

# Biochemistry and Molecular Biology Notes

Volume 13, No. 1

April, 2000

## Congratulations!

Check out the newest addition to **Mark Goebel's** office: an impressive wood and metal plaque for Mentor Recognition from the Siemens Foundation. Ms. Faiguni Desal, a high school student in Mark's lab, was a semi-finalist in the 1999 Siemens Westinghouse Science and Technology Competition. Her project was "Role of the cell-cycle regulators in controlling the mating response arrest". She recently presented Mark with the plaque on behalf of the Competition.

**Mark Kelley** has just received word that his grant to study "*Expression of the DNA repair/redox enzyme APR/REF- 1 in epithelial ovarian cancers: diagnostic, mechanistic, and therapeutic studies*" has been funded for 2 years at \$ 100K per year.

## New Course

**Diabetes and Obesity**, G805 (3 cr), Fall Semester 2000. Monday and Wednesday, 9-10:30 a.m.  
*Course description.* P: one semester of biochemistry. Biochemistry, cell biology, molecular biology, genetics, immunology, and pathophysiology of diabetes and obesity. Topics include metabolic regulation, signal transduction, insulin resistance, insulin production, beta-cell function, animal models, complications, nutrition, prevention, and therapy. *Among the many who will participate are:* David Crabb, David Creel, Glenn Bohlen, Janice Blum, Joseph Brozinick, Robert Considine (co-director), ark A. Deeg, Anna Depaoli-Roach, Jeffrey Elmendorf, Barry Gumbiner, Maureen Harrington, Robert Harris (co-director), Richard Peterson, Peter Roach and James Walsh.

## April Seminars

### Biochemistry Seminars

**4/3 Dr. Patricia J. Gallagher**, Associate Professor, Physiology & Biophysics, IUSM; "*Signaling to and from myosin* "

**4/10 Dr. Timothy R. Hughes**, Postdoctoral Scientist, Rosetta Informatics, Kirkland, WA; "*Functional discovery via a compendium of expression profiles*", **MS 326, 2:00 p.m.**

**4/10 Dr. Jane-Jane Chen**, Principal Research Scientist, Harvard-MIT Division of Health Sciences and Technology. MIT; "*Regulation and function of heme-regulated eIF02 a kinase* "

**4/17 Dr. John Cronan**, and Head of Microbiology, Professor of Biochemistry, Department of Microbiology, University of Illinois; "*Lipoic acid, attachment to enzymes and biosynthesis* "

**4/24 Dr. Jeffrey M. Peters**, Assistant Professor, Center for Molecular Toxicology, Pennsylvania State University, University Park, PA; "*Delineating roles for the peroxisome proliferatory-activated receptor- $\beta(\delta)$  with a null mouse model*"

## Biochemistry Student Seminars

- 4/5 Kirk Staschke  
4/12 Jingyuan Liu  
4/19 Paula Ladd/ Joel Yalowitz  
4/26 Prianto Moeljadi

## Center for Diabetes Research Seminars

- 4/4 **Dr. Jeffrey Elmendorf**, Assistant Professor, Department of Physiology and Biophysics and the Department of Biochemistry and Molecular Biology, IUSM; "*Signaling Mechanisms that Regulate Glucose Transport*"
- 4/18 **Dr. Alexander Skurat**, Associate Scientist/Associate Professor, Dept of Biochemistry and Molecular Biology, IUSM; "*New aspects of regulation of glycogen synthesis* "

## Research Seminars

- 4/13 **Dr. Wayne Wilson**, Postdoctoral Fellow, Department of Biochemistry and Molecular Biology, IUSM; "*Nutrient sensing and the regulation of glycogen synthase activity*"
- 4/27 **Ying Jiang**, Graduate Student, Dept of Biochemistry and Molecular Biology, IUSM; "*Regulation of mammalian diacylglycerol kinase*"

