

SPONSORED PROGRAMS NEWS

November 2007

RED FISH, GREEN FISH??

DR. GARY STUART STUDIES TRANSGENE MANIPULATION IN ZEBRAFISH

By Mark White

What started 18 years ago with a shipment of 40 zebrafish has blossomed into a full-time operation for Dr. Gary Stuart and his team on the campus of Indiana State University. Zebrafish (*Danio rerio*) are popular aquarium fish that are native to the streams of the southeastern Himalayan region. Stuart uses his zebrafish as a model organism for vertebrate development and gene function. One day it is believed that zebrafish will supplant mice and rats as one of the leading organisms for scientific study.

With his 18+ years of experience Stuart is at the forefront of zebrafish research. By transplanting jellyfish genes into the DNA sequence of a zebrafish, a process called transgenesis, he is able to produce fish that vary in appearance, some being red or green, by altering their genetic code. What this means is that since the fish is a vertebrate it may one day be possible to use this same technique on humans to cure disease. Stuart is motivated by these possibilities.

"We hope to understand what human genes might do based on fish reactions," he said.

(Continued on Page 8)



Dr. Stuart stands in front of the fish tanks in his lab

"As new ideas come out the old ones persist and that slows things down. People get comfortable with what is."

~ Dr. Gary Stuart

Inside this issue:

Awards Received	2-4
Open House	5
Center for Business Support and Economic Innovation	5
Proposals Submitted	6
Funding Opportunities	7
Exempt Review by IRB	8
Red Fish, Green Fish	8

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A NOTE FROM THE DIRECTOR BY DAWN UNDERWOOD UPDATE ON THE DEPARTMENT OF THE ARMY MEETING IN ROCHESTER, NY

In early October, Dr. Susan Berta of Geography, Geology, and Anthropology, Dr. David Skelton of Criminology, and Laura Kennedy of the Office of Grants and Contracts joined me in attending a technical assistance workshop hosted by the Department of the Army. According to Margo Barfield, Director of the Minority College Relations Program at Army Headquarters, ISU was chosen to participate in this meeting because of the Army's strategic interest in research programs and faculty expertise at ISU. Army programs discussed at the

meeting include: Academic Centers of Excellence, Small Business Innovative Research Programs (SBIR), and Lean Six Sigma training for ROTC programs. It is interesting to note that the Army does accept unsolicited proposals if they fall under Army priorities as stated in their Broad Agency Announcements (BAAs). Faculty who are interested in learning more about Army opportunities should explore the BAA postings found at <http://fedbizopps.gov> or contact OSP at x3088.

Awards Received — August/September

Baker, Catherine, Academic Services Center. 21st Century Scholars, \$271,127. *Twenty-First Century Scholar Program*. The program provides scholarships to students who might not otherwise attend college. Students enroll in the seventh and eighth grades by meeting income guidelines and by taking the Scholars Pledge.

Brack, Virgil, Ecology and Organismal Biology. Co-PI: John O. Whitaker Jr. and Dale Sparks. Purdue University, \$11,706. *Hardwood Ecosystem Experiment: Impact on bats using bat detectors and mist-net captures*. This is a Statement of Work to be performed by the Bat Center to assist Purdue University.

Collings, Gary, Educational Research & Evaluation. Indiana Department of Education, \$500,000. *Indiana Special Education Administrators' Services Project*. The mission of ISEAS is to support special education administrators in solution seeking. Besides supporting interaction and dialogue between local directors and state division staff, the ISEAS Project supports a university forum of representatives from higher education teacher training programs.

Conant, John, Economics. Indiana Council for Economic Education, \$8,000. *Center for Economic Education Continuation Grant*. Additional funds.

Conant, John, Economics. National Council on Economic Education, \$5,687. *International Education Week Showcase: Globalization*. John Conant will conduct two workshops during International Education Week. This grant provides \$1,988 in direct funds to cover costs and \$499 in materials to be distributed to teachers that attend.

Cutter, Lisa, Elementary, Early, and Special Education. Co-PI: Jay Gatrell, Joshua Powers, and David Hofmeister. U.S. Department of Education, \$195,890. *PRE Too! Preparing and Recruiting Underrepresented Teachers for Indianapolis Public Schools*. ISU, Ivy Tech and Indianapolis Public Schools have joined forces to form a partnership dedicated to recruiting, preparing, and retaining qualified individuals from underrepresented populations in the teaching profession. This program will consist of creating, empowering, and supporting

cohorts of highly-qualified individuals from minority populations interested in pursuing teaching careers through: scholarships; mentoring both scholarship recipients and high school students; continuous personal and professional development activities designed to support success while at the University, and upon graduation, through their first years in the teaching profession.

