

The Edge

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Science Without Borders

Discovery of Alda-1 Could Lead to a New Class of Drugs

Thomas Hurley, Ph.D., associate chair and professor of biochemistry and molecular biology at the Indiana University School of Medicine (IUSM) and director of the Center for Structural Biology, has led a team in the discovery of a compound, called Alda-1, which could lead to a new class of drugs that would restore activity of a mutated enzyme, ALDH2, thus reducing muscle damage caused by heart attacks. Hurley and Daria Mochly-Rosen, Ph.D., professor of chemical and systems biology at Stanford University, reported their recent



discovery in *Nature Structural Biology* published online January 10th, 2010. [Read the full article](#) in *Nature Structural Biology*.

Hurley explained how Alda-1 interacts with ALDH2 in a recent IUSM news release, "Because of the mutation in the gene, parts of the protein structure become loose and floppy. Alda-1 reactivates the enzyme by propping up those parts of the structure so they regain normal function." He predicted that by mid-2010 similar compounds, that hold more potential for becoming drugs, could be available for testing.

[Read the full IUSM news release.](#)

Alumni Spotlight on Dr. Kyle Kolaja

Like many students pursuing a doctoral degree in the biomedical sciences, Kyle L. Kolaja, Ph.D., D.A.B.T., started out on the pre-med path but was sidetracked by a lifelong interest in finding out how and why things work as they do. Kyle graduated from Michigan State University with his bachelor's degree then joined the Ph.D. program in Toxicology at IUSM. He graduated in 1996 with his Ph.D. and moved to a post-doc position at the University of Kansas Medical Center.

Today Kyle, now the Director of Early Safety and Investigative Toxicology in Roche's Non-Clinical Safety, has earned a top honor as a

Fellow of the Academy of Toxicological Sciences (ATS). This honor is held by less than five percent of ATS members and Kyle is among the youngest and is the first Roche scientist to achieve this recognition since 1995.



We congratulate Dr. Kolaja on this prestigious academy fellowship!

[Read the full press release.](#)

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***New Scientist* Provides Tips for Finding the Perfect Post-Doc**

From looking at publication records and investigating funding sources through the National Institutes of Health (NIH) database, to talking one-on-one with lab members, this article provides a whole host of tips on finding the perfect post-doc. Making sure you find the right PI, the right lab, the right institution, in the right city can mean a lot to your success. Hear from graduate students ready to make the transition and from post-docs who have made the transition on what they look for in a post-doc position. [Read the information packed article.](#)

***Science Careers'* Career Trends 2009: Careers Away from the Bench**

Booklet on career options away from the bench, including policy, non-profit, science writing, science law, and more! [Read the booklet.](#)



Funding News

The Funding News provides the latest index of research funding, scholarships, fellowships, and internships for faculty, post-docs, graduate students, and undergraduates. [Read the article.](#)



Career Basics: Advice and resources for scientists from *Science Careers* 2009 edition.

[Read the booklet.](#)

***Science Careers* Forum**

The *Science Careers* Forum is a professional, industrial, academic, and postdoctoral forum covering topics related to employment and career development in scientific and engineering careers, as well as alternative career choices for scientists and engineers. [Visit the forum.](#)

The Eppendorf & *Science* Prize for Neurobiology

The Eppendorf & *Science* Prize for Neurobiology acknowledges the increasingly active and important role of neurobiology in advancing our understanding of the functioning of the brain and the nervous system -- a quest that seems destined for dramatic expansion in the coming decades. This international prize, established in 2002, encourages the work of promising young neurobiologists by providing support in the early stages of their careers. It is awarded annually for the most outstanding neurobiological research by a young scientist, as described in a 1,000-word essay based on research performed during the past three years.

The winner of the Eppendorf and *Science* Prize for Neurobiology is awarded US\$25,000 and publication of his or her essay in *Science*. The essay and those of up to three finalists are also published on *Science* Online. The award is announced and presented at a ceremony at the annual meeting of the Society for Neuroscience. Eppendorf also provides financial support to help enable the grand prize winner to attend the meeting. [Learn more about the opportunity.](#)

Faculty Highlight of Dr. Zhong-Yin Zhang

Zhong-Yin Zhang, Ph.D., Robert A. Harris Professor and chairman of the Department of Biochemistry and Molecular Biology, and his colleagues have identified the biochemical processes used by TB bacteria to weaken infection-fighting macrophage cells. In addition, they also discovered a compound – I-A09 – that has blocked the TB bacterium's activity in laboratory tests. Current TB treatments must be administered for at least six months; this discovery could lead to a significantly shorter treatment regimen. According to the recent news release from IUSM, Dr. Zhang noted that I-A09 is being studied through a TB animal model at

Johns Hopkins University School of Public Health, and a more potent form is being reviewed for future clinical trials at IU.

