

UNIVERSITY OF ILLINOIS - CHICAGO

Greetings from University of Illinois at Chicago (UIC)! We have exciting developments to share with our colleagues. In May 2019, an outstanding cohort of residents graduated from our program.



From Left to Right: Celebrating their graduation were Drs. Kan Tsunoda, Harrison Siu, Rutger Stache, Henna Abbasi, Maysaa Oubaidin, Zesheng Chen, Lauren Gordon, Nisha Garg, and Ben Youel.

Our new class of residents (Drs. **Raj Desai** - Columbia University, **Peter Durbin** - University of Michigan, **Matan Moshe Farhi** - UIC, **Jessica Hedger** - UIC, **Karen Homs** - UIC, **Ruidan Ma** - University of Pacific, **Vivian Snider** - Columbia University, **Samim Taraji** - UIC, and **Michael Yang** - University of British Columbia) joined us on July 1!

After over 40 years of service, Dr. **Chester Handelman** will be retiring from clinical supervision activities. His contributions to adult orthodontics and interdisciplinary care focusing on periodontal health and TMJ disorders are immense.

After 57 years of service to UIC, Dr. **Andrew Haas** (Clinical Professor of Orthodontics) has decided to retire from his monthly teaching activities. His contributions to orthodontics and to UIC are immense. Several generations of orthodontists have been taught by Dr. Haas. He will be dearly missed by the UIC family. Please click on the link below for the piece that American Board of Orthodontics wrote about Dr. Haas.

<https://www.americanboardortho.com/about-abo/awards/wade-award-of-excellence-in-orthodontics/2017-wade-award/>



Dr. Haas

We are very thankful to our alumni and friends for their continued support to the UIC Department of Orthodontics. Our alumni and friends supported endowments that are enabling us to conduct high quality research. The Dr. Allan G. Brodie Craniofacial Endowment funds clinical and translational research to bring the most advanced 21st century technology, leadership and innovative science to the Brodie Institute and accelerate discovery that brings novel treatments and interventions to patients in Chicago and around the world. Our model of translational research is based on bioinformatics and to use massive repositories of clinical genetic data in order to identify patterns relevant to the delivery of clinical care. We are in the process of creating a named research center and establishing a state of the art 3D imaging lab to further our imprint in areas of big data analytics, clinical and translational orthodontics, and craniofacial growth and development. The 3D imaging lab will primarily serve departmental faculty and residents working on 3D research on topics such as sleep apnea/airway management; growth and development; surgical outcomes assessment; and CAD/CAM orthodontic appliances. The lab will enable us to implement digital technology in our curriculum, develop a comprehensive digital orthodontics course for our residents and also continuing education workshops covering diagnostics and treatment planning, multiple imaging acquisition technology, real-time simulation, virtual appliance construction monitoring and adjustment as well as overcoming obstacles in pre-programmed appliances, and assessment and evaluation of treatment outcomes.

With support of our alumni and friends, we are in the process of creating several resident scholarships. During this academic year, we created an Endowed Scholarship for our residents. This scholarship provides \$20,000 annually in tuition support.

Our alumni reception was held during the AAO Annual Session in May in Los Angeles. The event was very well attended and it was a great get-together of the UIC

Orthodontics family. We are in the process of creating “Alumni-Resident mentorship program/rotation”. We will be pairing our current residents with alumni to explore practice opportunities and learn more about practice management.



UIC Orthodontic faculty and residents at the AAO Meeting in Los Angeles

We have had a productive year doing high quality research. In the past academic year, our faculty members and residents published 31 articles in peer-reviewed journals and two book chapters. Several of our faculty members and residents presented at national meetings such as the AAO and AADR/IADR. We also obtained four grants to further research. Below are the details.

