Environmental & Molecular Toxicology

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Department Of Environmental & Molecular Toxicology Newsletter

Issue 13

June, 2008

EMT in the News

Dr. Jeff Jenkins

"Second runner-up: Copper changes salmon behavior" (Environmental Science)

Research by EMT alumna, Jason Sandahl, and advisor Jeff Jenkins considered 2nd runner up in ES&T best papers for 2007. "A Sensory System at the Interface between Urban Stormwater Runoff and Salmon Survival"□ by Jason F. Sandahl and Jeffrey J. Jenkins, Department of Molecular and Environmental Toxicology, Oregon State University; and David H. Baldwin and Nathaniel L. Scholz, NOAA Fisheries, Northwest Fisheries Science Center, Ecotoxicology and Environmental Fish Health Program, **2007**, ***41*** (8), 2998-3004.

Dr. Jennifer Field

"We do caffeine, but not much hard stuff" (Las Vegas Sun)

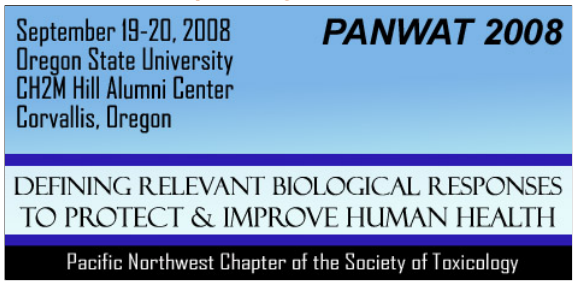
In Clark County, we take our coffee with cigarettes and ephedrine. We know this because the Sun commissioned an Oregon State University scientist to test Clark County's raw sewage for drugs, part of a process called "community urinalysis," and found that on March 20, the Thursday our sewage was sampled, illegal drug levels were low, and caffeine was high. Two times higher, in fact, tha scientist Jennifer Field has seen in any of the 12 cities she tested previously. Clark County was smoking that Thursday, too. Nicotin metabolized in the body as something called cotinine, registered very high in the test. So did ephedrine — a stimulant found in cold and allergy medicines, appetite suppressants, decongestants, and blood pressure and asthma medications.

Dr. Abby Benninghoff

"Nonstick Toxicity" (Science News)

The experiments were fishy. But they appear to have uncovered something that rodent studies missed: a potential cancer risk posed by a compound used to manufacture nonstick coatings. By mimicking the action of estrogen, this chemical, perfluorooctanoic acid, can promote cancer development, researchers report in an upcoming ***Environmental Health Perspectives.*** Better known as PFOA, perfluorooctanoic acid is the nonstick agent that DuPont developed and used to launch its Teflon line of products more than 50 years ago. PFOA-based nonstick chemicals now appear in everything from carpets and fry pans to microwave popcorn bags.

Upcoming EMT Events



- **Predators, Parasitoids and Native Bees in the Orchard: A Farmscaping for Beneficials Farm Walk**

  EVENT DATE: Tuesday, July 29th, 2008
  PLACE: Columbia Blossom Orchards and Clastic Fruit LLC, Mosier OR
  TIME: 2:00-5:00 P.M. **Organic Fruit Tasting at 5:00**

  TO REGISTER CONTACT: Gwendolyn Ellen, 541-737-6272, **gwendolyn@science.oregonstate.edu**

- **Farming for Bees, Beetles and (True) Bugs: A Farmscaping for Beneficials Farm Walk**

EVENT DATE: Tuesday, July 22nd, 2008
PLACE: Persephone Farm, Lebanon, OR
TIME: 2:00-5:00 P.M. **Veggie Potluck at 5:00**
TO REGISTER CONTACT: Gwendolyn Ellen, 541-737-6272 , gwendolyn@science.oregonstate.edu

Recent Graduates from EMT Labs

Stephanie Bollman Ph.D. in Genetics

Marthah De Lorme Ph.D. in Microbiology

Aly Mohamed M.S. in Genetics

Rick Scheri Ph.D. in Toxicology

Upcoming Thesis Defense Dates

Greg Sower Ph.D. in Toxicology, June 19th at 9 am in ALS 4000
"Spatial and temporal variations of bioavailable polycyclic aromatic hydrocarbons in the lower Willamette River."

Angie Perez Ph.D. in Toxicology, July 3rd at 2 pm in ALS 4001
"Long-term fertilizer input affects the distribution and fate of total and bioavailable metals in agricultural soils and crops."

Thank You and Goodbye

Polly Wegner
NPIC

New Faces in the Department

Sarah Allan
Summer 2008-Laboratory Tech in the Anderson lab
Fall 2008-EMT Grad Student

Craig Marcus
EMT Department Head

New Students

Lisa Duong
Spring Term 2008
GRA-Tanguay Lab

Babies!!