## Other Seminars of Interest

- 4/4 *The Serotonin Transporter: Pre- and Post-Synaptic Mechanisms of Regulation.* **Beth Hoffman, Ph.D.**, Research Scientist, Eli Lilly and Company, Indianapolis. Medical Science 311A/B, 12:00 Noon.
- 4/5 *Alcohol and Cardiovascular Disease.* **Mark Deeg, M.D.**, Dept of Biochemistry and Molecular Biology, Div of Endocrinology, IUSM. Wishard Hospital, Myers Auditorium, 8:00 a.m.
- 4/10 *Fat Metabolism in Humans.* **Samuel Klein, M.D.**, William H. Danforth Professor of Medicine and Nutritional Science and Director, Center for Human Nutrition, Washington University School of Medicine, St. Louis. MO Ruth Lilly Medical Library 301-302, 11:45 a.m.
- 4/12 *Pleiotropic Effects of ATRA on Stem Cells and Progenitor Cells.* Louise Purton, M.D., Postdoctoral Fellow, Fred Hutchinson Cancer Research Center, Seattle, WA. Cancer Research Institute Auditorium, 4:00 p.m.
- 4/14 *Structure and Regulation of Eucaryotic Translation Initiation Factors.* **John W. Hershey, Ph.D.**, Professor and Chair, Dept. of Biological Chemistry. University of California: Davis. CA. Medical Science A506, 12:00 noon

4/17 *Mechanistic Linkage Between Central Adiposity, Insulin Resistance and Type 2 Diabetes.* **Richard N. Bergman, Ph.D.**, Professor and Chairman, Dept. of Physiology/Biophysics. University of Southern California; Los Angeles, CA. Ruth Lilly Medical Library 301-302. 11:45 a.m.

4/26 *Repair of DNA Double Strand Breaks in Eukaryotic Cells.* **Dr. George Iliakis**, Division Director, Dept. of Radiation Oncology. Kimmel Cancer Center, Jefferson Medical College of Thomas Jefferson University; Philadelphia, PA. Cancer Research Institute Auditorium. 4:00 p.m.

4/28 *Growth Hormone-Mediated Insulin-Like Growth Factor-1 Gene Expression: What is the Mechanism?* **William L. Lowe, Jr., M.D.**, Division of Endocrinology Metabolism and Molecular Medicine. Northwestern University Medical School; Chicago, IL. Ruth Lilly Medical Library 301-302, 11:45 a.m.

## Scientific Sessions 2000

Biochemistry and Molecular Biology was well-represented at the recent IUSM Scientific Session 2000 held on Friday, March 31. Keynote and platform talks were held in MS B26 and poster presentations were in the atrium of the new MS wing.

Anna DePaoli-Roach served as Moderator for Platform Session II. The following Biochem people were selected to give platform talks: Howard Edenberg, Maureen Harrington, Goff Tunnicliff, Joe Dynlacht, and Bob Hromas.

Twenty-five posters out of 137 were presented by these Biochemistry personnel: Ariel Castro, John Rebhun, Lawrence Quilliam, Lori Cooper, Marcella Steele, Anna DePaoli-Roach, Ying Jiang, James Walsh, Jeffrey Elmendorf, Marie Fujino, Peter Roach, Brian Gibbons, Bill Bosron, Tom Hurley, Heather Breen, Boli Huang, Bob Harris, Hye-Sook Kwon, Kun Ma, Krishna Vattem. Ron Wek. Kelly Schweitzer, Bolan Linghu. Mark Goebel, Samantha Parmley, Bart Pederson, Wayne Wilson, David Daleke, Kent Redman, G. Seetharamaiah, Alex Skurat, Amy Dietrich, David Timm, Pengfei Wu, Lanmin Zhai, Hui Zong, Ke Zhan, and Marshall Anderson.

