

Environmental & Molecular Toxicology

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Department Of Environmental & Molecular Toxicology Newsletter

Issue 14

October, 2008

EMT in the News



Dr. Dave Stone, NPIC [Help Comes in Many Languages](#) (Oregon's Agricultural Progress- Summer 2008)

The National Pesticide Information Center at Oregon State University receives more than 24,000 questions each year from all 50 states and several countries. Now NPIC can handle pesticide questions in more than 170 different languages.

Dr. Jennifer Field [One big drug test: Analyzing a city's sewage can put a number on its vices](#) (The Los Angeles Times)

Which city uses more cocaine: Los Angeles or London? Is heroin a big problem in San Diego? And has Ecstasy emerged in rural America? Environmental scientists are beginning to use an unsavory new tool -- raw sewage -- to paint an accurate portrait of drug abuse in communities. ...The results have been intriguing: Methamphetamine levels in sewage are much higher in Las Vegas than in Omaha and Oklahoma City, Okla. Los Angeles County has more cocaine in its sewage than several major European cities. And Londoners apparently are heavier users of heroin than people in cities in Italy and Switzerland. "Every sample has one illicit drug or another, regardless of location," said Jennifer Field, an environmental chemist at Oregon State University who has tested sewage in many U.S. cities. "You may see differences from place to place, but there's always something."

Dr. Dan Sudakin [New method identifies meth hot spots](#) (Eureka Alert)

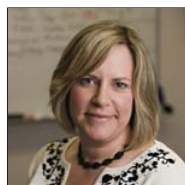
Dr. Dan Sudakin, a researcher at Oregon State University has used a new method of combining multiple sources of data to identify counties in Oregon with high numbers of methamphetamine-related problems per capita, giving officials a new tool in fighting the illegal drug. The study, presented today at a toxicology conference in Canada, examined statistics from four sources then identified five counties with the most meth-linked incidents per capita, such as deaths, poisonings and places where meth is made. "This method of combining different types of data -- like health statistics and the location of illicit labs -- to assess Oregon's methamphetamine problem is a new approach toward studying a significant public health concern," said OSU associate professor Dr. Daniel Sudakin, the study's author. "There are a lot of people analyzing the issue of methamphetamine, but they do it from different angles. For example, some focus on health problems, others focus on hazardous chemical releases from meth labs."

Dr. Robert Tanguay [Nanotechnology](#) (Oregon's Agricultural Progress- Summer 2008)

In recent years, nanotechnology has been making headlines in both the scientific and popular press primarily because of its size. The fascination that many scientists find with nanoparticles-particles smaller than a quarter-millionth of an inch, or 1,000 times smaller than a human hair-may be attributed to the technology's newness and unexplored power. The strength of the nanotech fervor has spread across research sectors ranging from pharmaceutical to fuel, and has resulted in the technology being identified as a mechanism for everything from faster prescription drug delivery in the human blood system to biofuel production. Yet, it is still new technology, and there are risks involved.

Dr. Dave Williams [A Tasty Remedy for Cancer?](#) (CBN News)

Dr. David Williams at the Linus Pauling Institute housed at Oregon State says I3C is making a name for itself. "Researchers in our group have been using indole-3-carbinol as a cancer prevention agent for a number of years," he said. Williams and his graduate student David Castro have been giving mother mice I3C in an attempt to prevent cancers in their offspring. The cancers they're studying come from air pollution. Williams describes the process, "Well, when anybody burns organic material you generate these polycyclic aromatic hydrocarbons which are carcinogens."



Dr. Staci Simonich was interviewed by several news organizations regarding her work in Beijing, they are listed to the right of these hi-lighted articles. She also had 156 other forms of news media that picked up her story or mentioned her work!