Department Peer Reviewed Publications (July 2018 to June 2019)

1. Morris R, Hoyer L, Elnagar MH, Atsawasuwan P, Galang-Boquiren MTS, Caplin J, Viana G, Obrez A, Kusnoto A. Reliability of Dental Monitoring™ 3D Digital Dental Models Using Photo and Video Mode. Article in Press (AJODO).
2. Wible E, Agarwal M, Altun S, Ramir T, Viana G, Evans C, Lukic H, Megremis S, Atsawasuwan P. Long-term effects of various cleaning methods on polypropylene/ethylene copolymer retainer material. Angle Orthod. 2019 Jan 2. doi: 10.2319/060818-429.1.
3. Nation L, Sanchez FJC, Opperman N, Galang-Boquiren MT, Viana G, Kusnoto B. Vertical characteristics of posterior teeth in untreated malocclusions. J World Fed Orthod. (8) 2019:57-63.
4. Alwadei AH, Galang-Boquiren MTS, Kusnoto B, Costa Viana MG, Lin EY, Obrez A, Evans CA, Masoud AI. Computerized measurement of the location and value of the minimum sagittal linear dimension of the upper airway on reconstructed lateral cephalograms compared with 3-dimensional values. Am J Orthod Dentofacial Orthop. 2018 Dec;154(6):780-787.

5. Greene CS. "The Ball on the Hill": A new perspective on TMJ functional anatomy. *Orthod Craniofac Res*. 2018 Nov;21(4):170-174. doi: 10.1111/ocr.12245. Epub 2018 Oct 14.
6. Atsawasuwan P, Chen Y, Ganjawalla K, Kelling AL, Evans CA. Extracorporeal shockwave treatment impedes tooth movement in rats. *Head Face Med* 2018 Nov 12;14(1):24
7. Rinchuse DJ, Greene CS. Scoping review of systematic review abstracts about temporomandibular disorders: Comparison of search years 2004 and 2017. *Am J Orthod Dentofacial Orthop*. 2018 Jul;154(1):35-46.e9. doi: 10.1016/j.ajodo.2017.12.011.
8. Greene CS, Stockstill J, Rinchuse D, Kandasamy S. Orthodontics and temporomandibular disorders: a curriculum proposal for postgraduate programs. *Am J Orthod Dentofacial Orthop*. 2012 Jul;142(1):18-24. doi: 10.1016/j.ajodo.2012.02.022.
9. Nicholas CL, Kadavy K, Holton NE, Marshall T, Richter A, Southard T. Childhood body mass index is associated with early dental development and eruption in a longitudinal sample from the Iowa Facial Growth Study. *Am J Orthod Dentofacial Orthop*. 2018 Jul;154(1):72-81.
10. Butaric, LN, Maddux, SD, Nicholas, CL, Evteev, A. 2018. Ontogenetic processes in the nasal cavity among Alaskan Inuits: Implications for respiratory adaptations in cold-dry environments. *Am J Phys Anthropol*. 168S: 33.
11. Nicholas CL, Thalji, G, Richter, A. 2018. Childhood obesity and accelerated timing of dental maturation: A review. *Forensic Anthropology*. 1: 170-179.
12. Wible E, Agarwal M, Altun S, Ramir T, Viana G, Evans C, Lukic H, Megremis S, Atsawasuwan P. Long-term effects of different cleaning methods on copolyester retainer properties. *Angle Orthod*. 2018 Aug 3. doi: 10.2319/010218-2.1. [Epub ahead of print]
13. Mostafiz W, Carley DW, Viana G, Ma S, Dalci O, Darendeliler MA, Evans CA, Kusnoto B, Masoud A, Galang-Boquiren T. Changes in sleep and airway variables in obstructive sleep apnea patients after mandibular advancement splint treatment. *Featured Article in AJODO – April 2019*.
14. Katsaros T, Allareddy V, Elangovan S. Dental Students' Exposure to Periodontal and Implant Placement Surgeries in U.S. Dental Schools. *J Dent Educ*. 2019 May 13;. doi: 10.21815/JDE.019.090. [Epub ahead of print] PubMed PMID: 31085689.
15. Allareddy V, Rengasamy Venugopalan S, Nalliah RP, Caplin JL, Lee MK, Allareddy V. Orthodontics in the era of big data analytics. *Orthod Craniofac Res*. 2019 May;22 Suppl 1:8-13. doi: 10.1111/ocr.12279. PubMed PMID: 31074158.
16. Rengasamy Venugopalan S, Farrow E, Sanchez-Lara PA, Yen S, Lypka M, Jiang S, Allareddy V. A novel nonsense substitution identified in the AMIGO2 gene in an Occulo-Auriculo-Vertebral spectrum patient. *Orthod Craniofac Res*. 2019 May;22 Suppl 1:163-167. doi: 10.1111/ocr.12259. PubMed PMID: 31074142.

