JOHN E. GUSTAFSON, Professor and Head

Hello from Stillwater, America’s heartland, the southern prairie, and home to the Scissor-tailed Flycatcher and Mississippi Kite!

In my first year I have greatly enjoyed witnessing all the student, faculty and staff academic and professional success that was celebrated within our department. This newsletter contains a culmination of events that have occurred during the past two years within our department. In 2013 for instance, the department held a University-wide celebration for the “new beginning” of Professors Linda and Chang-an Yu. The festivities included the installation of a display on the first floor of our building to honor the Yu’s completion of the cytochrome bc1 complex structure; these exceptional OSU scientists have indeed left the “brightest orange” all over the scientific map! To celebrate Professor Linda Yu’s retirement, I initiated an award entitled, “In recognition by the Women of Biochemistry and Molecular Biology”; which is designed to celebrate the contributions of all of our female students and faculty, by recognizing the best graduate student publication or the graduate student that demonstrates the greatest potential to succeed.

Biochemistry and Molecular Biology research continues to allow us to develop crops that reduce human hunger and misery, produce therapeutics that conquer human disease and increase societies understanding of the complex and shared metabolic pathways of all life forms on this planet. We all understand that supporting community, lending a hand or joining a worthy struggle can often enhance and better our collective well-being. As alumni educated within this department, you also have an appreciation for the scientific method that has been moving humanity forward ever since its initial application. Give the gift of the scientific method and its implications as often as possible to those around you.

I want to encourage all of you to come back and re-engage the faculty, staff and students that I work with and rediscover why this department is such an incredibly special place for learning and the continued exploration of the cells inner mysteries. Should you come back for a visit, my door is always open and I would love to get the chance to meet with you. In the coming months you will find many examples of our faculty and student research accomplishments and the names of all of our departmental undergraduate award recipients on the walls of the first floor as you enter from the north side of the Noble Research Center. The department is also in the process of updating our website and you can also see what we are up at https://www.facebook.com/BioChemOState; by all means, make an effort to “like” us.

In closing, I would like to send out a very hearty “thank you” to all the wonderful alumni and departmental citizens who continue to donate to our department’s general foundation account as well as the various award and scholarship accounts. These funds allow our department to celebrate our student citizen accomplishments and support numerous departmental initiatives.

My best to all of you “Biochemistry and Molecular Biology Pokes” out there!

John E. Gustafson, pictured with great nieces and nephew.
**CONGRATULATIONS FACULTY!**

**2012 PHOENIX AWARDS**

BCMB Associate Professor
**Dr. Ramamurthy Mahalingam** was given a $500 check for being designated the Outstanding OSU Graduate Faculty member. The award is extra special because it is given by the (GPSGA) Graduate and Professional Student Government Association.

**CONGRATULATIONS FACULTY!**

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**OSU Recognizes Achievement During Fall 2012 Convocation**

**President’s Cup Traveling Trophy for Creative Interdisciplinarity**

“Powerful New Technology for Electronic Diagnostic Nucleic Acid Analysis”

Team Leader **Jacqueline Fletcher**, Regents Professor, Entomology and Plant Pathology.

Team members include:
- **Astri Wayadande**, Assistant Professor, Entomology & Plant Pathology
- **Francisco Ochoa Corona**, Assistant Professor, Entomology & Plant Pathology
- **Carla Garzon**, Assistant Professor, Entomology & Plant Pathology
- **Li Maria Ma**, Assistant Professor, Entomology & Plant Pathology
- **Ulrich Melcher**, Regents Professor, Biochemistry & Molecular Biology (pictured left)
- **Rakesh Kaundal**, Assistant Research Scientist, Biochemistry & Molecular Biology (pictured right)
- **Jeff Sallee**, Assistant Professor, 4-H Youth Development
- **Robert Allen**, Department Head, Forensic Sciences, Center for Health Sciences
- **William Schneider**, Research Scientist, Emerging Plant Pathogens & Pests Unit

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**Don Ruhl wins CASNR Outstanding Faculty Advisor for 2012 - 2013**

**CONGRATULATION Don Ruhl** for receiving the CASNR Outstanding Faculty Advisor Award! Not only is he an outstanding advisor, his research is gaining recognition as well. Ruhl was recently featured in the winter/spring 2013 edition of “Cowboy Journal”. The article was titled “Ruhl’ing Out Cancer”. Portions of the article read as follows:

In 2010, Ruhl joined the OSU faculty to teach and continue his research. At St. Louis and Cornell, Ruhl worked among peers to identify one of the causes of breast cancer. Now, he focuses on pediatric cancer, but he said that two cancer types are similar in what amounts to a misreading of DNA. He recognizes that students are highly interested in pediatric cancer. “The OSU lab students have a choice in what they would like to research,” Ruhl said. “Most student interest leans toward the pediatric cancer we study. It has more unknowns, and they like that.” Madison Donica, a senior in BCMB from Ardmore, OK is one of Ruhl’s leaders in the laboratory. Donica is contemplating going to medical school and becoming a teacher. “I never thought about teaching before, but seeing Ruhl teach so well, conduct research and possibly save lives makes me want to do the same,” Donica said. “I am excited about our pediatric research because it is directly related to human health and affecting people.” Ruhl said he promotes research and encourages students to pursue research experiments to benefit their career goals. “If you are motivated and want to do research, come to OSU and you can do it,” Ruhl said.
Let’s Hear From Our Faculty

Dr. Ramamurthy Mahalingam

Job: Scientist
What I do: Understanding how plants respond to stress at a molecular level.
What is the most exciting aspect of your research? Hope that the basic research we conduct can contribute towards food self-sufficiency in this world.
Who works in your lab? Dedicated colleagues - Dr. Yongfang Li and Dr. Meena Muthuramalingam.
What is your proudest achievement? Seeing students trained in my lab being successful in their careers.
The one thing you should know about me is... I enjoy learning.

Dr. Rita Miller

Job: Researcher, Teacher, Mentor
What I do: I train students in cell biology, genetics, and biochemistry.
What is the most exciting aspect of your research? Finding and understanding new signal transduction pathways that regulate cell division. Someday, these can then be used in the fight against cancer and other diseases.
Who works in your lab? Ambitious, smart, and hard-working researchers work in my lab. I have one postdoc, three graduate students, and several undergraduates.
What is your proudest achievement? Seeing my students earn independent research positions and go on to successful careers.
The one thing you should know about me is... I expect my students to give outstanding presentations and I give them the tool to do so.
A high-level supercomputing and bioinformatics workshop was hosted this summer with the theme of Entangled Genomes. The workshop was funded through the provost’s office and was the combined effort of three groups: the Bioinformatics Graduate Certificate Program, the Entangled Genomes program and the iCREST program. Instructors included members of the J. Craig Venter Institute, The Texas Advanced Computing Center and iPlant.

Bioinformatics is an evolving field that has emerged. With our own bioinformatics graduate certificate program, Oklahoma State University is at the forefront of assimilating bioinformatics into the life sciences.

As part of keeping us ahead of the ever-bulging data sets, an advanced supercomputing and bioinformatics workshop was hosted August 2012.

The workshop, entitled “Bioinformatics of Entangled Genomes,” was funded through the provost’s office and was the result of a collaborative effort among the bioinformatics graduate certificate program at OSU, the Entangled Genomes program and iCREST.

Thirty participants, of whom 80 percent were graduate students and 20 percent were faculty and staff, representing nine departments and two colleges at OSU that participated in the workshop.

Instructors came from all across the nation, including members of the J. Craig Venter Institute, The Texas Advanced Computing Center and iPlant.

The visiting instructors were some of the most impressive names in the field of bioinformatics, and they taught OSU students and faculty the basics of computing to understand and annotate the copious amount of data produced by modern biochemical techniques, such as DNA and metagenome sequencing.

John Gustafson, head of OSU’s biochemistry and molecular biology department, was thankful that the provost funded this project and added, “The OSU organizers, Dr. Peter Hoyt, Dr. Mark Fishbein, Dr. Andrew Doust, Dr. Dana Brunson and Dr. Rakesh Kaundal, and all the other participating faculty and staff are to be commended for running such an effective course on our campus.”

The workshop was designed to meet a burgeoning need for expertise at OSU in bioinformatics and genomics. These fields have revolutionized research in the life of sciences and agriculture. The training provided at the workshop is a step towards empowering OSU faculty and students to use the most advanced sequencing and computational technologies for conducting research.

“With current and planned growth in the availability of next generation sequencing instrumentation on the OSU campus, coupled with the new high performance super computer, “Cowboy,” coming online this fall, OSU researchers will be better able to conduct advanced research in life sciences and agriculture,” said Mark Fishbein, and associate professor of botany at OSU an one of the organizers of the workshop.