Nathan Daniel Power
Born on March 16, 2008
to Laura Power

Awards

Melody Johnson -OSU PCOSW Award

The chair of the University Professional Development Award Committee of the President's Commission on the Status of Women (PCOSW), has informed us that Melody Johnson in NPIC has been selected to receive this year's award. This award is made available by President Ray and the PCOSW. It consists of a personal plaque, a $500 cash award, and a $500 professional development reserve fund for the department. Melody's name will also be engraved on the perpetual University Professional Development Award plaque located in Kerr Administration Building.

Lab News

Anderson Lab

Wendy Hillwalker, PhD, was elected Vice President for the Pacific Northwest chapter of the Society for Environmental Toxicology and Chemistry (PNW-SETAC) for 2008. She will assume the position of acting President in June 2008 and will accede to the Presidency for 2009.

Kevin Hobbie has joined the Food Safety and Environmental Stewardship Program, EMT, OSU as a Faculty Research Assistant.

The Anderson Lab, is hosting two scientists; **Ndeye Sokhna 'Sonja' Fall (right)** and **Adama 'Adam' Ndiaye (left)**; from the CERES Laboratory, Dakar, Senegal, West Africa during a 9 week training and capacity building event. This is the third technology transfer training event between OSU and the CERES lab for the utilization of a passive sampling device for better understanding of pesticide fate in watersheds of the Senegal and Niger rivers. The project, ***Reducing dependence on POPs and other agro-chemicals in the Senegal and Niger River basins through integrated production, pest and pollution management,*** funded by the UN GEF / FAO, is a collaborative effort between OSU (PIs Anderson, Jepson, Jenkins, and Bolte), the United Nations and six countries within Western Africa.

Adam **Sonja**

The **Food Safety Environmental Stewardship Program** hosted the 9th Annual FSES Advisory Council Meeting on April 28 th, 2008. The FSES Program is committed to providing the highest quality analytical laboratory research support for food quality assurance, environmental integrity preservation, enhancement of agricultural production, and recognition and dissemination of new knowledge. The FSES Advisory Council consists of members representing food production and processing and environmental stewardship in Oregon.

Members and guests from left to right: Kim Anderson (Director, FSES Program, OSU), Bob Komoto (Ontario Produce, Ontario, OR), Loys Hawkins (Bear Creek Orchards, Medford, OR), Dixon Landers (US EPA, Corvallis, OR), Jeff Jenkins (EMT Professor, Extension Specialist, OSU), Gene Foster (ODEQ, Portland, OR), Joe Defrancesco (IR-4 Liaison, IPPC, OSU), Dave Stone (EMT Professor, Extension, OSU)

Hays Lab

Collin Tominey, an undergraduate laboratory assistant in the Hays laboratory, received a URISC award to continue research in the lab this summer.

Dr. Paul Jepson, IPPC

"New Demonstration Hedgerow Planted at USDA, NRCS's Plant Materials Center in Corvallis Benefits Agricultural Community" - Collaborative article between NRCS, Plant Materials Center, Xerces Society for the Conservation of Invertebrates and IPPC

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Major step forward in program planning for pesticide risk reduction project in West Africa:
A number of OSU faculty and representatives from the FAO (UN) and African analytical laboratories took place in a week-long 'Quality Assurance Program Plan' [QAPP] workshop at OSU in April. The plan provides the basis for a detailed analysis of water-borne pesticide residues in an irrigated rice and vegetable production system on the Senegal River. The data collected will contribute to human health risk assessment and pesticide fate and behavior modeling that will eventually address problems in six Sahelian countries. All of these countries are subject to rapid agricultural development and the pesticide problems that tend to be associated with this. The current exercise is part of a large capacity building program that involves Paul Jepson (Principal Investigator, Integrated Plant Protection Center (IPPC) Director and Professor in Environmental and Molecular Toxicology (EMT)), with Jeff Jenkins (National Pesticide Information Center (NPIC) and EMT), Kim Anderson (Food Safety & Environmental Stewardship Laboratory (FSEL) and EMT), with Michael Guzy in Bioengineering. Over the last two years, a series of capacity building steps undertaken by EMT faculty have prepared laboratories and program partners in West Africa for a very large IPM education, pesticide risk assessment and pesticide risk management program that spans the Senegal and Niger River systems. Dave Stone and Dan Sudakin (NPIC, National Pesticide Medical Monitoring Program (NPMMP) and EMT) will also play a role in this project in the future. Contact Paul Jepson

Photo: "OSU and FAO (UN) participants in QAPP workshop on campus in April"

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Reducing agricultural hazards to natural enemies and pollinators:
The IPPC has been presenting a series of on-farm workshops with the Xerces Society for Insect Conservation on pollinator and natural enemy conservation, and practices that reduce pesticide risks to these organisms. This USDA SARE-funded program is targeted at agricultural professionals and agencies, but some farmers are also present at each walk. Basic bee and natural enemy biology and habitat requirements are discussed, farm walks illustrate these habitat needs, and pesticide risk management options are discussed. Workshops have taken place in the Dalles, Klamath Falls, the Willamette Valley, and Medford, OR. Follow-up workshops for participants will help to develop skills in farm planning for biodiversity enhancement, and focus again on chemical risk reduction strategies.

