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Dioxin Toxicity

Superfund Research Translation at October MSU Workshop

The CIT's Superfund Program has organized an October workshop focused on dioxins.

Concentrating on aryl hydrocarbon receptor biology, signaling mechanisms, and computational modeling, the workshop will provide an overview of current findings on the mechanisms, models, and potential health risks in relationship to dioxins and dioxin-like compounds.

The event will take place at MSU's Kellogg Center, beginning on Monday, October 20, at 8 a.m., and concluding with lunch on Tuesday, October 21.

National and international speakers will be featured and a poster session will highlight current work in the Superfund Program. The event is hosted by the Research Translation Core of the MSU Superfund Program.

The workshop sessions are:

Ah Receptor Biology:

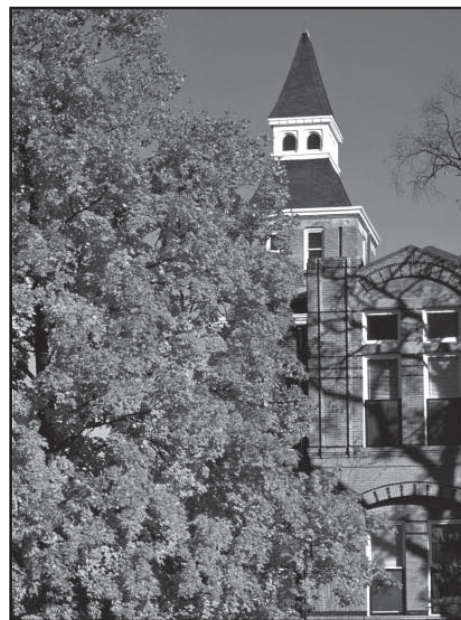
Chaired by Russell S. Thomas, Ph.D., Hamner Institutes for Health Sciences

- Christopher A. Bradfield, Ph.D., University of Wisconsin-Madison, **"Mouse Models of Dioxin Toxicity"**
- Shigeaki Kato, Ph.D., The University of Tokyo, **"Dioxin Receptor is a Ligand-Dependent E3 Ubiquitin Ligase"**
- Gary H. Perdew, Ph.D., Pennsylvania State University, **"Ah Receptor Mediated Gene Repression: A Mechanism to Maintain Cell Homeostasis"**

Ah Receptor and ARNT Signaling Mechanisms:

Chaired by Patricia Ganey, Ph.D., Michigan State University

- John J. LaPres, Ph.D., Michigan State University, **"Moving Toward a Comprehensive AHR Protein Interaction Network"**
 - Richard S. Pollenz, Ph.D., University of South Florida, **"ARNT and ARNT2 Proteins: Con-**
- Workshop, continued on page 2**



The Superfund workshop will be offered to registered participants free-of-charge and will take place Oct. 20-21, 2008 at the MSU Kellogg Center. To register, call 353-6469 or e-mail tox@msu.edu.

