

OHSU School of Dentistry/Dental Bites

February 2009

Dental Health Month At SOD

February is National Children's Dental Health Month and the school has events scheduled to raise awareness of the oral health needs of children, while helping to care for the underserved. The events are:

Feb. 7: Celebration of Smiles, 9 a.m. to 5 p.m., Portland Children's Museum

Feb. 19: Sealant Day, pediatric dentistry clinic

Feb. 27: Give Kids a Smile, 9 a.m. to 1 p.m., predoctoral clinic

Contact Prashant Gagneja, B.D.S., gagnejap@ohsu.edu for information.

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New Student Association at School

First-year dental student **Jim Bell**, 37, has been closely tied to the Hispanic community most of his adult life. He spent three years in Chile doing church service and going to the university to better his Spanish where he met wife, **Betty**. Upon returning to the U.S., he incorporated into his social network Hispanic people from all over Latin America.

"Many of our close friends and family

are Hispanic, so I have grown sensitive to issues facing Hispanics over the years," said Jim.

That's why when Jim became a student at OHSU and the School of Dentistry, he established a local chapter of the national organization Hispanic Student Dental Association (HSDA), the student branch of the Hispanic Dental Association (HDA). *(continued on page 5)*

New Gene Study Grant for Dr. Morton

David B. Morton, Ph.D., professor of integrative biosciences, has received a one-year, \$64,000 grant from the Muscular Dystrophy Association (MDA) to study the function of a fruit fly gene related to a human gene associated with Amyotrophic Lateral Sclerosis (ALS or Lou Gehrig's disease).

A large genetic analysis funded by MDA indicated that a gene, FLJ10986, may interact with environmental cues to trigger ALS in certain people. Little is known about how the FLJ10986 gene functions in humans, said Dr. Morton, or how defects in the gene could lead to ALS.



David Morton, Ph.D., professor of integrative biosciences, with a test tube of fruit flies being studied in his eighth floor lab. (Photo Dan Carter)

Fruit flies, he said, have a gene very similar to FLJ10986. In previous experiments, Dr. Morton and his team reduced the expression of the fruit fly gene, resulting in neurodegeneration in the fly's brain.

"The Muscular Dystrophy Association has funded us to gather additional preliminary data to understand more about the function of the fruit fly gene that is similar to FLJ10986," said Dr. Morton. "Findings from this study should lead to a better understanding of the normal role of this gene in humans and perhaps someday help scientists in earlier diagnosis of ALS or a potential treatment."

A Busy Winter for Dr. Balkowiec's Research Lab

The lab of **Agnieszka Balkowiec**, M.D., Ph.D., OHSU School of Dentistry assistant professor of integrative biosciences and OHSU School of Medicine adjunct assistant professor of physiology and pharmacology, has been very busy these past months, resulting in two recent publications.

One study, published in the *Journal of Neurochemistry*, sheds light on how the nerve supply to the cardiovascular system is established during development. Dr. Balkowiec and her team discovered that the nerve cells controlling heart rate and blood pressure synthesize a molecule known to be critically important for proper nervous system growth. The finding could someday play a significant role in the prevention of Sudden Infant Death Syndrome (SIDS) and high blood pressure.

According to the National Institutes of Health, SIDS is the leading cause of death in children between 1 month and 1 year of age. About one in three adults in the United States has high blood pressure.

The new discovery was published in a January issue of the *Journal of Neurochemistry* (vol. 108, pp. 450-464) and released online December 1, 2008 (www3.interscience.wiley.com.liboff.ohsu.edu/cgi-bin/fulltext/121542115/HTMLSTART).

"Our discovery sheds light on how the nerve supply to the cardiovascular system is established during development," said Dr. Balkowiec. "Someday we hope to better understand cardiorespiratory developmental disorders such as SIDS."

Changes in blood pressure are signaled to the brain by nerve cells called baroreceptors. The OHSU study shows that baroreceptors make a molecule called Brain-Derived Neurotrophic Factor (BDNF), which belongs to the family of neurotrophins that play a critical role in the development and plasticity of other nerve cells. (Studies suggest that developmental abnormalities in nerve pathways that control the cardiovascular and respiratory system may result in SIDS).

