Dear Alumni and Friends:

Welcome to the Spring 2011 issue of the MCDB Newsletter, which is aimed at alumni and friends of the Department of Molecular, Cell, and Developmental Biology at UCLA. The Department’s research focuses on the basic mechanisms that regulate cell differentiation and function. The central objective of the Department is to advance our disciplines by combining efforts in research and teaching.

Our research goal is to address the most conceptually important issues related to gene regulation and morphogenesis, bring the most innovative approaches to these investigations, and translate the discoveries to address the most pressing of human problems: disease and hunger. Our strategy to achieve this goal is to (a) build a department with broad expertise in gene discovery through mutational screens, chemical genetics, bioinformatics, and in-depth phenotypic analysis in multicellular organisms encompassing Arabidopsis, simple invertebrates, Drosophila, zebrafish, mouse and human stem cells; (b) develop the infrastructure to conduct cross-disciplinary and technologically advanced research; and (c) take a leadership role in the organization of cross-disciplinary research initiatives at UCLA.

The teaching mission of our department is to provide a comprehensive and intensively hands-on experiment-based education to our undergraduates, graduates and postdoctoral fellows, among whom are tomorrow’s leaders in research and medicine. We also place a strong emphasis on educating undergraduate non-science majors so that they will make informed decisions regarding the implementation of scientific discoveries and future funding for scientific research. Our strategy to achieve our teaching goal is to develop didactic courses that emphasize the experimental basis supporting basic concepts, and to involve undergraduates in two types of research experience: large-scale discovery-based programs and in-depth individual research projects.

Our distinguished faculty members are recipients of many honors and awards for internationally recognized research accomplishments. As teachers, we are proud that three members of our faculty have received UCLA’s Distinguished Teaching Award, and two have received the Gold Shield Faculty Prize.

We hope this newsletter will bring you news of the exciting new faculty, new research and new developments. We have a special section on alumni news, so please send us news about yourself and other UCLA MCDB friends or alumni (chair@mcdb.ucla.edu). Updating your contact information is very easy at https://www.uclalumni.net/MCDBUpdate.

Thank you for reading this newsletter. We hope to hear from you!

Utpal Banerjee
Irving & Jean Stone Professor and Chair, Molecular, Cell, and Developmental Biology Professor, Biological Chemistry Co-Director, Broad Stem Cell Center HHMI Professor
FACULTY NEWS AND RESEARCH

Professor Daniel Cohn has joined the faculty of the Department of Molecular, Cell, and Developmental Biology in a joint appointment with the UCLA Department of Medicine (Human Genetics). His research. Dr. Cohn is also Co-Director of the International Skeletal Dysplasia Registry. Dr. Cohn has conducted research on the molecular basis of a diverse group of skeletal dysplasias, including osteogenesis imperfecta, the Type II collagenopathies, pseudoachondroplasia, multiple epiphyseal dysplasia, disorders of the sulfation pathway and Dyggve-Melchior-Clausen dysplasia. He has written more than 85 articles for such publications as the American Journal of Human Genetics, Human Molecular Genetics, Nature Genetics, Genomics, Matrix Biology, Pediatric Radiology, Journal of Biological Chemistry, Gene and the Journal of Medical Genetics. Dr. Cohn received his bachelor's degree from University of California, Santa Barbara. He earned his doctorate degree from the Scripps Institution of Oceanography at University of California, San Diego, where he received both the Martin Kamen Award for the Outstanding Thesis in Biochemistry and the Eckhart Prize for the Outstanding Thesis in Oceanography.

Professors Steve Jacobsen and Matteo Pellegrini are featured in a series of faculty video interviews in which UCLA scientists discusses their cutting-edge research and new scientific developments. The interviews can be seen at http://newsroom.ucla.edu/portal/ucla/terasaki-life-sciences-building-175118.aspx.

