EMT IN THE NEWS

DR. RODERICK DASHWOOD – POPEYE WAS RIGHT *Researchers at Oregon State University say eating green vegetables might help prevent certain cases of cancer. Follow the link to see a video.*

DR. GEORGE BAILEY – TROUT TRUMP RATS FOR CANCER RESEARCH (FIELD & STREAM) & OSU RESEARCH FINDS TROUT ARE BETTER MODELS FOR CANCER RESEARCH THAN MICE (OREGONIAN)

A rainbow trout can inspire and inform. George Bailey knows all this and has plenty of fish stories. As a professor, he spent three decades studying disease with trout in his aquatic laboratory at Oregon State University.

DR. JENNIFER FIELD – TESTING THE WATERS FOR ILLEGAL DRUGS (KPLU)

If you flushed a toilet in Oregon on March fourth last year, chances are you took part in a drug test. Don't worry. The urinalysis was not traceable to individuals says Oregon State University chemist Jennifer Field. (See also KEZI and Science Daily)

DR. STACI SIMONICH – BEIJING OLYMPICS' AIR POLLUTION: WORSE THAN L.A. (LIVESCIENCE)

Air pollution at the Beijing Olympics last summer was bad on several counts, and the Chinese hid the extent of it, new research suggests. Particulate pollution levels were about two to four times higher than that of Los Angeles on an average day, according to research in the journal Environmental Science and Technology. And these air pollution levels constantly exceeded those considered excessive by the World Health Organization, and were about 30 percent higher than has been reported by Chinese environmental experts, said researcher Staci Simonich, an Oregon State University associate professor of environmental and molecular toxicology. (See also Daily Telegraph)

ATTENTION STUDENTS

THERE ARE STILL SPACES AVAILABLE IN THE LAB CLASS
TOX611 "TESTING FOR GENOTOXICITY",
WHICH RUNS SEPT 14-25TH.

COURSE GEARED TOWARD TOXICOLOGY, BIOCHEMISTRY, BIOLOGY, FOOD SCIENCE, NUTRITION, AND PHARMACY STUDENTS.

Introduces principles and methods of several key assays used to screen for DNA damage/mutation. The tests include the following:

(i) Salmonella mutagenicity assay ('Ames test')

(ii) Single cell gel electrophoresis ('comet') assay

(iii) Micronucleus assay, and

(iv) Single strand conformation polymorphism (SSCP) screening for oncogene/tumor suppressor gene mutation in cancers.

Recent Invited talks and seminars:

1. "HDAC inhibitors: sulforaphane and organoselenium compounds", Diet and Optimum Health Conference, Portland (2009).
2. "HDAC inhibitors and cancer prevention/therapy", Toyo University, Kawagoe (2009).
3. "α-Keto acid metabolites of organoselenium compounds inhibit HDAC activity", Apoptosis Workshop – Mechanisms of Cell Death & Therapeutic Implications, Kuala Lumpur, Malaysia (2009).
4. "NADPH oxidase 1 (Nox1) and Nox4 overexpression in colon cancer", Society of Free Radical Research, Langkawi, Malaysia (2009).
5. "α-Keto acids of organoselenium compounds inhibit HDAC activity in human colon and prostate cancer cells", FASEB Summer Conference on HDACs and Reversible Acetylations in Signaling and Disease", Lucca, Italy (2009).

6. "Dietary HDAC inhibitors: sulforaphane and organoselenium compounds", Dept Environ Occupational Health Sciences, U. Washington, Seattle (2009).