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Dr. Balkowiec and her team found that the stimulation of baroreceptors, as experienced during an increase in blood pressure, leads to the release of BDNF. The study also discovered that BDNF is present at the central end of baroreceptors in the brainstem.

"In fact, BDNF is likely to play the most important role at the central end of baroreceptors, where they connect to second-order neurons in the blood-pressure control pathway," said Dr. Balkowiec. "BDNF has previously been shown to play an important role in establishing neuronal connections in other parts of the nervous system, but this is the first time it has been considered a factor in the blood pressure control system."

Studies under way, in collaboration with **Virginia Brooks**, Ph.D., OHSU School of Medicine professor of physiology and pharmacology, indicate that levels of BDNF in cardiorespiratory nerve cells increase dramatically when blood pressure rises. This suggests a direct role of BDNF in regulation of blood pressure, said Dr. Balkowiec.

Additional study authors included neuroscience graduate student **Jessica Martin**, B.S., and two OHSU research assistants, **Victoria Jenkins**, B.A., and **Hui-ya Hsieh**, B.S.

The study was supported by grants from the American Heart Association and the National Institute's of Health's National Heart, Lung, and Blood Institute.

A second study in the Balkowiec lab, led by **Leila Tarsa**, D.D.S., M.S., a second-year endodontology resident, uncovered a mechanism for dental pain. Working with researchers in the departments of endodontology and integrative biosciences, Dr. Tarsa and her team discovered a novel function

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Mail Changes for SOD

The School of Dentistry's mail service was changed at the start of the New Year. There is now one mail pickup and one delivery per day, said **Craig Galloway**, material manager. Mail will be picked up and delivered between 12:30 and 1 p.m. Monday through Friday, with sorting generally completed by 1:45 p.m., said Craig.

New Recycling Bins

The School of Dentistry has new recycling bins in all lecture rooms and the sixth floor Student Learning Center. The bins are labeled for aluminum, plastic, and glass, according to SOD Green Team co-chair **Jenna Wilkinson**.

OHSU Policy Reminder

The solicitation of funds, goods, and services in the school, including the use of OHSU's list service, is prohibited by university policy. Please reference OHSU Policy No. 01-10-020 SOLICITATION or contact Dean **Jack Clinton**, D.M.D. '64, for more information.

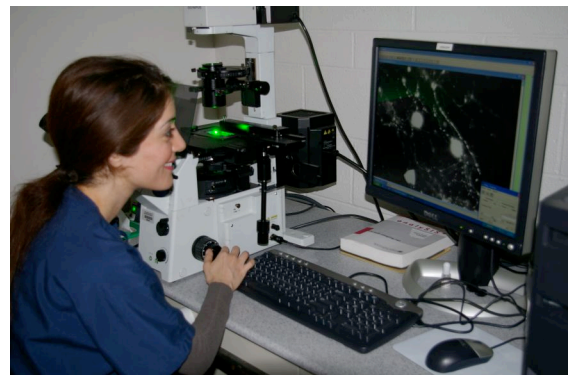
Environmental Health Conference at OHSU

The university is host to the Northwest's first Environmental Health Conference, Feb. 6 and 7 from 8 a.m. to 5 p.m. Keynote speaker is Michael A. McGeehin, Ph.D., M.S.P.H., director for the division of environmental hazards and health effects for the National Center for Environmental Health Centers for Disease Control and Prevention. Additional scientists, researchers, and healthcare professionals will be speaking. All health professionals are welcome Friday, Feb. 6; Saturday Feb. 7 is a student-only session. Please register online at www.oeconline.org/new-health-conference.

Dr. Balkowiec (continued from page two)

of the peptide known as Nerve Growth Factor (NGF) in the development of the trigeminal nerve. The trigeminal nerve provides the signaling pathway for periodontal pain, dental surgical pain, and pain associated with temporomandibular disorder, trigeminal neuralgia, migraine, and other neuropathic and inflammatory conditions.

The study is posted online ([www.neuropeptidesjournal.com/article/S0143-4179\(08\)00110-8/abstract](http://www.neuropeptidesjournal.com/article/S0143-4179(08)00110-8/abstract)) in *Neuropeptides*.