The enormous interest in the workshop has Hoyt, director of OSU’s bioinformatics graduate certificate program, hopeful.

“The workshop demonstrated that we have enough faculty and student interest on our own campus to pursue the development of interdisciplinary bioinformatics degrees that can build on our bioinformatics graduate certificate program,” he said.

Founded as a land grant university under the Morrill Act in 1890, OSU has always had research as one of its core priorities. With the advent of bioinformatics and the prevalence of resources and availability of options to learn cutting edge science right here on campus, OSU’s students and scholars can bravely foray into the emerging, dynamic world of science appropriately equipped in the cyber age.

[Story by Cynthia Dobbs, biochemistry and molecular biology graduate student].
Welcome New Faculty

**Dr. Donald Ruhl** joined the OSU Biochemistry & Molecular Biology Faculty in 2010 as an assistant professor & academic advisor. He earned his bachelor’s degree in Chemistry at the University of Missouri and Ph.D. in Pharmacology and Physiology at Saint Louis University School of Medicine. Ruhl served as a postdoctoral fellow in the Department of Molecular Biology and Genetics at Cornell University where he researched estrogen-dependent gene regulatory mechanisms, taught a traditional lecture-style class to graduate and undergraduate students and mentored undergraduates in a research laboratory.

Ruhl’s research interests focus on the mechanisms of gene regulation. These studies have centered on the role of ATP– and NAD+-dependent enzymes (i.e. SRCAp, Swi/Snf, PARP-1) in the regulation of chromatin structure and its implication in transcriptional activation. His primary research goal is to understand epigenetic mechanisms of gene regulation and explore how these mechanisms relate to the development of paediatric cancers.

**Dr. Rakesh Kaundal** joined the OSU Biochemistry & Molecular Biology faculty in 2011 as an assistant research scientist of bioinformatics and metagenomics and next-generation sequencing in the National Institute for Microbial Forensics & Food and Agricultural Biosecurity (NIMFFAB). He earned his bachelor’s degree in agriculture and master’s in plant breeding & genetics from CSK Himachal Pradesh Agricultural University, Palampur, India; Ph.D. in plant breeding and genetics at Dr. B.R. Ambedkar University, Agra, India, and post-graduate diploma in bioinformatics from Sikkim Manipal University, Gangtok, India. Before joining OSU, Kaundal served as a postdoctoral research fellow at The Samuel Roberts Noble Foundation, Ardmore, Oklahoma.

Research in the Kaundal Bioinformatics Laboratory (http://bic.okstate.edu/) focuses on a range of topics in applying statistical pattern recognition, artificial intelligence and machine learning technologies in the area of agricultural biosecurity, metagenomics, regulatory mechanisms of gene expression, genome-wide host-pathogen interaction networks and genome annotation for functional studies. He has developed a range of bioinformatics tools that are useful within real biological situations.

**Dr. Kevin Wilson** joined the OSU Biochemistry & Molecular Biology Faculty in 2011 as an assistant professor & academic advisor. He earned his bachelor’s degree in biochemistry at the University of Arizona; Ph.D. in chemistry at the University of Oregon; and was a postdoctoral fellow studying bacterial ribosomes at the University of California (Santa Cruz). Before joining OSU, Wilson was as an assistant professor of biochemistry at the University of Alberta in Canada, where he first got into research with antibiotics.

Wilson’s lab is investigating how antibiotics perturb the translational machinery in bacterial cells. Using novel methodology, Wilson is purifying the full translational machinery from both harmful and helpful bacteria, quantitatively assessing the components of this machinery and other putative factors connecting it to bacterial physiology, and comparing the effects of antibiotics on the composition and dynamics of the translational machinery. These studies will reveal how antibiotics that target the ribosome dismantle bacterial physiology, leading to bacterial death. These insights will be a critical prerequisite for the development of new more effective and specific antibiotics.

Visit [http://biochemistry.okstate.edu/newsite](http://biochemistry.okstate.edu/newsite) for more information on faculty research
Dr. Gary Thompson moved to Penn State

Dr. Gary Thompson came to the Department of Biochemistry and Molecular Biology as professor and head during the Summer of 2007. During his tenure, Thompson took part in dedication of the Roger E. Koepp Seminar room, in honor of the late, legendary Roger Koepp, department head from 1963-1990. Among numerous other contributions, Thompson was instrumental in re-establishing the Departmental newsletter. Thompson departed for Penn State March of 2011, taking a position as Associate Dean for Research and Graduate Education, Director, PA Agricultural Experiment Station, and Professor of Plant Science. Thanks for a job well done and good luck at Penn State.

