



# NEWS

## INDIANA UNIVERSITY

DEPARTMENT OF CELLULAR  
& INTEGRATIVE PHYSIOLOGY

School of Medicine

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### STATEWIDE PHYSIOLOGY RETREAT

The Annual Departmental Retreat for 2009, will be held Friday, October 2, 2009 at **The Garrison at the Fort Golf Resort & Conference Center**, located at 6002 N. Post Road, Indianapolis, Indiana, 46216. More information and directions will follow separately. Hosts: H.G. Bohlen & D. Basile

**“NEWSFLASH:-** The Department has been asked to consider starting up an Indiana Chapter of APS. You are probably aware that several states have already done this. The APS office views this as a means to develop grass-roots interest in Physiology and provides significant financial support for an annual meeting. Membership would be open to anyone with an interest in Physiology and annual dues would be minimal to encourage involvement. APS has some minimal requirements but generally adopts a hands off approach with chapter activities. An interest group (Sturek, Blazer-Yost & Kempson) is in contact with the APS office and an update will be presented at the Physiology Retreat on October 2”.

### SELKURT LECTURESHIP

The Selkurt Lectureship, was established at Indiana University School of Medicine in 1993 by Dr. Claire Selkurt and friends of Dr. Ewald E. Selkurt, Distinguished Professor of Physiology and Biophysics, to support a lectureship given by distinguished scientists in the fundamental medical sciences. The lecture will be held Thursday, October 11, 2009 at 12:00 noon in MS 326, distinguished guest Brian R. Duling, Ph.D., Professor, Department of Molecular Physiology and Biological Physics, Robert M. Berne Chair in Cardiovascular Research, University of Virginia, Charlottesville, VA. Title: “Voltage Gated Channels in the Endothelium – a new paradigm or a pharmacological phantasy?”

### SPECIAL SEMINAR

Jointly sponsored by the Department of Cellular & Integrative Physiology, The Harper Scholars Program and the IU Center for Environmental Health. We welcome Trevor K. Archer, Ph.D., Principal Investigator and Chief, Laboratory of Molecular Carcinogenesis, National Institute of Environmental Health Science, NIH on Tuesday, October 20, 2009 at 12:00 noon in MS 326. Title: “Steroid Receptors: Remodeling chromatin for transcription”

### ELECTRONIC SHOP “PART-TIME”

The Electronics and Computer Shop is staffed only part-time now. Preferred method of contact is by email. But, in an emergency, it is to your advantage to utilize as many methods of contact as are available. Electronics work is limited to consultation in the use of electronic instruments and repair of a limited number of instruments.

The Shop is no longer taking jobs requiring electronic instrument design or electronic construction projects. Computer services are the same as previously for Windows-based computers and software only. This includes specifying and ordering new computers

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according to your needs. Computer service includes diagnosis and repair of software damaged by viruses or malware. Computer service also includes diagnosis and repair of hardware defects and problems caused by defective hardware. Individual backup solutions are designed upon request.

People in the department can interact with Stanley to place their useful information on our physiology web site <http://medicine.iu.edu/physiology> . The webmaster email address shown at the bottom of our web pages is monitored by Stanley - though not on a daily basis. --- Stanley Stump, 317-274-7322, [sstump@iupui.edu](mailto:sstump@iupui.edu)

## **RETIREMENT** G.A. Tanner, Ph.D. June 30, 2009

(NOTE FROM G. TANNER)

Judy and I will move to Oregon probably in mid-November. We have bought a house in Eugene, OR. The house is a 5-minute walk from my daughter's house through a 5-acre forest preserve. The forest has deer and wild turkeys and many very tall (200 feet high) Douglas fir trees. So how much pressure is needed to raise a column of water to the top of a 200 ft high tree? How does that happen?

Eugene is a city of about 150,000 people. It is the home of Molecular Probes and the University of Oregon. I have already visited the Human Physiology department and I'm hoping to give six kidney lectures in their course for undergraduates.

We are very busy packing and getting our house in Indianapolis ready for sale. I didn't find the answers to all of the questions during my 50 years of doing research on kidney function, so I leave the rest to you. We would welcome visitors to the Northwest.

Best wishes, George

## **PUBLICATIONS NOTED BY FACULTY**

Focal adhesion kinase is important for fluid shear stress-induced mechanotransduction in osteoblasts. Young SR, Gerard-O'Riley R, Kim JB, **Pavalko FM**. *J Bone Miner Res.* 2009 Mar;24(3):411-24.

Knudson JD, Payne GA, Borbouse L, **Tune JD**. Leptin and mechanisms of endothelial dysfunction and cardiovascular disease. *Current Hypertension Reports* 10: 434-439, 2008.

**Tune JD**. Adaptations in the balance between coronary blood flow and myocardial metabolism in endurance athletes. *J Physiol* 586: 5043, 2008.

