



Harvard School of Dental Medicine

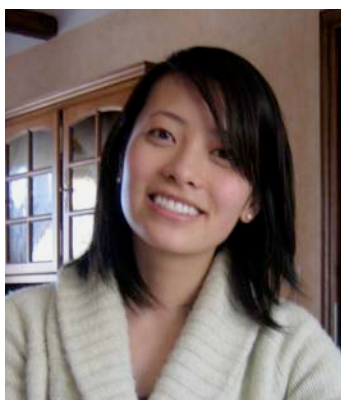
OFFICE OF RESEARCH BULLETIN

Mar/Apr 2006



CONGRATULATIONS TO RACHEL BADOVINAC, DMD, SCD for her recent NIH-NIDCR K08 Award, **Multigenic dissection nonsyndromic oral clefts**. Dr. Badovinac's mentor is Dr. Steve Sonis, and co-mentors are Dr. Marco Ramoni and Dr. Catherine Hayes.

Dr. Badovinac will use DNA from mothers and infants enrolled in a large-scale birth defects surveillance study to investigate the multigenic origins of nonsyndromic oral clefts (NOC) using a novel application of a proven analytical approach, Bayesian networks. In accomplishing the first aim, she will identify and validate the most probable network linking the phenotype of isolated NOC to the candidate maternal and subject single nucleotide polymorphisms and environmental exposures among the majority race/ethnicity. Through the second aim, she will validate two approaches to phenotyping non-isolated NOC. Finally, she will determine whether the model(s) generated in Aims 1 and 2 can be generalized to minority race/ethnicity groups. This project will provide the framework upon which she will prepare for an independent research career. Additionally, by being the first investigation to concurrently consider the candidate environmental exposures and SNPs in several candidate genes previously associated with NOC in association studies, this work has the potential to move the study of NOC dramatically forward.



CONGRATULATIONS TO ESTEE WANG (HSDM Class of 2008) who was awarded a **Howard Hughes Medical Institute-Research Training Fellowship**. This Fellowship allows Estee to take year off from HSDM to support full-time biomedical research training under the mentorship of Christopher A. Walsh, MD, PhD, Bullard Professor of Neurology at Beth Israel Deaconess Medical Center.

Estee will be working on, **"The genetic and molecular mechanisms in embryonic growth and patterning of the cerebral cortex and craniofacial complex."** Birth defects involving the cerebral cortex and craniofacial region are among the most common seen in the practice of medicine. In holopresencephaly and some syndromes with microcephaly, craniofacial malformations are present suggesting a common developmental link between the process of cortical patterning and craniofacial development. Estee's project will involve analyzing families with children with concurrent craniofacial, brain and skeletal malformations, specifically in a group of highly inbred Indians in a rural part of Canada. Linkage analysis in the Walsh Lab suggests that a gene residing on chromosome 21 may be responsible for these abnormalities. After candidate genes have been sequenced and isolated, an animal model will be generated to characterize this gene in order to better understand its function in human cerebral and craniofacial development.

PUBLICATIONS:

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- Turk BE, Lee DH, Yamakoshi Y, Klingenhoff A, Reichenberger E, Wright JT, Simmer JP, Komisarof JA, Cantley LC, Bartlett JD. MMP-20 is predominately a tooth-specific enzyme with a deep catalytic pocket that hydrolyzes type V collagen. *Biochemistry* 2006;28;45(12):3863-3874.
- Troulis MJ, Ramirez JL, Kaban LB. Endoscopic approach for mandibular orthognathic surgery. *Facial Plast Surg Clin North America* 2006;14(1):45-50.
- Yelick PC, Vacanti JP. Bioengineered teeth from tooth bud cells. *Dent Clin North Am* 2006;50(2):191-203.



DR. MANOJ MUTHURKU PICTURED HERE WITH **DR. BRUCE DONOFF** (LEFT) AND **BROOKE BLICHER** (RIGHT) WERE 2 OF THE 5 PRIZE RECIPIENTS AT THE HARVARD FORSYTH RESEARCH SYMPOSIUM.