Dr. Dale Maronek served as Interim Department Head

A big “Thank You” to Dr. Dale Maronek, Department Head & Director, Oklahoma Botanical Garden & Arboretum in the Department of Horticulture & Landscape Architecture, for his role as Interim Head of Biochemistry and Molecular Biology, beginning March of 2011 through the end of June 2012. Taking precious time out of his already busy schedule to assist and lead BCMB while the Division of Agricultural Sciences and Natural Resources (DASNR) completed the lengthy process of the department head search. We appreciate all you’ve done for us!

Dr. Sharon Ford Retired in 2011

After more than 30 years at OSU-BCMB, I finally retired, to live the good life in Portland, Oregon. Mine was a long and happy career in a Department that valued the work I did and was flexible enough to allow me to find a unique niche.

Warren and I moved to Oklahoma in August, 1978, when he accepted a job in the Chemistry Department at OSU. Dr. Roger Koepp hired me as a half-time Post-Doc and in 1979 Dr. Koepp asked me to teach half time in a laboratory course for pre-vet and pre-dietetics students (BIOC 3721). The rest is history - I taught biochemistry labs ever since. Over the years BIOC 3721 was disbanded when the vet school and the nutrition program no longer required it, to be replaced by the undergraduate majors lab (BIOC 3723) in spring 1995. Before that, undergraduate majors were required to take the graduate level lab.9BIOC 5824) For a while I taught both the undergraduate and the graduate versions of biochemistry laboratory.

About 1993, I began advising undergraduate students, initially working with students only in the College of Arts and Sciences but eventually advising students in both A&S and CASNR. I don’t know how many hundreds of students I have advised (>300 would be my guess). Along the way I picked up duties as pre-med advisor for the Department (in 2000) and as faculty advisor to the Biochemistry Club. I figure I have written recommendation letters for well over 100 aspiring doctors, dentists, pharmacists and veterinarians.

But all good things must come to an end to make time for more good things. I retired October 1, 2010. Warren retired December, 2010, and we moved to Portland, Oregon, where we had already purchased a home. I miss the students and my colleagues, but I am really enjoying the change of pace, and the cooler summers.
<table>
<thead>
<tr>
<th>Scholarship/Award</th>
<th>Name(s)</th>
<th>Year(s)</th>
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<tbody>
<tr>
<td>Outstanding Biochemistry Senior</td>
<td>Sarah Oppel</td>
<td>2011</td>
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<td>Lydia Meador</td>
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<td>Natalia Soulages Arrese</td>
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<td>Mrinalini Patil</td>
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<td>OSU Barry M. Goldwater Scholarship</td>
<td>Rosalina Yorks</td>
<td>2012</td>
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<td>Roger E. Koepppe Award</td>
<td>Rachel Leigh Rice</td>
<td>2013</td>
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<td>OSU Seniors of Significance</td>
<td>Lydia Meador</td>
<td>2011</td>
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<td></td>
<td>Sarah Oppel</td>
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<td></td>
<td>Grant Dixon</td>
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<td>Tyler Downing</td>
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<td>Wentz Scholars</td>
<td>Hannah James Cowell</td>
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<td>Jacob Keeling</td>
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<td>Wentz Projects</td>
<td>Erin Best</td>
<td>2012</td>
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<td></td>
<td>Jacob Keeling</td>
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<td></td>
<td>Lydia Meador</td>
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<td></td>
<td>Sarah Oppel</td>
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<td>Jaron Soulek</td>
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<td>Grace Knox Award</td>
<td>Sarah Oppel</td>
<td>2011</td>
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<td>Brady Selig</td>
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<td>Jared Pembrook</td>
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<td>Michael Veronneau</td>
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<td></td>
<td>Grant Dixon</td>
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<td>CASNR Top 20 Freshman</td>
<td>Kendra Rash</td>
<td>2012</td>
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<td>Niblack Scholars</td>
<td>Sarah Firdaus</td>
<td>2011</td>
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<td>Joshua Damron</td>
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<td>Jared Pembrook</td>
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<td>Rosalina Yorks</td>
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<td>Kelsie Brooks</td>
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<td>Kayla Davis</td>
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<td>Mrinalini Patil</td>
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<td>Paul F. Kruse Award</td>
<td>Randilea Nichols</td>
<td>2011</td>
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<td>Rachel E. Branch</td>
<td>2012</td>
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<td>Courtney Anderson</td>
<td>2013</td>
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<td>V.G. Heller Award</td>
<td>Lydia Meador</td>
<td>2011</td>
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<td>Jacob Keeling</td>
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<td>Jacob Hill</td>
<td>2013</td>
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<td>Merck Index</td>
<td>Randilea Nichols</td>
<td>2011</td>
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<td></td>
<td>Jacob Keeling</td>
<td>2012</td>
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<tr>
<td>James E. Webster Award</td>
<td>Allison Fuzzell</td>
<td>2011</td>
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<td>Hannah James</td>
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<td>Devin Leslie</td>
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<td>Alexander Brown</td>
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<td>Woong Hee Cho</td>
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<td>Lauren Nichols</td>
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<td>Jordan Stegman</td>
<td>2013</td>
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<tr>
<td>OSU Freshman Research Scholar</td>
<td>Karen McPhearson</td>
<td>2012</td>
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<tr>
<td>TCC to OSU Biochemistry Scholarship</td>
<td>Mattison Edwards</td>
<td>2012</td>
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Delta Nu Alpha (Biochemistry Club) is a social club that provides undergraduate students in the Department opportunities to explore and enrich their experiences in their biochemistry degree program as well as meet other biochemistry undergraduates. During club meetings they host guest speakers from a variety of fields such as scholarships, career services, graduate students, medical students, etc. They also participate in various activities throughout the year, including philanthropic activities such as “Relay for Life”, where they hosted a “Qdoba Night” on Feb. 12, 2013, to raise money for cancer research. The Club’s overall goal is to keep students involved and informed about campus resources and events.

