



Spring/Summer 2012

Biochemistry & Molecular Biology Notes

Volume 23 No.3 August, 2012



The Robert A. Harris Chair Endowed

A celebration dinner was held on July 13, 2012 to recognize the funding of the Robert A. Harris Chair. The chair was created in honor of Dr. Robert A. Harris for his numerous contributions to the Department of Biochemistry & Molecular Biology as well as to the IU School of Medicine. Dr. Harris served as the chairman of the Department of Biochemistry & Molecular Biology from 1988-2004 in which time the research funding tripled and the graduate program became the largest in the school. Dr. Harris has received national and international awards recognizing his many accomplishments in research, teaching and mentoring. The Robert A. Harris Chair was established through generous gifts from friends, students, colleagues, and the School of Medicine. The title of Robert A. Harris Chair will hereafter be held by the current chairman of Biochemistry & Molecular Biology, ensuring that Dr. Harris' legacy of excellence in research and education will endure at the School of Medicine in perpetuity.

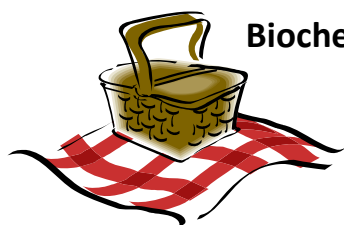
Former Biochem student earns early career achievement award

Dawn P. G. Brown, Ph.D. has been awarded this year's Neal-Marshall Indianapolis Alumni Chapter's Early Career Achievement Award.



Dr. Brown earned a doctorate in Biochemistry and Molecular Biology from the IU School of Medicine under the guidance of Mu Wang, Ph.D., Associate Professor of Biochemistry and Molecular Biology. Her dissertation "Understanding Cisplatin Drug Resistance in Human Ovarian Cancer," received funding by the GAANN fellowship, Edwin T. Harper Scholarship and the Ruth L. Kirschstein National Research Service Award from the NIH.

After graduation, she joined Lilly Research Laboratories first as a postdoctoral fellow, where her research included biomarker discovery and drug development for osteoarthritis and Alzheimer's disease, and later as a research scientist with Elanco Animal Health, a division of Eli Lilly and Co. Congratulations Dr. Brown.



Biochemistry & Molecular Biology Picnic—2012

The annual , Biochem Department Family Picnic will be held on Friday, September 21st, 2012 at Ft. Harrison State Park, 1:00 p.m. in the Sycamore Shelter house. Your event co-chairs will be Dr. Suk-Hee Lee and Dr. Yuichiro Takagi. Please join us for food, sports and fun!

Harrington wins 2012 Trustee Teaching Award

Maureen Harrington, Ph.D. was announced as a 2012 Trustee Teaching Award recipient. Awardees are selected primarily for their excellence in teaching and are recognized at IUPUI and IUSOM award ceremonies as well as at the medical school commencement in May.



Post-Doc awarded National Cancer Institute K01



Ann Kimble-Hill, Ph.D. was awarded the NCI Mentored Career Development Award to Promote Diversity (K01). The NCI K01 mechanism establish-

es a pathway of recruiting, training and retaining underrepresented investigators into research fields that address problems pertinent to the biology, etiology, pathogenesis, prevention, diagnosis, and/or treatment of human cancer and who can conduct independent competitive cancer programs.

The K01 provides support and "protected time" for 5 years in an intensive, supervised career development experience under the direction of Drs. Hurley and Wells. Dr. Kimble-Hill will be studying the underlying biophysical mechanisms involved in Angiotensin (Amot) lipid specificity. The long-range goal of this project is to characterize the structural aspects that guide the function of the Amot lipid binding domain and its impact on protein sorting and the downstream signaling events involved in cellular differentiation, cancer cell proliferation, and migration.