Faculty research profile:

William Lowry

Bill grew up in Seattle, WA and received his B.S. from the University of Washington in 1996. He then moved to New York to do his graduate work in signal transduction and cell biology with Xin-Yun Huang at Cornell Medical College in the fall of 1997. Bill then went across the street to work with Elaine Fuchs at the Rockefeller University in 2002 where he studied the mechanisms of quiescence and activation in stem cells of the Epidermis. In the summer of 2006 Bill joined the Department of Molecular, Cell and Developmental Biology at UCLA to explore adult stem cells and embryonic development. Bill holds the Maria Rowena Ross Term Chair in Cell Biology, and is supported by the March of Dimes, CRCC, JCCF, and ACS.

His research involves Mechanisms of Ectodermal Development, through the study of cell fate specification in human ectodermal development and generation of pluripotent cells from human somatic tissue. Human Embryonic Stem Cell (hESC) technology, a more serious effort to take advantage of hESC technology to model phenomena that would be impossible to study otherwise is now possible. We are using hESCs to study the process by which embryonic ectoderm bifurcates down two lineages of seemingly distinct cell types, namely neural and epidermal.

“Great deal of the excitement surrounding stem cell biology is predicated on the ability of these cells to be clinically relevant in regenerative medicine, but technical and ethical hurdles are impeding progress towards the use of HESCs in a therapeutic setting. The generation of patient-specific stem cells would remove most of these hurdles, and allow for autologous transplant of cells derived from a patient’s own tissue. Our most recent work and that of others demonstrated that these hurdles might be overcome through the use of reprogramming of adult somatic cells to generate cells that are seemingly indistinguishable from embryonic stem cells. We feel that the knowledge gained from our exploration of ectodermal development will be insightful for these neural and epidermal differentiation efforts from HESCs and human iPS.”
Many MCDB undergraduates are participating in undergraduate research scholar award programs. In the Howard Hughes Undergraduate Research Scholars Program: Abhik Banerjee, Abinav Baweja, Ke-Huao Chow, Catherine Yao, and Mary Youssef. In MARC (Minority Access to Research Careers): Michael Daniel and Martin Mwangi. 2010 Amgen Scholars: Jenny Huang and Xian Liu. And in the Undergraduate Research Scholars Program (USRP): Kimberly Bui, Jennifer Chang, Amie Fong, Jenny Huang, Tien-Phat Huyph, Angela Kyutunian, Grace Lee, Xian Liu, Arzin Minasian, Joseph Roth, Jason Scapa, Yuqi Kevin Wang, and Mary Youssef.

Undergraduate spotlight – Abhik Banerjee
My name is Abhik Banerjee and I am a fourth year student, double majoring in Molecular, Cell, and Developmental Biology and Music Performance, as well as completing a minor in Biomedical Research. I initially started undergraduate research as a student in Dr. U. Banerjee’s LS10H class. Afterwards, I applied to the Biomedical Research Minor and have subsequently worked in the Martinez-Agosto lab in the David Geffen School of Medicine’s Human Genetics department for the past three years. We are interested in studying the roles of growth signaling pathways in tissue regeneration using the Drosophila melanogaster imaginal disc as a model. Currently, we are working to develop a novel bi-conditional model to study tissue regeneration. In addition, we are also studying a novel gene identified to play a role in Drosophila tissue regeneration called Augmenter of Liver Regeneration and its possible role in growth signaling.

While I originally started to play the piano in second grade with Mrs. Jackie Warner, I eventually began to play the clarinet in fourth grade under the direction of Mr. Ronald Thorpe. In middle school, I was a member of the Marching and Jazz bands and began studying clarinet with Mrs. Jane Blais. Throughout high school, I continued Marching, Jazz, and Pep bands, as well as playing principal clarinet in the Solano County Youth Symphony. I also participated in County, as well as All-State Honor Band Competitions, and performed with the Solano County Symphony through their Salute to Youth Competition in 2005. I missed studying clarinet and after auditioning in Spring 2008, I was accepted into the UCLA Music Department and began studying clarinet with Professor Gary Gray in Fall 2008. Currently I play clarinet in the UCLA Wind Ensemble and Woodwind Chamber Ensemble.

