250**

Chart 1: FY2010 Total Current Chemical Engineering Contracts and Grants by Source.





DEPARTMENT OF CHEMISTRY
AND BIOCHEMISTRY
OFFICE OF THE CHAIRMAN

102 Brown Laboratory
University of Delaware
Newark, Delaware 19716-2522
PH: 302/831-1247
Fax: 302/831-6335

January 5, 2011

Prof. Norm Wagner
Chair, Department of Chemical Engineering

Dear Norm,

This is to follow up on our conversation regarding your Department's plan to change its name to '**Chemical and Biomolecular Engineering**'. As we agreed this is in accord with a national trend that affects not only Engineering departments, but Chemistry departments as well. There have been a number of name changes to 'Chemistry and Chemical Biology' in recent years. Were it not for the fact that we have been ahead of this curve by being a Department of Chemistry and Biochemistry, we might well consider such a move now.

In any event, I believe your arguments are cogent and the new name fits well with the make-up and direction of your department. Thus, on behalf of this department, I wish to register my explicit support for the new name.

With best regards,

A handwritten signature in black ink that reads "Klaus H. Theopold".

Klaus H. Theopold
Professor and Chair



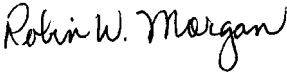
OFFICE OF THE DEAN

113 Townsend Hall
University of Delaware
Newark, Delaware 19716-2103
Ph: 302/831-2501
Fax: 302/831-6758

January 11, 2011

MEMORANDUM

To: Norm Wagner
Chair, Department of Chemical Engineering

From: 
Robin Morgan
Dean, College of Agriculture and Natural Resources

Re: Department Name Change to Chemical and Biomolecular Engineering

I am writing in support of the initiative in the department of Chemical Engineering to change the department name to Chemical and Biomolecular Engineering. The department has evolved such that many of its faculty members are invested in biomolecular engineering and are collaborating with life scientists on this and other campuses and in industry. This name change will more accurately reflect the current department and its future plans. I see no conflict with departments in my college or any other college, and I believe that this change will draw emphasis to and benefit life sciences in general at the University of Delaware. I also do not think this change detracts from the chemical engineering emphasis that has been a signature of this department at UD for decades; rather, this change reflects the department's broadened scope.

The Department of Chemical Engineering has been a flagship department and a point of pride for this university. I strongly support the desire of the department to change its name, and I welcome its emphasis on biomolecular engineering.

Cc: Kelvin Lee
Director, Delaware Biotechnology Institute



DEPARTMENT OF BIOLOGY
OFFICE OF THE CHAIR

University of Delaware
Newark, Delaware 19716-2590
Ph: 302/831-6977
Fax: 302/831-2281

Randall L. Duncan, Ph.D.
Professor and Chairman
Department of Biological Sciences
118C Wolf Hall
Telephone (302) 831-6977
Fax No. (302) 831-1033
E-mail: rlduncan@udel.edu

January 25, 2011

Prof. Norm Wagner
Chair, Department of Chemical Engineering

Dear Norm,

This is a follow-up to the conversation I had with Anne Robinson regarding your department's plan to change its name to **Chemical and Biomolecular Engineering**. As Anne and I discussed, I feel this offers no conflict with our department and will serve to enhance the visibility efforts of the bioengineering efforts on campus. In addition, it is in accord with a national trend in Engineering departments.

The points you make to support the name change are well supported, and I wish to provide my support for the new name.

Best regards,

A handwritten signature in black ink that reads "Randall L. Duncan".

Professor and Chair

BIOCHEMICAL & BIOMOLECULAR ENGINEERING

in Chemical Engineering



Dare to be first.



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

Metabolic Engineering
Stem-Cell Biotechnology
Protein Engineering
Tissue Engineering
Synthetic Biology
Bioseparations
Biofuels
Biomaterials
Genomics
Protein Biophysics
Metabolomics
Drug Delivery
Proteomics
Computational Biology
Biorefinery Technologies
Neurodegenerative Diseases
Cell Signaling

BIOCHEMICAL & BIOMOLECULAR ENGINEERING

Building on its long tradition of research and education excellence, the Chemical Engineering Department at the University of Delaware (UD) has grown the areas of biochemical & biomolecular engineering into one of the largest and strongest programs available both nationally and internationally.