Leila Tarsa, D.D.S., M.S., second-year endodontology resident (Photo Dr. Balkowiec)

The OHSU team found a new mechanism involved in establishing junctions – known as synapses – between trigeminal nerve cells. Nerve cells communicate with one another through chemicals called transmitters that are released at synapses. The transmitter release from nerve cells endings is possible only if aided by several molecules that are critical for proper function of the synapse. Tarsa's research shows that NGF promotes transport of one of the molecules (called synaptophysin) from the nerve cell body to its ending.

"The data indicate that NGF participates in formation of neuronal connections in the trigeminal system," said Dr. Balkowiec, who was the senior author of the study. "This study has broad implications for trigeminal nerve regeneration."

New Faces in SOD

Thomas Galbraith, D.D.S., assistant professor of operative dentistry, has joined the Hawthorne bridge as group leader. Dr. Galbraith joined the School of Dentistry one year ago. Prior to joining OHSU, Dr. Galbraith was in private practice in Weed, Calif. He is a 1979 graduate of the University of Southern California School of Dentistry.

Dr. Galbraith will lead the Hawthorne group with **Eric Anderson**, D.M.D. '05, assistant professor of restorative dentistry.

Denice Stewart, D.D.S., M.H.S.A., associate dean for clinical affairs, also reports that several new care coordinators have joined the predoctoral clinic. They are **Binh Nguyen** (Sellwood); **Emily Atwater** (St. Johns), **Susan Bond** (Steel); and **Tamara Jones** (Hawthorne).

Welcome also to **Cynthia Scheines**, D.D.S., Ph.D., an adjunct assistant professor of periodontology, who has joined the School of Dentistry faculty. Dr. Scheines was in private periodontic practice in Argentina, and taught periodontology at the Asociacion Odontologica Argentina. She received her doctor of dental science and her doctoral degree in periodontics from Universidad del Salvador in Buenos Aires.

Also joining the School is **Sheena Kalia**, D.D.S., as adjunct assistant professor of pediatric dentistry. Dr. Kalia is a 2008 graduate of the School's pediatric dentistry residency program. She received her doctor of dental surgery from the University of Alberta, Canada.

Goodbye to Staff

Longtime property specialist **Tim Allison** retired at the end of 2008. Tim was with the SOD for 28 years. We wish him well.

New OHSU Foundation President



OHSU has a new Foundation leader, **Allan Price**. Allan assumed the presidency at the end of December.

Prior to joining OHSU, Allan was vice president for university advancement and a member of the senior executive staff at the

University of Oregon, a position he held since 2001. As vice president for advancement, he oversaw the planning and implementation of Campaign Oregon, which raised \$823 million.

Allan also directed all aspects of U of O's public affairs, marketing, media, and alumni relations, as well as its cultural advocacy through the Jordan Schnitzer Museum of Art.

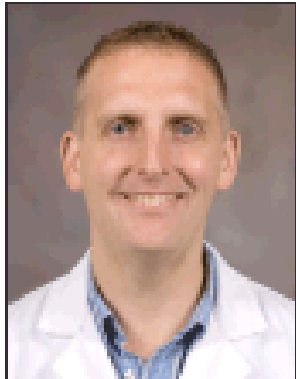
SOD Calendar

Feb. 16	OHSU Holiday (President's Day)
Feb. 16	Alumni Association board meeting, 6 p.m.
Feb. 19	Inaugural Robert G. Gootee Endowed Lectureship in Leadership and Professionalism, 3 p.m., DS1 and DS4.
March 14	Alumni Reception, Phoenix, AZ
March 27	End of 12-week winter term
March 30-	
April 3	Spring Break
April 4	Annual Meeting and Awards Luncheon, 11:30 a.m. to 1 p.m.
April 3 to 5	Reunion Weekend 2009
April 6	Start of 12-week spring term

New HSDA

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Its 12 members — mostly first and second year students -- met in late January to establish objectives, elect officials, and discuss 2009 projects.



First-year dental student Jim Bell

The group hopes to raise awareness of oral health issues facing Hispanics among OHSU students and dental professionals; provide a voice for the Hispanic oral health professional; stimulate interest and encourage entry of Hispanics into oral health; promote the oral health of the Hispanic community through improved prevention, treatment, and education; foster knowledge concerning Hispanic oral health problems; and disseminate information to Hispanic dental professionals and the Hispanic community.

