



# HARVARD

SCHOOL OF DENTAL MEDICINE

OFFICE OF RESEARCH BULLETIN

November / December 2007



## HSDM Welcomes new Chair and Professor of Oral Medicine, Infection and Immunity, **ROLAND BARON, DDS, PHD**

Dr. Roland Baron is an exceptional and accomplished scientist and leader. Trained as a dentist in Paris, he earned post graduate certificates in Oral Biology and Periodontology as well as a PhD in Odontology. He is internationally known for his groundbreaking advances in bone biology. His research is the basis for the

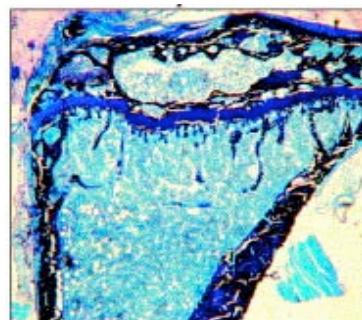
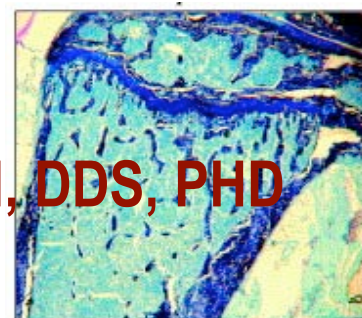
development of novel therapies to prevent bone loss such as that in arthritis and osteoporosis.

Dr. Baron, who has over 250 publications, is the Editor-in-Chief and Founder of the *Journal of Bone* and Associate Editor of the *Journal of Cellular Physiology*. He has won numerous professional honors, and in 2005 was the recipient of the D. Harold Copp Award in Basic Research from the International Bone and Mineral Society. Dr. Baron is a member of the many Scientific Advisory Committees. Most recently, he served as President and Chief Scientific Officer at the Prostrakan Group and he has also held other significant leadership positions in pharmaceutical companies.

Dr. Baron's laboratory is entirely focused on signal transduction and the ways in which it controls cell differentiation and function. For this purpose, they mostly study skeletal development and remodeling as a model system. In this context, the program of the laboratory is divided in three well-defined but highly interactive main research goals:

1. *Understanding the role of the AP1 family of transcription factors, specifically Delta FosB in skeletal development and in particular in the determination of mesenchymal cell lineages between the osteoblast and adipocyte cell types.*
2. *Characterizing the role of Src tyrosine kinase and its substrate Cbl in the signaling from integrins and other receptors involved in cell adhesion and migration, the role of ubiquitination in these processes and the role of these processes in cell migration, using as a model system the migration and function of the bone resorbing cell, the osteoclast.*
3. *Characterizing the molecular mechanisms by which the G Protein-coupled calcitonin receptor regulates the cytoskeleton, adhesion and migration in osteoclasts, and its cross-talk with integrin signaling, Src, Cbl and the focal adhesion kinase Pyk2.*

Dr. Baron's approaches combine extensively in vitro and in vivo experiments, often involving genetically modified transgenic or knockout mice and their isolated cells, that integrate molecular, cellular and in vivo studies to determine both the molecular mechanisms of cell biology and pathology and the impact of these mechanisms and their alteration at the organ level in normal and disease conditions. His work is directly relevant to several medical issues such as osteoporosis, bone metastasis in cancer, cancer itself through his focus on several proto-oncogenes, and endocrine disorders.



