DEPARTMENT OF BIOCHEMISTRY KANSAS STATE UNIVERSITY

Alumni and Friends Newsletter Fall 2002

News from the Department Head

Michael Kanost Interim Head

I became interim head of the department at the beginning of October, due to Charlie Hedgcoth's illness (see page 2). Charlie's death has saddened us, and we certainly remember with great appreciation his many contributions to biochemistry at KSU.

The department has continued to develop and prosper, with record success in grant funding by the faculty,

over \$2.5 million in fiscal 2002. We recently made some revisions and additions to our upper level laboratory courses. We replaced Biochemistry Laboratory II with a set of four one-credit modules: NMR Laboratory (taught by Dr. Krishnamoorthi and Dr. Prakash), Protein Structure Laboratory (Dr. Smith and Dr. Zolkiewski), Recombinant DNA Laboratory I (Dr. Muthukrishnan) and Recombinant DNA Laboratory II (Dr. Kanost). These courses have been well received by students and provide flexibility in choosing laboratory courses to meet students' needs. Other recent course changes are Physical Studies of Biomacromolecules (Drs. Krishnamoorthi, Prakash, Smith and Zolkiewski), a new course for undergraduate biochemistry majors, Nuclear Magnetic Resonance Spectroscopy of Macromolecules, a short and intensive hands-on course taught by Dr. Prakash during intersession between semesters, Molecular Signal Transduction (revision of a course previously called Hormones) taught by Dr. Takemoto, and Biochemistry of Cell Regulation, taught by Dr. Zolkiewska.

The Ackert Hall addition, now named Chalmers Hall (see article on page 3), continues to progress more slowly than we had hoped, as additional funding must still be obtained to finish the laboratory spaces on the two floors that will be assigned to the Biochemistry Department. When the building is finally completed, we will benefit by being located in two buildings (Burt Hall and Chalmers Hall) that are relatively close together, rather than being spread out in three buildings as we are now, and we will have new departmental administrative office space and teaching labs in Chalmers Hall.

Read on for additional news from the department, including prestigious honors to Tom Roche and Karl Kramer.

Dr. Tom Roche Recognized As University Distinguished Professor

Dr. Thomas Roche of the Department of Biochemistry has been selected as University Distinguished Professor in recognition of his outstanding contributions to teaching, research and service to his profession and community. He was recognized at a commencement ceremony on May 17, along with three other recipients of the award, also faculty members from Kansas State University.

"The level of excellence and productivity represented by these faculty exemplifies what universities are all about," Provost James R. Coffman said. "Collectively the University Distinguished Professors have achieved the highest levels of distinction across a broad front of graduate and undergraduate education, research and creative work, and service."

University Distinguished Professor is a lifetime title that represents the highest honor K-State can bestow on its faculty,



an award that recognizes those making outstanding contributions to teaching, research and service to their professions and communities. University Distinguished Professors are appointed following a university-wide competition held by the provost.

Roche is a leading researcher studying mammalian pyruvate dehydrogenase complex — PDC — a central decisionmaking factor in how a body uses sugar. The human body has two primary uses for dietary sugar, it can be used as an energy source or converted to fat. Roche's research has targeted the structure, function and regulation of pyruvate dehydrogenase complex. In diabetes, particularly insulin resistant diabetes, a specific regulatory enzyme prevents use of abundant sugar and contributes to the damaging effects of the disease. Roche's research is trying to understand the unique properties of this enzyme, "kinase 4," and in collaboration with other scientists, develop inhibitors that may lead to a new treatment for diabetics. He has co-authored more than 80 publications, presented more than 50 guest lectures and received more than \$5 million in research grants during his tenure.

Roche was awarded a National Defense Education Act predoctoral fellowship, a postdoctoral fellowship and the research career development award from the National Institutes of Health. He also received the Conoco distinguished graduate faculty member award and was a Mid-America State Universities Association Honors Lecturer. Roche received his bachelor's degree in 1966 from Regis College and earned a Ph.D. from Washington State University in 1970, both in chemistry. Before coming to K-State in 1974, he conducted research at the University of Texas for four years. Roche was the head of the K-State biochemistry department from 1990 to 1999. As department head, he oversaw the development of two core facilities, a biotechnology lab and the High Field Protein NMR facility.