## Faculty Positions Available

Diabetes faculty positions (tenure track) are available in a newly formed **Center for Diabetes Research** at the Indiana University School of Medicine. The School has embarked on a major initiative to enhance basic diabetes research. Faculty would have primary appointments in an appropriate basic science Department and would be expected to develop an externally funded basic research program with direct relevance to diabetes and its complications. Areas of interest include, but are not limited to, molecular mechanisms of insulin signaling and hormone action, molecular and cellular aspects of metabolic control, proteomic or genomic approaches to diabetes research and islet cell biology. Successful candidates would also participate in training medical and graduate students. The levels of the positions are open and competitive space and start-up funding is available. Please send applications to: Dr. Peter J. Roach, Director, Center for Diabetes Research, Van Nuys Medical Science Building, MS405A, 635 Barnhill Drive, Indiana University School of Medicine, Indianapolis, IN 46202. (phone 317 274- 1582; e-mail: [diabetes@iupui.edu](mailto:diabetes@iupui.edu)).

## Recent Publications

**Melissa Limp-Foster** and **Mark Kelley** (2000) DNA repair and gene therapy: Implications for transitional uses. *Environ. Mol. Mutagen.* **35**: 71-81.

Stone CL, Jipping MB, Owusu-Dekyi K, **Hurley TD**, **Li TK**, **Bosron WF**. The pH-dependent **binding** of NADH and subsequent enzyme isomerization of human liver beta 3 beta 3 alcohol dehydrogenase. *Biochemistry.* **38**(18): 5829-35, 1999

**Vig E**, **Green M**, **Liu Y**, Donner DB, Mukaida N, **Goebel MG**, **Harrington MA**. Modulation of tumor necrosis factor and interleukin-1-dependent NF-kappaB activity by mPLK/IRAK. *Journal of Biological Chemistry* **274**(19): 13077-84, 1999.

**Wu P**, **Inskeep K**, **Bowker-Kinley MM**, **Popov KM**, **Harris RA**. Mechanism responsible for inactivation of skeletal muscle pyruvate dehydrogenase complex in starvation and diabetes. *Diabetes.* **48**(8): 1593-9, 1999.

**Blair PV**, **Kobayashi R**. Edwards HM III, Shay NF, Baker DH, **Harris RA**. Dietary thiamin level influences levels of its diphosphate form and thiamin-dependent enzymic activities of rat liver. *Journal of Nutrition.* **129**(3): 641-8, 1999.

**Hurley TD**, **Steinmetz CG**, **Weiner H**. Three-dimensional structure of mitochondrial aldehyde dehydrogenase. Mechanistic implications. *Advances in Experimental Medicine & Biology.* **463**: 15-25, 1999.

Harp JM, Hanson BL, **Timm DE**, Bunick GJ. Macromolecular crystal annealing: evaluation of techniques and variables. *Acta Crystallographica Section D-Biological Crystallography* **55** (Pt 7): 1329-34, 1999.

**Timm DE**, Mueller HA, Bhanumoorthy P, Harp JM, Bunick GJ. Crystal structure and mechanism of a carbon-carbon bond hydrolase. *Structure with Folding & Design.* **7**(9): 1023-33, 1999.

## New Grants

**Joyce Hurley** received a PDP award for her project "The Role of the P/Q-Type Calcium Channel in Migraine".

**Tom Hurley** received a BRS Shared Instrumentation Grant from NIH for a "Procise 491 CLC Protein Sequencer". This will be used to fund an upgrade of a Procise HT edman sequencer to the high-sensitivity model Procise CLC. The HT has been utilized for research purposes since its installation in November 1999, but several research projects were delayed until an instrument with sufficient sensitivity was available.

**Jean Hamilton** received an ADA award, "A structure/function study of pyruvate dehydrogenase kinase".

**Suk-Hee Lee** received an Indiana University Center for Aging Research Grant for "Role of DNA-Dependent Protein Kinase in Telomere Length Regulation". He also received an award from the U.S. Army, Medical Research and Materiel Command for "Role of DNA- Dependent Protein Kinase in Breast Cancer Development/ Progression".