

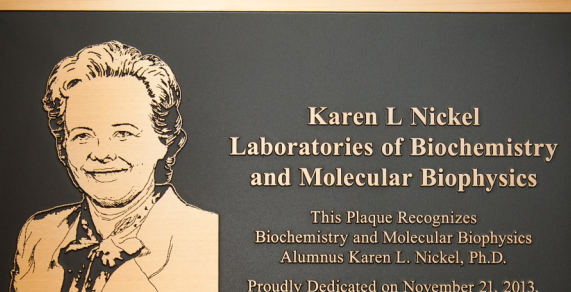
BMB

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Active Site News

Winter 2013

A Dedication to Remember



For her Distinguished Career, Generosity and Support to K-State:

Retired Chief of Laboratory Field Services for the California State
Department of Health

Former President of the American Association of Clinical Chemists

Dedicated speaker on "Career Opportunities for Biochemists"

Dr. Nickel obtained her M.S. (1966) and Ph.D. (1968) degrees from the Department of Biochemistry at Kansas State University, and completed postdoctoral training and licensure in California as a Clinical Chemist and national board of certification by the American Board of Clinical Chemistry in 1975. She was a Diplomate of the American Association of Clinical Chemists (AACC) and a Laboratory Director in the California Department of Health. She served the AACC over many years, on the Board of Directors (1982), as elected national Secretary (1986), as editor of the AACC newsletter, as President-Elect of the AACC (1989), and AACC President in (1991). In 1993 Dr. Nickel became the first woman to hold the position of Chief of Laboratory Field Services for the California Department of Health. During her tenure she analyzed programs, changed laws and made new regulations, paving the way for clear and easy enforcement of lab standards. She took a lead role against laboratory fraud and established enforcement actions against violators. Dr. Nickel created a career ladder for laboratory personnel, giving recognition to phlebotomists, technicians, genetic scientists, masters-level supervisors and non-traditional directors.



The dedication of the Karen L. Nickel laboratories in Burt Hall (Room 101A below) on November 21, 2013 celebrated the revision of the space previously occupied by Professor Emeritus Tom Roche. The remodeling encompassed a complete revision of the bench tops, cabinets and surfaces from floor to ceiling, and added a new air conditioning system, while retaining the wonderful open ambiance of the original lab, built in 1923.



New Undergraduate Curricula in Biochemistry & Molecular Biophysics

The overall educational objectives of Biochemistry and Molecular Biophysics (BMB) are to graduate students who are competent laboratory scientists, intellectually prepared for future endeavors, and proud ambassadors of Kansas State University. Toward those ends, during 2012 BMB reviewed and revised its undergraduate curricula for the Bachelor of Arts and Bachelor of Sciences degrees. We intend to provide K-State students with appropriate biochemical, molecular biological and biophysical training for their professional careers, whatever they may be. Our programs now include degree plans in Biochemistry (BA, BS, BS/MS), Medical Biochemistry (BA, BS) and Molecular Biophysics (BS).

The Medical Biochemistry curricula (<http://bit.ly/JL63F1>) are new and novel, aimed to create successful programs of study for students in pre-medical, pre-veterinary, pre-dental or pre-nursing majors. They follow the 2012 recommendations of the American Association of Medical Colleges (AAMC) and the American Society of Biochemistry and Molecular Biology (ASBMB), that stress biochemistry in pre-health training and testing, while reducing emphasis on advanced mathematics, physical sciences and organic chemistry (bit.ly/1hJD5k6). A new, undergraduate course that considers biochemical aspects of human and animal health (BIOCH 571; Medical Biochemistry) is at the heart of these two curricula. This one-semester, team-taught lecture class covers medically-related biochemical concepts, structures, pathways, and mechanisms. BMB faculty are excited about its content and context, that include discussions of diabetes, neurodegenerative diseases, sickle-cell anemia, cancer, cystic fibrosis, infectious disease, bioterrorism and more. Our lectures will instruct students about protein structure/function, metabolism, signal transduction, bioenergetics, membrane transport, genomics/proteomics, all in relation to clinical medicine. We offer BIOCH 571 in the Fall of the junior year, immediately preceding MCAT, MVAT, and MDAT testing in the ensuing Spring term. The class will also serve as preparation for those tests, with the intention of maximizing the performance of the students in our programs. At present, no equivalent class exists at K-State.

New Undergraduate Curricula at K-State BMB

Biochemistry Degree Programs: B.A. B.S. B.S./M.S.

Medical Biochemistry Degree Programs: B.A. B.S.

Molecular Biophysics Degree Program: B.S.

The second new degree program, Molecular Biophysics (<http://bit.ly/1aKTbpo>), develops a different set of skills in a different group of students, who desire careers in basic research. Our collaborations with the Department of Physics advanced to another level last year, when we renamed ourselves Biochemistry and Molecular Biophysics. We joined forces with Physics in the design and the implementation of this B.S. degree plan. It suits BMB students who desire more quantitative and physical training, as well as Physics undergraduates who want more understanding of biochemistry and molecular biology. Among all our degree programs, Molecular Biophysics offers most rigorous mathematics, physics, chemistry and biophysics as preliminaries to laboratory research. Biophysical analyses of macromolecules, whether ensembles or single molecules, constitute a rapidly advancing research frontier and a major interest of our faculty. The Molecular Biophysics B.S. curriculum imparts comprehensive training in these areas for future researchers.