Charlie Hedgcoth, Jr.

Charlie Hedgcoth Jr., 66, of Manhattan, died Oct. 10, at Mercy Health Center on College Avenue. He was born Jan. 29, 1936, in Graham, Texas, the son of Charlie and Edna (Hanson) Hedgcoth Sr. On June 20, 1956, he married Barbara Graham in Dallas, Texas. She survives of the home.

He served in the U.S. Coast Guard as a radioman from 1954 until 1958. He received B.S. and Ph.D. degrees in chemistry from the University of Texas in Austin and then joined the faculty of Kansas State University in 1965. Dr. Hedgcoth was a Professor of Biochemistry at Kansas State University and had been serving as Head of the department since



1999. He was a member of the American Society for Biochemistry and Molecular Biology, the American Chemical Society, Sigma Xi, Phi Lambda Upsilon, and the American Society for the Advancement of Science. Dr. Hedgcoth will be remembered by former students as a skilled and energetic teacher. He supervised the research of 17 M.S. and Ph.D. students and 14 postdoctoral associates and visiting scientists.

He was very active in the soccer community in Manhattan in youth and collegiate levels and was the KSU faculty soccer advisor for more than 25 years.

In addition to his wife, he is survived by two daughters, Kelli Goodson and daughters Bridget, Amber, Samantha and Brooke, Kim Mallon and her husband Rob and children Kacie, Kristin, Kiley and Shane; and one son, Mike Hedgcoth and his wife Rachael and son Austin Cole.

He had been a Manhattan resident since 1965. Dr. Hedgcoth was cremated and his ashes were scattered on the Konza Prairie.

A memorial has been established for the Little Apple Soccer Club. Memorial contributions may be left in care of the Yorgensen-Meloan-Londeen Funeral Home, 1616 Poyntz. The Department of Biochemistry has named its award for graduate teaching assistants the Hedgcoth Graduate Teaching Award. Contributions to the fund for this award (Hedgcoth Graduate Teaching Award Fund) may be sent to the Kansas State University Foundation, 2323 Anderson, Manhattan, Kansas 66502.

Biochemistry Alumnus Named 2002 College of Arts & Sciences Alumni Fellow

Dr. Karen Nickel was selected as the 2002 College of Arts & Sciences Alumni Fellow. Dr. Nickel received her B.S. in Chemistry from Oregon State University, and her M.S. and Ph.D.

in Biochemistry from Kansas State University working with Dr. Bryce Cunningham on the enzymology of a uterine peroxidase. After managing and directing several laboratories, she attained her current position as Chief, Laboratory Field Services, for the State of California. Her responsibilities include inspection, licensing and registration of about 17,000 clinical laboratories and credentials for and licensing of about 22,000 laboratory



personnel. Dr. Nickel has served in various capacities for the American association for Clinical Chemistry including National President in 1991. She has served on the Chemistry Advisory Board for Oregon State University.

Dr. Nickel visited campus on February 25th -26th. She met with students faculty and staff, and presented a seminar by titled "Alternate Pathways for Your Biochemistry Career." Her visit concluded with a banquet hosted by the KSU Alumni Association to recognize all 2002 Alumni Fellows.

Karl Kramer Receives Award From the Entomological Society of America

Karl J. Kramer, adjunct professor of biochemistry at Kansas State University and research chemist at the Agricultural Research Service-U.S. Department of Agriculture Grain Marketing and Production Research Center, is the recipient of the 2002 Recognition Award in Insect Physiology, Biochemistry, and Toxicology, from the Entomological Society of America.

The award was presented at the association's 50th Annual Meeting, in Fort Lauderdale, Fla. The purpose of this award, which was established in 1996, is to recognize and encourage innovative research in the areas of insect physiology, biochemistry, and toxicology. The areas of research may include development, molecular biology, genetics, defense mechanisms, and other offshoots of physiology, biochemistry and toxicology. The annual award consists of an inscribed plaque and \$1,500.