One of the most exciting aspects of UCLA is its strength in both the Arts and Sciences. As a double major in Music Performance and Molecular, Cell, and Developmental Biology, I have an amazing opportunity to continue both of my academic passions and have become a stronger student in and out of the classroom. While both majors share virtually no overlap, I feel they complement each other very well. I feel Music Performance has definitely promoted my creativity and changed the way I approach designing experiments and techniques. As a result of my research and clinical experiences with the Mobile Clinic Project at UCLA, I aim to pursue a combined M.D/Ph.D degree and plan to apply to the Medical Scientist Training Program. My ultimate goal is to do research in Human Genetics, more specifically looking at the genetic mechanisms behind tissue regeneration and directly translating my research towards the development of new medical treatments for my patients. Although I will not pursue music performance professionally, I plan to continue clarinet performance in chamber groups and to support local Arts programs in my local community.
GRADUATE STUDENT NEWS

In Fall 2010, a doctorate in Molecular, Cell, and Developmental Biology was awarded to Adam David Langenbacher (Jiau-Nian Chen). Filing their doctoral theses in Winter 2011 were Melina Grigorian (Volker Hartenstein) and Georgeann O’Brien (Alvaro Sagasti).

Graduate student Michaela Patterson, from the Lowry lab, has been selected by the Office of Research and Graduate Studies of the UC Office of the President to go to the state capitol in order to represent UCLA at UC Graduate Research Advocacy Day on Wednesday, May 11. Michaela will spend the day with visiting legislators, advocating for the University, and showing how the specific projects she is working on will make California a richer, better place in which to live.

Congratulations to MCDB doctoral student Zahra Tehrani (Shuo Lin’s lab) whose first-authored paper was recently accepted for publication in Development. Not only that, but Zahra’s paper also has been selected to be highlighted in Development’s “In this Issue” section, which highlights and unpacks the findings of each selected paper, and makes them accessible to all readers within the developmental biology community. The “In this Issue” page is also sent out to other journals and press organizations to alert them to Development’s upcoming content.


The article summary that appears in Development’s “In this Issue” section:

Pancreatic Hh signalling: a play in two acts
In amniotes, inhibition of hedgehog (Hh) signalling in the early embryonic endoderm is a prerequisite for pancreatic specification. In contrast, loss of Hh signalling in zebrafish severely disrupts pancreas development, suggesting opposite roles for Hh signalling in fish versus mammalian pancreas organogenesis. Zahra Tehrani and Shuo Lin now reconcile these contrasting functions by showing that the Hh pathway plays distinct roles during various stages of zebrafish pancreas development. Using genetic and pharmacological approaches to temporally modulate Hh activity, they show that Hh activity during early gastrulation is essential for the subsequent migration and differentiation of pancreatic precursors; this positive role of Hh acts to restrict Bmp signalling and to promote b-cell differentiation. By the end of gastrulation, they report, Hh signalling adopts a negative role by antagonizing retinoic acid (RA)-mediated induction of endocrine pancreatic precursors. These findings highlight sequential roles for Hh signalling in pancreas development and uncover antagonistic relationships between the Hh, Bmp and RA pathways during pancreas organogenesis.

Graduate student profile: Kristine Estrada (Karen Lyons’ lab): “I grew up in Diamond Bar, CA and obtained my BSc degree in Chemical Engineering at UCLA in 2002. I received my MSc in Biomedical Engineering at the University of Wisconsin, Madison in 2005 under the guidance of Dr. Naomi Chesler. My project was to evaluate the effect of chronic hypoxia on collagen metabolism in the murine lung. From 2006-2007, I worked as a research assistant/lab manager with Dr. Stephen Blacklow at Harvard Medical School, where I investigated the mechanism by which receptor-associated protein functions as an escort protein to LDL-receptor family members. I went back to graduate school and then joined the laboratory of Dr. Karen Lyons in 2008, where I aim to identify the role of inhibitory Smads 6 and 7 on bone development.”

