

2016 KAO report for  
Orthodontic Graduate Program  
University of Kentucky

Respectfully submitted by G. Thomas Kluemper, DMD, MS  
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*Greetings from the Bluegrass and the Orthodontic Graduate Program at the University of Kentucky!* The richest resource at UK continues to be the human resource and orthodontic team we have assembled. This year's roster at Kentucky includes the following: **Residents:** Alli Bergmann, Katie Gibson, Sudha Gudhimella, Abheer Jayakar, John Potocki, Leah Ditsch Sebastian, Jonathan West, McKenzie Woods, Evan Zeh. **Externs/Visiting Professors:** Ahmed Abouelnour, Jeryn Jacob, Divakar Karanth, Ross Savage. **Staff:** Bobbi Jo Allen, Allyson Cooper, Kim Mesmer, Andrea Reed, Janell Shaner, Robin Stovall, Pandrurada Subramanya, Abdelhamed Yousry **Faculty:** Fayrouz Bazina, Cindy Beeman, Mel Dean, Jim Hartsfield, Bruce Haskell, Saran Huja, Tom Kluemper, Jud Knight, Lorri Morford, Bob Rust, Lina Sharab, Jim Thacker and Phillip Wahle

Here is an update on the activities and accomplishments from this amazing team that I am honored to serve.

**Drs. Christian Francis and Lucy Wachs** (Class of 2015) earned two of the four 2016 *Thomas M. Graber Awards of Special Merit* for their graduate research here at UK. Dr. Francis's study was titled *Screw Diameter and Orthodontic Loading Influence Adjacent Bone Remodeling* (**faculty advisor: Dr. Huja**) and Dr. Wachs' "*Association of APOE-ε Isoforms and Reduced BMI Values in Obstructive Sleep Apnea Patients with a Convex Dento-facial Profile*" (**faculty advisor: Dr. Kluemper**) Both Dr. Wachs and Francis and Dr. Wachs presented their award winning research during this year's 116th Annual Session of the AAO in Orlando, Florida.

In May, **Drs. Ashley Betz and Adam Tackett** graduated after many wonderful years at UK, where they earned both their respective DMD degree and MS/Orthodontic Certificate. Dr. Betz has joined the practice of **Dr. Lisa Kochis** in Lexington/Georgetown, while Dr. Tackett returned home and will be practicing with **Dr. Brent Chumbley** in Corbin/Middlesboro. Adam and Ashley also presented their research at the 2016 meetings of the American Association of Dental Research and the American Association of Orthodontics. In addition, **Dr. Ed Barre** of Cincinnati retired his part-time clinical faculty position in our program. Dr. Barre is a long-time and highly valued faculty member here at UK and we will greatly miss him. Longtime friend, alumnus and supporter of our program, **Dr. Bob Rust** of Crestview Hills has been hired to fill Dr. Barre's position.

**Dr. Cindy Beeman** was awarded an eLearning Innovation Initiative (eLII) Hybrid Course Redesign and Faculty Skill Development grant this year from the Office of the Provost, Analytics and Technologies (AT) and the Center for the Enhancement of Learning and Teaching (CELT). Both grants are designed to address the needs in an ever-changing learning environment and will include synchronous and asynchronous hybrid learning opportunities, 'flipped' class designs, and IT enabled personalized/adaptive learning. Dr. Beeman has been implementing new technology associated with these grants to improve instructional delivery and to support faculty development within the College of Dentistry.

**Dr. Jim Hartsfield** has recently developed the UK Craniofacial Genetics Continuing Education Program. This exciting new program is designed to benefit individuals interested in expanding their understanding of Clinical Craniofacial Genetics and its application to clinical care and research, as well as faculty seeking a sabbatical experience in medical genetics. In addition, Dr. Hartsfield continues to head up the Craniofacial Biology Externship, was recently elected Vice President of the Midwest Component of the Angle Society of Orthodontists, where he also Chairs the Study Committee, serve as the sole dentist on the Osteogenesis Imperfecta Executive Board and served as a Visiting Professor at the University of Western Australia for two weeks this summer.

**Dr. Saran Huja**, in collaboration with **Drs. Jeffrey Ebersole and Subramanya Pandrurada** as awarded a COBRE Pilot grant to evaluate the effects of antibodies to *P. gingivalis* on osteoclast activity. The information generated in these studies will eventually help to understand potential effects of antibodies in response to natural

colonization/infection, as well as future vaccination strategies that may be employed. In addition, Dr. Huja continues his bench top research in bone physiology, its response to skeletal anchorage and the mechanisms of expedited tooth movement. He recently presented the results of some of his work at the 2016 meetings of the AAO and Midwest Component of the Angle Society. Finally, Dr. Huja is moving into exciting new areas of leadership within the College, where he will now serve as Associate Dean of Student/Faculty Development and Graduate Studies and Graduate Program Director in Orthodontics.

