Our EMT programs offer a unique and exciting synthesis of the fields of Biology (Molecular Toxicology) and Chemistry (Environmental Chemistry), which positions EMT to focus on creating, disseminating and applying new biomedical and biophysical knowledge to enhance the treatment and prevention of human disease, and to ensure the protection of the environment and public health. This integrated approach, combining both the biological and physical sciences, provides exciting training and research opportunities for graduate students and supports our state-of- the-art and internationally competitive research programs. EMT offers a highly collegial and exceptionally collaborative, research and training environment dedicated to the success and advancement of all EMT students, faculty and staff.

The current EMT department has a long and illustrious history, having evolved extensively over the years since 1883 when our very first faculty member was hired into the original Dept. Of Agricultural Chemistry here at OSU. Over the past 125 years, our department changed and adapted to the ever evolving fields of agricultural sciences and toxicology, and in 1998 was reorganized and renamed Environmental and Molecular Toxicology to more clearly communicate the breadth, depth and research and training emphases of our current programs. Our nineteen faculty members have diverse research programs collectively aimed at understanding environmental hazards and their impacts on biological systems in order to protect human health and the environment while complimenting and supporting our Toxicology training programs offering Ph.D. and M.Sc. degrees in Toxicology and an undergraduate minor.

UPCOMING Events

20th PNW-SETAC Annual Meeting

April 14-16, 2011

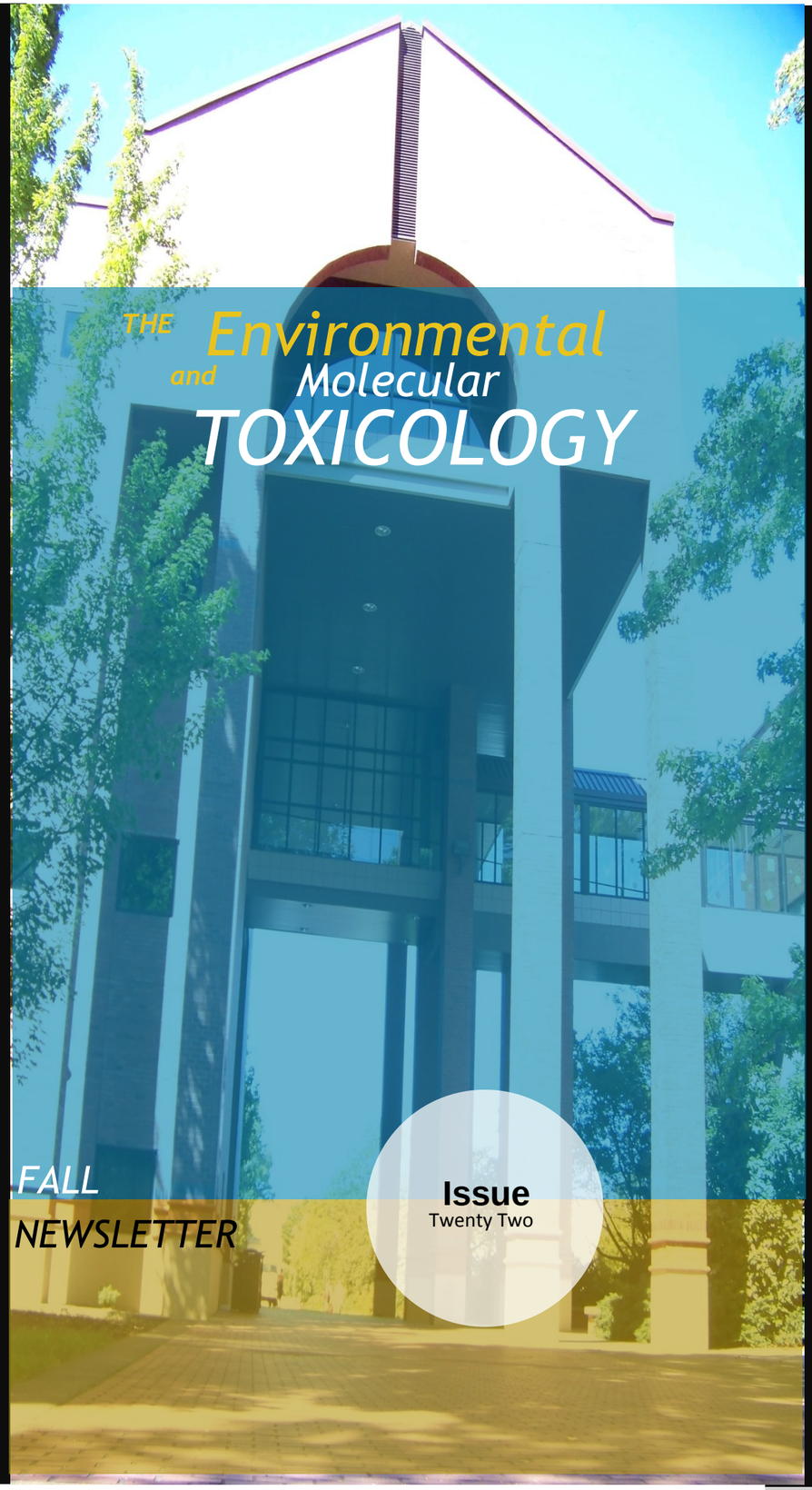
Vancouver Hilton | Vancouver, Wash.