17. Robb K, Badheka A, Wang T, Rampa S, Allareddy V, Allareddy V. Use of extracorporeal membrane oxygenation and associated outcomes in children hospitalized for sepsis in the United States: A large population-based study. *PLoS One*. 2019;14(4):e0215730. doi: 10.1371/journal.pone.0215730. eCollection 2019. PubMed PMID: 31026292; PubMed Central PMCID: PMC6485643.
18. Marchini L, Allareddy V. Epidemiology of facial fractures among older adults: A retrospective analysis of a nationwide emergency department database. *Dent Traumatol*. 2019 Apr;35(2):109-114. doi: 10.1111/edt.12459. Epub 2019 Jan 20. PubMed PMID: 30548143.
19. Rampa S, Wilson FA, Tak HJ, Roy S, Wani RJ, Markiewicz MR, Allareddy V. Patient Characteristics and Causes of Facial Fractures in the State of California. *J Oral Maxillofac Surg*. 2019 Mar 30;. doi: 10.1016/j.joms.2019.03.035. [Epub ahead of print] PubMed PMID: 31028736.
20. Louscher BM, Allareddy V, Elangovan S. Predictors of Citations of Systematic Reviews in Oral Implantology: A Cross-Sectional Bibliometric Analysis. *SAGE open*. 2019 March; :1-8. doi: 10.1177/2158244019835941.
21. Castillo JC, Gianneschi G, Azer D, Manosudprasit A, Haghi A, Bansal N, Allareddy V, Masoud MI. The relationship between 3D dentofacial photogrammetry measurements and traditional cephalometric measurements. *Angle Orthod*. 2019 Mar;89(2):275-283. doi: 10.2319/120317-825.1. PubMed PMID: 30779676.
22. Finn SC, Silver MT, Canary B, Kantarci A, Allareddy V, Katebi N, Masoud MI. A modified Steiner's analysis that does not require radiographic exposure of the cranial base. *Orthod Craniofac Res*. 2019 Feb;22(1):1-8. doi: 10.1111/ocr.12250. Epub 2018 Dec 6. PubMed PMID: 30365248.
23. Cutrera A, Allareddy V, Azami N, Nanda R, Uribe F. Is Short Root Anomaly (SRA) a risk factor for increased external apical root resorption in orthodontic patients? A retrospective case control study using cone beam computerized tomography. *Orthod Craniofac Res*. 2019 Feb;22(1):32-37. doi: 10.1111/ocr.12254. Epub 2018 Dec 13. PubMed PMID: 30451366.
24. Abramowicz S, Allareddy V, Lee MK, Nalliah RP, Rampa S, Allareddy V. Hospital-Based Emergency Department Visits With Pediatric Burns: Characteristics and Outcomes. *Pediatr Emerg Care*. 2019 Jan 7;. doi: 10.1097/PEC.0000000000001699. [Epub ahead of print] PubMed PMID: 30624417.
25. McCluskey CK, Allareddy V, Rampa S, Allareddy V, Rotta AT. Characterization of Suicide and Deliberate Self-Harm Among Children in the United States. *Clin Pediatr (Phila)*. 2019 Jan;58(1):66-72. doi: 10.1177/0009922818806313. Epub 2018 Oct 19. PubMed PMID: 30338709.
26. Nalliah RP, Shroff D, Stein K, Chandrasekaran S, Rampa S, Allareddy V, Allareddy V. Opioid Abuse and Dependence in Those Hospitalized Due to Head and Neck