Floyd, Rosiline, Upward Bound. Indiana Department of Education, \$70,500. *Summer Food Service Program*. Grant from the State of Indiana's Local Economic Development Organization Grant Fund for reimbursement of eligible project costs connected with the summer activities for Upward Bound.

Hughes, Melissa, Distance Support Services. Hoosier Uplands Economic Development Corporation, \$53,000. *Community Alliance to Promote Education (CAPE)*. Hoosier Uplands.

Janz, Kenneth, Center for Instruction, Research, and Technology. Purdue University, \$3,000. *ISU/INSGC Student Summer Internship in Science Education*. Two pre-service science education teachers will develop multimedia science curriculum modules that integrate NASA resources. The ten modules will be available to K-12 educators and other public schools through a web archive.

Johnson, Mary, Terre Haute Center for Medical Education. Indiana University, \$19,389. *Investigation of Wound Healing Using Proprietary Pulsed Electromagnetic Field Treatment*. This study will establish the timeframe, duration, and frequency of administration for proprietary pulsed electromagnetic field to accelerate wound healing in a rat model of surgical wound formation and repair.

Kristeller, Jean, Psychology. National Institutes of Health, \$185,152. *Mindfulness Meditation: Regulating Eating and Obesity*. Fourth year of funding for the Mindfulness-based Eating Awareness Therapy program which addresses long-term weight loss and compares it to a placebo control to establish preliminary evidence regarding receptivity, weight loss, and possible mediating variables.

* Student

Awards Received — August/September (con't)

Kuhlman, Jolynn, School of Graduate Studies. Co-PI: Kathy Boone-Tovey. U.S. Department of Education, \$222,819. *McNair Post Baccalaureate Achievement Program*. The ISU Ronald E. McNair Post Baccalaureate Achievement Project will improve the post baccalaureate educational attainment of disadvantaged college students in Indiana.

Lane, Tara, Small Business Development Center. Indiana Economic Development, \$14,547. *West Central Indiana Small Business Development Center*. State funds will be used to continue operation of the West Central Indiana Small Business Development Office.

Latimer, Jennifer, Geography, Geology, and Anthropology. Co-PI: Jack C. Maynard. Purdue University, \$36,638. *LSAMP Indiana, Phase II*. Agreement with Purdue University to participate in NSF's Louis Stokes Alliance for Minority Participation. Program provides support and opportunities for minority students in the STEM discipline areas.

Lugar, Robyn, Social Work. Co-PI: Rhonda Impink and Peggy Weber. Indiana University, \$70,386. *Child Welfare Training: Title IV-E*. Additional funds.

Maughan, George, Industrial and Mechanical Technology. University of Central Missouri, \$1,950. *Scholarship Workshop*. Plan, duplicate, and distribute training manuals, and deliver a one-day faculty workshop entitled "Scholarship Workshop" for faculty in the College of Science and Technology at University of Central Missouri.

McNabb, Jeffrey, Dean's Office. Department of Workforce Development, \$20,000. *Vigo County Project Lead the Way Grant*. *Ivy Tech*. Project Lead the Way is a curriculum program that provides a flexible sequence of pre-engineering courses that build competence in mathematics, science, economics, reading, writing, and communications while introducing students to the scope, rigor, relevance and discipline of engineering and engineering technology. ISU with Ivy Tech, West Vigo High School, Terre Haute North High School and Terre Haute South High School have formed a consortium to bring this program to Vigo County.

McNabb, Jeffrey, Dean's Office. Department of Workforce Development, \$15,000. *Vigo County Project Lead the Way Grant*, North Vigo High School.

McNabb, Jeffrey, Dean's Office. Department of Workforce Development, \$15,000. *Vigo County Project Lead the Way Grant*, South Vigo High School.

McNabb, Jeffrey, Dean's Office. Department of Workforce Development, \$15,000. *Vigo County Project Lead the Way Grant*, West Vigo High School.

Nellis, Leah, Blumberg Center. Indiana Department of Education, \$126,832. *Collaborative Problem Solving Project*. Grant award increase to provide funding for the Indiana Training Alternative in School Psychology Initiative (\$45,232) and an ISTAR Early Childhood Consultant (\$81,600).

Rogers, Nancy, Center for Public Service and Community Engagement. Ivy Tech Community College, \$15,000. *Funds to support a graduate assistant to coordinate the Indiana EASE mentoring program*. The mentoring program will support 20 mentors working with 20 middle-school children from Vigo County during the 07/08 school year.