Our core faculty have established substantial research efforts and state-of-the-art laboratories at UD. We are building the fast growing fields of synthetic biology, stem-cell biotechnology, metabolomics, systems biology and biofuels, and expanding further UD's research activities in all frontier areas in modern BioChE, including protein engineering, tissue engineering & drug delivery, protein biophysics, genomics, proteomics & computational biology, and metabolic engineering, both within chemical engineering as well as through extensive collaborations across campus and nearby medical centers.

BIO RESEARCH AREAS

- ▶ Biomolecular, Cellular & Protein Engineering
- ▶ Metabolic Engineering & Synthetic Biology
- ▶ Biofuel & Biorefinery Technologies
- ▶ Experimental Genomics, Proteomics & Metabolomics
- ▶ Neurodegenerative Diseases
- ▶ Stem-Cell & Tissue Engineering
- ▶ Systems Biology & Computational Genomics
- ▶ Computational Biology & Signaling Networks
- ▶ Biomaterials & Drug Delivery
- ▶ Bio-Nanotechnology
- ▶ Protein Biophysics & Bioseparations

A TRADITION OF EXCELLENCE

Chemical Engineering at UD is ranked, by all metrics, among the top 10 programs in the US with a world-wide reputation and reach. Building on a long and distinguished history, UD leads chemical engineering research and teaching at both the national and international levels.

Dynamic Faculty – Our graduate students work with a talented, diverse faculty who are widely heralded for their research and educational contributions, and whose research efforts provide students countless opportunities to participate in a rich and vibrant intellectual environment within the University and beyond.

State-of-the-art Facilities – State of the art laboratories and core, shared facilities at the Colburn Laboratory and the Delaware Biotechnology Institute (DBI) house all Chemical Engineering faculty working on various application of biological systems.

Training Future Leaders – UD is one of the largest producers of Chemical Engineering PhD graduates in the US. The Department currently enrolls over 130 PhD students and 25 postdoctoral fellows. Graduate students joining the UD graduate program work among the best and most motivated peers and faculty mentors to develop into the future leaders in research, education and innovation.

UD faculty and their students publish over 150 scientific manuscripts and patents each year, drawing from an impressive research portfolio and impacting all areas of engineering science – from biomolecular and metabolic engineering to energy and catalysis; from green engineering and nanostructured materials to complex fluids and polymers.



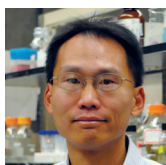
CORE BIOENGINEERING FACULTY



MACIEK ANTONIEWICZ

DUPONT YOUNG PROFESSOR,
ASSISTANT PROFESSOR

Our metabolic engineering and systems biology lab is developing next generation tools for engineering microbial and mammalian cells applied to specific problems in biotechnology and medicine: biofuels and diabetes. The lab makes use of modern techniques for molecular biology, metabolic flux analysis, cell biology, mass spectrometry and bioinformatics.



WILFRED CHEN

GORE PROFESSOR

Chen's research interests include cellular and metabolic engineering, synthetic biology for biofuel production, protein therapeutics, viral detection, drug discovery, and protein purification.



DAVID COLBY

ASSISTANT PROFESSOR

The Colby lab uses cellular and biomolecular engineering to solve problems of the nervous system. Important aspects include reprogramming cells to alter their identity or function and engineering proteins for enhanced therapeutic potency. Applications focus on diseases caused by protein misfolding, including Prion and Huntington's diseases.



APRIL KLOXIN

ASSISTANT PROFESSOR

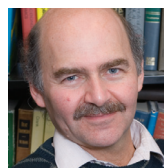
The Kloxin lab develops materials with highly controlled properties for spatiotemporal regulation of the cell microenvironment and exploits these materials for regenerative medicine. The lab operates at the interface between materials and cell biology, utilizing techniques in organic synthesis and purification, materials characterization, and stem cell culture for complex tissue regeneration.



KELVIN LEE

GORE PROFESSOR, DBI DIRECTOR,
DBI FACULTY FELLOW

Lee's group develops and applies next generation life science technologies. The team addresses problems in Alzheimer's disease diagnosis and treatment as well as in the production of recombinant therapeutics and in the expression of proteins. His team has significant experience with mass spectrometry and next generation DNA sequencing.



ABRAHAM LENHOFF

GORE PROFESSOR

Lenhoff's group studies applications of protein molecular biophysics, especially to protein separations processes. The group makes use of experimental and theoretical methods drawn from areas such as thermodynamics, transport phenomena and colloid science, and the applications are predominantly to fundamental aspects of protein chromatography and the phase behavior of protein solutions.