## BARON LAB:

**ROLAND BARON, DDS, PHD**  
Professor & Chair

**AZEDDINE ATFI, MSC, PHD**  
Visiting Assistant Professor

**DIEGO CORREA, MS**  
Graduate Student

**ERIC HESSE, MD**  
Research Fellow

**WILLIAM C. HORNE, PHD**  
Lecturer

**RIKU KIVIRANTA, MD, PHD**  
Research Fellow

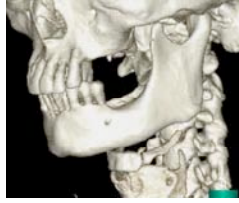
**SUTADA LOTINUN, PHD**  
Research Associate

**ENKHTSETSEG PUREV, MD, PHD**  
Research Fellow

**GLENN ROWE, PHD**  
Research Fellow

**HIROAKI SAITO, PHD**  
Research Fellow

**NAH-YOUNG SHIN, PHD**  
Research Fellow



# PUBLICATIONS



- Al-Mohaya M, Treister N, Al-Khadra O, Lehmann L, Padwa B, Woo SB. Calcineurin inhibitor-associated oral inflammatory polyps after transplantation. J Oral Pathology Medicine 2007;36(9):570-574.
- Bogren A, Teles RP, Torresyap G, Haffajee AD, Socransky SS, Wennstrom JL. Clinical and microbiologic changes associated with the combined use of a powered toothbrush and a triclosan/copolymer dentifrice: A 3-year prospective study. J Periodontology 2007;78(9):1708-1717.
- Chuang SK, Perrott DH, Susarla SM, Dodson TB. Age as a risk factor for third molar surgery complications. J Oral Maxillofacial Surgery 2007;65(9):1685-1692.
- Dodson T. Paracetamol is an effective drug to use for pain following oral surgery. Evid Based Dentistry 2007;8(3):79-80.
- Elangovan S, Margolis HC, Oppenheim FG, Beniash E. Conformational changes in salivary proline-rich protein 1 upon adsorption to calcium phosphate crystals Langmuir 2007; Sep 20.
- Fox J, Boutin S, Handt L, Taylor N, Xu S, Rickman B, Marini R, Dewhirst F, Paster B, Motzel S, Klein H. Isolation and characterization of a novel Helicobacter species 'Helicobacter macacae' from rhesus monkeys with and without chronic idiopathic colitis. J Clin Microbiol. 2007; Oct 10.
- Gallucci GO, Mavropoulos A, Bernard JP, Belser UC. Influence of immediate implant loading on peri-implant soft tissue morphology in the edentulous maxilla. Int J Oral Maxillofac Implants 2007 Jul-Aug;22(4):595-602.
- Goldwasser BR, Chuang SK, Kaban LB, August M. Risk factor assessment for the development of osteoradionecrosis. J Oral Maxillofac Surgery 2007 Nov;65(11):2311-2316.
- Hudson TS, Hartle D, Hurstings S, Nunez N, Perkin S, Young S, Arany PR, Green JE. Inhibition of prostate cancer growth by resveratrol and muscadine grape skin extract through distinct mechanisms. Cancer Research 2007;67(17):8396.
- Johnson TM, Badovinac R, Shaefer J. Teaching alternatives to the standard inferior alveolar nerve block in dental education: outcomes in clinical practice. J Dent Education 2007;71(9):1145-1152.
- Kaban LB, Troulis MJ, Wilkinson MJ, Ebb D, Dodson TB. Adjuvant antiangiogenic therapy for giant cell tumors of the jaws. J Oral Maxillofacial Surgery 2007;65(10):2018-2024.
- Leong P, Tumanyan S, Blicher B, Yeung A, Joshipura K. Periodontal disease among adult, new-immigrant, Chinese Americans in Boston with and without diabetes -- a brief communication. J Public Health Dent 2007 Summer;67(3):171-173.
- Pham L, Purcell P, Morse L, Stashenko P, Battaglini RA. Expression analysis of nhaoc/NHA2: A novel gene selectively expressed in osteoclasts. Gene Expression Patterns 2007; Aug 1.
- Razzaque MS. Can fibroblast growth factor 23 fine-tune therapies for diseases of abnormal mineral ion metabolism? Nat Clin Pract Endocrinol Metab 2007; Oct 9.
- Shklar G, Chermi DA. Lorenz Heister and oral disease with the original text from his papers. J Hist Dentistry 2007;55(2):68-74.
- Sunk, I, Bobacz, K, Hofstaetter, JG, Amoyo, L, Soleiman, A, Smolen, J, Xu, L, and Li, Y. Increased expression of discoidin domain receptor 2 is linked to the degree of cartilage damage in human knee joints: A potential role in osteoarthritis pathogenesis. Arthritis and Rheumatology 2007;56:3685-92.
- Tanner AC, Kent R Jr, Kanasi E, Lu SC, Paster BJ, Sonis ST, Murray LA, Van Dyke TE. Clinical characteristics and microbiota of progressing slight chronic periodontitis in adults. J Clin Periodontology 2007; Sep 17.
- Woo SB, Natarajan E. Alveolar ridge keratosis. J Am Dent Association 2007;138(10):1306.
- Wright RF, Dunlop RA, Kim FM, Douglass CW. A survey of program directors: Trends, challenges, and mentoring in prosthodontics. part 1. J Prosthodont. 2007; Oct 10.
- Wright RF, Dunlop RA, Kim FM, Weber HP, Donoff RB. A survey of deans: Trends, challenges, and mentoring in prosthodontics. part 2. J Prosthodont 2007; Oct 11.
- Yang S, Chen W, Stashenko P, Li YP. Specificity of RGS10A as a key component in the RANKL signaling mechanism for osteoclast differentiation. J Cell Science 2007;120(Pt 19):3362-3371.

