

# ENVIRONMENTAL & MOLECULAR TOXICOLOGY

## FALL NEWSLETTER 2009

December, 2009

ISSUE # 19

### EMT In The News...

## OSU Student Met Nobel Laureates in Germany

Original Article By Tiffany Woods (OSU Extension News Services)

Ed O'Donnell, a UHC alumnus who received his Honors Baccalaureate in Biochemistry/Biophysics in 2006 and a current OSU graduate student was one of 580 young scientists from 67 countries chosen to attend the 59<sup>th</sup> annual Nobel Laureate meeting in Lindau from June 28 to July 3. More than 20,000 people applied to attend it, said Christian Rapp, the press officer for the event. The panel that reviewed the finalists' applications deemed those selected to be some of the most talented young researchers in the world.

O'Donnell, 25, got to rub elbows with 23 Nobel Prize recipients, listen to their lectures, and discuss topics of current interest with them during meals and social activities. Most of the laureates are in the field of chemistry, the focus of this year's gathering.

O'Donnell, who earned a 3.97 GPA while getting an Honors Baccalaureate degree in biochemistry and biophysics from OSU, hopes to become a professor and continue researching cancer. He is interested in the disease in part because his grandmother died



*Photo by: Tiffany Woods*

of breast cancer. In his research he is studying how nuclear receptors control cell growth and is trying to develop drugs that will control this growth.

O'Donnell works in the lab of OSU cancer biologist Siva Kolluri, who nominated him for the meeting. "Eddie is one of the best you could ever find as a grad student," Kolluri said. "He's very talented, methodical and determined. He puts 100 percent into what he does. He's generated some pretty exciting results in the lab."

Kolluri remembers one Sunday last year when O'Donnell was working in the lab while Kolluri was writing a paper in his office. "He ran down the hall, banged on my door and held up a paper and was breathing so hard and said, 'Here it is. Can you believe it?'" Kolluri recalled.

O'Donnell was holding up a printout of an X-ray that showed an unexpected protein complex. Kolluri said it was an important discovery because it might lead to the development of a new cancer-fighting drug. "Identifying this protein complex has helped to shape my current research and has led to a number of exciting discoveries that Dr. Kolluri and I hope to publish," O'Donnell said.





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## NIEHS Center Director Honored by Oregon State

By Eddy Ball



*Williams, above, is shown in a photo from a magazine story about his work with cruciferous vegetables and inhibition of transplacental cancer in pregnant mice caused by exposures to PAHs. (Photo courtesy of David Williams and OSU)*



On September 23 in Corvallis, Ore., Oregon State University (OSU) recognized the achievements of NIEHS grantee David Williams, Ph.D., with its Alumni Association Distinguished Professor Award — the highest award the university presents to members of its faculty. Williams joined more than two dozen leading faculty and staff members honored in 21 award categories as part of University Day, the annual kick-off of the new school year.

[Williams](#) is a professor in the Department of Environmental and Molecular Toxicology at the OSU College of Agricultural Sciences and director of the Superfund Research Program (SRP) at OSU. He is also an investigator in the OSU Linus Pauling Institute and Marine and Freshwater Biomedical Sciences Center. Williams is a principal investigator on two NIEHS grants — [PAHs: New Technologies and Emerging Health Risks](#) and [Ultra-Low Dose Carcinogen Testing With the Trout Model](#). He co-authored an NIEHS-funded [study](#) on colon cancer and chlorophyllin that was selected in September as an Extramural Paper of Month.

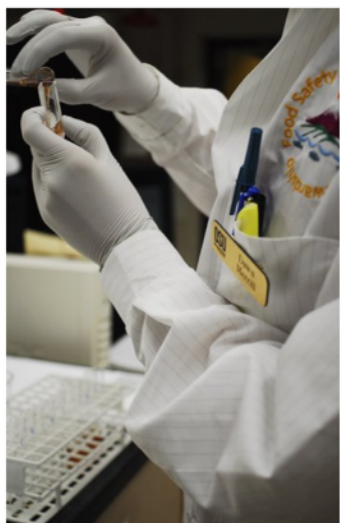
"I was very surprised and honored by this award," Williams said of the announcement. "It recognizes a team effort over my 22 years at OSU conducting research funded in large part by NIEHS through the Centers program, an associated program project, and now our newly awarded SRP grant."