Early bird conference registration through RegOnline will <u>begin February 1st</u> along with hotel registration online directly with the Vancouver Hilton. Early bird registration ends **<u>March 15th</u>** and **<u>April 1st</u>** will be the last day to register for a hotel room.

The Meeting Program is still in the preliminary stages, however Thursday afternoon (April 14th), there will be a Special Session on the Science and Policy of Salmon and Pesticides in the Northwest, that is sure to be a lively topic, as well as the usual Friday and Saturday morning platform and poster sessions.

Saturday afternoon (April 16th) we will be offering an Earth Day tree-planting activity, and we encourage everyone to "stick" around and enjoy the weekend in the Portland/Vancouver area, especially since the low hotel conference rates will be available for 3 days before and after the meeting.

Click here for more information and details.



EMT in the News

Applying Superfund expertise to the Gulf oil spill

Kim Anderson, Ph.D., of the NIEHS-funded Superfund Research Program (SRP) at Oregon State University (OSU) is tracking the long-term chemical impact of the Deepwater Horizon oil spill in the Gulf of Mexico.

Bed bug return no surprise to scientist

Oregon State University entomologist Paul Jepson is not surprised by the resurgence of bed bug cases and their uncomfortably close ties with humans.

Researchers find carcinogens in Gulf

Scientists testing the waters near Louisiana have found an alarmingly high increase in carcinogenic substances, according to a report from Oregon State University.

Should parents worry about BPA?

Tanguay has been studying how BPA affects zebrafish for three years. His research revealed that BPA has what he calls a "subtle impact" on the central nervous system of fish.

$1 million microscope for Richland scientists

Joe Fisher, a doctoral student at OSU working under the direction of Robert Tanguay, makes the drive to the Tri-Cities to put zebrafish in a culture-dish sample under the new multi-photon confocal microscope…

Integrated Pest Management can increase crop production

Paul Jepson heads the Integrated Plant Protection Center at Oregon State University. He says farmers who have attended field schools in Asia and Africa have increased the use of IPM. And he says this has cut pesticide use.

Researchers say level of harmful oil compounds jumped in Gulf waters

Levels of some cancer-causing oil compounds rose significantly in the waters off the Louisiana coast during the BP spill, according to Oregon State University researchers.

New Approaches Needed to Gauge Safety of Nanotech-Based Pesticides, Researchers Urge

In a study published October 4 in the *International Journal of Occupational and Environmental Health*, scientists from Oregon State University and the European Union outline six regulatory and educational issues that should be considered whenever nanoparticles are going to be used in pesticides.

Toxicology at OSU celebrates 50 years

Even though the Department of Environmental and Molecular Toxicology has only officially been in existence for less than two decades, toxicology has been the primary scientific focus of many researchers, instructors and students on campus for 50 years.

NPIC Lab News

NPIC Lab Highlights

1) Kristina Wick, one of the NPIC Faculty Research Assistants was awarded a scholarship by the Environmental Health Section of the American Public Health Association (APHA), which supported her travel to attend its annual meeting in Denver. At the conference, Kristina presented a poster with Dave Stone entitled, "Pediatric Exposure to Biological/Repellent Pesticides Reported to the National Pesticide Information Center." Way to go Kristina!