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- Huang, F., Oldfield, C., Meng, J., Hsu, W., Xue, B., Uversky, V.N., Romero, P., and **Dunker, A.K.** Subclassifying disordered protein by the CH-CDF Plot Method. *Pac. Symp. Biocomput.* 17:128-139 (2012)
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- Uversky, V.N. and **Dunker A.K.** A multiparametric analysis of the intrinsically disordered proteins: Looking at intrinsic disorder through the compound eyes. *Analytical Chemistry* (E-pub ahead of print) (2012)
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- Habegger KM**, Hoffman NJ, Ridenour CM, Brozinick JT, Elmendorf JS 2012 AMPK enhances insulin-stimulated GLUT4 regulation via lowering membrane cholesterol. *Endocrinology* In Press

PUBLICATIONS

- Oh E, **Kalwat MA**, Kim MJ, Verhage M, Thurmond DC. Munc18-1 Regulates First-phase Insulin Release by Promoting Granule Docking to Multiple Syntaxin Isoforms. *J Biol Chem.* 2012 Jul 27;287(31):25821-33. PMID:22685295
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- Angelia D. Lockett, Mary Van Demark, Yuan Gu, Kelly S. Schweitzer, Ninotchka Sigua, **Krzysztof Kamocki**, Iwona Fijalkowska, Jana Garrison, Amanda J. Fisher, Karina Serban, Robert A. Wise, Terence R. Flotte, Christian Mueller, Robert G. Presson, Horia I. Petrache, Rubin M. Tudor, and Irina Petrache. Effect of cigarette smoke exposure and structural modifications on the alpha-1 antitrypsin interaction with caspases. *Molecular Medicine*, 2012 Jan 10. doi: molmed.2011.00207. [Epub ahead of print]
- Clauss M, Robert Voswinckel R, Rajashekhar G, Sigua NL, Fehrenbach H, Rush NI, Schweitzer KS, Yildirim AO, **Kamocki K**, Fisher AJ, Gu Y, Safadi B, Nikam S, Hubbard WC, Tudor RM, Twigg HL, Presson RG Jr, Sethi S, and Petrache I. Lung endothelial monocyte activating protein II is a novel therapeutic target in murine emphysema. 2011. *Journal of Clinical Investigation.* 121(6):2470–2479. doi:10.1172/JCI43881
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- Hromas, R. Williamson, E., Fnu, **S.**, **Lee**, Y-J, Park, S-J, Beck, B.D., You, J-S, Laitao, A., Nickoloff, J.A., and Lee, S-H (2012) Chk1 phosphorylation of Metnase/SETMAR at Ser495 inhibits replication fork recovery but enhances DNA repair. *Oncogene*, advance online publication 9 January 2012; doi: 10.1038/onc.2011.586 PMID:22231448
- Bechtold-Dalla Pozza, S., Hiedl, S., Roeb, J., Lohse, P., **Malik, R.E.**, **Park, S.**, Durán-Prado, M., and Rhodes, S.J. (2012). A recessive mutation resulting in a disabling amino acid substitution (T194R) in the LHX3 homeodomain causes combined pituitary hormone deficiency. *Horm Res Paediatr.* 2012 Jan 25. [Epub ahead of print] PubMed PMID: 22286346.
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- Bieniossek, C., **Imasaki, T.**, **Takagi, Y.**, and Berger, I. (2012). MultiBac: expanding the toolbox for multiprotein research applications. *Trends in Biochemical Sciences (TiBS)* 37, 49-57
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- He, R., Zeng, L.-F., He, Y., Zhang, S. and **Zhang, Z.-Y.** "Small molecule tools for functional interrogation of protein tyrosine phosphatases" *FEBS J.*, in press (2012).
- Dong, Y., Zhang, L., Zhang, S., Bai, Y., Chen, H., Sun, X., Yong, W., Li, W., Colvin, S. C., Rhodes, S. J., Shou, W., and **Zhang, Z.-Y.** "Phosphatase of regenerating liver 2 (PRL2) is essential for placenta development by downregulating PTEN (phosphatase and tensin homologue deleted on chromosome 10) and activating Akt protein", *J. Biol. Chem* 287, in press (2012).