The award recognizes Kramer for making "significant contributions to the fields of insect biochemistry, physiology and molecular biology during his long, distinguished career as a scientist with U.S. Department of Agriculture-Agricultural Research Service, K-State and several other universities. His accomplishments include characterizing metabolic enzymes that regulate sclerotization of the exoskeleton, characterizing gut activation of *Bacillus thuringiensis* protoxins and explaining the mechanisms of insect resistance to these bacterial toxins, cloning an insect chitinase gene and inserting it into transgenic plants for expression as a potential bioinsecticide, and finally development of several biopesticides, including chicken egg avidin and digestive enzyme inhibitors in corn and other grain crops."

Biochemistry Graduates Honored

The Department of Biochemistry at Kansas State University is honoring four of its graduate students for outstanding academic and research achievements.

James Broughman, who earned his doctorate in biochemistry in May 2001, and Yifei Zhu, doctoral student, are recipients of the department's Graduate Student Research in Biochemistry Award. The award recognizes outstanding research work and includes a cash prize and a certificate.

Lalida Panpradit-Shank and Richard Suderman, both doctoral students, are recipients of the 2001 Biochemistry Outstanding Graduate Student teaching Assistant Award. The honor includes a certificate and a cash award.

Major research professor for both Broughman and Panpradit-Shank was John Tomich, professor of biochemistry. Major research professor for Zhu and Suderman is Michael Kanost, professor of biochemistry.

Broughman, who is now a postdoctoral associate in K-State's department of anatomy and physiology, was recognized for his research investigating the development of synthetic peptide derivatives as therapeutics for cystic fibrosis. Now working in the laboratory of Bruce Schultz, assistant professor of anatomy and physiology, Broughman is researching the use of synthetic peptides to assist gene therapy by reducing transepithelial resistance.

Zhu studied immunity. Her work focused on cloning expressed genes from tobacco hornworm after immune challenge and investigating their function in the insect immune system. She is now employed at Silgen Co. in San Francisco, CA.

Panpradit-Shank served as a special assistant for the lecture

portion of the class, General Biochemistry. She investigated the development of peptides as alternative therapy for treatment of cystic fibrosis, particularly on relating the bioavailibility of glycine-deprived peptides to their chloride transport activity. She graduated in December and will return to Thailand to begin a faculty position.

Suderman has been an instructor for the classes, General Biochemistry and Advanced DNA Laboratories. He is investigating cuticle sclerotization and the involvement of a phenoloxidase, laccase, in the hornworm defense system.

K-State to Name Ackert Hall Addition in Honor of Former University Administrator and College Dean, John Chalmers.

K-State News Service

Kansas State University has received approval from the

Kansas Board of Regents to name the new addition to Ackert Hall in honor of John Chalmers, a longtime K-State administrator and former dean of the College of Arts and Sciences. Chalmers Hall will be formally dedicated in spring 2003; a date will be announced later.



"We're pleased that the Board of Regents approved our request to name our newest research and teaching facility in honor of Dr. John Chalmers," said Jon Wefald, K-State president. "Chalmers Hall provides much needed space for two of our major life science programs at K-State: biology and biochemistry. Dr. Chalmers was instrumental in positioning K-State's biology and biochemistry programs for their successful growth in academics and research," Wefald said. "He created the Division of Biology, the largest academic unit in the College of Arts and Sciences, through the merger of several other life science departments. He also was instrumental in moving the department of biochemistry to the College of Arts and Sciences to better serve students and faculty."

The 56,000-square-foot Chalmers Hall provides additional laboratory space for K-State's Division of Biology; office and laboratory space for the Terry C. Johnson Center for Basic Cancer Research; office space for BioServe Space Technologies, a NASA commercial space center; and office and laboratory space for K-State's department of biochemistry. Construction of the \$11.9 million addition was made possible by "Crumbling Classroom" funds from the state of Kansas, energy conservation bond funds, private gifts and restricted fees.

Chalmers joined K-State in 1963, serving as dean of the College of Arts and Sciences until 1969 when he was named the

university's vice president for academic affairs. He stepped down from the post in 1980 to return to classroom teaching as a professor of economics and finance. He retired in 1985.

"John Chalmers was a highly respected dean of the College of Arts and Sciences," said Stephen White, interim dean of the college. "His many contributions have had a lasting impact throughout the college. He richly deserves to have a life sciences building named for him."