- Cancer. *J Oral Maxillofac Surg.* 2018 Dec;76(12):2525-2531. doi: 10.1016/j.joms.2018.06.010. Epub 2018 Jun 12. PubMed PMID: 30509393.
27. Allareddy V, Wang T, Rampa S, Caplin J, Nalliah R, Badheka A, Allareddy V. Prevalence and predictors of *C. difficile* infections in hospitalized patients with major surgical procedures in the USA: Analysis using traditional and machine learning methods. *Am J Surg.* 2018 Dec 1;PubMed PMID: 30528819.
 28. Badheka A, Bangalore Prakash P, Allareddy V, Allareddy V. Retrospective study of haemophagocytic syndrome hospitalisations in children in the USA. *BMJ Paediatr Open.* 2018;2(1):e000337. PubMed PMID: 30498794; PubMed Central PMCID: PMC6242022.
 29. Shroff D, Nalliah RP, Allareddy V, Chandrasekaran S, Stein K, Rampa S, Allareddy V. Opioid abuse/dependence among those hospitalized due to periapical abscess. *J Investig Clin Dent.* 2018 Nov;9(4):e12354. PubMed PMID: 30066389.
 30. Ukwuoma OI, Allareddy V, Allareddy V, Rampa S, Rose JA, Shein SL, Rotta AT. Trends in Head Computed Tomography Utilization in Children Presenting to Emergency Departments After Traumatic Head Injury. *Pediatr Emerg Care.* 2018 Sep 25; PubMed PMID: 30256318.
 31. Wang T, Allareddy V, Rampa S, Allareddy V. Interpretable Patient Mortality Prediction with Multi-value Rule Sets. [revised 2018 July]. [Other]. 2018 July. Other: arXiv:1807.03633v2.

Book Chapters

1. Phimon Atsawasuwan and Sajjad Shirazi (November 5th 2018). Advances in Orthodontic Tooth Movement: Gene Therapy and Molecular Biology Aspect [Working Title], IntechOpen, DOI: 10.5772/intechopen.80287. Available from: <https://www.intechopen.com/online-first/advances-in-orthodontic-tooth-movement-gene-therapy-and-molecular-biology-aspect/>.
2. Galang-Boquiren M.T.S., Kusnoto B., Zheng Z., Pan X. (2019) Dose Adjustments for Accuracy: Ultralow Dose Radiation 3D CBCT for Dental and Orthodontic Application. In: Kadioglu O., Currier G. (eds) Craniofacial 3D Imaging. Springer, Cham.

Department Presentations at National Meetings (July 2018 to June 2019)

1. Atsawasuwan P. MicroRNA and target gene expression profiles during osteoblast/clast differentiation and tooth movement. Oral presentation at 48th Annual Meeting of AADR/97th General Session & Exhibition of the IADR. Vancouver, BC, Canada. June 2019.
2. Atsawasuwan P. Evaluation of Parameters of Mandibles with Different Craniofacial Skeletal Patterns using Three-dimensional Radiographs. Presented at the Eastern component of the Edward H. Angle society of Orthodontists in Toronto, Canada on April 10-14th