Editorial Board:

Rod was appointed to the Editorial Board of a new journal entitled "*Clinical Epigenetics*" – further journal info can be found here:

http://www.springer.com/biomed/human+genetics/journal/13148

For Recent publications, click here

News Article:

Scientific papers 1, 2 and 3 above were featured in the recent OSU media release:

http://oregonstate.edu/ua/ncs/archives/2009/aug/natural-compounds-chemotherapeutic-drugs-may-become-partners-cancer-therapy

NEW TOX GRAD STUDENTS COMING THIS FALL…

Name	From	Lab
Alex Brewer	University of Oklahoma Norman	TBA
Erin Madeen	Kishwaukee College	Field
Steven O'Connell	University of Georgia	Anderson

WELCOME TO THE DEPARTMENT

Sarah Bissonnette
Faculty Research Assistant
HOPS Lab

Erin Madeen
Graduate Research Assistant
Field Lab

Dr. Bill Stubblefield
Professor, Senior Research
Weniger Hall

		
Dr. Abiba Tidou *Visiting Scholar* *Williams Lab*	*Steven O'Connell* *Graduate Research Assistant* *Anderson Lab*	*Alex Brewer* *Graduate Research Assistant* *Lab TBA*
	**Steven Sylvester** **Visiting Scholar** **Simonich Lab** **Shejun Chen** **Visiting Scholar** **Simonich Lab** **Fei Chen** **Research Assistant** **Tanguay Lab**	
Jennifer Przybyla *Faculty Research Assistant* *Anderson Lab*		

NEW EMT GRANT AWARDS

PI	Title	Agency	Awarded
Dr. Robert Tanguay	Rapid Throughout Whole Animal Platform to Define Nanoparticle/Biological Interactions: A Path to Safer Nanomaterial	University of Oregon	$185,000
Dr. Stacey Harper	Computationaland Analytical Tools to Support the Development of Environmentally Benign Nanomaterials	University of Oregon	$105,000
Dr. Dave Williams; Sharon Krueger	New Technologies and Emerging Health Risks: Research Supplement to Promote Diversity in Health-Related Research	NIEHS	$162,073

CONGRATULATIONS!

Kara Hitchko & Travis Klaas got married July 25, 2009 in Eureka, California.

EMT Departmental Seminars – Summer 2009

Scott Burchiel

Environmental PAHs: Signaling in Human Lung and Mammary Epithelial Cells
June 22, 12:00 PM, ALS 4001

Gary Perdew

Differing Mechanisms of Ah Receptor Mediated Regulation of Gene Expression: Evidence for Selective Activation of the Ah Receptor
August 17, 11:00 AM ALS 4001

EMT Departmental Seminars - Fall 2009

Mark Leid, PhD

September 29, 2:00 PM, ALS 4001

If you wish to nominate, organize or host a speaker for the Departmental Seminar please contact: osu.emt.seminar@gmail.com

The 2009 EMT Departmental Seminar Committee
Britton Goodale Tamara Tal Wendy Hillwalker
Phil Janney Norman Forsberg

Last month, TEAM-Tox hosted their first professional development workshop. The workshop, “Preparing an Effective Scientific Presentation”, was led by Dr. Abby Benninghoff, a senior postdoctoral fellow in Dave Williams’ lab. The workshop was attended by nearly forty graduate students and postdoctoral trainees representing five departments. Undergraduate students and HHMI and high school research interns also numbered among the workshop participants. The TEAM-Tox Departmental Seminar Committee would like to extend their deep appreciation for Dr. Benninghoff’s efforts to improve graduate education at OSU. If you are interested in leading or organizing a future professional development workshop, please contact osu.emt.seminar@gmail.com.

The EMT Departmental Seminar Committee is excited to announce the results of their first speaker election, which was held in July. The mission of the DSC is to organize seminars for the Environmental and Molecular Toxicology department that engage our students, trainees, faculty and affiliates with dynamic speakers from toxicology and related fields. The EMT department represents a diverse range of research interests and areas of expertise, and the DSC is working to capture this diversity in the seminar series by inviting speakers who are nominated and democratically elected by TEAM-Tox.