2) Eva Arndt, one of the NPIC student interns, was awarded with sponsorship to attend the annual meeting of the Society of Wetland Scientists, Pacific Northwest Chapter, in Salt Lake City this summer. Ms. Arndt is pursuing a degree in BioResource Research with emphasis in toxicology. Congratulations Eva!

3) Other abstracts presented at the American Public Health Association meeting (Denver, November 6-10, 2010):

a) Tribal-university partnership to address tribal exposures to polycyclic aromatic hydrocarbons (PAHs) and improve community health - Dave Stone, PhD (Oral)

b) Identifying priority persistent pollutants in urban discharge - Dave Stone, PhD (Poster)

c) Recurring and emerging trends in pesticide exposure incidents among pets reported to the National Pesticide Information Center - Kaci Buhl, MS, Dave Stone, PhD (Platform)

d) Bed bug-related pesticide incidents reported to the National Pesticide Information Center (NPIC) from 2000-2010 - Kaci Buhl, MS, Laura Power, MS, Dave Stone, PhD (Poster)

NPIC Lab Publications

Gervais, J; Luukinen, B; Buhl, K; Stone, D. Zinc Phosphide/Phosphine Technical Fact Sheet; National Pesticide Information Center, Oregon State University Extension Services. http://npic.orst.edu/factsheets/znptech.pdf

Gervais, J; Luukinen, B.; Buhl, K; Stone, D. Glyphosate Technical Fact Sheet; National Pesticide Information Center, Oregon State University Extension Services. http://npic.orst.edu/factsheets/glyphotech.pdf

Stone Lab News & Publications

Dave Stone was awarded the Provost's Outreach & Engagement Award for Excellence – Diversity Award. The award includes a glass sculpture and a significant financial award for programmatic activities. Congratulations Dave!

New publications:

Stone D, Harper B, Lynch I, Dawson K, Harper S (2010). Exposure assessment: recommendations for nanotechnology-based pesticides. *International Journal of Occupational and Environmental Health* 16:467-474.

Hope BK, Stone D, Fuji T, Gensemer B, Jenkins J (2010). Meeting the challenge of identifying persistent pollutants at the state level. *Integrated Environmental Assessment Management* ***6,*** 735-748.

Skalski T, Stone D, Kramarz P, Laskowski R (2010). Ground beetle community responses to heavy metal contamination. *Baltic Journal of Coleopterology* **10**, 1-12.

Tanguay Lab News

Tanguay Lab Highlights

Jill Franzosa was recently awarded a fellowship grant:

- National Institute of Health (NIH) Ruth L. Kirschstein NRSA Fellow (F31). September 2010-present.

She was also awarded the following awards:

- Elsevier Best Platform Presentation in Toxicogenomics. November 2010 at the Society of Environmental Toxicology and Chemistry Annual National Meeting in Portland, Ore.
- Graduate Student Travel Award. November 2010. Society of Environmental Toxicology and Chemistry. Annual National Meeting; Portland, Ore.
- 1st Place in Poster Presentation Award. October 2010. Society of Toxicology, Pacific Northwest Association of Toxicologist conference.
- 2nd Place in Poster Presentation Award. September 2010. Fifth Aquatic Animal Model for Human Disease Conference, Corvallis, Ore.

Congratulations, Jill!

Welcome to the Tanguay Lab!

Anna Mattson
Siba Das
Kitae Kim

Congratulations, Robert on your new grant!

Total Direct Cost $1,369,852. *In vivo systems level analysis of gene-environment interactions.* The goal of this proposal is to build a high throughput zebrafish-based screening facility that can be exploited to identify the mechanism by which chemicals perturb early developmental events leading to short and long-term adverse health effects.

Other Tanguay Lab Awards and Achievements

Galen Miller: 1st place winner for poster presentation at 5th Aquatic Animal Models for Human Disease Conference. September 2010.

Britton Goodale: 3rd place winner for poster presentation at 5th Aquatic Animal Models for Human Disease Conference. September 2010.