Schafer, Marion, Industrial and Mechanical Technology. Tredegar Film Products, Div. of Tredegar Industries, Inc., \$10,000. *Package Testing Research/Development*. Indiana Packaging Research & Development Center will perform research and testing to provide new and redesigned packaging for the products produced by Tredegar, and any other services requested over the course of the contract.

Schafer, Marion, Industrial and Mechanical Technology. Biomet Manufacturing Corporation, \$25,000. *Package Testing Research/Development*. Indiana Packaging Research & Development Center will perform research and testing to provide new and redesigned packaging for the products produced by Biomet, and any other services they request.

Awards Received — August/September (con't)

(Continued from Page 3)

Schafer, Marion, Industrial and Mechanical Technology. DVO Extremity Solutions, \$10,000. *Package Testing Research/Development*. Indiana Packaging Research & Development Center will perform research and testing to provide new and redesigned packaging for the products produced by DVO Extremity Solutions, and any other services they request.

Sparks, Dale, Ecology and Organismal Biology. U.S. Fish and Wildlife Service, \$1,101. *Survey of bats in DeKalb County, Illinois*. Develop and deliver "in training" on proper selection and deployment of equipment to capture bats, specifically mist nets.

Stafford, Russell C., Geography, Geology, and Anthropology. Town of West Terre Haute, \$1,844. *Phase Ia Archaeological Reconnaissance, West Terre Haute Storm Drain Improvements*. As part of Section 106 compliance, a Phase Ia archaeological reconnaissance will be conducted along proposed storm drainage routes where necessary, as well as within areas to be utilized as retention basins.

Speer, James, Geography, Geology, and Anthropology. Co-PI: Jodi Sparks*, Joe Nannery*, Brian Cox* and Michael Glenn*. Purdue University, \$5,000. *Urban Sprawl and Fire Danger in the Urban/Wildland and Interface: A Skills Building Research Experience*. Final portion of funding for project Urban Sprawl and Fire Danger in the Urban/Wildland Interface: A Skills Building Research Experience.

Stemmans, Catherine, Athletic Training. Andover Coated Products, \$629. *PowerFlex Cohesive Elastic Bandage Teaching Supplies*. Andover Coated Products donated 15 cases of PowerFlex Cohesive Elastic Bandage, 30 PowerFlex taping System CD-ROMs and 20 Literature Folders for the express purpose of educational supplies for athletic training laboratory classes.

Tuttle, Elaina, Life Sciences. Co-PI: Rusty Gonser and Greg Bierly. Purdue University, \$4,960. *Extrinsic Cascades and the Evolutionary impacts of Global Climate change*.

Study will look at short and long-term effects that weather has on evolution by studying a population of white-throated sparrows.

Underwood, Dawn, Office of Sponsored Programs. Rose-Hulman Institute of Technology, \$2,000. *Institutional Review Board Agreement Contract*.

Venable, Bradford, Art. Co-PI: Nancy Nichols-Pethick. City of Terre Haute, \$5,000. *The Gilbert Wilson Memorial Mural Project*. This project is an ongoing endeavor to create public murals in the Terre Haute community.

Whitaker, John O. Jr., Ecology and Organismal Biology. Co-PI: Brianna Walters. Indiana Department of Natural Resources, \$39,300. *Bat Banding registry of Indiana Myotis and Bats of Indiana*. The Bat Center will establish state-wide bat marking registry.

Whitaker, John O. Jr., Ecology and Organismal Biology. Co-PI: Brianna Walters. S.M. Stoller Corp. \$6,600. *Bat Survey*.

Whitaker, John O. Jr., Ecology and Organismal Biology. Co-PI: Brianna Walters. Lamar Outdoor Advertising, \$200. *Bat Survey*.

Awards Received — August/September (con't)



OSP Director, Dawn Underwood, assists Elliot Robins, Coordinator of Assessment/Accreditation, with a grant search at the open house.

* Student

OFFICE OF SPONSORED PROGRAMS OPEN HOUSE

External Funding Opportunities and Good Eats Abound!!

On Tuesday, September 18, the Office of Sponsored Programs welcomed students, faculty and staff to its annual open house. It turned out to be a big success as about 75 people filtered through the offices over the course of the two hours. Food and beverage were on hand for all who attended this event in addition to complimentary coffee mugs filled with goodies. The purpose of this event was to introduce students and faculty to OSP's new location at Erickson Hall 511 and to generate awareness of what the department has to offer. Remember, our doors are open 8:00 am to 4:30 pm Monday thru Friday, so come by and see what OSP can do for you!



Peggy Weber, Department of Social Work, and Randy Peters, Industrial and Mechanical Technology, dropped in to visit.