Students and faculty in the EMT department as well as trainees from associated labs were invited to nominate speakers for the departmental seminar series, and separate ballots were created for internal OSU speakers, local (driving distance) speakers, and external speakers who would require an airline flight. Nominees represented 8 departments from OSU and thirteen other institutions. TEAM-Tox members voted for their top choices, with voter participation estimated at 60%. We are pleased to announce our top nominees; their research is exciting, diverse, and we hope to see many of them in upcoming EMT seminars. The DSC keeps an ongoing list of nominees for the seminar series, if there is someone you would like to nominate for the next election, contact us at osu.emt.seminar@gmail .com. We welcome any suggestions for the EMT seminar series, and hope to see everyone at the seminars this fall.

Speakers from OSU
Rosita Rodriguez Proteau, Pharmacy
James Carrington, CGRB
Dan Sudakin, EMT
Dave Stone, EMT
Ursula Bechert, Environmental Sciences
Louisa Hooven, Zoology
Balz Frei, Linus Pauling Institute
Kerry McPhail, Pharmacy
Paul Jepson, EMT
Stacey Harper, EMT
Local (driving distance) speakers
Alex Nechiporuk, OHSU
Susan Renn, Reed College
Ann Fairbrother, Parametrix
Tracy Collier, NOAA, NWFSC
Michael Skinner, WSU
Non-local Speakers (flight required)
Ilona Jaspers, UNC Chapel Hill
David Shepherd, University of Montana
Kenneth Poss, Duke University

Elected Speakers Fall 2009

GOODBYE AND GOODLUCK

			
Lucas Quarles TOX MS Grad	Tammie McQuistan Now working with Dr. Mustacich in LPI	Kerry Thomas Attending Grad School at Miami Univ in Ohio	Anita Balleby Working in COAS on OSU Campus

CONGRATULATIONS CAITLIN RERING

Caitlin Rering will be a Junior in Chemistry Dept. this Fall and she is an undergrad working in Jennifer Field's lab. She received a URISC (Undergraduate Research, Innovation, Scholarship and Creativity) award based on her proposal entitled "*Nicotine and its Urinary Metabolites in Wastewater: Validating Community Exposure to Legal and Illegal Drugs*". Congratulations Caitlin!

LAB NEWS

BUERMEYER LAB

New publication from the Buermeyer lab:

MLH1 Expression Sensitizes Ovarian Cancer Cells to Cell Death Mediated by XIAP Inhibition

Xiuyun Ding1, Azizah B. Mohd4, Zhiqing Huang3, Tsukasa Baba3, Marcus Bernardini3, H. Kim Lyerly1,2, Andrew Berchuck2,3, Susan K. Murphy3, Andrew B. Buermeyer4, Gayathri R. Devi1,2

Department of Surgery1, Duke Comprehensive Cancer Center2, Department of Obstetrics and Gynecology3
Duke University Medical Center, Durham, NC 27710

Environmental and Molecular Toxicology4, Oregon State University,
Corvallis, OR 97333

Abstract

Background: X-linked inhibitor of apoptosis protein (XIAP), an endogenous apoptosis suppressor can determine the level of caspase accumulation and resultant response to apoptosis-inducing agents like cisplatin in epithelial ovarian cancer (EOC). In addition, the mismatch repair protein hMLH1 has been linked to DNA damage-induced apoptosis by cisplatin via both p53-dependent and -independent mechanisms.

Methods: In this study, hMLH1 expression was correlated with clinical response to platinum drugs and survival in advanced stage (III/IV) EOC patients. We then investigated whether MLH1 loss was a determinant in anti-apoptosis response to cisplatin mediated by XIAP in isogenic and established EOC cell lines with differential p53 status. **Results**: The percentage of cells undergoing cisplatin-induced cell-killing was higher in MLH1-proficient cells compared to MLH1-defective cells. Additionally, presence of wt hMLH1 or hMLH1 re-expression significantly increased sensitivity to 6-thioguanine, a MMR-dependent agent. Cell-death response to 6-thioguanine and cisplatin was associated with significant proteolysis of MLH1, XIAP destabilization and increased caspase-3 activity. siRNA-mediated inhibition of XIAP increased MLH1 proteolysis and cell death in the MLH1-proficient cells but not in MLH1-defective cells.