Dr. Staci Simonich [Pollution Levels Unclear but a Key Concern \(USA Today\)](#)

"This is going to be a little shocking," Staci Simonich says as she unscrews the aluminum housing that covers the collection filter in her air-sampling machine atop the geology building at Peking University. When the environmental chemistry professor pulls the cover off, the filter underneath is as gray as the lint filter in a much-used clothes dryer. "This is 24 hours worth of particulate matter from Beijing air," she says. "It's the darkest I've ever seen."

Dr. Staci Simonich [Beijing's blue-sky thinking gives scientists a golden opportunity to study the effects of pollution \(AP, The Guardian\)](#)

China's quest to clear up the capital's polluted skies in time for the Games' opening ceremony on Friday has been marked by a huge effort in what scientists are calling the single largest attempt ever made to improve air quality. Scores of heavily polluting factories have been shut down and some two million vehicles were pulled off roads across Beijing and a huge swath of northern China - an area roughly the size of Alaska. During the weekend the hazy skies finally gave way to swirling blue. Beijing's massive experiment with controlling pollution is offering international researchers a unique opportunity to study the effects on an urban laboratory. ...From a researcher's point of view China's attempts to ensure blue skies for the Olympics are of huge scientific interest, said Staci Simonich, an associate professor of chemistry and toxicology at Oregon State University. "It's a giant science experiment on air pollution. As far as I know it's the biggest case where a city that had air quality problems took strong measures to improve air quality. They've taken it very seriously. It's exciting from a science standpoint."

The Wall Street Journal (front page, 7/29/08)
Thomson Reuters (7/30/08)
The Associated Press (8/3/08)
Boston Public Radio's (WBUR) Here & Now program (8/5/08)
Northwest Public Radio, Oregon Public Broadcasting and Seattle's KPLU radio (Interview with Tom Banse; OPB also used my photo of you on their Web site, 8/6/08 and 8/8/08)
McClatchy newswire (8/7/08)
Nature.com (8/7/08)
USA Today's On Deadline breaking news blog, with a photo of you that USA Today shot (8/7/08)
USA Today's sports page, with a photo they shot (8/8/08)
Gazette Times front page, with a photo I shot (8/8/08)
EurekAlert in China
KUOW Puget Sound Public Radio (8/8/08)
The Oregonian (lead story on front page, 8/13/08)
KGW TV (8/13/08)
National Geographic News (8/15/08)

Recent Graduates from EMT Labs**Rick Scheri**

Curtis Lab

**Greg Sower**

Anderson Lab

**Angie Perez**

Anderson Lab

**Marthah DeLorme**

Endophyte Lab

**Susie Genualdi**

Simonich Lab

Thank You and Goodbye

Anne Miller Henderson
NPIC

New Faces in the Department



Kristina Wick
NPIC

New Students



Sarah Allan
Anderson Lab



Norman Forsberg
Anderson Lab



Britton Goodale
Anderson Lab



Kara Hitchko
NPIC



Prasad Koparapu
Tanguay and Ho Labs



Amy Palmer
Craig Lab

Weddings!!



Lisa Duong of the Tanguay Lab and Hao Truong were married on August 9, 2008.

Babies!!

William Paul Buchner was born on August 20th at 5:16 PM to Ed and Cari Buchner. He weighed 7 lbs 13 oz and was 21 inches long. He is happy and healthy and Cari is thoroughly enjoying her maternity leave!



Awards



Kate Salli

Tanguay lab- tied for First place platform "Gold and Silver Nanomaterials Reduce the Inflammatory Response to Injury in a Larval Zebrafish Model"



Niki Marshall

Kerkvliet lab- tied for First place platform "AhR Activation by TCDD Disrupts Effector T Cell Differentiation Inducing a Unique Type of Regulatory T Cell"



Kerri Stanley

Simonich and Tanguay Labs- took second place in the platform presentation. "Relative Toxicities of Endosulfan I and Endosulfan Sulfate in Developing Zebrafish"



Eddie O'Donnell

Kolluri lab- First place "Characterization of leflunomide as a ligand of the Aryl Hydrocarbon Receptor"