Wedding Bells

Michael Kalwat & Danielle Montoney
March 5th, 2011

Sowmya Jairam & Uday Shanker Evani
June 18, 2012

Jacob Adler & Emily Avery
June 30, 2012

Melissa (Pearcy) Tarrh & Robert Tarrh
July 14th, 2012

Birth

Announcements



Oun Kheav (Harris/DNA Sequencing Lab) and his wife celebrated the arrival of a new baby boy, Ryan on December 17, 2011. He weighed 7.1 lbs and was 20 inches.

Lujuan Zhang & Yunpeng Bai (Zhang lab) welcomed home their first daughter on April 13, 2012. She was 7lbs, 2oz.

Amber Mosley and her husband, Shane welcomed their new daughter, Lucy into the world on May 1st, 2012. She measured 7lbs, 5oz and 20.25 inches.

Congratulations

Corner

Congrats to Brian Teske! Brian finished 243/1100 riders in RAIN 2012—a 160 mile ride across Indiana event. The race began at 07:00 and Brian finished at 16:53.

Congrats to Nicholas Pearcy! Nicholas (son of Melissa Tarrh) was selected to represent his class as the Science Ambassador and presented at the Dow AgroSciences' Seed Festival.

Congrats to Lance Wells! Lance (son of Clark Wells, Ph.D.) won the Elementary State Chess Tournament!

Condolences



*Our deepest sympathy to
Anna DePaoli-Roach &
Peter Roach in the loss of
Anna's sister, Mina.*

Grant Awards

| Principle Investigator | Funding Agency | Project Title |
|------------------------|----------------|---------------|
|------------------------|----------------|---------------|

FACULTY

| | | |
|---|---------------------------|---|
| Charlie Dong, Ph.D. | NIH-NIDDK | <i>Regulation of hepatic lipid metabolism by a novel Foxo pathway</i> |
| Millie Georgiadis, Ph.D. & Quyen Hoang, Ph.D. | IUSOM-RSFG | <i>Use of multi-angle lights scattering in the characterization of macromolecular complexes</i> |
| Mark Goebel, Ph.D. | IUSOM-RSFG | <i>Ubiquitin dependent protein degradation in sensing nutrient limitation</i> |
| Maureen Harrington, Ph.D. | IUSOM- BRG | <i>Transcriptionally targeted therapy for Rheumatoid Arthritis</i> |
| Quyen Hoang, Ph.D. | NIH | <i>Structure and conformational dynamics of alpha-synuclein</i> |
| Andy Hudmon, Ph.D. | CTSI Core Pilot | <i>Generate S272C/H273Q CaMKII Knock-in mice</i> |
| Andy Hudmon, Ph.D. | NIH | <i>CaMKII in neuronal signaling and degeneration</i> |
| Samy Meroueh, Ph.D. | CTSI P3 PDT | <i>Treatment of neuropathic pain by a small-molecule inhibitor of beta subunits of voltage-gated calcium channel complexes.</i> |
| Amber Mosley, Ph.D. | IUSOM BRG | <i>The role of the PAF complex in the regulation of genome stability</i> |
| Amber Mosley, Ph.D. | NIH | <i>Regulation of RNA Polymerase II Transcription by the Phosphatase Rtr1</i> |
| Yuichiro Takagi, Ph.D. | NSF | <i>Molecular basis of Mediator interactions with RNA polymerase II transcription machinery</i> |
| Yuichiro Takagi, Ph.D. | Showalter | <i>Development of chemical probes for Mediator of transcription regulation</i> |
| Ron Wek, Ph.D. | Showalter | <i>Translation and Stress Regulatory Pathways in Health and Disease</i> |
| Clark Wells, Ph.D. | IUSCC Breast Cancer Pilot | <i>Expression of Proteins in the Polarity Pathway in Breast Cancer Subtypes</i> |
| Jinsam (Teddy) You | CTSI | <i>Equipment Grant: Agilent UHPLC System for metabolomics services</i> |