Kristine Estrada
ALUMNI NEWS

Sometimes our alumni find us, and sometimes we find them. We’ll ask you for permission if we find news on the web that we’d like to include. If you’d like to let us (and others) know what you are doing, please email us at chair@mcdb.ucla.edu.

2000s

Rosette Abayahoudian ’06 received her DDS degree from UCLA in 2010.

Tom T. Chen ’09 PhD (Iruela-Arispe) is a postdoctoral fellow at Genentech.

Andrew Folick ’07 is in the Medical Scientist Training Program (MD/PhD-Program in Developmental Biology) at Baylor College of Medicine.

Carla Gormsen ’07 recently took a new position as a Consultant with Deloitte Consulting in Los Angeles.”

Ann Marie Hernandez ’06 is a Clinical Research Coordinator at UCLA in the Department of Medicine, Division of Nephrology.

Nicholas Kolaitis ’07 is a medical student at UCSD. He is President of the Class of 2012, and worked as the Clinic Manager of the UCSD Pacific Beach Student-Run Free Clinic. He has published papers in looking at the genetics behind risk factors for cardiovascular disease and on the pathogenesis and diagnosis of melanoma. He is involved in research looking at the effect hemophilia has on cardiovascular risk, and is planning to pursue a career in academic internal medicine.

Fernando Macias ’04 received his MD from the UCLA School of Medicine and is a resident physician at UCSF-Fresno.

Betty Pio ’02 received a master’s degree in Regulatory Science from USC and is an Engagement Manager in the Strategic Advisors consulting group of Leerink Swann, a healthcare investment bank in New York City.

Kevin Ro ’10 entered the UCLA School of Medicine in Fall, 2010.

Aswin Sekar ’07 is a student in the Harvard/MIT MD/PhD program.

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Sneha Thamotharan ’08 writes, "My sister and I are both MCDB alumni. After graduating UCLA I moved to Houston, TX to pursue a masters degree in Behavioral Psychology and obtained a job at Texas Children’s Hospital. (I worked for an NIH funded, multisite, longitudinal study as a behavioral interventionist, teaching families of children diagnosed with type 2 diabetes healthy lifestyle changes, including healthy eating, physical activity, and social skills.) I am now living in College Station, TX attending Texas A&M University as a student in the Clinical Psychology Doctoral program. I hope to..."
become a pediatric clinical psychologist, researching adolescent sexual behavior. After graduating UCLA my sister (Visho Thamotharan ’04) went to Stanford University to pursue a masters degree in education and is currently in her 6th year teaching 11th grade chemistry at Oscar De La Hoya Animo Charter High School. She is also pursuing a EdD in Educational Leadership at the University of Southern California (though she is still a Bruin). She is working to help underrepresented minorities achieve their dreams, especially in the STEM field. After completing her EdD (this May) she hopes to continue working in education by supporting teachers.”

Emily Wang ’09 writes, “I graduated in the summer of 2009. I moved back home to the SF Bay Area (where I am originally from) and worked for about a year as a medical transcriptionist and office assistant for a doctor who practices Neurology and Sleep Medicine. In June of this year, I moved to the Phoenix, AZ area to pursue my graduate studies as a future Physician Assistant. I am now attending Midwestern University. Our students here hail from all over the country, with a large contingent from the Midwest (where the original campus of this school was founded), and UCLA’s reputation is highly respected. I am especially thankful for the strong foundation I have in the basic sciences. My undergraduate degree in MCDB prepared me excellently for my graduate studies. I am very thankful to have received this degree from such an esteemed institution. While I am not interested in directly pursuing research, I will be applying my studies in a clinical setting and I will be reading medical journals to keep abreast of scientific innovation. MCDB at UCLA has prepared me well for a career in the healthcare field.”

Crystal D. Wu ’07 is concentrating in Finance, Strategy and Global Business in the MBA program at the Foster School of Business of the University of Washington, where she is Co-President of Women in Business. Before joining the Foster Program, she worked at SWAPE, LLC, an environmental consulting firm in Santa Monica, CA. As a project manager, Crystal managed projects for high-profile environmental litigation cases nationwide.