Lisa Truong: 3rd place platform presentation at the 2010 Pacific Northwest Association of Toxicologists Conference

Tamara Tal: 2nd Place in the 2010 Pacific Northwest Association of Toxicologists Conference Poster Award

ASE Summer Intern **Anastasyia Berst** (which Tamara mentored) placed 3rd in the 2010 Pacific Northwest Association of Toxicologists Conference Poster Award

EMT in the Community

Outreach with Sweet Home Junior High

On Monday, November 22, students from Sweet Home Junior High came to campus and participated in a toxicology and chemistry activity led by Diana Rohlman, Will Backe, Steven O'Connell, Kate Saili and Lisa Truong. The students were given a scenario in which a factory producing metam sodium contaminated river water with metam sodium. Scientists collected samples at the spill site, and three additional sites, and used mass spectrometry to analyze the river samples. Using the chromatograms of metam sodium standards, and the chromatograms of the river samples, students were able to calculate the levels of metam sodium in the river at the different sites. This outreach opportunity was in coordination with the Office of Precollege Programs, in association with Dana Beck.

EMT Joy Drive

For the second year, TEAM Tox, EMT Partners and the EMT department partnered with Childcare and Family Resources to participate in the Joy Drive. The purpose of the Joy Drive is to help needy OSU families during the holiday season. We sponsored a mother, father, and a 2 year old little boy. Thanks to the generosity of our department, we were able to purchase gifts for all members of the family. Overall, the Joy Drive was able to provide gifts for 52 OSU students with children. For more information about the Joy Drive, please see the linked article, provided below. Once again, we would like to extend a sincere "Thank you" to all those who participated and helped make our second Joy Drive such a success. To read about the entire OSU Joy Drive program, click here.

Corvallis Halloween 5K Road Race

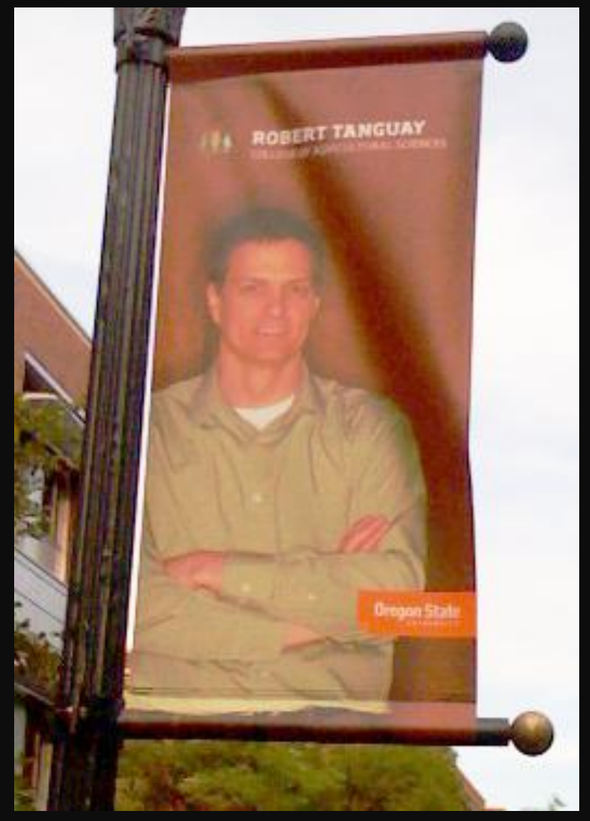
Sean Ross, of the NPIC lab, ran in the 5K Road Race on Halloween day dressed as Charlie Brown. Over 230 participants ran in this race put on by Strands, Inc.

He came in 3rd place in his division (age/gender category).

Congratulations, Sean!

Have you seen this person?

You may have noticed EMT has received some recognition this year on the new OSU banners that are up around campus. Robert's banner can be seen in front of Kelly Engineering Building on SW Campus Way.



EMT Awards and Achievements

Congratulations Dave Stone

Dave Stone received the Provost's Outreach and Engagement Award for Excellence – Diversity Award, presented to him at the annual Outreach and Engagement conference luncheon Nov. 19. The award consists of a glass sculpture and a significant financial award that Dave can utilize for programmatic activities.

Congratulations Robert Tanguay and trainees

Robert was the recipient of a highly competitive award that is a three-year, $1,856,760 NIH Directors Opportunity RC4 Award. "In vivo systems level analysis of gene-environment interactions."