3. Atsawasuwan P. A novel approach to predict cervical vertebra and midpalatal suture maturation. Oral presentation at the AAO annual meeting in Los Angeles, CA on May 4-7th
4. Caplin J. Average Acid Etching Times Prior to Orthodontic Bonding Utilizing Different Etching Protocols. Poster presentation at the AAO annual meeting in Los Angeles, CA on May 4-7th
5. Nicholas C. Childhood obesity, oral inflammation, and dental eruption: Using molecular biomarkers to inform orthodontics. Invited talk at 44th Annual International Conference on Craniofacial Research ("Moyers Pre-Symposium").
6. Chester Handelman. - American Association of Orthodontists Annual Session – Los Angeles. Transverse Constriction of Both Arches in Adults and Correction by Nonsurgical Expansion.
7. Elnagar M. Evaluation of dentofacial transverse widths in growing and adult individuals with an average facial pattern. Poster presentation at the AAO annual meeting in Los Angeles, CA on May 4-7th.
8. Allareddy V - American Association of Orthodontists Annual Session – Los Angeles. Outcomes Following Non Surgical Treatment of Severe Class II Division I Malocclusions: Results from the Pilot Practice Based Research Network Study (May 2019).
9. Allareddy V, Venugopalan SR, Nalliah RP, Allareddy V. Machine learning approaches in Dentistry: A SWOT analysis. 48th Annual Meeting of AADR/97th General Session & Exhibition of the IADR. Vancouver, BC, Canada. June 2019.
10. Karhade D, Allareddy V. Deep learning approach for predicting 5-year survival of oral squamous cell carcinoma patients. 48th Annual Meeting of AADR/97th General Session & Exhibition of the IADR. Vancouver, BC, Canada. June 2019.
11. Allareddy V, Rampa S, Nalliah R, Wang T, Allareddy V. 1288: Prevalence, Predictors and outcomes of adverse drug events in surgical cohorts in the United States. Quality & Patient Safety VI, 48th Critical Care Congress February 17-20, 2019 San Diego, California, USA.
12. Allareddy V, Wang T, Caplin J, Badheka A, Nalliah R, Rampa S, Allareddy V. 1364: Use of a novel machine learning approach to identify high risk groups for In-hospital mortality. Quality & Patient Safety XV. 48th Critical Care Congress February 17-20, 2019 San Diego, California, USA.
13. Badheka A, Rampa S, Wang T, Nalliah RP, Caplin J, Allareddy V, Allareddy V. 1669: Neonatal infections in hospitals: Nationwide prevalence and outcomes. Sepsis Pediatrics I, 48th Critical Care Congress February 17-20, 2019 San Diego, California, USA.
14. Allareddy V, Wang T, Rampa S, Badheka A, Nalliah R, Caplin J, Allareddy V. 316: Novel machine learning approach to predict Clostridium difficile infections in U.S. Surgical cohorts. Epidemiology I, 48th Critical Care Congress February 17-20, 2019 San Diego, California, USA.

15. Allareddy V, Badheka A, Wang T, Nalliah R, Rampa S, Allareddy V. 832: Profile and outcomes of hospitalized adults who refuse treatment in the United States. Patient and Family Support I, 48th Critical Care Congress February 17-20, 2019 San Diego, California, USA.
16. Allareddy V. COAST 2018 Innovators' Workshop on Personalized and Precision Orthodontics. Key note talk - Data mining for Clinical Outcomes Research (September 2018).
17. Sinha G, Viana G, Galang-Boquiren MT. "Fostering Interprofessional Collaboration in an Advanced Dental Education Program" 2019 American Dental Education Association (ADEA) Annual Session & Exhibition. Chicago, IL
18. Stache R, Prasad B, Viana G, Galang-Boquiren MT. "Oral Appliance and Pharmacologic Agents in Treatment of Sleep Apnea" Sleep 2019 - 33rd Annual Meeting of the Associated Professional Sleep Societies. San Antonio, TX

International Invited Talks by UIC Faculty Members (July 2018 to June 2019):

1. Dr. Tsay was invited as a speaker at the Annual Meeting of Mongolian Association of Orthodontists, September 1,2, 2018; A speaker at 2018 Sino-US Forum of Orthodontics, October 25, 26, 2018, Nanjing, China; and as a speaker at a continuing education course entitled " Esthetic Practice and Considerations in Orthodontic Treatment", Stomatologic Hospital of Guangzhou Medical University, China (December 2018).
2. Dr. Tsay gave a 2-day course titled *Facial Esthetics and Orthodontic Diagnosis, Treatment Planning, and Treatment Technique* to the orthodontic residents, faculty, and area orthodontists at School of Stomatology, Guangzhou Medical University, Guangzhou, China, in November 2018.
3. Dr. Tsay gave a 5-day continuing course: *Objective Based Orthodontic Technique (O.B.O.T.)* at Ulaan Baatur, Mongolia (September 2018).
4. Dr. Galang-Boquiren gave a talk titled *Updates in Dental Sleep Medicine for the Orthodontist* at the 10th Association of Philippine Orthodontists Regional Congress, Bohol, Philippines.