Open House/CBSEI

CENTER FOR BUSINESS SUPPORT AND ECONOMIC INNOVATION

The Center for Business Support and Economic Innovation (CBSEI) is the ISU business engagement office. As Indiana State's official liaison for business support services and economic development, CBSEI works with faculty and staff from all areas of the university to identify business needs and coordinate University solutions. The Center also provides opportunities for students and graduate students to get involved in paid internships and projects with innovative companies and get hands-on experience. By working with local businesses, CBSEI and ISU play a role in diversifying the local economy, creating jobs, fostering innovation, and retaining the best talent in the state.



The staff of CBSEI: Business Consultant Magda Narczewska and Director Chris Pfaff.

CBSEI is also part of the Terre Haute Innovation Alliance, a partnership between ISU, Rose Hulman, and the City of Terre Haute, created to enhance economic development and provide businesses the resources needed to succeed.

The Innovation Alliance is currently home to three businesses: DesAcc Inc., InfraWare Inc., and Handshake LLC. These companies have benefited from the program and applications are currently being accepted for innovative companies interested in the program.

For further information or to learn about specific engagement opportunities, please contact the Center for Business Support and Economic Innovation at Indiana State University at 812-237-2536 or visit www.indstate.edu/cbsei.

Proposals Submitted — August/September

Albig, Allan, Life Sciences. Indiana Academy of Science.

Baker, Catherine, Academic Affairs. 21st Century Scholars.

Bakken, George, Ecology and Organismal Biology. Co-PI: Michael Rowe*. International Elephant Foundation.

Colayori*, Samantha, Ecology and Organismal Biology. Co-PI: George Bakken. Indiana Academy of Science.

Conant, John, Economics. National Council on Economic Education.

Date*, Priya, Ecology and Organismal Biology. Co-PI: Dianna Hews. Indiana Academy of Science.

Gatrell, Jay, Geography, Geology, and Anthropology. Co-PI: John Conant. Canadian Embassy.

Gonser, Rusty, Life Sciences. National JSHS: Academy of Applied Science.

Gonzales*, Gabriella, Ecology and Organismal Biology. Co-PI: Dale Sparks. Indiana Academy of Science.

Jhamb*, Deepali, Life Sciences. Co-PI: Swapan Ghosh and Michael King. Indiana Academy of Science.

Kjonaas, Richard, Chemistry. Indiana Academy of Science.

Lane, Tara, Small Business Development Center. Indiana Economic Development.

Latimer, Jennifer, Geography, Geology, and Anthropology. National Science Foundation.

Li*, Hongtao, Life Sciences. Co-PI: Swapan Ghosh. Indiana Academy of Science.

Maughan, George, Industrial and Mechanical Technology. University of Central Missouri.

McLean, Mary Ann, Life Sciences. Co-PI: Sandra Brake. National Aeronautics and Space Administration.

Mercier, William, Public Safety. Co-PI: Meredith Ditz and Kelly Hall. Indiana Criminal Justice Institute.

Mercier, William, Public Safety. Co-PI: Jacquelyn Smith and Kelly Hall. Vigo County Local Coordinating Council.

Nellis, Leah, Blumberg Center. Indiana University.

Powers, Susan, Dean's Office. Lilly Endowment, Inc.

Rogers, Nancy, Center for Public Service and Community Engagement. Ivy Tech Community College.

Schafer, Marion, Industrial and Mechanical Technology. Tredegar Film Products, Div. Of Tredegar Industries, Inc.

Schafer, Marion, Industrial and Mechanical Technology. Biomet Manufacturing Corporation.

Schafer, Marion, Industrial and Mechanical Technology. DVO Extremity Solutions.

Sparks, Dale, Ecology and Organismal Biology. U.S. Fish and Wildlife Service.

Sparks, Dale, Ecology and Organismal Biology. Co-PI: John O. Whitaker, Jr.. Indiana Department of Natural Resources.

Stafford, Russell C., Geography, Geology, and Anthropology. Town of West Terre Haute.

Steiger, Thomas, Sociology. Canadian Embassy.

Stemmans, Catherine, Athletic Training. Andover Coated Products.

Underwood, Dawn, Office of Sponsored Programs. Rose-Hulman Institute of Technology.

Weng, Qihao, Geography, Geology, and Anthropology. National Science Foundation.

Weng, Qihao, Geography, Geology, and Anthropology. National Science Foundation.

Weng, Qihao, Geography, Geology, and Anthropology. National Oceanic Atmospheric Administration.



*Student

Funding Opportunities

GRANT RESOURCE CENTER REMINDER

GRC Staff Speaking at ISU on November 29th.

The presentations will take place in Dede II.