Commenting on Williams' award, NIEHS SRP Director Bill Suk, Ph.D., described Williams as "a leader in the field of environmental carcinogenesis, who has brought together a multi-disciplinary team of outstanding scientists to explore new mechanisms of Polycyclic Aromatic Hydrocarbons (PAHs) and their impact on human health. Suk characterized Williams' group as "an innovative and exciting program" engaged in cutting-edge environmental research. "David is certainly worthy of this award, and we are proud of his accomplishments."

The OSU Alumni Association Distinguished Professor Award is given to the person who demonstrates outstanding professional achievement through teaching and scholarship, service to the university and the community, and professional leadership, nationally and internationally. The recipient receives a plaque and \$3,000 from the OSU Alumni Association. Nominees for this award may also be considered for nomination for the [CASE U.S. Professor of the Year Award](#), which is presented by the Carnegie Foundation.

The awards were formally presented at an evening banquet, and the recipients also were also honored during a presentation to the campus at LaSells Stewart Center as part of University Day events.





Congratulations to Dawn Merrill for completing a B.S degree in Bioresource Research. Her thesis was entitled: "Development of a colorimetric test kit to determine enzymatically produced pyruvic acid in sweet onions". She has been part of Anderson lab for two years. (Photo by Margaret Corvi)

**Sarah Allan** won 1<sup>st</sup> runner up in the poster completion at the Superfund Research Meeting in New York. Her poster was titled: "Site-specific toxic effects in zebrafish embryos exposed to passive sampling device extracts linked to differences in environmental contaminant mixtures" and received the second highest score from the judges in the non-biomedical category at the Superfund Research Project.



**CONGRATULATIONS  
SARAH!**



# NEWS FROM THE CRAIG LAB

## Publications

- Rattray RM, Perumbakkam S, Smith F, and Craig AM. **Microbiomic Comparison of the Intestine of the Earthworm *Eisenia fetida* Fed Ergovaline.** *Current Microbiology*. Epub ahead of print.

Available on SpringerLink

<http://www.springerlink.com/openurl.asp?genre=article&id=doi:10.1007/s00284-009-9530-8> and will be fully accessible to libraries, institutions and their patrons that have purchased a SpringerLink license.



# NEWS FROM NPIC

NPIC delivered the following oral presentations at conferences this fall:

Stone D and Sudakin D (2009). Organophosphate Incidents Reported to the National Pesticide Information Center: the Role of Regulation. North American Congress of Clinical Toxicology, San Antonio, TX, September 24, 2009.

<http://informahealthcare.com/doi/full/10.1080/15563650903076924>  
(scroll to #69)

Agle K, Ross S and Stone D (2009). National Pesticide Information Center's web-based portal for veterinarians: A new tool to report pesticide incidents among animals. American Public Health Association, Philadelphia, PA, November 9, 2009.

<http://apha.confex.com/apha/137am/webprogram/Paper197620.html>





# NEWS FROM THE TANGUAY LAB

## CONGRATULATIONS JILL & SUMITRA!

### Pacific Northwest Association of Toxicologists (PANWAT) Meeting

At the annual regional meeting of the Society of Toxicology (Seattle, WA) in September, two Tanguay Laboratory Members were recipients of research awards. **Jill Franzosa** received the First Place Platform Presentation Award and **Sumitra Sengupta** was awarded the First Place Poster Presentation Award.

**Dr. Tanguay** was also the speaker at The Nanotoxicology Speciality Section (NTSS) of the Society of Toxicology and EPA Webinar held on October 21, 2009. Dr. Tanguay presented a power point presentation entitled "A Rapid In Vivo System for Defining Biological Responses to Nanomaterials."