Toxicology Lecture Series

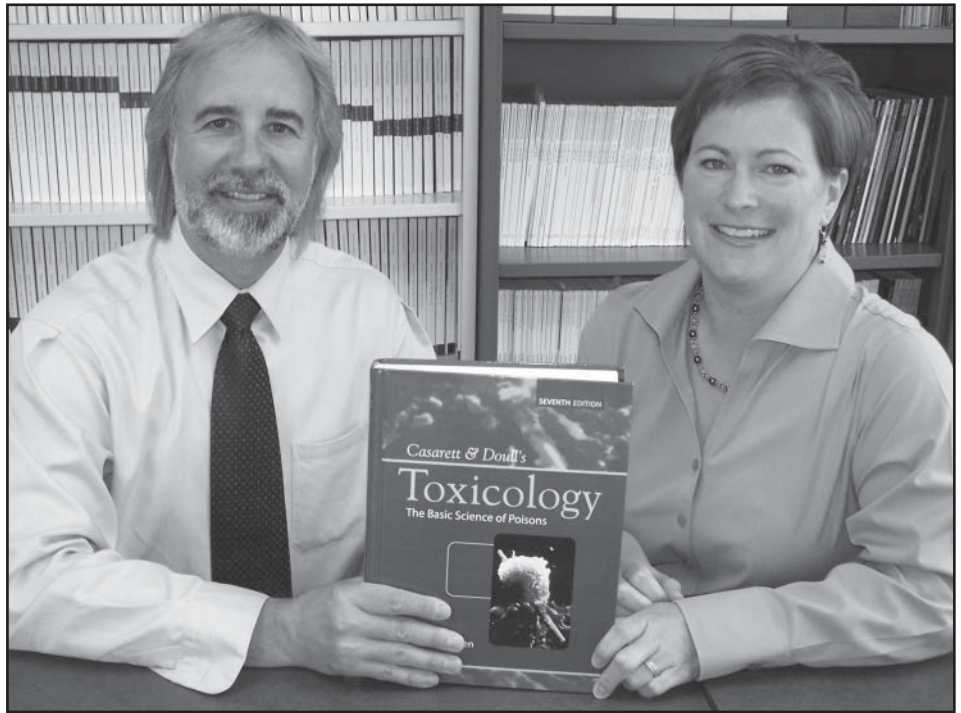
Begins Nov. 21, 2008

Each year the MSU-CIT partners with an affiliated academic unit in bringing individuals to the MSU campus who have made substantial scientific contributions to the discipline of toxicology. Called the Distinguished Scholars in Toxicology Lecture Series, the MSU Graduate School provides financial support for the program. This year, the Department of Pathobiology and Diagnostic Investigation is the departmental partner.

The first lecture will feature an inhalation toxicology expert, Daniel Costa, from the U.S. Environmental Protection Agency. He will speak on **“Health Effects of Air Pollutants: What Animal Studies Tell Us That Supports and Expands What We Have Learned from Human Studies”** on Friday, November 21, 2008 at noon in room 162 of the Food Safety and Toxicology Building.

Costa is currently national program director for air research in the Office of Research and Development at the EPA. He is responsible for the overall direction and management of the air research program, including particulate matter, ozone, and air toxics; across all EPA Labs and Centers.

The lecture is open to all. Off-campus attendees should call or e-mail the CIT office at (517)353-6469, tox@msu.edu, at least one week before the lecture to make parking arrangements.



MSU Contributes to Toxicology Text

Two MSU faculty members contributed to the 7th Edition of the esteemed *Casarett and Doull's Toxicology: The Basic Science of Poisons*, edited by Curtis D. Klaasen.

CIT Director Norbert E. Kaminski, Assistant Professor Barbara L. Faubert Kaplan, along with adjunct MSU faculty member Michael P. Holsapple, authored a chapter. Holsapple is the executive director of the Health and Environmental Sciences Branch of the International Life Sciences Institute.

“This is a book by and for professional toxicologists, long regarded as the gold standard in the field,” Kamin-

ski said. “It is the primary text for most graduate programs in toxicology around the world.”

“It is very exciting to write something that will be carefully read by so many students in toxicology,” Kaplan added.

Kaminski, Kaplan, and Holsapple wrote chapter 12, “Toxic Responses of the Immune System”, which is part of the text’s unit on target organ toxicity.

The text is well known for its scope of modern toxicology, including the principles, concepts, mechanisms, and modes of thought that are the foundation of the discipline.

Research Translation Workshop, continued from page 1

served and Unique Functions Across Critical Signaling Pathways that Respond to Environmental Stress”

• Norbert E. Kaminski, Ph.D., Michigan State University, **“A Strategy for Assessing Human B Cell Sensitivity to TCDD”**

Computational Modeling and Risk Assessment:

Chaired by James E. Trosko, Ph.D., Michigan State University

• Rory B. Conolly, Sc.D., U.S. Envi-

ronmental Protection Agency, **“Computational Modeling in Concert with Laboratory Studies: Application to B Cell Differentiation”**

• J. Craig Rowlands, Ph.D., Dow Chemical Company, **“Consideration of AHR Receptor Biology in Reducing Uncertainty in the Human Health Risk Assessment of Dioxin and Related Compounds”**