The day's schedule will be:

- 8:00am-10:00am

Federal Funding for Science, Technology and Education

- 10:15am-11:45am

Federal Funding for Humanities and Social Sciences

- 1:15pm-3:15pm

Program Trends for Private Foundations

The GRC is provided through ISU's membership in AASCU. The GRC website can be accessed at <http://www.aascu.org/grc/search/>

(username: isu, password: awards)

Registration is not required for the November 29th presentations. Please contact Liz Metzger at x3228 or emetzger@isugw.indstate.edu with any questions.

NSF – Major Research Instrumentation Program (MRI)

Program Solicitation 08-503

Full Proposal Due January 24, 2008

Letter of Intent Due Dec. 21, 2007

Required for requests between \$2 million and \$4 million.

The MRI program encourages the development and acquisition of research instrumentation for shared inter- and/or intra- organizational use. This program cuts across all NSF Directorates.



Rusty Gonser, Life Sciences, at the OSP Open House.

NEH – Digital Humanities Workshops

CFDA 45.163

Full Proposal Due January 17, 2008 (for workshops beginning no earlier than July 2008).

The NEH invites proposals for workshops that offer academically rigorous professional development programs for K-12 educators seeking to use digital resources to strengthen the teaching of the humanities.

NEA Foundation – Learning & Leadership Grants

Proposals are reviewed three times a year. The next review date is Feb. 1, 2008; award recipients will be notified by June 15th.

http://www.neafoundation.org/programs/Learning&Leadership_Guidelines.htm

Purpose: Grants support public school teachers, public education support professionals, and/or faculty and staff in public institutions of higher education for one of the following two purposes: (1) Grants to **individuals** fund participation in high-quality professional development experiences, such as summer institutes or action research. (2) Grants to **groups** fund collegial study, including study groups, action research, lesson study, or mentoring experiences for faculty or staff new to an assignment.

Indiana Campus Compact – Faculty Fellows Program

Proposal due 3/28/08 for the 08/09 Academic Year.

<http://www.indianacampuscompact.org/>

Fellow will teach a service-learning course, perform professional service for a community agency, and design a research or creative project that relates to the professional service or to the practice of service-learning, during the fellowship year.

EXEMPT REVIEW BY IRB

New IRB Procedures:

The Institutional Review Board (IRB) is experimenting this year with a new procedure for reviewing "exempt" applications for research involving human subjects. In the past, reviewers of "exempt" applications often asked for many clarifications – such as requesting changes be made to informed consent documents, requesting web-based surveys come into line with ISU Internet research policy, or requesting other revisions. Beginning this year, applications determined to be "exempt" by the IRB will not be reviewed. The principal investigator will receive a short letter indicating the "exempt" status and wishing the PI best of luck. Those determined not to be exempt will be reviewed as either "expedited" or "full," whichever is appropriate. The IRB determines whether an application is exempt, expedited or full.

What this means for PIs is a faster review process, not only for "exempt" applications but for "expedited" and "full" reviews as well. All PIs benefit from submitting well-written and thorough applications. Informed consent documents/statements must be provided; a copy of the instrument (questionnaire, interview guide) must be included in the application; and, for web-based surveys, the e-mail invitation and URL must be provided so the IRB reviewer can "take the survey." With the proper documentation, it should be possible for the IRB exempt reviewer to determine whether or not the research is exempt. If the application is determined to be "exempt," the PI will be notified and the research can begin. Some PIs with pending "exempt" applications may still get queries from the IRB, but our goal is to reduce such inquiries to the minimum.

Good researching!!

Tom Steiger, Chair, IRB

For more information on the Institutional Review Board go to:

<http://www.indstate.edu/irb/>

RED FISH, GREEN FISH (CONT.) SOME HURDLES YET TO BE CLEARED

(Continued from Page 1)

Stuart houses his fish lab in the Science Building on the ISU campus and employs two graduate students to help conduct his research. Daily chores involve feeding the fish, cleaning the containers and regulating the light in the room.

The general goal of this research is to improve transgenesis methods in zebrafish so that they can eventually be used for determining gene function. The next step in Stuart's plan is to produce a yellow fish, one that is both red and green. This is the biggest hurdle yet to be cleared as the chance of breeding a yellow fish with the proper gene structure is less than 1%.

According to Stuart, transgene research has boundless possibilities, which will at some point put our values to the test.

"This science is developing at a rate where it is possible that we could obtain the knowledge to stretch the human life expectancy limitlessly within the next 100-500 years," he said.

"We hope to understand what human genes might do based on fish reactions."

~Dr. Gary Stuart



A view inside the fish lab.