AWARDS:



SHIGEMI NAGAI, PhD, DDS RECEIVES HICKEY AWARD

Dr. Nagai's manuscript, "Reproducibility of tooth color gradation using a computer color-matching technique applied to ceramic restorations", published in The Journal of Prosthetic Dentistry, received the **2005 Judson C. Hickey Scientific Writing Award** in the Research Category.

CONGRATULATIONS TO THE PRIZE RECIPIENTS OF THE STUDENT POSTER COMPETITION IN THE "BONES & TEETH: DEVELOPMENT, GROWTH AND REPAIR" HARVARD FORSYTH RESEARCH SYMPOSIUM

D M D C A T E G O R Y :

BROOKE BLICHER Validation of self-report for periodontal disease: A systematic review

ESTEE WANG Risk of osteonecrosis of the jaws in multiple myeloma patients on high-dose bisphosphonate therapy

A G E C A T E G O R Y :

MANOJ MUTHURKU Innate immune regulatory mechanisms differentially regulate soft and hard tissue homeostasis

GRACE WU Use of the cold test as a measure of pulpal anesthesia in endodontic therapy: A randomized, blinded, placebo-controlled clinical trial

P O S T D O C C A T E G O R Y :

YASUYOSHI UEKI Cherubism gene product SH3BP2 is a critical regulator of myeloid sensitivity to inflammatory macrophage- and osteoclast-inducing signals

Congratulations to the 2006 Krakow Harvard Forsyth Endowed Endodontic Research Fund Recipients

STACY ACKERMAN, DDS

Detection of microbial species in human root canals

BRAD LIPKIN, DDS

The effect of skewing the Th phenotype against Porphyromonas gingivalis towards Th1 in m urine model of pulpal infection

ANNA RATINER, DMD

The expression and function of the novel IL-1 isoforms in periapical tissue inflammation

JONATHAN ROSSALL, DDS

Interleukin-17 expression and function in periapical tissue inflammation

The Krakow Fund was established by Dr. Alvin Krakow, who founded the Harvard School of Dental Medicine's post-doctoral program in endodontics. The overall purpose of this Fund is to support endodontic research at Harvard School of Dental Medicine and The Forsyth Institute which will strengthen the scientific foundation of this clinical specialty.

A special thank you to the HSDM Scientific Advisory Board members who recently visited HSDM to review our basic science laboratories.

ROLAND BARON, DDS, PhD
Professor of Orthopaedics and Cell Biology, Yale University

JAMES BECK, PhD
*Professor and Co-Director, Center for Oral and Systemic Disease,
UNC at Chapel Hill School of Dentistry*

LINDA GRIFFITH, PhD
*Professor and Director Biological and Mechanical Engineering,
Massachusetts Institute of Technology*

PETER POLVERINI, DDS
Professor and Dean, University of Michigan School of Dentistry



Are you ready for Grants.gov? electronic grant submission

★ Note, R03 & R21 applications must be submitted electronically for the June 1, 2006 deadline. R01 applications must be submitted electronically for the February 1, 2007 deadline. Detailed information is posted at <http://era.nih.gov/ElectronicReceipt>.

★ PI's and their staff must sign up for an NIH Commons account. To register, please visit the HMS Sponsored Program's Administration website at http://www.hms.harvard.edu/spa/signup/nihcom_form.htm.

★ PI's and their staff must download PureEdge software at <http://grants.gov/DownloadViewer> and have the capability of saving files to PDF.



Drs. Kaban, Donoff, Weber, Olsen at the April 7th Harvard Forsyth Research Symposium

QUESTIONS ABOUT RESEARCH AT HSDM, OR INFORMATION IN THIS BULLETIN?

If so, please contact

Dawn DeCosta

dawn_decosta@hsdm.harvard.edu

Office REB-404 _ 617.432.1121