Conclusion: These data suggest that XIAP inhibitors may prove an effective means of sensitizing EOC to MLH1-dependent apoptosis.

CRAIG LAB

Dr. Craig recently visited the Czech Academy of Sciences in Prague while attending the 6th International Symposium of Anaerobic Microbiology to talk about the lab's research on bioremediation of munitions/explosives using sheep ruminal microbes. When the Communist regimes left eastern Europe not so long ago, a large amount of munitions were left behind which now pose a significant environmental problem, as they are beginning to leach into the surrounding soil and water. Thus, a lot of interest was generated in our economical 'agricultural approach' to munitions degradation.

The lab recently signed a contract with the Massachusetts Military Reservation to begin a practical experiment applying our agricultural approach to munitions degradation, whereby grasses are planted on munitions-contaminated soil which bring the munitions up into the blades of grass, making them bioavailable for sheep. The sheep consume the grass and remediate the munitions to non-toxic linear compounds in their rumen with anaerobic microbes. A parallel controlled greenhouse experiment will be conducted at OSU using soil removed from the same sites.

THE HARPER LABORATORY

Dr. Harper will serve as Vice-Chair of ASTM International Technical Committee E56 on Nanotechnology. The technical committee develops standards and guidance for nanotechnology and nanomaterials and the coordination of existing ASTM standardization related to nanotechnology needs.

Dr. Harper served as an American National Standards Institute (ANSI)-appointed U.S. delegate for the International Organization for Standardization (ISO) TC 229 meeting held in Seattle on June 8-9, 2009.

JENKINS LAB

Congratulations Dr. Jenkins!

On behalf of the Work Group Coordinating Committee of the *National Conversation on Public Health and Chemical Exposures,* Jeff Jenkins was invited to participate on the Education and Communication Work Group. Dr. Jenkins wrote in contributing to the *National Conversation*'s goal of strengthening the nation's approach to protecting public health by reducing exposure to harmful chemicals. His experience and perspective was found to be essential to the success of this effort.

KOLLURI LAB

Congratulations to Ed O'Donnell

http://oregonstate.edu/ua/ncs/archives/2009/jun/osu-student-meet-nobel-laureates-germany

OSU STUDENT TO MEET NOBEL LAUREATES IN GERMANY

Ed O'Donnell is one of 580 young scientists from 67 countries who will attend the 59th 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.

An article from the lab:

Bisson, W.H., Koch, D.C., O'Donnell, E.F., Khalil, S.M., Kerkvliet, N.I., Tanguay, R.L., Abagyan, R., and Kolluri, S.K. Modeling of the Aryl Hydrocarbon Receptor(AhR) ligand binding domain and its utility in virtual ligand screening to predict new AhR ligands. Journal of Medicinal Chemistry; August 31, 2009.

NPIC

The National Pesticide Information Center released its Annual Report for 2008. Read all about our new Spanish website (http://npic.orst.edu/es), new podcasts(http://npic.orst.edu/pestibytes/index.html) and the trends in pesticide inquiries last year. The whole report is available online at http://npic.orst.edu/reports/NPIC08AR.pdf

IN MEMORY OF...

Sheldon "Shag" Wagner died July 19, 2009, at Good Samaritan Regional Medical Center. He was 80.

His obituary can be found at http://www.gazettetimes.com/news/local/obituaries/article_b53694cf-279a-5d25-a37f-a75be313d446.html

Past Newsletters:

ISSUE 17		
ISSUE 16	ISSUE 10	ISSUE 5
ISSUE 15	ISSUE 9	ISSUE 4
ISSUE 14	ISSUE 8	ISSUE 3
ISSUE 13	ISSUE 7	ISSUE 2
ISSUE 12	ISSUE 6	ISSUE 1
ISSUE 11		