Stephen Brown ’99 PhD (Aguilera) writes, “After completing a post-doctoral fellowship at the House Ear Institute in Los Angeles with Dr. Andy Groves studying genes involved in early chick inner ear development, I began teaching full-time and have a tenure track faculty position in the Life Science department at Los Angeles Mission College in Sylmar. I currently teach courses in microbiology and biology for majors and non-majors, and am involved in developing the curriculum for new courses in genetics and molecular biology.”

Cory Evans ‘97 PhD ’02 (Aguilera) is an Assistant Researcher in the lab of Professor Utpal Banerjee at UCLA. He writes, “My work continues to explore the molecular genetic mechanisms underlying normal hematopoietic development in Drosophila, and I have recently begun to examine the hematopoietic response to tissue injury.”

Cheryl A. Kerfeld ’93 (Thornber/Yeates), a structural biologist and the head of the U.S. Department of Energy Joint Genome Institute's Education and Structural Genomics Programs, has won the American Society for Biochemistry and Molecular Biology’s Award for Exemplary Contributions to
Education. Colleagues underscore that Kerfeld has pushed the envelope for education both in the classroom and on the national scale. “Kerfeld, who has bachelor's degrees in biology and English, a master's degree in English and a doctorate in biology, developed and directed the University of California, Los Angeles Undergraduate Genomics Research Initiative. Today, Kerfeld leads the JGI's effort to develop educational programs and tools centered on large-scale DNA sequencing and its bioinformatic analysis and serves as an adjunct professor at the University of California, Berkeley. At the JGI, she conceived of and oversaw the development of an electronic resource and website for use by undergraduates annotating genomes. The Integrated Microbial Genomes Annotation Collaboration Toolkit, or IMG-ACT, is now being used at more than 65 educational institutions. ‘Based on her own research, Cheryl knows that genome annotations are only as good as the experiments they inspire to test bioinformatics predictions. The holy grail is a national undergraduate effort to connect sequence annotation to functional genomics, and Cheryl is the leader to make it happen,’ said Brad Goodner, a professor of biology at Hiram College in Ohio.

“The ASBMB Award for Exemplary Contributions to Education is given annually to a scientist who encourages effective teaching and learning of biochemistry and molecular biology through his or her own teaching, leadership in education, writing, educational research, mentoring or public enlightenment.”

Elisabeth Indriani ‘97 is an audit manager at Deloitte & Touche, LLP, in the Chicago area.

Hamid Moradi ‘98 received his MD from Oregon Health & Science University in 2002, and is an Assistant Clinical Professor in Nephrology at UC Irvine.

Keith Strohmaier ’95 received a PhD in Biochemistry and Molecular Biology from the University of California, Santa Barbara, and is Fiscal Services Manager of the Santa Barbara County Education Office.

Avram Walts ’96 is a researcher in the Translational Medicine Branch, National Heart, Lung, and Blood Institute, NIH, Bethesda, Maryland.

Dallas Hughes ’88 PhD (Simpson) is Vice-President of Research and Development at NovoBiotic Pharmaceuticals in Cambridge, MA. Prior to joining NovoBiotic, Dr. Hughes was a Senior Vice-President at Ceteck Pharmaceuticals.

Jack Okamuro ’87 PhD (Goldberg) is a National Program Leader in Crop Production and Protection in the Agricultural Research Service of the US Department of Agriculture in Beltsville, MD. He writes, “my years at UCLA (1973-1987) are the foundation that I continue building my career on.”

Bruce Blumberg ’87 PhD (Fessler) is a Professor of Developmental & Cell Biology in the School of Biological Sciences and Professor of Pharmaceutical Sciences at UC Irvine.

“Our laboratory is broadly interested in the study of gene regulation and intercellular signaling during embryonic development. We study a family of regulatory proteins called nuclear hormone receptors and their ligands. These receptors are all members of the steroid receptor superfamily and are ligand-regulated transcription factors that regulate important events during embryonic development and adult physiology.”