# STUDENT SPOTLIGHT & RESOURCES



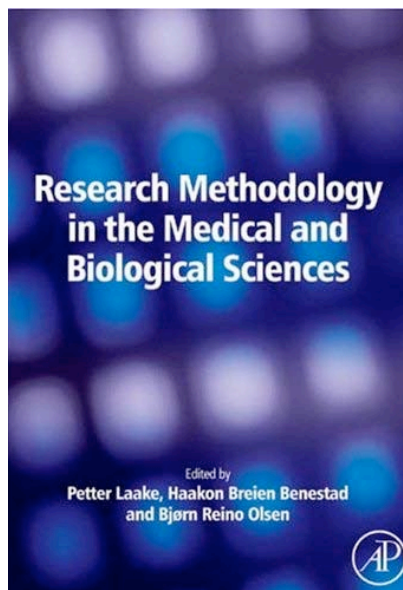
## ROSALYN SULYANTO

(DMD Class of 2010)

and President of the

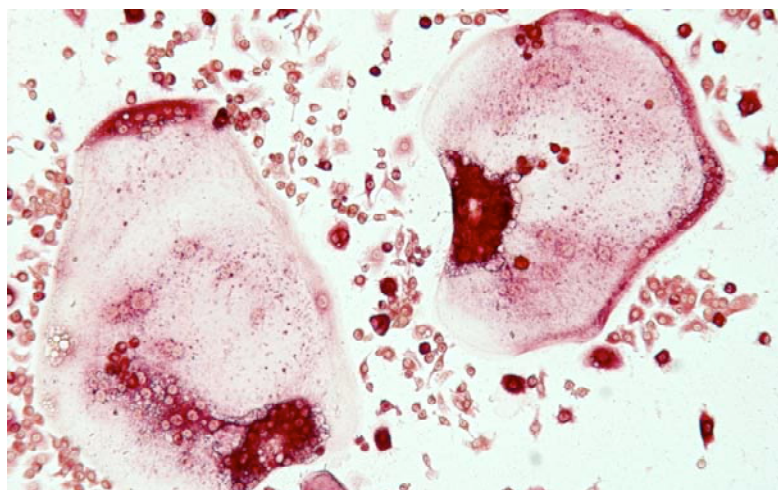
HSDM Student Research

Group, is one of twelve DMD students taking a year off to dedicate to her research activities. Rosalyn is spending a year in the Laboratory of Laurie Glimcher, MD, Irene Heinz Given Professor of Immunology, Department of



## Research Methodology in the Medical and Biological Sciences

by Petter Laake (Author), Haakon Breien Benestad (Author), Bjørn Reino Olsen (Editor). This textbook will be used in the *How to write a competitive research proposal* course.