## Manuscripts & Publications...

- [1] L. Welsh, R.L. Tanguay, and K.R. Svoboda, Uncoupling nicotine mediated motoneuron axonal pathfinding errors and muscle degeneration in zebrafish. *Toxicol Appl Pharmacol* 237 (2009) 29-40.
- [2] M.L. Kent, S.W. Feist, C. Harper, S. Hoogstraten-Miller, J.M. Law, J.M. Sanchez-Morgado, R.L. Tanguay, G.E. Sanders, J.M. Spitsbergen, and C.M. Whipps, Recommendations for control of pathogens and infectious diseases in fish research facilities. *Comp Biochem Physiol C Toxicol Pharmacol* 149 (2009) 240-8.
- [3] L.K. Mathew, M.T. Simonich, and R.L. Tanguay, AHR-dependent misregulation of Wnt signaling disrupts tissue regeneration. *Biochem Pharmacol* 77 (2009) 498-507.
- [4] W.H. Bisson, D.C. Koch, E.F. O'Donnell, S.M. Khalil, N.I. Kerkvliet, R.L. Tanguay, R. Abagyan, and S.K. Kolluri, Modeling of the aryl hydrocarbon receptor (AhR) ligand binding domain and its utility in virtual ligand screening to predict new AhR ligands. *J Med Chem* 52 (2009) 5635-41.
- [5] J. Li, X. Shang, Z. Zhao, R.L. Tanguay, Q. Dong, and C. Huang, Polycyclic aromatic hydrocarbons in water, sediment, soil, and plants of the Aojiang River waterway in Wenzhou, China. *J Hazard Mater* 173 75-81.
- [6] L.K. Mathew, S. Sengupta, J.A. Franzosa, J. Perry, J. La Du, E.A. Andreasen, and R.L. Tanguay, Comparative expression profiling reveals an essential role for raldh2 in epimorphic regeneration. *J Biol Chem* 284 (2009) 33642-53.
- [7] K.A. Stanley, L.R. Curtis, S.L. Simonich, and R.L. Tanguay, Endosulfan I and endosulfan sulfate disrupts zebrafish embryonic development. *Aquat Toxicol* 95 (2009) 355-61.
- [8] T.L. Tal, J.A. Franzosa, and R.L. Tanguay, [Molecular Signaling Networks That Choreograph Epimorphic Fin Regeneration in Zebrafish - A Mini-Review](#). *Gerontology* (2009) Nov 18. [Epub ahead of print] PubMed PMID: 19923791.
- [9] T.L. Tal, S. Simmons, R. Silbojoris, L. Dailey, S.H. Cho, R. Ramabhadran, W. Linak, W. Reed, P.A. Bromberg, and J.M. Samet, [Differential transcriptional regulation of IL-8 expression by human airway epithelial cells exposed to diesel exhaust particles](#). *Toxicol Appl Pharmacol*. 2009 Nov 13. [Epub ahead of print] PubMed PMID: 19914270





## NEWS FROM TEAM TOX Adopt-a-Family

TEAM Tox adopted a four-person family through the Student Parent Advisory Board Joy Drive in late November. Thanks to the generosity of the department, TEAM Tox raised \$170 in donations, in addition to individual donations of toys and gifts for the family. The donations were used to purchase clothing, toys, books and school supplies for the family.

On Wednesday, December 2<sup>nd</sup>, we held a 'wrapping party' to wrap all the presents prior to delivery.

This was a great opportunity to give back to the OSU community, and TEAM Tox would like to give a big "Thank you!" to everyone who helped make this a success.



*Adopt-a-Family wrap party*

<b>MOM</b>	<b>DAD</b>
<ul style="list-style-type: none"> <li>-Candles (votive candles, pillar candles, Yankee candles)</li> <li>-Candle holders (votive and pillar holders)</li> <li>-Books (2)</li> <li>-Purple scarf</li> <li>-Scarf, hat and mittens matching set</li> <li>-Scrapbook paper sets (2)</li> </ul>	<ul style="list-style-type: none"> <li>-Travel mug</li> <li>-Fishing pliers</li> <li>-Fishing gloves</li> <li>-Fishing lures</li> <li>-Soccer socks</li> <li>-Pens (2 packs)</li> <li>-Highlighters</li> <li>-Paper (3 packs)</li> </ul>
<b>2.5 Boy</b>	<b>Baby boy</b>
<ul style="list-style-type: none"> <li>-Stickers</li> <li>-Hat with matching mittens</li> <li>-Pants</li> <li>-2 shirts</li> <li>-Fleece pullover</li> <li>-Matchbox trucks</li> <li>-Thomas the Train magnet</li> </ul>	<ul style="list-style-type: none"> <li>-Bibs (3-pack)</li> <li>-Onesies (5-pack)</li> <li>-Receiving blankets (4)</li> <li>-Baby toys</li> <li>-'Tap-a-Tune' Piano</li> </ul>