• Thomas B. Starr, Ph.D., TBS Associates,

“Dioxins: The Trouble with TEFs (Toxic Equivalency Factors) and

Putative Cancer Risks”

• Glenn E. Rice, Ph.D., U.S. Environmental Protection Agency, **“EPA’s Strategy for Responding to the NAS Expert Panel Committee on the Assessment of the Health Effects of Dioxin”**

Because the workshop is part of MSU’s Superfund Program funded by the National Institute of Environmental Health Sciences Superfund Basic Research Program, scientists and students may attend free-of-charge. Registration is required by calling: (517)353-6469, or e-mailing: tox@msu.edu.

Atchison Lab Receives McNair/SROP Undergraduate Trainees

Professor Bill Atchison, a toxicologist and CIT-affiliated faculty member, regularly welcomes undergraduate students to work in his lab in a unique program designed to increase the access of minorities to graduate programs in science.

Notably, alumni from the program and Atchison's lab include several doctors of pharmacy, three medical doctors, a dentist, and several masters-level engineers and pharmacists. Additional alumni are currently in M.D. and Ph.D. programs.

The Ronald E. McNair Post-Baccalaureate Achievement Program/Summer Research Opportunity Program, known at Michigan State University as McNair/SROP, is co-named after Ronald E. McNair, the laser physicist and NASA mission specialist who died in the USS Challenger Space Shuttle accident in 1986.

The McNair program is funded by the U.S. Department of Education. This program encourages first-generation, low-income college juniors and seniors to enter doctoral study. McNair runs simultaneously with SROP, an initiative that gives minority students the opportunity to acquire research skills necessary to be successful in graduate school. SROP is funded by the Committee on Institutional Cooperation (CIC) and MSU.

To promote equal educational opportunity, McNair/SROP's design helps participants develop the research skills and student-faculty mentor relationships critical to success at the doctoral level.

Professor Bill Atchison had participated in the McNair/SROP program for many years, but has been a regular summer faculty mentor since 2004. Each summer, his lab welcomes four to six students from the University of Puerto Rico at Cayey. As part of his commitment to the program, Atchison travels to Cayey each spring and personally interviews students vying for a spot in the MSU program.

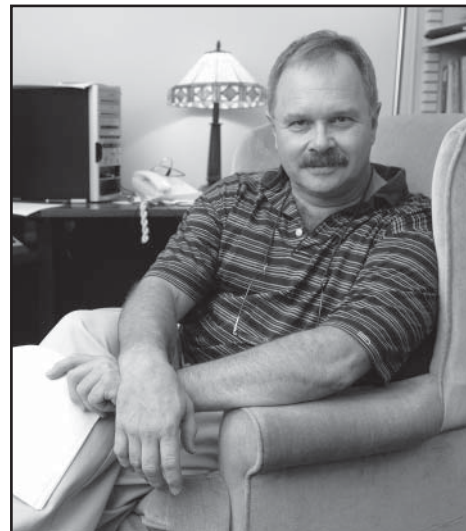
Atchison believes his lab benefits from the exchange just as much as the

student participants.

"Every year, we get a new group of very enthusiastic, intelligent, and motivated students," Atchison said. "They add diversity to my lab, and provide opportunities for post docs to mentor. What's more, we have the satisfaction of seeing bright students move forward."

While at MSU, the students participate as research assistants in labs, but they also receive academic assistance from the McNair/SROP program in writing and preparation for the Graduate Record Examination, necessary for acceptance in U.S. graduate programs. In addition, the students give oral and poster presentations, visit graduate schools, and write curriculum vitae.

Last spring, many of the previous summer toxicology participants received travel awards from the Society of Toxicology to attend the SOT Annual Meeting in Seattle, Washington. Travel awards went to Billie Pace-Gracyk from Drake University, as well as Fransheska Vega, Angela Rivera, Eleine Rodriguez, and Jose Suarez, all of the University of Puerto Rico. Vega and Suarez presented posters based on their summer projects. Suarez had worked in the lab of CIT Director, Norb Kaminski, and Pace-Gracyk, Vega, Rivera, and Rodriguez had all worked in Professor Atchison's lab.