Immunology and Infectious Diseases at Harvard School of Public Health as well as with Antonios Aliprantis, MD, PhD studying, the ROLE OF

## NFATC1 IN OSTEOCLAST FUNCTION IN

VIVO. Rosalyn represented HSDM at the 48<sup>th</sup>

Annual ADA DENSPLY Student Clinician

Research Program in San Francisco.

52 US Dental Schools and 16 International Dental Schools participated in the 2007 SCADA Program. Rosalyn presented her project, Role of NFATc1 in Osteoclast Function in vivo and won 2<sup>nd</sup> place at this year's competition.

## CONGRATULATIONS

## TO ROSALYN!



Dr. Kenneth McDougall (Chairman-Council on ADA Sessions), Ms. Rosalyn Sulyanto (HSDM DMD Student), Dr. James Bramson (Chief Executive Officer of ADA), Dr. Linda Niessen (VP and Chief Clinical Officer for DENTSPLY)

# RESEARCH NOTABLES

**DMD STUDENT, RABIE SHANTI** was the co-recipient of the Oral and Maxillofacial Surgery Foundation Daniel M. Laskin Award for the “most outstanding article published in the Journal of Oral and Maxillofacial Surgery in 2006.” This award was for an article published with Dr. Thomas Flynn entitled, **SEVERE ODONTOGENIC INFECTIONS, PART 1: PROSPECTIVE REPORT AND PART 2: PROSPECTIVE OUTCOMES STUDY.**



## STUDENT RESEARCH REQUIREMENT CHANGES

### DMD CLASS OF 2010 AND BEYOND

**COMPONENTS OF THE RESEARCH TRACK INCLUDE (complete by the end of year 2):**

1. COURSEWORK
2. SELECTION OF MENTOR
3. WRITTEN RESEARCH PROPOSAL
4. WRITTEN RESEARCH THESIS (10 PAGE MAXIMUM)
5. PRESENTATION AT HSDM STUDENT RESEARCH DAY

**COMPONENTS OF THE HONORS RESEARCH TRACK INCLUDE (complete by the end of year 4):**

1. COURSEWORK
2. SELECTION OF MENTOR
3. WRITTEN RESEARCH PROPOSAL
4. WRITTEN RESEARCH THESIS OR MANUSCRIPT
5. THESIS DEFENSE PRESENTATION
6. PRESENTATION AT HSDM STUDENT RESEARCH DAY

### MMSC CLASS OF 2008 AND BEYOND

**COMPONENTS OF THE RESEARCH TRACK INCLUDE (complete by the end of year 4):**

1. COURSEWORK
2. SELECTION OF MENTOR
3. WRITTEN NIH-FORMATTED RESEARCH PROPOSAL
4. EXAMINATION OF NIH-FORMATTED RESEARCH PROPOSAL
5. AGE SEMINAR SERIES PRESENTATION
6. PRESENTATION AT HSDM STUDENT RESEARCH DAY

### DMSC CLASS OF 2010 AND BEYOND

**COMPONENTS OF THE RESEARCH TRACK INCLUDE (complete by the end of year 4):**

1. COURSEWORK
2. SELECTION OF THESIS ADVISORY COMMITTEE
3. WRITTEN NIH-FORMATTED RESEARCH PROPOSAL
4. EXAMINATION OF NIH-FORMATTED RESEARCH PROPOSAL
5. WRITTEN THESIS
6. THESIS DEFENSE
7. 3 PUBLICATIONS
8. AGE SEMINAR SERIES PRESENTATIONS
9. PRESENTATION AT HSDM STUDENT RESEARCH DAY

**QUESTIONS . COMMENTS . SUGGESTIONS .**

HSDM OFFICE OF RESEARCH — 188 LONGWOOD AVENUE, REB 404 — BOSTON, MA 02115  
DAWN\_DECOSTA@HSDM.HARVARD.EDU — 617.432.1121 TEL— 617.432.5867 FAX