"There is a broad range of serious challenges facing the dental profession and, although we recognize one person cannot do much to solve the complexities of our dental health care system, by voicing our opinions and becoming involved, we have a better chance of shaping the dental industry so that more people have access to quality dental care," said Jim.

All dental students are welcome to join the new group—the Hispanic Student Dental Association at OHSU. **Mark Mitchell**, M.A., associate dean for student affairs, is the faculty advisor for the group. For information, contact Jim at bellja@ohsu.edu.

New Endodontology Study for Machida Lab

The lab of **Curtis Machida**, Ph.D., professor of integrative biosciences, has published its second *Journal of Endodontics* study. In the February 2009 (volume 35, issue 2) *Journal of Endodontics* ([http://www.jendodon.com/article/S0099-2399\(08\)01067-4/abstract](http://www.jendodon.com/article/S0099-2399(08)01067-4/abstract)), Dr. Machida's team outlines their discovery that transmissible herpesvirus particles are in endodontic abscesses and cellulitis, the first time herpesvirus particles have been detected in patients with any type of endodontic disease. This is also the first published study regarding herpesviruses and their potential association with endodontic abscesses and cellulitis.

Abscesses and cellulitis are severe and painful endodontic diseases caused by bacteria and such patients can also be infected with latent herpesviruses. The OHSU study assessed the presence of human cytomegalovirus, Epstein-Barr virus, herpes simplex virus, and Varicella zoster virus in 31 endodontic patients with abscesses and cellulitis, and then compared them with 19 healthy patients.

Using a variety of molecular techniques, the OHSU team found that 29 percent of patients containing endodontic abscesses and experiencing tooth pain had human cytomegalovirus, six percent had the Epstein-Barr virus, and three percent had herpes simplex virus. None of the patients containing endodontic abscess exhibited Varicella zoster virus.

In the 12 patients with cellulitis, 17 percent had human cytomegalovirus and eight percent had Epstein-Barr virus. None of the patients with cellulitis had herpes simplex virus or Varicella zoster virus.

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SOD Students Tapped for ASDA Positions

Several OHSU dental students recently were selected for leadership positions within the American Student Dental Association. They are:

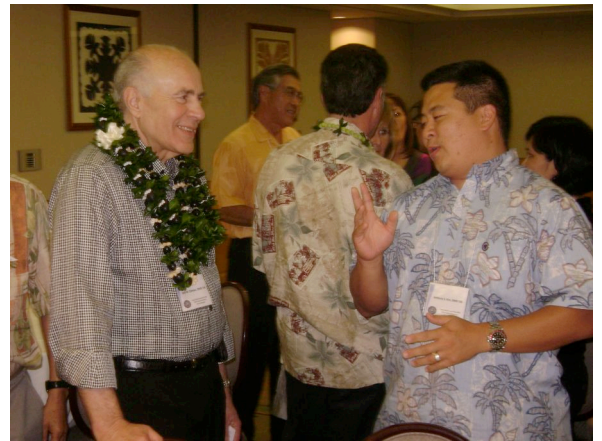
*Second-year dental student **Vishal Panchmatia**, who was appointed to the ASDA Editorial Board as contributing editor. There are four contributing editors on the ASDA Editorial Board, reporting to an editor-in-chief. Contributing editors set policy for ASDA publications and website; identify potential contributors and help coordinate articles; and write articles and offer suggestions for content and design.

*Second-year dental student **Jacob Morrow** was tapped as vice chair of the Legislative Grassroots Network (LGN), an arm of the American Student Dental Association (ASDA). Jacob will provide leadership in advocacy and other aspects of the political process. For example, he will represent dental students on the American Dental Political Action Committee (ADPAC) Board of Directors and is a voting member; he works with other ASDA members to set up ADPAC drives at their respective chapters; and he will help plan the National Dental Student Lobby Day.