For students who are motivated in other directions, or less focused or settled on their ultimate careers, the standard B.A. and B.S. programs in Biochemistry (<http://bit.ly/1aKTIXZ>) continue to provide well rounded and thorough programs of study.

Overall, we hope and anticipate that these curricular revisions will maintain the high standards of K-State BMB undergraduate education for many years to come.

A New Scholarship for Developing Scholars in Biochemistry and Molecular Biophysics



Larry Davis knows what it's like to take a chance. As a biochemist he does that with every experiment. He also knows what it's like to get a chance. That's what happened when he received a scholarship to go to a college where every science major was required to do an undergraduate research project with a faculty mentor. From that chance grew his first two scientific publications, plus a photo in Chemical and Engineering News. It also led to an opportunity to go to graduate school to get one of the first PhDs in Molecular Biology.

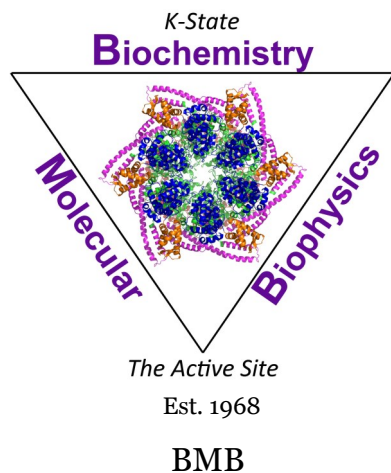
Now he's trying to make a chance for more first generation college students at K-State to have the opportunity of doing research with a faculty mentor. This kind of opportunity can be a life-changing experience, especially for members of groups under-represented in sciences, who may have met very few professors or researchers during their high school years.

Not surprisingly, Larry Davis' parents, George and Olive Davis, did not have college degrees. The economic realities of the Great Depression of the 1930s in the U.S. made that impossible for him, and the turbulence of WW II in England made that impossible for her. But they valued higher education and made great efforts so that both of their children would get to college. In recognition of their dedication to education, the new scholarship is named in honor of George H. and Olive E. Davis, and is called the Davis Scholarship for Developing Scholars in Biochemistry and Molecular Biophysics.

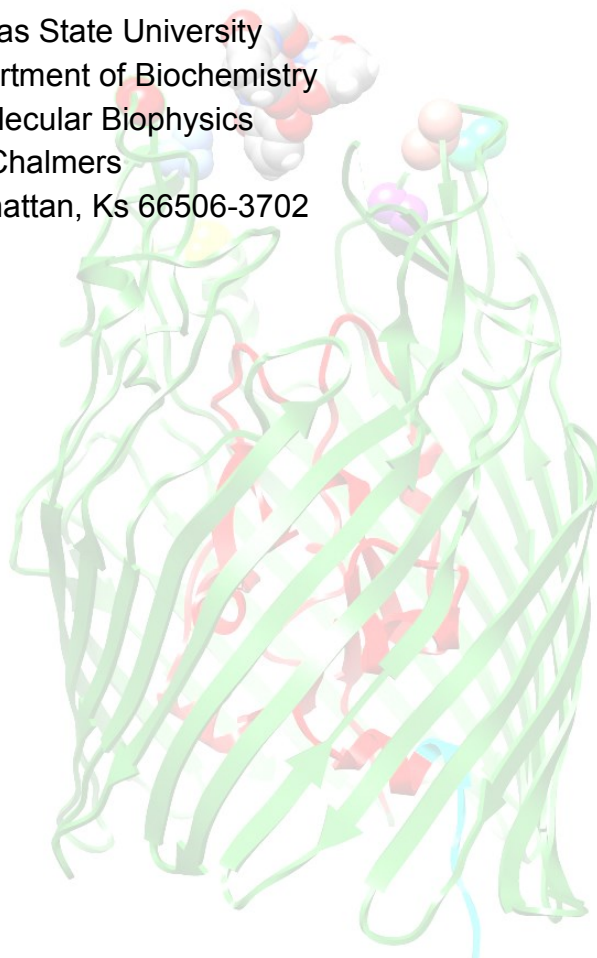
More than a decade ago K-State launched the Developing Scholars program. It is specifically focused on first generation college students, and those from groups presently under-represented in research-based disciplines. If you've followed the newsletter the past few years you may have noticed that several developing scholars with biochemistry majors have been very successful. Most recently Jenny Barriga received a Goldwater Scholarship, as reported last spring. Another developing scholar, Pam Maynez, was featured on the cover of the Johnson Cancer Center news.

Many national scientific societies, including the American Society for Biochemistry and Molecular Biology, have been making vigorous efforts to recruit such students to Science, Technology, Engineering and Math (STEM) disciplines. The new scholarship in Biochemistry and Molecular Biophysics (BMB) will help the department, and the university, in that effort, by supporting one or two students majoring in BMB each year to do research with a faculty mentor.

This new scholarship has account number Q59504 within the department's range of giving options. If you would like to help support developing scholars through the department, you may designate your gift for that purpose. See the department website for the other scholarships and support opportunities.



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Burt Hall