Photo: "Paul Jepson (IPPC) discusses beetle bank habitats at Persephone Farm, Lebanon, OR"

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New pesticide risk management program:
The IPPC is now a partner in an NRCS CIG grant initiative, led by Tom Green of the IPM Institute, to develop an IPM Options Evaluation Tool. The tool is deigned to reduce the negative impacts of IPM practices by providing state-of-the-art risk estimates of risks to wildlife, beneficial organisms and humans, and access to information about mitigation practices. Collaborators include the IPM Institute, OSU IPPC, BCS Ecologic, the NRDC and Ottawa Carleton University. More details may be found at http://www.ipminstitute.org/pmoet/ .

Kerkvliet Lab

New Publications
Funatake CJ, Marshall NB, Kerkvliet NI. 2,3,7,8-Tetrachlorodibenzo-p-dioxin alters the differentiation of alloreactive CD8+ T cells toward a regulatory T cell phenotype by a mechanism that is dependent on aryl hydrocarbon receptor in CD4+ T cells. J Immunotoxicol. 2008 Jan;5(1):81-91. PMID: 18382861 [PubMed - in process]

Duy Pham, an undergraduate researcher in the Kerkvliet Lab, is going to be a grad student in the Department of Immunology at

IUPUI 'Indiana University-Purdue University Indianapolis'. He will also be visiting Viet Nam, his country of birth, after graduation. He hasn't been there in several years.

Kolluri Lab

Dr. William Bisson, visiting Research Associate

Dr. William H. Bisson received his Master's Degree in Chemistry from the University of Padua (Italy) in 1999 and got his PhD in Chemistry and Computational Chemistry at the Swiss Federal Institute of Technology (ETH) Zurich (Switzerland) in 2003. In 2004 he joined the group of Prof. Abagyan at The Scripps Research Institute in La Jolla, CA as Swiss National Science Foundation Research Fellow and since 2006 he worked as Research Associate in the group of Prof. Pellecchia at the Burnham Institute for Medical Research in La Jolla, CA. Dr. Bisson's expertise in the field of drug discovery join Molecular Biology and Medicinal Chemistry through Computational Structure-based Design. Dr. Bisson is recipient of the DSM Fellowship (1999), Prospective Researcher Swiss National Science Foundation Postdoctoral Fellowship Award (2004) and Basel Award 2005 (2005). His recent publication describes, starting from a known family of phenothiazine derivatives, the discovery of a novel non-steroidal anti-androgen with inhibitory effects on Prostate Cancer cell growth (Bisson et al. PNAS 2007 104, 11927-32).

News from Dr. Dashwood

Dr. Rod Dashwood returned from sabbatical leave in Tokyo, working at the National Cancer Center on the role of micro RNA's in colon carcinogenesis. While in Japan, he was awarded, from the US National Cancer Institute (NCI), a new NIH R01 grant entitled "Role of dietary histone deacetylase inhibitors in colon cancer." Dr. Dashwood also received word that his work had been selected as an "exemplar of NCI-funded translational research", and will present the findings at an NIH-sponsored meeting in Washington D.C., in November. On a sad note, Rod's younger brother, Vic, passed away on April 29th in Riddlesworth, England.

Tanguay Lab

publications

Mathew LK, Sengupta S, La Du J, Andreasen EA and Tanguay RL (In Press) Crosstalk between AHR and Wnt signaling impairs tissue regeneration in zebrafish. ***Faseb J***.

Williams Lab

Awards

Abby Benninghoff was recently recognized as a Finalist for the Postdoctoral Research Award at the 10th European International Society for the Study of Xenobiotics Meeting held in Vienna, Austria.

Brett Bemer, an undergraduate laboratory assistant in the Williams laboratory, received URISC and HHMI summer funding to work on “The role of Flavin-containing monooxygenases on Sulindac Pharmacokinetics”.

Publications

Recent publication of article in Tilton, SC, Orner, G. A., Benninghoff, A. D., Hillary M. Carpenter, Jerry D. Hendricks, Cliff B. Pereira, David E. Williams.Genomic Profiling Reveals an Alternate Mechanism for Hepatic Tumor Promotion by Perfluorooctanoic Acid in Rainbow Trout. Environmental Health Perspectives

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Past Issues

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If there is any information that YOU would like to include in the next newsletter, which is scheduled for the end of spring term please send it via email to Kerry.Thomas@oregonstate.edu

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