The Biochemistry and Molecular Biology Graduate Student Association (BMBGSA) continues to grow by leaps and bounds. The Association is active in Departmental decisions and provides campus wide input by regular attendance at Graduate and Professional Student Government Association meetings. BMBGSA coordinates the Department’s annual campus wide Fall Research Symposium in life sciences, with 2013 being the tenth year for this event. BMBGSA also sponsors the Department’s graduate student based Journal Club, which provides a venue for all graduate students to take part in critical scientific discussion with their peers. The Association’s main goal is to develop and hone professional skills such as cooperation and leadership by supporting graduate student events.
There is no more important time to give than now nor more important investment you could make than in your profession. Give back to the program of which you can be proud.

To explore ways to give, contact the BMB department @ 405-744-6189 email: biochemistry@okstate.edu ♦ website: biochemistry.okstate.edu/newsite
GRADUATES

Class of 2012 - 2013

**Bachelor of Science**
- Anderson, Courtney Ross
- Anderson, Whitney Elizabeth
- Byrum, Jeffrey Ross
- Chambers, Lauren Elizabeth
- Cheek, Kelley Lynn
- Combs, Kayla Lachell
- Dixon, Grant Barry
- Doanhich, Aaron David
- Donica, Madison Jane
- Downing, Tyler Andrew
- Edwards, Mattison Leigh
- Fritz, Bryan Robert
- Funke, Melanie Renae
- Hill, Jacob Austin
- Haldane, David Vernon
- Kietyeta, Baowends Estelle
- McWhirter, Mary Frances
- Mick, Megan Elise
- O’Dell, Brandon Floyd
- Pascual, Elizabeth Grace O
- Patil, Mininali Krishna
- Pitts, Candace Faye
- Rachlin, Laura Meghan
- Ramirez, Brandon Scott
- Ratto, Tony Patrick
- Reutlinger, Ian Scott
- Rice, Rachel Leigh
- Steele, Dustin James
- Van Maanen, Priscilla Lynn
- Whitley, Joren Michael
- Withrow, Caitlin Deeann