**Dr. Tom Kluemper** was recently appointed as Liaison for the Southern Association of Orthodontics to the AAO's Council on Education. In January, he fulfilled the final requirement for membership in the Midwest Component of the Edward Angle Society of Orthodontics with his presentation: *Phenotypic and Genotypic Factors Associated with Obstructive Sleep Apnea* at the Annual Meeting in Naples, FL. Finally, Dr. Kluemper will assume the role of Chief, Division of Orthodontics within the College beginning with the inception of this academic year.

In June, **Dr. Lorri Morford** was elected Vice President of the Craniofacial Biology Group in the International Association for Dental Research. Here at home she is Supervisor of the UK Center for the Biologic Basis of Oral and Systemic Diseases and Co-Director of the Craniofacial Genetics/Genomics Lab here at UK and will join the faculty in the new Craniofacial Genetics Continuing Education Program. In the fall, Dr. Morford was an invited speaker in the Division of Orthodontics Pontificia Universidad Javeriana in Bogotá, Colombia where she presented her work in Epigenetics and Dental Agenesis and Cancer. Finally, she presented on Personalized Medicine at the 2016 meeting of the AAO in Orlando.

### **Program Publications 2015-16:**

#### **Book Chapters**

**Hartsfield JK.** Personalized Orthodontics, Limitation and Possibilities in Practice. In V Krishanan and Z Davidovitch (Ed.), *Biological Mechanisms of Tooth Movement* (2nd Edition ed., pp. 164-172). Wiley-Blackwell Publishing.

**Hartsfield JK Jr, LA Morford:** Genetics and Orthodontics. In: Orthodontics Current Principles and Techniques, sixth edition. LW Graber, RL Vanarsdall, and KWL Vig, eds. Mosby, Inc. St. Louis, MO, pages 31-50, 2016.

**Hartsfield JK, LA Morford:** Genetic Implications in Tooth Movement, In: Biology of Orthodontic Tooth movement - Current Concepts and Applications in Orthodontic Practice. B Shroff, ed. Springer, pages 103-132, 2016

**Huja SS.** Are We Any Closer to Understanding the Mechanisms of Expedited Tooth Movement? In: Expedited Orthodontics: Improving the Efficiency of Orthodontic Treatment Through Novel Technologies. Kapila SD, Nervina J, Hatch N (eds). Monograph 51, Craniofacial Growth Series, Department of Orthodontics and Pediatric Dentistry and Center for Human Growth and Development, The University of Michigan, Ann Arbor, MI, 2015. Pages 47-64.

#### **Journal Articles/Abstracts**

**Subramani K,** Pandravadana SN, Puleo D, **Hartsfield JK, Huja SS.** *In vitro* Evaluation of Osteoblast Responses to Carbon Nanotube-coated Titanium Surfaces, Progress in Orthodontics 2016;17(23):2-9

**Subramani K,** Pandravadana SN, Puleo D, **Hartsfield JK, Huja SS.** *In vitro* Evaluation of Osteoblast Responses to Carbon Nanotube-coated Titanium Surfaces. J Dent Res 94(Spec Iss A):abstract number 2576, 2015 ([www.dentalresearch.org](http://www.dentalresearch.org)).

**Wachs L, Elmahdy M, Morford LA, Hartsfield JK, Roedig J, Phillips B, Wardrop P, Van Sickels JE, Kluemper GT.** (2015). *AHI, BMI and TNF a-rs1800629 Comparison Among Obstructive Sleep Apnea Patients with Different Facial Profiles* (Spec Iss A ed., vol. 94). J Dent Res. [www.dentalresearch.org](http://www.dentalresearch.org)

- Miller SF, Shaffer JR, Marazita ML, Levy SM, Warren JJ, **Hartsfield JK**, Moreno MM. (2015). *Exploratory Genome - Wide Association Study of Dental Arch Shape* (Spec Iss A ed., vol. 94). J Dent Res. [www.dentalresearch.org](http://www.dentalresearch.org)
- Miller S, Shaffer JR, Marazita ML, Levy SM, Warren JJ, **Hartsfield JK**, Moreno LM. (2015). *Genome Wide Association Study of Dental Arch Form and Positional Relationships in the Mixed Dentition Stage* (1 Supplement ed., vol. 29). FASEB Journal.
- Nieto O, Uriza LF, Hidalgo P, **Morford LA, Hartsfield JK**, Bolivar A, Otero L. (2015). *Upper Airway Computed Tomograph Findings Associated with Sleep Apnea* (Spec Iss A ed., vol. 94). J Dent Res. [www.dentalresearch.org](http://www.dentalresearch.org)