1980s
IN MEMORIAM
Yael Kaniel

We have just learned that Yael Kaniel ’99 passed away in March, 2009. MCDB shares the sorrow of her friends and family. From an obituary in the Stanford School of Medicine Medical Center Report:

“Yael Kaniel, MD, an attending hospitalist in the special care nursery at Lucile Packard Children’s Hospital and an instructor in neonatal and developmental medicine, died March 3 of cancer. She was 31.

“Kaniel arrived at Packard Children’s in 2007 after completing her pediatric residency at Children’s Hospital Los Angeles. She was a graduate of the Sackler School of Medicine in Tel Aviv, Israel, and earned her undergraduate degree in molecular, cell and developmental biology at UCLA. She lived in San Francisco.

"She had the perfect personality for a pediatrician,” said William Benitz, MD, Packard’s chief of neonatology. ‘She inspired families with confidence and comfort that their babies were in good hands.’

“A significant part of Kaniel’s job at Packard was resuscitating newborns who struggled to breathe. Responding to an obstetrician’s urgent page, she would quickly arrive in the delivery room to give supplemental oxygen or help a baby who was breathing too fast. ‘It’s pretty panic-inducing for parents, but after just a few minutes of your time as a doctor, there’s a happy pink baby in mom’s arms,’ said Ronald Cohen, MD, director of Packard’s intermediate care nursery. ‘Yael was great at that, and she got a real kick out of it.’

"She loved to cheer babies into this strange world they found themselves in,” agreed Aki Kaniel, Yael Kaniel’s father. He remembered her as a warm, engaging person who always had a book in her hand and a close-knit group of friends nearby. She hummed happily to herself if she ate a new food she liked, and enjoyed world travel to locations such as Turkey, Switzerland, Belize and Paris—where, at the Eiffel Tower, she and her husband became engaged to be married.

“Kaniel is survived by husband Josh Zaretsky, parents Batya and Aki Kaniel, sister Natalie Kaniel, stepmother Sharon Safdie, and stepsister and stepbrother Laura and Daniel Safdie. Contributions in her memory may be sent to the Yael Kaniel-Zaretsky Memorial Fund at Packard Children’s, c/o Haya Barzilay, 1554 Arbor St., Los Altos, CA 94024.”
**GIVING TO THE DEPARTMENT**

If you are interested in giving to the UCLA Department of Molecular, Cell, and Developmental Biology, please visit our web site at www.mcdb.ucla.edu/giving.php. Your donation, regardless of amount, has a powerful impact and is greatly appreciated.

Alumni interested in making a gift to the Department by endowing a scholarship, supporting a faculty member, making a planned gift or other gift, should contact Jeff Poltorak, Director of Development, Life Sciences, at 310-206-0666 or jpoltorak@support.ucla.edu.

Alumni and friends who are, or wish to become, Chancellor's Associates may now direct their annual gifts to the UCLA Department of Molecular, Cell, and Developmental Biology and retain all the benefits that have traditionally been given to Chancellor's Associates. For information, visit www.uclafund.ucla.edu/leadership/index.html.

Membership in the UCLA Alumni Association has many benefits (discounts, networking, career services, news and information, and just plain fun). Find out more at http://alumni.ucla.edu/join/join-now/home.cfm

**WE WANT YOUR PICTURES!**

Do you have photographs of your time at UCLA as a graduate or undergraduate student? Please forward them to us at chair@mcdb.ucla.edu. Please include the names of the people shown, the year of the photo, and the story or event behind it. We’d like to publish them in the next newsletter to stir some alumni memories.

**LIFETIME E-MAIL FORWARDING**

Whether you are e-mailing friends, colleagues or future employers, you can show your Bruin pride by establishing and using your @ucla.edu e-mail forwarding address. You’ll never need to send out another I’ve changed my e-mail address message again. Register for Lifetime E-mail Forwarding today at www.uclalumni.net/NewsLinks/lifetime.cfm.

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**MCDB NEWSLETTER**

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