**Master of Science**
- Chen, Xiao
- Dutta, Mukta
- Han, Yua
- Hu, Yingxia
- Pennington, Steven Michael
- Perez, Gloria

**Doctor of Philosophy**
- Davenport, Jason

Class of 2011- 2012

**Bachelor of Science**
- Branch, Rachel Elizabeth
- Brewer, Emily Jade
- Burch, Whitney Lyn
- Cain, Steven Bryan
- Clevenger, Ryan Lewis
- Colston, Loren Ann
- Cowles, Megan Lynne
- Darling, Joanna Michelle*
- Dobson, Martha Marshall
- George, David P
- Goerke, Kale Scott*
- Hoyt, Amy Elizabeth
- Janz, Amanda Neline*
- Johnson, Bryan Lee
- Keeling, Jacob William Pankney*
- Lakin, Katelyn Rebecca
- Long, John Paul, III
- Matile, Morgan Leigh
- Meeks, Allison Emily
- Monreal, Isaac Abrey
- Nichols, Danielle Nicole*
- Pembrook, Jared Keith**
- Sanders, Samantha Megan
- Streck, Robert Harding***
- Subramaniam, Raagini
- Tucker, Jessica Mullins
- Veronneau, Jessica Morgan

**Master of Science**
- Zhang, Si

**Doctor of Philosophy**
- Brown, TeeCie Paige
- Peal, Lila K
- Wang, Qiyu
- Zhou, Fei

Class of 2010- 2011

**Bachelor of Science**
- Berry, Brian Delohr
- Boothe, Melissa Nicole
- Bruce, Crystal Hernandez
- Clark, Hailey Marie
- Clary, Zachary Kent
- Fluit, Natoshia Cole
- Greenlee, Matthew Alec
- Higley, Jared Preston*
- Hudson, Thomas J.
- Humble, Brandon Christopher*
- Kriner, Betsy Kay*
- Krug, Luisa Teresa**
- Largent, Janell Leann*
- Minor, Rynesha Derizette
- Nash, Randall Matthew
- Nichols, Randilee Dawn**
- Nutter, Curtis Alan*
- Oppel, Sarah Kathryn
- Outhier, Chelsea Lynne
- Pellam, Kaylann Kim
- Price, Ronald Joshua
- Skocik, Grace Michelle
- Souleik, Jaron Joseph
- Teachey, Kirby Dawn
- Webb, Erika Nicole
- Weirick, Tyler M

**Master of Science**
- Liu, Wenjun
- Tabassum, Nazia

**Doctor of Philosophy**
- Daley, Shawn M.E.
- Grover, Veenita
- Matts, Jessica Allyn-Brooke

*General Honors Award
**Honor’s College Degree

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OSU President Burns Hargis with Michael Veronneau
Honors College Bachelor of Science Degree in Biochemistry and Molecular Biology - Class of 2012
2012 - 2013 Seminars

Fall 2012

Dr. Brenda Smith, Nutritional Sciences - OSU. “Regulation of Bone Metabolic Activity by Polyphenolic Compounds from Plant-based Foods”

Dr. Joan Conaway, Stowers Institute. “Mediator and the Control of RNA Polymerase II Transcription”

Dr. Blaine Bartholomew, Southern Illinois University School of Medicine. “ATP-Dependent Remodelers of Chromatin”

Dr. Patrick Abbot, Vanderbilt University. “Optimist, Suspi-cion and History Lessons in the Age of ‘Omics’”

Dr. Doris Benbrook, OU Health Sciences Center. “Heat Shock Proteins and Stress Response Pathways in Cancer Drug Development”

Dr. Kevin Vaughan, University of Notre Dame. “How Chromosome Alignment Silences the Spindle Assembly Checkpoint”

Dr. Gerald Schoenknecht, Botany - OSU. “Genome of the Eukaryotic Extremophile Galdiera sulphuraria”

Dr. Andrew Wang, Institute of Biological Chemistry (Taiwan). “Understanding Antibiotics Function and Resistance by Structural Biology Approach”

Dr. Donghua Zhou, Physics - OSU. “At the Interface of Physics and Biology: Bone Characterization and Protein Structures by Solid-state NMR Spectroscopy”

Dr. Arlan Richardson, University of Texas Health Sciences at San Antonio. “Rapamycin, the First Anti-aging Drug?”