GRADUATE STUDENTS

| | | |
|--|-----------------------------|---|
| Jeff Gehlhausen (Wade Clapp's lab) | Children's Tumor Foundation | <i>Generation of a novel, accurate murine model of Neurofibromatosis type 2 and genetic validation of therapeutic targets for schwannoma development.</i> |
| Latha Ramalingam (Debbie Thurmond's lab) | AHA Predoc | <i>Regulation of Glucose Homeostasis by Doc2B and SM proteins</i> |

RECENT



Lakshmi Reddy Palam, Ph.D. defended his thesis “Regulation of CHOP translation in response to eIF2 phosphorylation and its role in cell fate” on February 15th, 2012. Lakshmi completed his graduate studies in the lab of Ron Wek, Ph.D.



Souvik Dey, Ph.D. defended his thesis, “Transcriptional regulation of ATF4 is critical for regulating the Integrated Stress Response in response to eIF2 phosphorylation” on February 29th, 2012. Souvik completed his graduate studies in the lab of Ron Wek, Ph.D.



Liyun Cao, Ph.D. defended her thesis, “Mechanism of tissue transglutaminase upregulation and its role in ovarian cancer metastasis” on March 2nd, 2012. Liyun completed her graduate studies in the lab of Daniela Matei, Ph.D.

GRADUATES



Yasmeen Rahimi, Ph.D. defended her thesis , “The role of pyruvate dehydrogenase kinase in glucose and ketone body metabolism” on May 17th, 2012. Yasmeen completed her graduate studies in the lab of Bob Harris, Ph.D.



Christopher Batuello, Ph.D. defended his thesis, “Phospho-regulation and metastatic potential on Murine Double Minute 2” on June 7th, 2012. Christopher completed his graduate studies in the lab of Lindsey Mayo, Ph.D.



Michael Kalwat, Ph.D. defended his thesis, “F-Actin Regulation of SNARE-Mediated Insulin Secretion” on August 16th, 2012. Mike completed his graduate studies in the lab of Debbie Thurmond.



Krzysztof Kamocki, Ph.D. defended his thesis, “The role of ceramides in cigarette smoke induced alveolar cell death” on August 22nd, 2012. Krzysztof completed his graduate studies in the lab of Irina Petrache, M.D.

New Faces in Biochem



Grad Students



Halesha Basavarajappa
(Corson Lab)



Esther Bolanis
(Conway Lab)



Cameron Buchman
(Hurley Lab)



Amanda Campbell
(Zhang Lab)



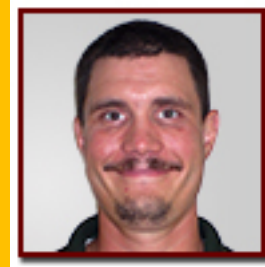
Sisi Chen
(Liu Lab)



Michael Fusakio
(Wek Lab)



Ankur Garg
(X. Zhang Lab)

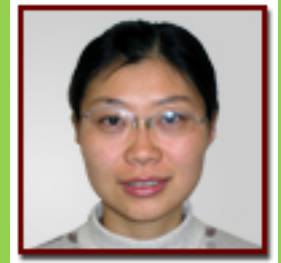


Matthew Justice
(Petrache Lab)

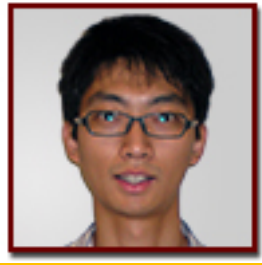
Post Docs



Patricia Borges Santos
Celestino, Ph.D.
(Edenberg Lab)



Ruoyu Zhang, Ph.D.
(Zhang Lab)



Jinzhong Liu
(Flockhart Lab)



Krishna Mahalingan
(Hurley Lab)



Akaash Mishra
(Firulli Lab)



Sudha Savant
(Korc Lab)



Isha Singh
(Georgiadis Lab)



Ragadeepthi Tunduguru
(Turchi Lab)



Chunxiang Wu
(Hoang Lab)



Sara Young
(Wek Lab)

Computer Support



Ryan Long
(Bioinformatics)

Research Tech



Adelai Neal
(Roach Lab)