*Sarah Haluzak, Nikki Marshall,  
Diana Rohlman, Prasad Perumbakkam*





## ***NEW EMT GRANT AWARDS!***

<b><i>PI NAME</i></b>	<b><i>TITLE OF PROJECT</i></b>	<b><i>AGENCY</i></b>	<b><i>AWARDED</i></b>
<b><i>STACI SIMONICH</i></b>	EXTENT OF ENDOCRINE DISRUPTION IN TROUT OF WESTERN NATIONAL PARKS	USDI-NPS	\$21,150
<b><i>STACEY HARPER</i></b>	NO TITLE GIVEN	BOOZ ALLEN HAMILTON	\$25,666
<b><i>LARRY CURTIS</i></b>	2009-11 GREAT BASIN ENVIRONMENTAL PROGRAM NV	UNIVERSITY OF NEVADA, RENO	\$25,000
<b><i>DAN SUDAKIN, JEFFREY JENKINS</i></b>	OSU CONSULTATION ROLE OF THE OREGON PESTICIDE ANALYTICAL & RESPONSE CENTER (PARC)	ODA	\$50,000
<b><i>ROBERT TANGUAY</i></b>	RAPID THROUGHOUT WHOLE ANIMAL PLATFORM TO DEFINE NANOPARTICLE/BIOLOGICAL INTERACTIONS: A PATH TO SAFER NANOMATERIAL	UNIVERSITY OF OREGON	\$185,000
<b><i>STACEY HARPER</i></b>	COMPUTATIONAL AND ANALYTICAL TOOLS TO SUPPORT THE DEVELOPMENT OF ENVIRONMENTALLY BENIGN NANOMATERIALS	UNIVERSITY OF OREGON	\$105,000
<b><i>DAVE WILLIAMS, SHARON KRUEGER</i></b>	PAHS: NEW TECHNOLOGIES & EMERGING HEALTH RISKS	PHS	\$235,584
<b><i>NANCY KERKVIET, SIVA KOLLURI</i></b>	THE AHR AS A NOVEL PATHWAY FOR THE INDUCTION OF REGULATORY T-CELLS	PHS	\$911,624
<b><i>WILLIAM BAIRD, DAVID WILLIAMS</i></b>	INHIBITION OF CANCER INDUCTION BY RED RASPBERRY EXTRACT & A COMPONENT CYANADIN-3-O-GLUCOSIDE	USDA AG RESEARCH SERVICE	\$35,000



## *American Women in Science Outreach Opportunity – “Discovering the Scientist Within”*

On Saturday, November 7th, nearly 100 middle-school age girls came to Oregon State University to interact with scientists in different disciplines. The young women were given the opportunity to interact with scientists in the fields of pharmacy, engineering, physics, food science, computer science, veterinary science, and toxicology. Kate Sali, Diana Rohlman, Nikki Marshall, Wendy Hillwalker and Britton Goodale participated in this outreach opportunity, representing EMT. For the toxicology program, the girls were given one of three unknown compounds. Using yeast as the model system, they developed dose response curves for their compound by measuring the amount of carbon dioxide produced by the yeast – the less CO<sub>2</sub>, the more toxic the compound. The dose response curves were then compared to previously generated curves to identify the compound.





# CONGRATULATIONS ARE IN ORDER...

DECEMBER, 2009

ISSUE # 19

CONGRATULATIONS GARY PERDEW!



*Congratulations to Gary Perdew, the director of the Center for Molecular Toxicology and Carcinogenesis at Penn State University since 1999. Gary came and gave a seminar here at OSU, this summer, on August 17<sup>th</sup>, entitled, "Differing Mechanisms of Ah Receptor Mediated Regulation of Gene Expression: Evidence for Selective Activation of the Ah Receptor". He was one of four alumni recipients honored for their professional achievements by Oregon State University's College of Agricultural Sciences. [Click for more on this award ceremony.](#)*



## CONGRATULATIONS KACI & CHRISTOPHER!!

Kaci Agle and Christopher Buhl were married on September 12, 2009 at Avery Park, here in Corvallis, Oregon.