From The Laboratory of S. Muthukrishnan

Our laboratory currently has two scientists from India (Dr. Anand and Dr. Jayaraj), two from Japan (Dr. Arakane and Dr.

Ueda) and three graduate students (Haqing Yi, Qingsong Zhu and Han Lu). Tian Zhou and Yimin Lu have recently moved to other labs within the Biochemistry Dept. and expect to graduate this spring. We continue to interact with scientists from India, namely Drs. Krishnaveni and Velazhahan from Tamil Nadu Agricultural University. We still see a lot of Dr. Thara Venkatappa who is now in the Department of Plant Pathology at KSU. We heard from several graduate students of



our laboratory recently. Xiarong Wang is just finishing her Ph. D. from U. Penn. Wang Lei recently moved to Yale, Mark Swegle accepted a job in St. Louis and Grace Lee moved to San Diego. Keep those e-mails coming. We like to know how you are doing.

The major research goals of our laboratory continue to be the identification of genes encoding proteins with fungicidal or insecticidal activities and to utilize them in plant transformation protocols to enhance the innate resistance of plants to pathogens and pests. We have focused on the class of proteins called pathogenesis-related proteins (PR-proteins) which are natural inducible defenses deployed by plants when attacked by pathogens and pests. This group includes chitinases and β -1,3glucanases (which hydrolyze cell walls of fungi), membranepermeabilizing proteins, enzymes that produce reactive oxygen species, and inhibitors. We have isolated several of these genes (or cDNA's) from wheat, barley, or rice. Another group of genes that we have utilized in crop plant transformation codes for proteins with insecticidal activity. This latter group of proteins includes a chitinase from tobacco hornworm, chicken avidin, and the endotoxin from Bacillus thuringiensis. Many of these proteins are known to act synergistically in enhancing the potency of one another.

Our strategy for improving host plant resistance is to introduce plasmid DNA's containing the antifungal or insecticidal genes in different combinations and under the control of a constitutive promoter which leads to the expression of these transgenes in several tissues at high levels. We anticipate that such "immunization" with multiple genes prior to exposure to the pathogen or pest will give the plants a head start in the battle against the pests.

We have reported some success in enhancing the resistance of crop plants using this strategy. Transgenic rice, wheat, or sorghum plants overexpressing a rice chitinase or a rice thaumatin-like protein show improved tolerance to sheath blight, scab, and stalk rot respectively.

Tobacco plants expressing an insect chitinase exhibit significantly reduced damage to insect attack and synergize the effect of *B. thuringiensis* endotoxin. We hope that the combinations of genes that we are currently trying will result in plants that will require very little or no application of fungicides and insecticides for control of these pests. If that happens, you will no doubt hear from us again.

From the Laboratory of Karl J. Kramer

In 2001-2002, the Kramer lab continued working on the avidin biopesticide project with ProdiGene Inc. (College Station, TX) and other collaborators including development of a new corn dust formulation, identification of additional susceptible species, and construction of new transgenic avidin plants:

1. A new avidin corn dust formulation suppressed stored grain insect pest populations when it was mixed together with whole grain.

2. Avidin suppressed populations of the cowpea weevil, Asiatic rice borer, rice leafroller, and German cockroach.

3. New versions of avidin corn, wheat and rice were constructed for use in future insect resistance screens after selection of best



producing lines. We also discovered that a carbohydrate (chitin) binding protein in wheat called wheat germ agglutinin (WGA) is not only a host plant resistance factor for stored product insect pests but also acts as a synergist when combined with other naturally occurring resistance factors such as insect digestive enzyme inhibitors. WGA apparently causes destabilization of the lining of the insect's midgut when it binds to chitin in the peritrophic membrane. Various combinations of proteins are being tested to identify the most efficacious cocktail for suppression of stored product insect pests in grains.

Together with the Kanost, Muthukrishnan and Hopkins labs, we cloned from a single insect species the genes for two novel insect enzymes and several major skeletal structural proteins that play critical roles in insect development. The first enzyme is chitin synthase, which catalyzes the synthesis of the structural polysaccharide chitin in the exoskeleton and gut lining. The second is a special type of phenoloxidase, laccase, which facilitates the stabilization of the insect's exoskeleton by catalyzing the oxidation of precursors for cuticular protein crosslinking agents. The structural proteins are three of the most abundant ones expressed during deposition of the pupal skeleton. In the future we plan to express recombinant forms of all of these proteins and use them for model cuticle biomaterial reconstitution experiments. With the Muthukrishnan lab, we determined some of the functional roles of various domains in insect chitinase. Finally, we demonstrated that metal ions (zinc and manganese) were needed by stored grain insects for hardening of their mandibles. Deposition of these metals enhanced the insects' ability to penetrate into grain kernels.