Professor Bill Atchison is a faculty mentor for undergraduate trainees from the University of Puerto Rico at Cayey.

Jose Suarez recently had an abstract accepted for the 2008 Annual Biomedical Research Conference for Minority Students (ABRCMS). He will present "Optimization of Lentiviral Vector Production for Use in Generation of B Lymphocyte Models" on November 7, 2008.

For the first time this fall, three McNair/SROP summer students returned to MSU and Atchison's lab to complete a full semester. The students will earn nine biology elective credits and three internship credits while working in the lab.



Carol Shreffler, Ph.D., program administrator at the National Institute of Environmental Health Sciences, (center), visited MSU recently and made time to meet with the MSU-CIT's Environmental and Integrative Toxicological Science trainees. Shreffler participated in a round table discussion with the students on toxicology training and potential career paths.

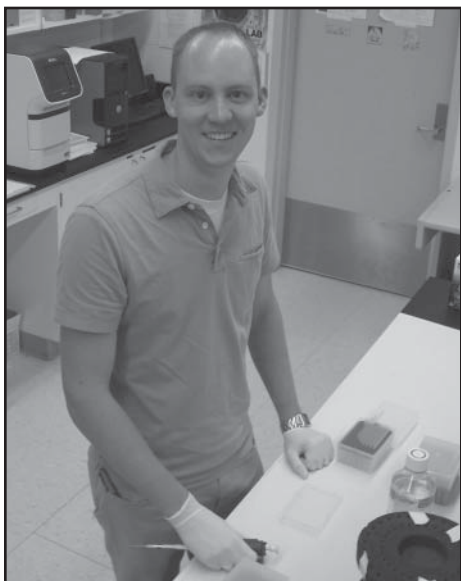
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Faculty and Trainee Achievements and Notables

• **Neil Birmingham**, postdoctoral trainee in Professor Jack Harkema's Lab, has accepted an instructor and assistant professor position at the Mount Sinai School of Medicine at New York University. His research will focus on drug discovery and development using traditional Chinese medicine for the treatment of allergy and asthma.

• **Leslie Bourquin**, affiliated faculty, was a Fulbright Research Scholar-Nord Pas de Calais Scholar conducting research on food safety risk governance at Ecole Polytechnique Universitaire de Lille in France.

• **Aaron Fullerton**, Environmental and Integrative Toxicological Sciences trainee, was one of four students selected to present research as a candidate for the Young Investigator Award at the 10th Biennial Meeting of the International Endotoxin and Innate Immunity Society held in Edinburgh, Scotland, July 30-August 2, 2008. Fullerton presented "Hemostatic System Activation Contributes to Liver Injury



Aaron Fullerton, CIT pre-doctoral student, recently presented his research at the 10th Biennial Meeting of the International Endotoxin and Innate Immunology Society held in Edinburgh, Scotland.

in Mice Treated with Trovafloxacin and Lipopolysaccharide." The CIT provided travel funds through The MSU Graduate School Educational Enhancement Award Program.

• **Jay Goodman**, affiliated faculty, was recently appointed to the National Institute of Environmental Health Sciences Board of Scientific Counselors.

• **David Long**, affiliated faculty, became a Geological Society of America fellow.

• **Haitian Lu**, Environmental and Integrative Toxicological Sciences trainee, has been invited to speak at the Inaugural John P. Wyatt Lecture Award in Environmental Health and Disease Symposium at the University of Kentucky being held on November 5, 2008.

• **Nigel Paneth**, affiliated faculty, was an invited speaker at the Surgeon General's Conference on the Prevention of Preterm Birth.

• **Robert Roth**, affiliated faculty, was named chair of the Awards Committee for the Society of Toxicology.



CIT pre-doctoral student Priya Raman, pictured here with her major professor CIT Director Norbert Kaminski, was presented with a plaque for the Best Oral Presentation at this summer's Pharmacology Research Colloquium. Pharmacology and Toxicology graduate students from MSU, University of Michigan, Wayne State University, and the University of Toledo participate each year.