TERRY PAPOUTSAKIS

EUGENE DUPONT CHAIR PROFESSOR,
DBI FACULTY FELLOW

Papoutsakis' group develops and applies experimental and computational genomic strategies in metabolic engineering for biofuel and biorefinery applications; and stem-cell bioengineering for production of platelets and solid tissues. The work includes the development of evolutionary engineering approaches for microbial strain development. Systems biology is an integral part of the lab's work.



CHRISTOPHER ROBERTS

ASSOCIATE PROFESSOR

The Roberts group focuses on pharmaceutical protein stability, biophysics of protein aggregation and polypeptide self assembly, and development of engineering and multi-scale models for protein stability and colloidal phase behavior.



ANNE ROBINSON

ASSOCIATE CHAIR,
PROFESSOR

The Robinson laboratory is interested in understanding the fundamental interactions between molecules, both in isolation and in the complex environment of the cell. To this end, they are investigating the determinants of protein folding and misfolding on the molecular and cellular levels, with a focus on proteins that are major therapeutic and bioprocess targets.



MILLICENT SULLIVAN

ASSISTANT PROFESSOR

The Sullivan group develops new, bioinspired materials for drug and gene delivery. The group combines approaches from cell biology and materials science to produce materials that interact with cells and proteins in unique ways to initiate efficient therapeutic trafficking and release.

MATERIALS BIO INTERFACE



THOMAS EPPS III

ASSISTANT PROFESSOR

The Epps group uses the self-assembly of nanostructured soft materials to design nanoscale containers and scaffolds for targeted drug delivery.

Epps' group uses de novo design principles to create materials with well-controlled sizes and tunable mechanical, thermal, and delivery properties.



ERIC FURST

ASSOCIATE PROFESSOR

CMET DIRECTOR

Furst's biomaterials research focuses on developing rapid characterization methods enabled by microrheology and microfluidics to screen the

properties of novel hydrogelators that are engineered for controlled delivery and scaffolding in tissue regeneration.

MODELING & COMPUTATIONAL BIOLOGY



ANTHONY BERIS

ARTHUR B. METZNER PROFESSOR

Modeling and Simulation of Biological Transport Phenomena with specialization on blood flow

modeling in the arterial circulation system. Beris' research focuses on quantitative and computational

methods of interest to biological applications as part of broader collaborative multidisciplinary approaches.

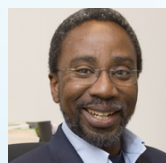


PRASAD DHURJATI

PROFESSOR

Systems Biology: Mathematical Modeling of Biological Systems, Knowledge-based Analysis of Omics Data, Simulation of Gene and Metabolic Regulatory Networks, Physiology-based Pharmaco-kinetic (PBPK)

Models, Models to Predict Side Effects of Drugs, & Hybrid-Quantitative-Qualitative Models.

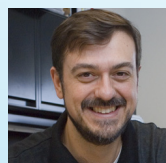


BABATUNDE OGUNNAIKE

WILLIAM L. FRIEND CHAIRED PROFESSOR,
CENTER FOR SYSTEMS BIOLOGY—DBI

The Ogunnaike group is interested in mathematical modeling and analysis of complex biological systems for generating novel hypotheses regarding effective

treatment of pathologies. Specific systems of interest include cellular signal transduction, neuronal adaptive processes in the brain, and the biological control systems involved in hemostasis and hypertension.



DIONISIOS VLACHOS

ELIZABETH INEZ KELLEY PROFESSOR
CCST AND CCEI DIRECTOR

Multiscale modeling of spatiotemporal dynamics of signal transduction and cellular phenomena related to cancer.

GRADUATE STUDIES IN CHEMICAL ENGINEERING

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)
- ▶ 14 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)

APPLY!

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.



College of Engineering

CHEMICAL ENGINEERING

150 Academy Street
Colburn Lab
Newark, DE 19716

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.

CONTACT INFO

P: (302) 831-2543

E: cheg-graduate-admissions@udel.edu

www.che.udel.edu/biocheg



AN EQUAL OPPORTUNITY EMPLOYER-The University of Delaware is committed to assuring equal opportunity to all persons and does not discriminate on the basis of race, creed, color, gender, genetic information, age, religion, national origin, veteran or disability status, or sexual orientation in its educational programs, activities, admissions or employment practices as required by Title IX of the Educational Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, Title VII of the Civil Rights Act of 1964, and other applicable statutes. Inquiries concerning the above should be referred to the Office of Equity and Inclusion, (302) 831-8735, located at 305 Hullahen Hall. [ChE_Bioeng_1010]

FIRST CLASS

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Newark, DE

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