From the Laboratory of Dolores J. Takemoto

This year my lab has seen a complete turnover in Personnel. Lynn Wagner has received her PhD and has taken a postdoctoral position at the University of Washington in Seattle. Richie Harris will receive his MS and will be moving t o Chicago. My undergraduate researchers will be moving on to their



chosen post graduate positions. Kendall Powell has been accepted into Vet School at KSU, Tara Raney will attend Optometry School in Chicago and Kelly Drankhan has accepted a graduate research Assistantship at the University of Michigan. I have two new postdocs this year, Anne Nguyen who received her PhD from Texas A & M and Dingbo Lin who came from Japan and China. We continue to work on the role of protein kinase C gamma in the lens and it's control of lens gap junctions and how this changes during diabetes. Results of this work appears in 6 publications out this year and in three posters to be presented by the lab at the ARVO meeting this year. The lab has also taken in two new undergrads, Anne Jewell and Levi Kinderknecht and one grad student who is also in Vet school. Rachel Stutzman will be working on her MS degree to determine the changes which occur in gap junction activity during diabetes

Recent Presentations

Michal Zolkiewski, Michael Barnett, Vekalet Tek and a student represented the department at the seventh annual Midwest Stress Response and Chaperone meeting Jan. 19 at Northwestern University Technological Institute in Evanston, III. Zolkiewski and his lab group presented three posters, "Site-Directed Mutagenesis of Important Charged Residues in ClpB from Escherichia coli," "Conserved Amino-Acid Residues Within the Amino-Terminal Domain of ClpB Are Essential for the Chaperone Activity" and "Stability and interactions of the Amino-Terminal Domain of ClpB From Escherichia coli."

Xuemin Wang presented "Phospholipase-Mediated Signaling and Networks," at the 10th National Congress of Biochemistry and Molecular Biology of Plants and Fourth Symposium Mexico-USA, Oct. 27-31, in La Paz, Mexico.

Alumni News

Dr. G.V.K. Rao (Ph.D. 1968, Nordin), an alum of Kansas State University, recently passed away. He attended KSU in the mid 1960's, and received his Ph.D. in Biochemistry in 1968. He later went on to become the director of Clinical Chemistry at Fort Worth Osteopathic Medical Center. His professor, Dr. Philip Nordin, is now retired.

Terry Johnson (B.S. 2001), University of Texas - Houston Health Science Center in the Graduate School of Biomedical Sciences, Cancer Biology.

Wensheng Nie (Ph.D. 2001, Denell), Currently devoting time to baby girl born on Aug. 15, 2002, 6 pounds 11 ounces. Applying for a Postdoctoral Research position with Stanford University. Husband works in CISCO SYSTEMS and also graduated from KSU January 2001.

Mohammed Rahmatullah (Ph.D. 1983) is professor and Head of the Department of Biotechnology and Dean of Life Sciences at Khulna University in Bangladesh. This is the only Biotechnology department in the country.

Daqing Yang (Ph.D. 1996, Roche), is an Assistant Professor in the Division of Basic Biomedical Science at University of South Dakota, School of Medicine at Vermillion, SD.

Karen Gonzales (Ph.D. 1995, Takemoto), is currently at University Systemia - Metropolitania Puerto Rico. Had a boy last May (2001).

Sarah Lewis (M.S. 2000, Takemoto), doing well at KU Medical Center, 2nd year.

Xiaowei (Christina) Wu (M.S. 1998, Davis), is currently devoting time to baby girl born in May of 2001 and recently purchased first home with husband who works for Texas Instruments and is looking for teaching opportunities.