Robert has also recently been awarded a new two-year NIH R21 award from NIEHS: "The role of ERR-gamma in the developmental toxicity of bisphenol A."

Two of Robert's trainees have also been awarded predoctoral fellowship awards from NIH and EPA:

Lisa Truong: NRSA predoctoral "Assessing the Interaction between Nanomaterials and Biological Systems in vivo."

Kate Saili: EPA STAR predoctoral "Developmental neurobehavioral toxicity of bisphenol A: Definind the role of ERRgamma."

Congratulations Tamara Tal

Tamara was selected as a 2011 Science Communication Fellow. These highly competitive Fellowships are awarded by Environmental Health Sciences. Fellowship training provides the skills with which to communicate environmental health research to the media, policy makers and the public.

Congratulations John Hays

John Hays was recently awarded a $100,000 research grant from Cibus to develop a method to reversibly knock down DNA mismatch repair (MMR) and then restore it after the mutagenesis is accomplished.

Congratulations Kim Anderson

Kim Anderson was awarded a new NIEHS-funded grant. Her application "R21 BRIDGES for Evaluation of Health Outcomes, Repercussions and Impacts in Zones of Oil-spills in Nature" was funded $400,000 for the next two years.

EMT Founders Day Reception

In celebration of the 50th anniversary of the Society of Toxicology (1961-2011), the EMT department wanted to recognize the contributions of those faculty and staff who contributed to the establishment and initial development of the Toxicology Program at Oregon State University by hosting a reception in their honor.

More EMT Events and News

This past September, we had another successful EMT fall picnic. This year's picnic was held at the Martin Luther King, Jr. Park in Corvallis. We have continued the tradition of a faculty vs. student kickball game and tons of food. If you missed our picnic last September, remember, we have one every fall! Bring your family (and furry friends) and come enjoy food and fun!

Congratulations, Dr. Sudakin and family!

On September 8, 2010, Taiga and Dan Sudakin welcomed the arrival of their twin boys, Isaac Vincent Sudakin (7 pounds, 7 ounces) and Ethan Louis Sudakin (6 pounds, 10 ounces). Dan is holding Isaac, Taiga is holding Ethan.

Happy Holidays from EMT!

We finished off this year with a bang! Another successful Holiday Potluck in the books. Thank you to all of you who contributed to helping prepare for the potluck, whether in service or bringing a dish, and those who helped during, and after the potluck as well. We are lucky to have one of the most giving, and generous departments at Oregon State. A special thanks to Dr. Marcus who prepared the turkey, Glenn Wilson for his continued above-and-beyond help, and Rod Dashwood for sharing his birthday (and cake!) with the department.

Harper Lab News

Harper Lab Highlights

Dr. Harper presented a public seminar entitled "Nanotechnology: Huge Science at a Really Small Scale" for the Friends of Yachats Commons Foundation, Yachats, OR on September 11th. Her presentation is available at http://www.youtube.com/user/YachatsAcademy?feature=mhsn. It is in 6 parts and a little over an hour total watching time.

Dr. Harper presented a talk entitled "Integrative strategies to forecast the environmental fate and impact of nanomaterials" for the Women in SETAC luncheon at this year's annual meeting.

Dr. Harper gave two presentations at the Nanoinformatics 2010, a Collaborative Roadmapping Workshop in DC, November 3-5. One presentation was entitled "nano-TAB, a standardized specification to enable data sharing in nanotechnology" and the other was "Nanomaterial-Biological Interactions Knowledgebase".

Dr. Harper interviewed on NPR (www.jeffersonexchange.org) to discuss the environmental health and safety of nanotechnologies as well as the concerns and recommendations for future nanotechnology-based pesticides.

Harper Lab Publications

Stone, D.L., B.J. Harper, I. Lynch, K. Dawson and S.L. Harper. 2010. Exposure assessment: Recommendations for nanotechnology-based pesticides. International Journal of Occupational and Environmental Health 16: 467-474.

Usenko, C.Y., S.L. Harper, M.T. Simonich and R.L. Tanguay. 2010. Fullerene C_{60} Toxicology. *In* Handbook of Nanophysics: Nanomedicine and Nanorobotics. Editor Klaus D. Sattler. (pp. 17.1-17.8) Taylor and Francis, London, England.