Dr. Mark Libault, University of Oklahoma. “Use of an Innovative Single Cell Model, the Root Hair Cell, to Unravel Plant Adaptation to Environmental Stresses”

Spring 2013

Dr. Ben Holt, University of Oklahoma. “How Plants Perceive and Use Day Length as a Cue to Time Flowering Deciphering the Roles of NF-Y Transcription Factors”

Dr. Ken McNally, IRRI (Philippines). “ASPIRe — Accelerated Sequencing and Phenotyping for Improved Rice”

Dr. Dan Starr, University of California Davis. “Moving Nuclei Through the Cell with a KASH-SUN Bridge Across the Nuclear Envelope”

Dr. Michael T. Kinter, OMRF. “Changes in Mitochondrial Function in the Hearts of Obese Mice: New Directions Based on Quantitative Proteomics”

Dr. Ray Ming, University of Illinois. “Dynamic Rearrange-ments and Gene Trafficking in Nascent Sex Chromosome of Papaya”

Dr. Jonathan Wren, OMRF. “Predicting Function, Phenotype and Disease Relevance for Uncharacterized Genes and Non-coding RNAs”

Dr. Tom Juenger, University of Texas Austin. “Studying Ecophysiology and Adaptation in Plants Using Genetic and Genomic Tools”

Dr. Steve Clarke, Nutritional Sciences - OSU. “Examining the Role of miRNA in the Control of Iron-sulfur Cluster Biogenesis and Iron Metabolism in Mammals”

Dr. Rajeev Azad, University of North Texas Denton. “On Next Generation Methods for Detecting Allen Genes in Microbial Genomes”

Dr. Liuling Yan, PASS - OSU. “Molecular Regulation of Flowering initiation in Wheat”

Dr. Don French, Zoology - OSU. “Effective Engagement in College Science Classrooms”


Dr. Vibha Srivastava, University of Arkansas. “DNA Methylation in Gene Coding Region: A New Paradigm in Transcrip-tional Regulation.”

Dr. John Cushman, University of Nevada Reno. “Functional Genomics of Crassulacean Acid Metabolism (CAM): A Metabolic Adaptation to Water-limited Environ-ments”

For more information on the Department’s seminar series, visit our website at biochemistry.okstate.edu/newsite
NEWS FROM YOUNG ALUMNI

Qiyu Wang

After graduating in Fall 2011 from Dr. Chang -An Yu’s lab, I work as a postdoc at Harvard University. I am studying exosome-like vesicles, which are 50 to 100 nm vesicles secreted by many kinds of mammalian cells. They carry various molecular constituents like proteins and RNA. They can merge with target cells and release their contents there. The target cells can be distant from the vesicle’s cell of origin. This may play a role in cell-to-cell signaling and the dysregulation of this process may cause some human disease.

Lila Peal

I defended my dissertation entitled “Molecular Characterization of an Arabidopsis thaliana RNA Binding Protein Involved in Oxidative Signaling” in August of 2011. That same August, I joined the Department of Biological Sciences at Cameron University as a temporary instructor. While at Cameron University, I taught General Biology, General Biology Lab, Principles of Biology I Lab, and Introduction to Microbiology I. Lab. Kathryn Parsley, a student in my General Biology class, had an interest in research and with the help of Dr. Ramamurthy Mahalingam, I received an Oklahoma EPSCoR-ROA award and the student received an Oklahoma EPSCoR-REU award. In the summer of 2012, Kathryn and I worked in Dr. Mahalingam’s lab doing research on switchgrass. In August 2012 I joined the Chemistry department at Langston University as an Assistant Professor. At Langston, I teach biology I, physical science, and biochemistry. I’m currently trying to develop a research project to engage undergraduates in research.

Michael Puckette

After graduating from OSU in December of 2009 I moved to Old Saybrook, Connecticut and started a job as a post-doctoral researcher with the USDA-ARS at Plum Island Animal Disease Center. My research with the USDA-ARS covered viral/host protein/protein interactions of Foot and Mouth Disease Virus (FMDV) and enhancement of anti-viral activity of interferon treatment through usage of additional cytokines. After working with the USDA for three years I recently accepted a position as a visiting scientist working with the Department of Homeland Security Target Advance Development (TAD) unit. My research with DHS-TAD has focused on aspects of DNA vaccine technology and development of more effective FMDV DNA vaccines and vaccination technologies.

Last December I got engaged to my girlfriend of three years. She is a high school science teacher at Norwich Technical High School in Norwich Connecticut. We are going to be married this July 26 in southern Vermont. She has already made multiple trips back to Oklahoma with me and enjoys Braun’s shakes and Hideaway pizza. Unfortunately we have yet to be able to time our visits in such a way that she has been able to try Joe’s cheese fries.