Kris Hartzer (B.S. 2001) graduated in the Spring of 2001 with a dual major in Biology and Biochemistry and accepted a position as graduate research assistant in the KSU Dept of Entomology studying with Dr. James Baker/KunYan Zhu & B. Oppert the prophenoloxidase in the Indian Meal Moth. M.S. or Ph.D.

Marisol Castaneto (B.S. 2001) entered KSU Graduate Program, M.S. in Dr. Gerald Reeck's lab, hopes to graduate in Spring 2003. **Dr. Mark Swegle** (Ph.D. 1991, Muthukrishnan) recently moved to St. Louis.

Greta Ann Herin is enrolled in the Ph.D. program in Neurobiology at the University of Pittsburgh School of Medicine, Pittsburgh, PA. studying the NMDA subtype of glutamate receptor.

Dr. Kirk Hayenga (B.S. 1994) is currently employed as Senior Director, Hyseq Pharmaceuticals, Inc. (formerly Hyseq, Inc.).

Craig Behnke (M.S. 1996, Reeck) is working for Cyrix Biotech in San Diego area.

Yimin Lu (M.S. 2002, Muthukrishnan), is employed currently by the University of California - San Diego as a Research Assistant.

Anthony "Tony" Cole (M.S. 1995, Andersson) and wife Kunwei Chen-Cole (M.S. 1995, Muthukrishnan) have relocated their family to the Chicago, Illinois area. Tony has accepted a position as a postdoctoral research associate in the Department of Physiology and Biophysics at the University of Illinois-Chicago's College of Medicine. Kunwei is enjoying a new research position at Medichem Life Sciences.

Cris Oppert (B.S. 2001), son of alumna **Brenda Oppert** (Ph.D. 1991, Takemoto) received his Bachelor of Science, dual majoring in Biology and Biochemistry in May of 2001. He was accepted into the graduate program at Florida State University in the Department of Oceanography. Cris is working with Dr. Nancy Marcus on copepod biology and biochemistry.

Brenda Oppert (Ph.D. 1991, Takemoto) has been working with the USDA Agricultural Research Service in Manhattan since 1991. Currently she is a Research Molecular Biologist studying insect digestive physiology.

Kirk Pappan (Ph.D. 1998, Wang; 1998-2001 Postdoc, Reeck) and wife **Loretta Pappan** (2000-01 Research Assistant, Reeck) have relocated to the St. Louis, Missouri area. Kirk has accepted a position as a postdoc in the Department of Pathology and Immunology at Washington University School of Medicine in St. Louis. His work with Dr. Michael McDaniel is centered around insulin resistance during obesity and diabetes. Loretta has also received a postdoctoral research position at Washington University with Dr. Steven Brody in the Department of Internal Medicine. Her research involves studying the regulation and development of lung cilia in diseases such as Cystic Fibrosis.

Behrooz Sharifi (Ph.D. 1984, Tsen) is currently in the Los Angeles, California area. He is employed as a professor at UCLA in the Division of Cardiology, School of Medicine at the Cedars-Sinai Medical Center. He is investigating microarray technologies to determine the difference between the genes expressed in the arteries of normal and atherosclerotic individuals.

Bob Bonsall (M.S. 1982, Mueller) is working as a Scientific Lab

Manager in the Department of Plant Pathology at Washington State University. Recently his department acquired a 534 K Otoff mass spectrometer which he oversees. His research focuses on studying soil antibiotics.

Sundari Ravindran (M.S. 1993, Roche) and family are currently in New Jersey. She is employed at Schering Plough and her work is in cancer research.

James Maher (Ph.D. 1983, Roche) has obtained his M.D. and is on a post-residency fellowship in internal medicine in Cincinnati, Ohio.

Karen Fleischer (B.S. 2001) has moved to Miami Beach, Florida. She is currently employed as a research assistant at IVAX.

Bhuvana (Ph.D. 1991, Muthukrishnan) and **S. "Gopal" Gopalakrishnan** (Ph.D. 1990, Roche) are currently residing in Moorpark, California Both work for Ceres, a biotechnology company in California, Bhuvana in the Intellectual Property Department and Gopal in the bioinformatics area.

Dahao Ling (M.S. 2000, Wang) has relocated to San Diego, California and is currently working for Diversa Corp. as a Research Assistant.