Bender SB, **Tune JD**, Borbouse L, Long X, Sturek M, Laughlin MH. Altered mechanism of adenosine-induced coronary arteriolar dilation in early-stage metabolic syndrome. *Exp. Biol. Med.* 234: 683-692, 2009.

Payne GA, Bohlen HG, Dincer UD, Borbouse L, **Tune JD**. Periadventitial adipose tissue impairs coronary endothelial function via protein kinase C- $\beta$  dependent phosphorylation of nitric oxide synthase. *Am. J. Physiol. Heart Circ. Physiol.* 297: H460-H465, 2009.

Borbouse L, Dick GM, Asano S, Bender SB, Dincer UD, Payne GA, Neeb ZP, Bratz IN, Sturek M, **Tune JD**. Impaired function of coronary BK<sub>Ca</sub> channels in metabolic syndrome. *Am. J. Physiol. Heart Circ. Physiol.* In press.

Dick GM, **Tune JD**. Role of potassium channels in coronary vasodilation. *Exp. Biol. Med.* In press.

**Miller, S.J.**, Coppinger, B.J., Zhou, X., and Unthank, J.L. Antioxidants reverse age-related collateral growth impairment. *J. Vasc. Res.* 2010, 47: 108-114.

Bhonagiri P, Pattar GR, Horvath EM, Habegger KM, McCarthy AM, **Elmendorf JS**: Hexosamine biosynthesis pathway flux contributes to insulin resistance via altering membrane PIP<sub>2</sub> and cortical F-actin. *Endocrinology* 150(4):1636-1645, 2009.

Pattar GR, **Elmendorf JS**: Dietary chromium supplementation and its role in carbohydrate and lipid metabolism. *Biochemical Aspects of Human Nutrition (In Press)*

Neeb, Z.P., X. Long, E. Mokolke, J. Edwards, M. Alloosh, and M. **Sturek**. Adenosine A2a/b receptor-mediated vasodilation is antagonized by adenosine A1 receptor in coronary circulation of healthy Ossabaw swine. *FASEB J.* 23:1032.9, 2009.

Long, X., R. Ellosiebo, and M. **Sturek**. Role of adenosine A1 receptors and P2Y2 receptors and ERK1/2 activation in coronary atherosclerosis and in-stent stenosis. *FASEB J.* 23:593.12, 2009.

Francis, S.J., D. Yang, R. Sharma, M. Alloosh, M.S. **Sturek**, and C.S. Packer. Effects of metabolic syndrome (MetS) on male and female ossabaw miniature pig detrusor muscle contractility and compliance. *FASEB J.* 23:781.12, 2009.

Han, S., B. Joung, E.-K. Choi, S. Hwang, M. Maruyama, T. Shinohara, Y. Zhang, S.-F. Lin, J. D. Tune, M. Alloosh, M. **Sturek**, and P.-S. Chen. Cardiac nerve sprouting in Ossabaw miniature pigs with genetic predisposition to metabolic syndrome. *Heart Rhythm* 6, Suppl. 2:S370, 2009.

Kreutz, R.P., M. Alloosh, Z. Neeb, Y. Kreutz, D.A. Flockhart, and M. **Sturek**. Metabolic syndrome in Ossabaw miniature swine is associated with increased sensitivity of platelet aggregation to adenosine diphosphate. *Arterioscler. Thromb. Vasc. Biol.* (In press, 2009).

Kostrominova, T.Y., B.A. Clark, D. del Rosario, M. Alloosh, J.W. Wenzel, and M. **Sturek**. Increased intramyocellular lipid accumulation in skeletal muscles of Ossabaw miniature swine with metabolic syndrome. *Int. Union Physiol. Sci.* (In press, 2009).

## **Raghu Mirmira has been busy**

### Grant

7/1/09-6/30/11

ADA-Takeda Pharmaceuticals Beta Cell Award, *Transcriptional and Survival Mechanisms in Beta Cell Biology*

### Grant Reviews

3/2009

Ad Hoc Reviewer, Special Emphasis Panel, NIDDK (SRO: Dr. Ryan Morris)

### Accomplishments

3/2009:

Ad Hoc Reviewer, Special Emphasis Panel, **NIH** (SRO: Dr. Ryan Morris)

7/2009

Was recertified in ABIM Endocrinology, Diabetes, and Metabolism

8/2009

**Chaired NIH special review session:** American Recovery and Reinvestment Act Competitive Revision Panel

2008-present:

Charter member, **NIDDK B Study Section, NIH**

## **HONORS**

**C. Subah Packer**, PhD, Associate Professor of Cellular and Integrative Physiology has received the Arthur C. Guyton Educator of the Year Award from the American Physiological Society. The award was presented at the 2009 Experimental Biology Meetings in New Orleans on April 21.