Zhang and his colleagues revealed their discoveries in the March 9th online early edition of the *Proceedings of the National Academy of Science*. [Read the online version.](#)

[Read the full IUSM press release.](#)



10 Ph.D. Programs

Anatomy & Cell Biology

Biochemistry & Molecular Biology

Biomolecular Imaging & Biophysics

Cellular & Integrative Physiology

Medical & Molecular Genetics

Medical Neuroscience

Microbiology & Immunology

Pathology

Pharmacology

Toxicology

Annual Rock For Riley – April 9th at The Vogue

The sixth annual Rock for Riley will take place this Friday, April 9th, at the Vogue Theater in Broad Ripple. Julian Casablancas, lead singer of The Strokes, will perform live beginning at 9 p.m. The main mission of Rock for Riley is to organize an annual benefit concert in support of the Riley Hospital for Children, Indiana's only comprehensive children's hospital. Thus far Rock for Riley, an IUSM student founded and managed organization, has raised \$650,383!

Previous musicians who have performed at this event include: Wilco, My Morning Jacket, and local bands such as Margot and the Nuclear So and So's.

Tickets this year are \$20 and can be purchased at Ticketmaster Online (www.ticketmaster.com) or at the Vogue box office. For more information visit [Rock for Riley](#).



U.S. Social Security Administration and The Regenstrief Institute Partner to Improve the Disability Claim Process

The Regenstrief Institute has been awarded a Recovery Act contract to aid the U.S. Social Security Administration (SSA) in improving and shortening the disability claims process. Regenstrief, based on the Indiana University-Purdue University Indianapolis (IUPUI) campus, has been an international leader in health information technology for over three decades. The institute created and operates the Indiana Network for Patient Care (INPC), a secure state-wide health information exchange system used by Indiana providers to help improve patient care.

According to the recent IUSM news release, J. Marc Overhage, M.D., Ph.D., director of medical informatics at the Regenstrief Institute, Regenstrief Professor of Medicine at IUSM, and president and C.E.O. of the Indiana Health Information Exchange noted, "Facilitating the processing of patients' disability claims is another example of how healthcare providers

throughout Indiana have worked together with the Regenstrief Institute and Indiana Health Information Exchange to ensure that their patients' healthcare information is used to enhance their care." Indianapolis is known as the most healthcare wired metropolitan area in the country.

The SSA requires the same type of information Indiana physicians currently access through the INPC to make effective and efficient patient care decisions, to process disability claims. Currently the claim process can take weeks, if not months, as the SSA requires documentation from the patients providers submitted by fax or U.S. mail. And the brunt of the collection responsibility is on the patient.

Work to implement a system for use by the SAA is scheduled to begin this spring. [Read the IUSM news release](#).

Calendar of Events

April 3 to May 14	Fall/Summer 2010 Open Registration using OneStart
April 30	IBMG Rotation 3 and Modular 3 Courses End
May 3	IBMG End-of-the-Year Celebration!
May 7	IBMG Program Selection Form due

TBD=to be determined



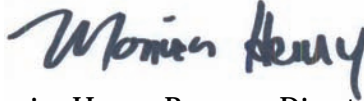
Research. Discover. Cure.

Message from the Director

Oh the parallels between spring time and decision time... it was Mark Twain that once said, "It's spring fever. That is what the name of it is. And when you've got it, you want - oh, you don't quite know what it is you *do* want, but it just fairly makes your heart ache, you want it so!" Both spring time and the time for tough decisions are upon us. Our first year IBMG students - they want so badly to have the tough decision of picking a lab home and Ph.D. program home behind them and to move forward with their research and scientific growth. More often than not students have multiple mentor / laboratory options and knowing how important the decision is they agonize endlessly over their pros and cons list. Now is the perfect time to revisit Dr. Rhodes' *Introduction To Programs* talk, *Finding a Mentor*, *Getting the Most out of your Graduate Experience*, and *Planning Ahead*, to help make this tough decision a little easier.

Prospective IBMG students want the decision of selecting a graduate school behind them. They too don't know quite what it is that their heart aches for other than to have the decision behind them and begin their graduate school career. Some hold multiple offers at top-notch institutions and work tirelessly on their pros and cons list. Prospective students, please remember that the IBMG Program provides you with choice and support. The goal of the program is to provide a well rounded education and shape you into a world class scientist. With hundreds of top-rated labs, many mentoring opportunities and student networks, and world-class facilities, we have the ability to do just that. The campus also provides many opportunities through the multiple [research centers](#) to do basic research, biomedical research, and translational projects. This is an exciting time to be at the IUSM: the faculty research and recent discoveries are mind blowing, the collaborative spirit is thriving, and the [advantages of Indianapolis](#) make this a great place to live and become a scientist.

Again, spring and decision making... a time to move forward and seek what makes your heart ache. Best of luck to all of you on choosing your road to the future!



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IBMG Program



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SCHOOL OF MEDICINE

INDIANA UNIVERSITY