David Castro

Williams Lab- Second place "Critical Windows of Transplacental Carcinogenesis: Identifying efficacious approaches to chemoprevention with chlorophyllin"

Lab News

Endophyte Lab

New Endophyte Website

For the 2008 harvest season, the Endophyte Service Laboratory (ESL) led by Dr. A. Morrie Craig went live with a sample submission and general information website. Our clients can use the online system to submit hay samples for endophyte alkaloid testing, see the status of their submitted samples and print out official results and certificates for completed samples. In addition, both clinical and commercial clients can find answers to commonly asked questions about endophyte testing and general information about endophyte toxicosis and its effects on livestock. Click on <http://oregonstate.edu/endophyte-lab/> to view our latest endeavor at streamlining endophyte testing for the grass seed industry!

Kerkvliet Lab

New Publications

Nikki B. Marshall, William R. Vorachek, Linda B. Steppan, Dan V. Mourich and Nancy I. Kerkvliet. 2008. [Functional Characterization and Gene Expression Analysis of CD4+CD25+ Regulatory T Cells Generated in Mice Treated with 2,3,7,8-Tetrachlorodibenzo-p-Dioxin](#). The Journal of Immunology, 2008, 181: 2382-2391.

This article was also highlighted at the beginning of the journal "[A new type of Regulatory T cell](#)"

Kolluri Lab

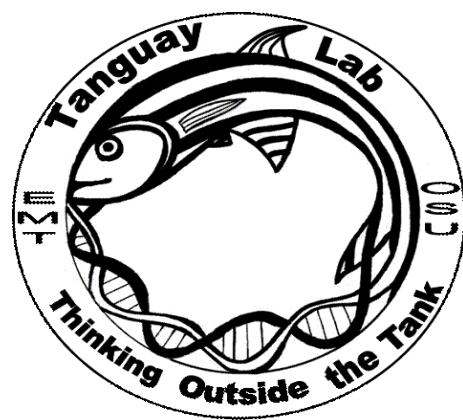
New Publications

Kolluri et al., A Short Nur77-Derived Peptide Converts Bcl-2 from a Protector to a Killer, *Cancer Cell* (2008) In Press. doi:10.1016/j.ccr.2008.09.002

NPIC News

The **National Pesticide Information Center** will be represented at this years annual American Public Health Association conference held at the San Diego Convention Center on October 25-29th. Kaci Agle, Project Coordinator and Kari Christensen, Outreach Facilitator will exhibit and disseminate information about NPIC services provided by the cooperative agreement between Oregon State University and the U.S. EPA. The conference will include over 13,000 national and international physicians, health administrators, nurses, educators, researchers, epidemiologists, environmental health professionals and related health specialists. Details for the conference are found at: <http://www.apha.org/meetings/>

Tanguay Lab



New Logo Created for the Tanguay lab by GRA Kate Saili

New Publications

S. Harper, C. Usenko, J.E. Hutchison, B.L.S. Maddux and R.L. Tanguay. *Journal of Experimental Nanoscience*. **Tentatively** - Vol. 3, No. 3, September 2008, 197–208. In vivo biodistribution and toxicity depends on nanomaterial composition, size, surface functionalisation and route of exposure

Jinga, R., Huang, C., Baia, C., Tanguay, R.L. and Donga, Q. Optimization of pre-freezing conditions for zebrafish sperm. (In Press *Aquaculture*).

Mathew, L.K., Simonich, M.T., and Tanguay, R.L. AHR-dependent misregulation of Wnt signaling disrupts tissue regeneration. (In Press *Biochem Pharmacol*)

Welsh, L., Tanguay, R.L. and Svoboda, K.R. Uncoupling nicotine mediated motoneuron axonal pathfinding errors and muscle degeneration in zebrafish, (In Press, *Toxicol Appl Pharmacol*).