An article on Dr. Packers' s teaching career will be featured in an upcoming issue of *Advances in Physiology Education* and Dr. Packer's invited paper on her teaching philosophy will be published in the October issue of the *The Physiologist*.

Steve Kempson was elected Chair for the 45<sup>th</sup> annual meeting of the Lake Cumberland Transport Group, June 20-23, 2010, and has received a new grant (Acute regulation of osmolyte transport in kidney) from the AHA Midwest Affiliate for 2009-2011.

Stephanie Colvin was awarded CTSI funding for 2009-2010 (renewal)

## 2009 TRUSTEE TEACHING AWARDS

The 2009 IUSM Trustee Teaching Awards were be presented during the May graduation. Recipients are:

<b>Recipient</b>	<b>Department</b>
James McAteer, PhD	Anatomy
Mark Seifert, PhD	Anatomy
Kenneth Gwartz, MD	Anesthesia
Peter Roach, PhD	Biochemistry
<b>H Glenn Bohlen, PhD</b>	<b>Cellular &amp; Integrative Physiology</b>
Stephen Wolverton, MD	Dermatology

## **WELCOME!**

### **Faculty, Students & Staff**

Welcome to Cheikh Seye, Ph.D. and to his family. Dr. Seye comes to us from the Department of Biochemistry at the University of Missouri-Columbia. His major objective of research is to evaluate the contribution of extracellular nucleotides in the development of vascular diseases. His new office is in MS 332, with phone 317-274-8528, cseye@iupui.edu. Let the collaborating begin.



Richard Day, Ph.D. is here and settled in, he is located in room 333, E-mail: rnday@iupui.edu 317-274-2166. The focus of his research is to determine how tissue-specific transcription factors in cells of the anterior pituitary regulate the assembly of the protein complexes that control pituitary gene expression. Our studies are showing how Pit-1, a pituitary specific homeodomain transcription factor, orchestrates the activities of a network of transcription factors and co-regulatory proteins that function to control prolactin and growth hormone gene expression.

Debra Hickman, DVM, M.S., New Director of LARC and secondary in Physiology. She comes from the Portland VA Medical Center. She shares lab space with Steve Kempson, Ph.D. in room 306. Her staff includes Jennelle Johnson and Melissa Swan. Welcome to Physiology.

## **OUR NEW STUDENTS/POSTDOCS & STAFF**

- (MS) Michelle Kurian
- (MS) Nicole Brown
- (PhD) Julia Hum
- (PhD) Zach Berwick
- (PhD) Vijay Bindingnavile

(PhD) Raleigh Malik  
 (PhD) Soyoung Park  
 (PhD) Meng Chen  
 (PhD) Brent Penque

Steven Miller has a new postdoc who recently joined his lab in Vascular Surgery. His name is Dr. Gabriel (Gabi) Gruionu, and he received his Ph.D. in Biomedical Engineering in 2004 at the University of Arizona. He came here from W.L. Gore & Associates, Inc., where he worked as a Product Specialist.

Kelly Prince is a new postdoc with the Rhodes' lab

Saikat Chakraborty is a new postdoc with Sasha Obukhov.

Shaomin Qian is a new postdoc in Dr. Seye's lab.

Nicole Hays is new in the lab of Dr. Day

### **THESIS DEFENSES' & GRADUATES** —October/08 – September/09

Kirk Habegger, July 23, 2009 (currently a fellow in the laboratory of Dr. Matthias Tschop at the University of Cincinnati)

Reina Watanabe, January 13, 2009 (currently a fellow in the laboratory of Dr. David Gutterman at the Medical College of Wisconsin)

Rong Zhao, May 14, 2009

Guru Pattar, September 3, 2009

Min Zhang, September 8, 2009

### **NEW ARRIVALS** (*future Physiologists*)



#### **Paul David Neeb**

Clarian Hospital Indianapolis, IN -  
 Apr 30, 2009  
 by Zach



← **Caroline Grace Tune** was born April, 2009

**Stephanie and Scott** (Rhodes lab) had a baby girl, Cate Elizabeth Colvin 12/08 →

**Sasha and Elena** welcomed their 3<sup>rd</sup> son, December, 2008

**Wenwu Zhang** welcomed, baby #2, a son, Jayden, August, 2008

**Rong Zhao**, welcomed Cindy on July 13, 2008





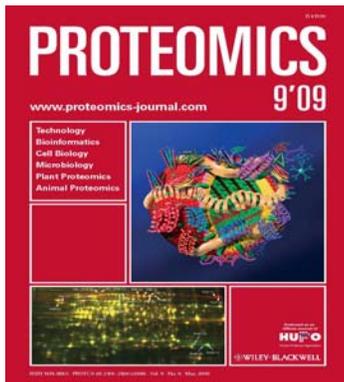
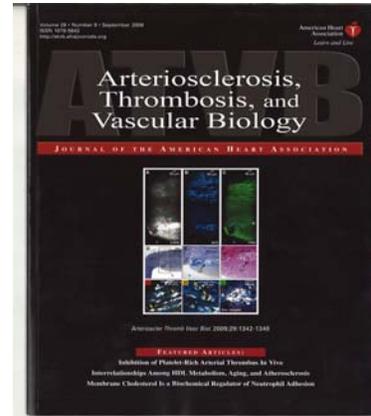
Xin Long and Jun Zhao were married on Friday, May 29, 2009.