Grants Obtained by UIC Department of Orthodontics (July 2018 to June 2019):

1. Biomedical Research Award of the American Association of Orthodontists Foundation (PI: Phimon Atsawasuwon. A Novel Nanoparticle Delivery System of microRNAs for Orthodontic Purposes). This proposal was awarded the Fred F. Schudy Memorial Research Award.
2. Orthodontic Faculty Development Fellowship Award of the American Association of Orthodontists Foundation (PI: Mohammed H. Elnagar. Implementation of Dental Remote Monitoring). This proposal was awarded the Robert M. Ricketts Sunflower Orthodontics Fellowship Award.
3. Research Aid Award of the American Association of Orthodontists Foundation (PI: Shayna Azoulay-Avinoam, Project Mentor: Sath Allareddy. Novel Machine

- Learning Approach to Examine Surgical Outcomes in Patients with Craniosynostosis). The goal of this project is to use novel machine learning approaches to discern patterns in outcomes following surgical repairs of craniosynostosis and to build predictive models. We will use findings from the proposed study to build Machine Learning Algorithms that can be trained to be used in real world prospective clinical data with a continuous feedback loop to improve quality of care in patients with craniosynostosis surgical corrections.
4. NIH/NIDCR - 1U19DE028717 (Specialty Node Director: Sath Allareddy, PI: Gregg Gilbert - UAB), "The National Dental PBRN Administrative and Resource Center". The National Dental PBRN is a national collaborative of practices and organizations across the United States that engages practitioners in the excitement of discovery for the benefit of everyday clinical practice and patients. Project Period: 2019 to 2026.

Several of our faculty members were selected to serve in key roles in organized dentistry activities. Below is a list of regional and national appointments of our faculty members.

Regional and National Appointments (July 2018 to June 2019):

Dr. Therese Galang has been appointed to the following -

- **Trustee**, Illinois Society of Orthodontists
- **Secretary-Treasurer**, Illinois Sleep Society
- **Scientific Committee appointment**, American Academy of Dental Sleep Medicine

Dr. Jennifer Caplin was elected as the **Editor** of the AAO Society of Educators.

Dr. Sath Allareddy was selected to serve on the following:

- The American Association of Orthodontists Foundation Planning and Awards Review Committee (PARC) for a three-year term.
- Chair the "Big Data Task Force" of the American Association of Orthodontists.
- "National Director of Specialty Engagement" of the National Dental Practice Based Research Network (Study funded by NIH/NIDCR) for a 7 year period (April 2019 to March 2026).

Remembering Dr. Arshad Mohammed:

We are extremely saddened to report the demise of our resident, Dr. **Arshad Mohammed**, who died in a tragic car accident on March 28 at the age of 32 years. He was extremely well-liked by everyone here at UIC. Last spring, prior to dental school commencement, Arshad received the Dr. Alan C. Peterson Scholarship. The scholarship is named for the late Dr. Alan C. Peterson, who graduated from the College in 1973. The criteria for the scholarship call for the recipient to exemplify compassion, dedication, and excellence in a clinical setting. We believe that everyone who knew Arshad would agree that he fulfilled these qualities and showed compassion and respect for his patients, fellow students and residents, faculty, staff, administrators, and friends.

Arshad's passing has been very painful for everyone who knew him. We can only imagine the thousands of lives he would have touched as a healing member of the dental profession.



UIC Orthodontics Bow-Tie Day – in memory of Dr. Arshad Mohammed



Dr. Arshad Mohammed receiving the Dr. Alan C. Peterson Scholarship award from Dr. Susan Rowan

Dr. **James J. Baldwin**, part-time Clinical Professor of Orthodontics who retired in 2014, passed away on January 31 at the age of 93. Dr. Baldwin had taught at the College for 15 years, specializing in biomechanics. He was a pioneer in the development of the segmented arch technique. Dr. Baldwin also taught at the Indiana University Dental School.



Dr. James Baldwin

I am very thankful to our residents, faculty, staff, alumni, and friends for fostering a culture of excellence at UIC!

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