Tilton, F., La Du, J.K. and Tanguay, R.L. Thiol status is a critical factor in the zebrafish developmental toxicity of the dithiocarbamate sodium metam (NaM) (In Press, *Aquatic Toxicology*).

Tilton, F. and Tanguay, R.L. Exposure to sodium metam during zebrafish somitogenesis results in early transcriptional indicators of the ensuing neuronal and muscular dysfunction. (In Press *Toxicol Sci*.)

Truong, L., Harper, S.L., and Tanguay, R.L. Evaluation of embryotoxicity using the zebrafish model" *Methods in Molecular Medicine*, Editor Jean-Charles Gautier. (In Press *Humana Press*, Totowa, NJ. pp. pending.

Williams Lab

Awards



AMERICAN COLLEGE OF TOXICOLOGY

Dave Castro received a Travel Award (\$1000) to attend the upcoming American College of



Toxicology Meeting in Tucson, AZ. For that same meeting his abstract titled "**Critical Windows of Transplacental Carcinogenesis: Identifying Efficacious Approaches to Chemoprevention with Chlorophyllin**" was awarded the Furst Award (\$2000), recognizing the best student paper to be presented at the meeting.

Finally, Dave had a paper accepted in Toxicology and Applied Toxicology: "Lymphoma and Lung Cancer in Offspring Born to Pregnant Mice Dosed with Dibenzo[a,l]pyrene: The Importance of In Utero Versus Lactational Exposure"



Lyndsey Shorey also received a Travel Award (\$1000) to attend the upcoming American College of Toxicology Meeting in Tucson, AZ. She will be presented this award at the conference which will take place on November 10th, 2008.



In August, a new manuscript was published in Environmental Health Perspectives. This paper was also selected as a highlight article for this issue:

Tilton SC, Orner GA, Benninghoff AD, Carpenter HM, Hendricks JD, Pereira CB, and Williams DE. (2008) [Genomic Profiling Reveals an Alternate Mechanism for Hepatic Tumor Promotion by Perfluorooctanoic Acid in Rainbow Trout](#). Environmental Health Perspectives 116(8):1047-55.

Highlight: Alternative Mechanism for PFOA? Trout Studies Shed Light on Liver Effects
<http://www.ehponline.org/realfiles/docs/2008/116-8/ss/html>

Abby Benninghoff

New data related to this topic were presented by Dr. Benninghoff at the 5th SETAC World Congress in Sydney, Australia: "Multiple perfluoroalkyl acids enhance aflatoxin B1-initiated hepatocarcinogenesis in rainbow trout via possible estrogen-like mechanism of action."

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<http://www.ehponline.org/docs/2008/116-8/ss.html#alte>

New Manuscripts

Henderson MC, Siddens LK, Krueger SK, Morré JT, and Williams DE (2008) Metabolism of the anti-tuberculosis drug ethionamide by mouse and human FMO1, FMO2 and FMO3 and mouse and human lung microsomes. Toxicol Appl Pharmacol, in press.

New Publications

Castro DJ, Baird WM, Pereira CB, Giovanini J, Löhr CV, Fischer KA, Yu Z, Gonzalez FJ, Krueger SK and Williams DE (2008) Fetal mouse cyp1b1 and transplacental carcinogenesis from maternal exposure to dibenzo[a,l]pyrene. Cancer Prev Res 1,128-134.
<http://cancerpreventionresearch.aacrjournals.org/cgi/content/full/1/2/128>

Castro DJ, Yu Z, Löhr CV, Pereira CB, Giovanini J, Fischer KA, Orner GA, Dashwood RH, and Williams DE (2008) Chemoprevention of dibenzo[a,l]pyrene transplacental carcinogenesis in mice born to mothers administered green tea: primary role of caffeine. Carcinogenesis 29,1581-1586.
<http://carcin.oxfordjournals.org/cgi/content/full/29/8/1581>

<http://www.ehponline.org/docs/2008/116-8/ss.html#alte>

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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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