Best wishes on a long and prosperous life together.

11199 Wang athero CARS ATVB 2009 Cover.pdf



**Wang H-W, Langohr IM, Sturek M and Cheng J-X.** Imaging and quantitative analysis of atherosclerotic lesions by CARS-based multimodal nonlinear optical microscopy. *Arterioscler Thromb Vasc Biol* 29: 1342-1348, 2009



11175 Richardson LDL Proteome Cover Proteomics 2009.pdf

**Richardson MR, Lai X, Dixon JL, Sturek M and Witzmann FA.** Diabetic dyslipidemia and exercise alter the plasma low density lipoproteome in Yucatan pigs. *Proteomics* 9: 2468-2483, 2008

**DID YOU KNOW** Did you have special plans on 09/09/09?

Not only did the date look good in marketing promotions, but it also represents the last set of repeating, single-digit dates that we'll see for almost a century (until January 1, 2101), or a millennium (mark your calendars for January 1, 3001), depending on how you want to count it.

As part of his obsession with numbers both mathematically and divine, and like many mathematicians before and since, Pythagoras noted that nine in particular had many unique properties.

Any grade-schooler could tell you, for example, that the sum of the two-digits resulting from nine multiplied by any other single-digit number will equal nine. So  $9 \times 3 = 27$ , and  $2 + 7 = 9$ .

Multiply nine by any two, three or four-digit number and the sums of those will also break down to nine. For example:  $9 \times 62 = 558$ ;  $5 + 5 + 8 = 18$ ;  $1 + 8 = 9$ . Sept. 9 also happened to be the 252nd day of the year ( $2 + 5 + 2$ )...mmmmmmmmmm!

**Written by Regina Brett, 90 years old, of the local newspaper "The Plain Dealer", Cleveland, Ohio**

"To celebrate growing older, I once wrote the 45 lessons life taught me. It is the most-requested column I've ever written."

My odometer rolled over to 90 in August, so here is the column once more:

1. Life isn't fair, but it's still good.
2. When in doubt, just take the next smallstep.
3. Life is too short to waste time hating anyone.
4. Your job won't take care of you when you are sick. Your friends and parents will. Stay in touch.
5. Pay off your credit cards every month.
6. You don't have to win every argument. Agree to disagree.
7. Cry with someone. It's more healing than crying alone.
8. It's OK to get angry with God. He can take it.
9. Save for retirement starting with your first paycheck.
10. When it comes to chocolate, resistance is futile.
11. Make peace with your past so it won't screw up the present.
12. It's OK to let your children see you cry.
13. Don't compare your life to others. You have no idea what their journey is all about.
14. If a relationship has to be a secret, you shouldn't be in it.
15. Everything can change in the blink of an eye.
16. Take a deep breath. It calms the mind.
17. Get rid of anything that isn't useful, beautiful or joyful.
18. Whatever doesn't kill you really does make you stronger.
19. It's never too late to have a happy childhood. But the second one is up to you and no one else.
20. When it comes to going after what you love in life, don't take no for an answer.
21. Burn the candles, use the nice sheets, wear the fancy lingerie. Don't save it for a special occasion. Today is special.
22. Over prepare, then go with the flow.
23. Be eccentric now. Don't wait for old age to wear purple.
24. The most important sex organ is the brain.
25. No one is in charge of your happiness but you.
26. Frame every so-called disaster with these words 'In five years, will this matter?'
27. Always choose life.
28. Forgive everyone everything.
29. What other people think of you is none of your business.
30. Time heals almost everything. Give time time.
31. However good or bad a situation is, it will change.
32. Don't take yourself so seriously. No one else does.
33. Believe in miracles.
34. God loves you because of who God is, not because of anything you did or didn't do.
35. Don't audit life. Show up and make the most of it now.
36. Growing old beats the alternative -- dying young.

37. Your children get only one childhood.
38. All that truly matters in the end is that you loved.
39. Get outside every day. Miracles are waiting everywhere.
40. If we all threw our problems in a pile and saw everyone else's, we'd grab ours back.
41. Envy is a waste of time. You already have all you need.
42. The best is yet to come.
43. No matter how you feel, get up, dress up and show up.
44. Yield.
45. Life isn't tied with a bow, but it's still a gift."