Dr. Rondang Siagian (M.S. 1967, Parrish) has retired from government service as a university teacher; becoming a full-time teacher at a private medical school; but continuing with six graduate students working on M.S. degrees in biomedical sciences, and achieving a full professorship.

Let your fr form below Kansas Sta 66506-370 Name:	tiends know what you are doing. Fill out the w and mail to: Department of Biochemistry, te University, 104 Willard Hall, Manhattan, KS 2 or e-mail us at biochem@ksu.edu
Address:	
City:	
State:	Zip:
Degree/Ye	ar:
Current Pos	sition/Employer:
Tell us abo honors, civ	ut YOURSELF! Include professional activities vic involvement, family, etc.

Recent graduates from the Biochemistry Graduate Program

Student	Degree & Year	Major Professor	Current Position
Gafford, Philip Scott	M.S. '02	Stewart	Medical student at Meharry Medical College, Nashville, TN
Zhou, Tian	M.S. '02	Muthurishnan	Researcher at the University of Texas Southwestern in Dallas
Haiqing Yi	M.S. '02	Muthurishnan	Working on Ph.D. with Anna Zolkiewska
Cao, Yi	Ph.D. '02	Zolkiewska	Postdoctoral at Fred Hutchinson Cancer Research Center, Seattle, WA.
Takeguchi, Wade	M.S. '02	Tomich	Process Scientist in Los Angeles area
Wagner, Lynn	Ph.D. '02	Takemoto	Postdoctoral at University of Washington - Seattle in Ophthalmology
Barnett, Micheal	M.S. '01	Zolkiewski	Research Assistant for Dr. Michal Zolkiewski at Kansas State University in Biochemistry
Broughman, James R. Jr.	Ph.D. '01	Tomich	Postdoctoral at K-State Veterinary Medical Center in Anatomy & Physiology
Curtis, Carmelle	Ph.D. '01	Denell	Postdoctoral at John Hopkins Medical Center in Cancer Research
Dong, Jianchun	Ph.D. '01	Roche	Graduate Student at University of Washington - Seattle in Electrical Engineering
El-Shehawi, Ahmed	Ph.D. '01	Hedgcoth	Postdoctoral at Kansas State University in Biochemistry
Kang, Qing	Ph.D. '01	Zolkiewska	Instructor at the University of South Carolina
Lu, Yimin	M.S. '01	Muthurishnan	Working for Allergan Irvine, CA
Nie, Wensheng	Ph.D. '01	Denell	Research Associate at Stanford University
Peng, Tao	Ph.D. '01	Roche	Postdoctoral at Yale in Pharmacology
Turkan, Ali	Ph.D. '01	Roche	Postdoctoral at Kansas State University in Biochemistry
Zhu, Yifei	Ph.D. '01	Kanost	Working for Silgen Co. San Francisco, CA

Notes from the Biochemistry Undergraduate Program

We are delighted with the continuing strength of the undergraduate program. There are about 50 majors currently. Thanks to the financial support from KSU and Biochemistry alumni, a number of these students are scholarship winners. This year's awardees are:

Brogan, Sara Marie (Freshman, Winfield)

Brownback, Kyle Robert (Senior, Lindon)

Luna, Bianca (Sophomore, Garden City) Omoluabi, Ozozoma (Junior, Cote D'Ivdire) Warner, Matthew David (Sophomore, Olathe)

Yevseyenkov, Vladimir Vasilyevi (Senior, Whitewater)

Medallion Scholarship Kelce Foundation Scholarship J.S. Hughes Memorial Scholarship Fred & Virginia Merrill Biochemistry Award KSU Parents Telefund Scholarship June D. Hull Sherrid Cancer Award Arts & Sciences Excellence Award Megan E. Taylor Memorial Scholarship MOD LA Memorial Scholarship Gifts KSU Foundation Award June D. Hull Sherrid Cancer Memorial Scholarship Gifts



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KSU BIOCHEMISTRY ON THE WORLD WIDE WEB http://www.ksu.edu/bchem/

Our home page contains information on the Department of Biochemistry, faculty, undergraduate and graduate programs, courses, seminar, and core facilities. Other K-State-related pages that might be of interest:

KSU Alumni Foundation http://www.ksu.edu/alumni

E-Collegian Newspaper http://www.spub.ksu.edu