Alisha Howard

During my matriculation at OSU, I received a BS in both Chemistry and Biochemistry Fall of 2005, and a Ph.D. in Biochemistry, Spring of 2010. Awards include but are not limited to V.G. Heller Award in Biochemistry and Molecular Biology-2006, and CASNR’s Centennial Scholar Fellowship-2006 to present. “I want to thank everyone at OSU, the faculty, staff and students, for all their support during school, looking for the next step (getting a job) and during my post-doc endeavors.”

Brian Herrin

I graduated in 2009 with a bachelor’s degree in Biochemistry and Molecular Biology with a minor in Mathematics. Having worked in both a research lab in the Microbiology department and the Oklahoma Animal Disease Diagnostic Lab before entering vet school, I knew that I wanted to pursue a career in anatomic pathology. During my research experience as an undergrad, Dr. Susan Little (OSU-CVHS) served on my Honor’s Thesis committee and was interested in mentoring me as a graduate student in Veterinary Biomedical Sciences. From there, the school worked out a program where I would complete the first two years of vet school, take a year off to focus on my research projects, then finish the last two years of vet school (2014), and finally finish my PhD (2016 hopefully!). I am now in my third year of vet school and will start clinics in May. My research focuses on ticks and tick-borne diseases, specifically mapping risk factors for tick-borne diseases. Currently, I am looking at mapping risk factors for Lyme disease in the New York City metropolitan area, the spread of Lyme disease to Southwest Virginia, and risk factors for Ehrlichiosis in endemic areas. I enjoy being able to apply my research training to clinical cases that are seen in the hospital. Staying clinically relevant is one of the major focuses of the research our lab does. After finishing my graduate degree, I want to enter a residency program in anatomic pathology, and my career goal is to work at a veterinary school doing diagnostics and teaching.
Dr. Arlan G. Richardson earned his Ph.D. in Chemistry, with an emphasis in Biochemistry, in 1968. He is noted for his pioneering work and continuing leadership in the field of oxidative stress and damage in aging and age-related diseases. Dr. Richardson has over 164 peer-reviewed scientific publications and 36 chapters. He holds a Senior Research Career Scientist title with the Department of Veterans Affairs and is a Professor in the Barshop Institute for Longevity and Aging Studies, University of Texas Health Science Center at San Antonio.

The Department of Biochemistry and Molecular Biology and the Department of Chemistry welcomed Dr. Richardson as a speaker in the BCMB Fall 2012 Seminar Series. His presentation was titled: “Rapamycin, the first anti-aging pill?”

Dr. Ahern graduated with his M.S. in Biochemistry from OSU in 1980 and went to Oregon State University (the other OSU) in 1981 where he received his Ph.D. in 1986. After two years post-doc-ing at UCSD, he returned to Oregon State in 1988, began teaching in 1995 and advising in 1999. Ahern has received numerous awards for teaching and advising. He is probably best known for his Metabolic Melodies (http://www.davincipress.com/metabmelodies.html), YouTube lectures on Biochemistry (http://www.youtube.com/user/oharow?feature=mhee), and iTunes U Courses (http://oregonstate.edu/dept/biochem/ahern/123.html). “I'm very proud that the YouTube lectures have had over 1.5 million views since I've posted them,” reports Ahern. He has written books on biochemistry, the most recent of which is "Biochemistry Free and Easy" available now (http://biochem.science.oregonstate.edu/biochemistry-free-and-easy). This book has been downloaded almost 30,000 times since its release in August, 2012.

Dr. Ahern has been married to Indira Rajagopal since 1992. Indira has been co-author with Kevin on two books - Biochemistry Free and Easy (above) and a newer one just released in January called "Kevin and Indira's Guide to Getting Into Medical School". It is available here - http://www.lulu.com/shop/product-20684903.html

NOTE: We are excited to inform you that Dr. Kevin Ahern will be visiting OSU Biochemistry and Molecular Biology as a guest seminar speaker during the Department's Fall 2013 seminar series. For complete seminar information visit our website at http://biochemistry.okstate.edu/news
The Department of Biochemistry and Molecular Biology encourages all students to reach their full potential in every aspect of their education. The Department recognizes the importance of alumni and values their contributions toward the success of our students. Financial contributions make it possible for the Department to provide a top-quality research seminar series, educational and research opportunities for students, and a variety of scholarships and scholar awards.

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Or checks payable to OSU Foundation and *designate your desired area of support in the BCMB Department*. For further information on giving toward or endowing funds for recognition of a specific individual, please contact the Department.

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