

GRANT OPPORTUNITIES

Newsletter of the Office of Grants and Program Review

April 2003

UTC Professor Continues Work on Major Research Project

Staff Writer: Meredith Byrum, Graduate Assistant

The Department of Biological and Environmental Sciences at UTC consistently receives high respect and praise at both community and national levels because of the innovative research projects conducted by department faculty and the valuable applied experience that department students gain through coursework and special projects. Dr. Tim Gaudin, UC Foundation Associate Professor, contributes to the department's distinguished reputation through his work with the project *The Early Evolution of the Pholidota and a Reexamination of the Monophyly of the Cohort Edentata (Mammalia)*.

Dr. Gaudin initiated this program of research in 2001 when he earned a three-year, \$126,388 Research in Undergraduate Institutions (RUI) award from the National Science Foundation (NSF). Highly competitive and rigorous, the RUI program is among the NSF's most prestigious grant awards. Dr. Gaudin's award marks only the second RUI grant in UTC's history.

The goal of Dr. Gaudin's work is to better understand how the specialized features of animals such as armadillos, anteaters, and

sloths evolved from their earliest ancestors. To study the issue, Dr. Gaudin and his research team will examine placental mammals that are members of the order of Pholidota (Old World pangolins or scaly anteaters) and the order Xenarthra (New World armadillos, anteaters, and sloths). He will then compare his findings with the cranial and postcranial skeletal characteristics of the Palaeanodonta (fossorial mammals).

In conducting his research, Dr. Gaudin has worked closely with Dr. Robert Emry, curator of fossil mammals at the national Museum of Natural History, Smithsonian Institution in Washington, D.C. Currently, the two are working on descriptions of several fossil pangolins, including two early Eocene fossil species that are approximately 35 million years old. One of these fossils, found in the Inner Mongolia region of China, belongs to a genus and species entirely new to science. UTC undergraduate honors Biology student Brandon Pogue has signed on to help write the description of this new pangolin species, and his work will serve as an honors thesis that will eventually appear in a major paleontology journal.

Other collaborators on the project include Dr. Ken Rose from Johns Hopkins University and Dr. Gerhard Storch

from the Forschungs-Institut Senckenberg in Frankfurt, Germany. These scholars are working together with Drs. Gaudin and Emry on a paper about the evolution of "edentate" mammals, including pangolins and xenarthrans. Another undergraduate Biology student involved in the project is Susan Tuckniss, who is working on a description of the skull of an extinct 3.5 million-year-old ground sloth. And a final contributor to the success of the project is Julia Morgan Scott, resident artist and preparator, who is creating illustrations for the various research underway.

Dr. Gaudin and his research team will continue work on the descriptions of these fossils this summer. In addition, Dr. Gaudin will also analyze the evolutionary relationships among living and extinct pangolins. The results of this significant project will provide new insights for the scientific community about an entire species, and Dr. Gaudin and the UTC students involved will bring positive national and international recognition to the university through their work with the study.

FUNDED GRANTS AND RESEARCH

February 1, 2003 — March 31, 2003

COLLEGE OF ARTS AND SCIENCES

CHEMISTRY

DR. GREG GRANT

Merek; American Association for the Advancement of Science	Symbiosis: Undergraduate Science Research Program	\$20,000
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DR. KYLE KNIGHT

American Chemical Society	Kinetic Resolution of Secondary Alkyl Halides	\$17,000
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DR. ROB MEBANE

Research Corporation	Catalytic Transfer Hydrogenation with Raney Catalysts and Water as the Hydrogen Donor	\$15,342
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ENGLISH

DR. RICHARD JACKSON

Allied Arts of Greater Chattanooga	Meacham Writers' Workshops	\$2,000
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MATHEMATICS

DR. BETSY DARKEN

Clemson University	Statistical Work for the NSF Grant "Impact of Calculus Reform on Long-Term Student Performance"	\$9,548
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DR. TERRY WALTERS, DR. STEVE KUHN

National Science Foundation	Enhancing Mathematics Communication: Creating and Delivering Web-Based Homework Problems	\$58,909
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EDUCATION AND APPLIED PROFESSIONAL STUDIES

EXERCISE SCIENCE HEALTH AND LEISURE STUDIES

DR. DAVID CUNDIFF

TN Department of Education	Health Education and PANTS Training Institute	\$20,000
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EDUCATION AND APPLIED PROFESSIONAL STUDIES

EXERCISE SCIENCE HEALTH AND LEISURE STUDIES

DR. GENE EZELL

TN Department of Education HIV Prevention Education Program Evaluation \$16,000

TEACHER PREPARATION ACADEMY

DR. LUCIEN ELLINGTON

Association for Asian Studies Education About Asia Journal 2003 \$57,798

DR. LUCIEN ELLINGTON, DR. HUGH PREVOST

U.S.-Japan Foundation Mid-South Japan in the Schools 2002-04 \$205,233

ENGINEERING AND COMPUTER SCIENCE

SIMCENTER

Mississippi State University Development of a Computational Fluid Dynamic Capability for Centrifugal Compressors \$100,500

OTHER AWARDS

METROPOLITAN COLLEGE

DR. JOHN SCHAEERER, MS. MEREDITH PERRY

Association of Collegiate Schools of Planning Lessons in Smart Growth: University Case Studies and Best Practices \$1,000

SUBMITTED PROPOSALS

February 1, 2003 — March 31, 2003

COLLEGE OF ARTS AND SCIENCES

PSYCHOLOGY

DR. LYNN OURTH, DR. LINDA SMITH

Community Foundation of Greater Chattanooga Summer Camp for Children with Autism Spectrum Disorder

EDUCATION AND APPLIED PROFESSIONAL STUDIES

CHALLENGER CENTER

MR. TOM PATTY

Institute of Museum and
Library Services

Education Enrichment for Students and Teachers in Area Schools

EXERCISE SCIENCE HEALTH AND LEISURE STUDIES

DR. GARY WILKERSON

NATA Res and Educ Fdn

Comparison of ATOA and PTOA Functional Outcome Data

TEACHER PREPARATION ACADEMY

DR. JANE BROWER, DR. CHRYSTAL PARTRIDGE

Tennessee Higher Education
Commission

Each One Reach One

DR. JEANETTE STEPANSKE, DR. ANN HOLMES, DR. DEBORAH MCALLISTER

National Science Foundation

Virtual Reality on the Yellow School Bus: Planning Geoscience
Experiences for Grades 3-8

ENGINEERING AND COMPUTER SCIENCE

DR. CECELIA WIGAL, DR. STEPHANIE SMULLEN, MS. KATHY WINTERS

National Science Foundation

Adventures in Computers, Engineering, and Science (ACES)

DR. CECELIA WIGAL, DR. JOE OWINO, MR. RICK KEYSER

National Science Foundation

Increasing Females and Minorities in Engineering and Computer Sciences

OTHER SUBMISSIONS

METROPOLITAN COLLEGE

DR. JOHN SCHAEERER, VICE-CHANCELLOR RICHARD BROWN

Fannie Mae Foundation

Live and Learn Program

WUTC-FM

DR. JOHN MCCORMACK

U.S. Department of
Commerce/PTFP

Digital Transmission Equipment