Kaci Buhl is the Project Coordinator for NPIC; Chris Buhl is a physics student at OSU.







# Welcome Elizabeth (Ellie) Grace Cleveland



**Date: December 5, 2009**

Weight: 9 pounds, 7 ounces

Length: 21 inches

Congratulations Cleveland Family!



# Pictures from the EMT Fall Picnic Kickball Game!





# MORE PHOTOS...





# Holiday Potluck

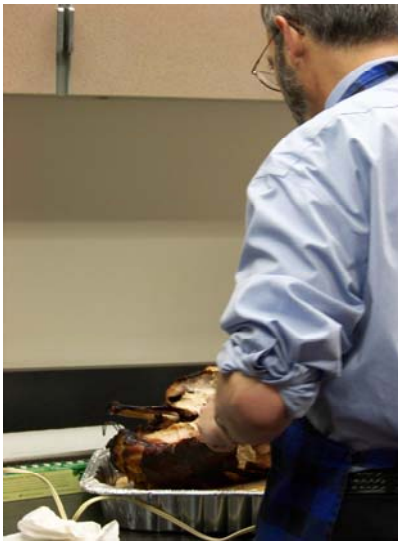
*December 2009*

Our Annual Holiday Potluck was another success. We had a great turn out and lots of yummy food! We also had an "Over-the-top-fabulous-festive-sweater Contest". Congratulations to Jill & Dawn, our winners!

Lots of Food!



Dr. Marcus Carving the Turkey!



Festive Holiday Sweater Contest





*New to the Department...*

**New  
to the  
Labs**



**Jason Carriere**  
Research Asst.  
Harper Lab



**Shejun Chen**  
Visiting Scholar  
Simonich Lab



**Nick Kesinger**  
PostDoc Scholar  
Field Lab



**Ann Ketter**  
Research Asst.  
NPIC/Stone

WELCOME

**New  
to the  
Office**



**Joanna Loving**  
Grants & Contracts  
Technician



**Mary Mucia**  
Grad Program  
Administrator

*Familiar Faces... New Positions...*



**William Bisson**  
Research Asst.  
Kolluri Lab



**Margaret Corvi**  
Research Asst.  
SARL/Tanguay

WELCOME  
BACK!



# Farewell & Goodluck!



“Abby Benninghoff will be leaving OSU in January 2010 to begin her new faculty position as an Assistant Professor at Utah State University



in the Animal, Dairy and Veterinary Sciences department. Her new lab will focus on the influence of environmental factors on epigenetic mechanisms of gene regulation in animals and humans, and how such mechanisms determine health and disease. Dr. Benninghoff wishes to give her sincere thanks to all in EMT who provided support and guidance during her training as a post-doctoral fellow.”

*Thank You*

## Farewell to our Visitors...

**Steven Sylvester** is an assistant professor with a PhD in Biochemistry at Washington State University –Vancouver. Steve has been working in the Simonich lab since August and departed from EMT in December. While on sabbatical in the Simonich lab, Steve learned about analytical, environmental chemistry and contributed to the lab by developing a user manual for the lab’s JEOL magnetic sector high resolution mass spectrometer and sharing his research experience. Thanks Steve! To learn more about Steve’s research go to: <http://www.vancouver.wsu.edu/programs/sci/sylvester.htm>



The Tanguay lab sadly says goodbye to **Jiangfei Chen**, a visiting graduate student from Wenzhou Medical College, Wenzhou China. She completed neurodevelopmental toxicology research training in the Tanguay laboratory for the past 4 months. The focus of her studies was on the developmental and neurobehavioral impacts of early life stage exposure to Trimethyltin Chloride (TMT), a relevant environmental contaminant. Fei learned many new techniques and benefited by the dynamic lab environment. The Tanguay group also learned much from Fei and the collaboration will continue after she returns home. Good luck Fei!



## Winter Term Degree Completions



Kate Cleveland  
Master’s Degree



Nikki Marshall  
PhD



Shannon Wenig  
Master’s Degree

*Congratulations!*