School Outreach to Hawaii Alums

In an effort to stay connected with the School of Dentistry's alums, Dean **Jack Clinton**, D.M.D. '64, attended a January dinner in Honolulu, organized by Hawaii alums during the Hawaii Dental Association meeting. **Owen Kawakami**, D.M.D. '68, and **James Sagawa**, D.M.D. '66, organized the Jan. 23 event at the Hawaii Prince Waikiki on behalf of the School.

Alum Outreach *(continued from left column)*



Dean Jack Clinton, D.M.D. '64 (left) chats with Anthony Kim, D.M.D. '98. (Photo Pat Regan)

The alum dinner garnered 20 School of Dentistry alums, about one-fourth the total number of Hawaii alums.

"Everything was very relaxed and fun," said Dean Clinton, who was presented with a lei from the organizers. "This is a really energetic group and we owe them a big 'mahalo' (thank you) for all their support. And the mid-70 degree temperatures also didn't hurt the collegial atmosphere!"

Dean Clinton updated alums on the 300 dental students now enrolled, including the four Hawaiians, first-year dental students **Eric Muraoka** and **Jordan Takaki**; third-year dental student **Rhinelle Torres**; and fourth-year dental student **Alison Buccat**.

Dean Clinton noted that the Hawaii Dental Student Scholarship Endowment Fund, initiated to help Hawaiian dental students enrolled at OHSU with tuition and fees, has reached \$30,000 of the \$50,000 necessary to establish the fund, with the goal of raising \$100,000 to have an even greater impact on Hawaii dental students.

Machida Lab Study

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"We anticipated that herpesviruses might be associated with radiographic bone destruction or abscesses larger than five millimeters, but that was not the case," said Dr. Machida, the principal investigator, whose lab was host for the study. "Based on this study, we concluded that herpesviruses are present, but not necessary for an endodontic patient to develop abscesses and cellulitis. The size of radiographic lesions was not predictive on whether patients with abscesses contained herpesvirus particles."

The OHSU team included third-year dental student **Vicky Chen**, B.S.; second-year dental student **Yanwen Chen**, Ph.D.; **Hong Li**, D.D.S., M.Sc., Ph.D., a recent endodontology graduate; **Karla Kent**, Ph.D., associate professor of integrative biosciences; **J. Craig Baumgartner**, D.D.S., M.Sc., Ph.D., chairman and professor of endodontology; and Dr. Machida.

The research at OHSU was funded the American Association of Endodontists Foundation, the Oregon Clinical and Translational Research Institute, the NIH's National Center for Research Resources, and the NIH Roadmap for Medical Research.

Dental Students Offer Care in Clark County

While many OHSU dental students will be spreading the word about good oral care at Celebration of Smiles Feb. 7, more than 30, mostly third- and fourth-year dental students, will be at Clark College caring for children in Vancouver, Wash. The Clark College event is similar to Give Kids a Smile, according to organizer **Michael Melanson**, DS4. **Peter Lubisich**, D.M.D. '01, assistant professor of pediatric dentistry, will be the faculty supervisor.

Staff Inservice Training Online

The staff OSHA training that was cancelled because of the December snowstorm is online. All SOD staff are required to read the Hazard Communication presentation. All Risk I staff should also read the Bloodborne Pathogens presentation. (Staff that perform tasks involving exposure to human blood, body fluids, or tissues and/or staff that occasionally perform such tasks, are considered Category I).

To access the presentations, go to <http://ohsu-eres.lib.pdx.edu/eres/> and select the Electronic Reserve and Reserves page. Search by: Course Name=Office of Clinical Affairs, or Course Number, SODOCA, and click on course number password oca. The presentations are in a folder marked December 2008 Staff Inservice, and both are in pdf format.

The SOD is required to document that its employees have received the yearly update, said **Karla Kent**, Ph.D., associate professor of integrative biosciences, and the School's health and safety officer. Employees are asked to go to the office of clinical affairs (room 104, next to the elevators) to sign the roster attached to the door, once they have read the presentation(s). One hour of continuing education credit can be offered for the combined reading of both presentations.

Please contact Dr. Kent with any questions, kentka@ohsu.edu.

If you have a submission for *Dental Bites*, please contact Sydney Clevenger (clevenger@ohsu.edu, 503-418-1792) by the 25th of the month prior to publication. Photos are also welcome in jpg or tif format.