

Mohamed G. Hassan, PhD, MSc, BDS

Department of Orthodontics
Faculty of Dentistry
Assuit University, Assuit, Egypt
Phone: (+20) 1110511333
Email: dr.mohamedghassan@gmail.com

EDUCATION

- Ph.D. in Orthodontics & Craniofacial Orthopedics** January 2020
Alexandria University
Thesis: The Effects of Altering Osteoclast Count in Utero on Mandibular Length in Adult Mice
- M.Sc. in Orthodontics & Craniofacial Orthopedics** February 2014
Alexandria University
Thesis: Analysis of Midfacial Shape of New Mouse Models with Midfacial Hypoplasia
- B.D.S. (Faculty of Dentistry)** July 2006
Alexandria University

RESEARCH EXPERIENCE

- Fulbright Research Scholar, University of California, San Francisco** 2017 – 2018
Department of Orofacial Sciences
Advisor: Dr. Andrew Jheon
- Identified an association between alteration of osteoclast count and mandibular length in adult mice.
 - Initiated a collaboration with Dr. Alice Goodwin at UCSF to explore the TMJ shape variation among new mice model of skeletal malocclusion.
 - Developed a model for studying variation in TMJ shape based on variation in diet hardness over multiple generations, and used it to uncover that diet hardness does have a significant impact on TMJ shape.
 - Explored the influence of dietary calcium and phosphorus in utero on adult mouse mandibular and TMJ morphology.
- Research Assistant, University of Washington, Seattle** 2010 – 2011
Department of Pediatrics
Advisor: Prof. Timothy Cox
- Contributed to the identification of novel gene mutation in Pfas causing midface hypoplasia using mouse models.
 - Gained proficiency in using geometric morphometric analysis to study craniofacial variation.
 - Excelling the use of Micro-computed tomography and 3D volumes rendering and analyses.

GRADUATE STUDENTS TRAINED (*University of California, San Francisco*)

- 2017 – 2018 Richardo Vargas (Division of Orthodontics)
- 2017 – 2018 Allan Wang (Division of Orthodontics)
- 2017 – 2018 Alejandra Palacios (Division of Orthodontics)

WORK EXPERIENCE

Assistant Lecturer, Assuit University, Egypt

2021 – Present

Department of Orthodontics

- Teaching the undergraduate orthodontic course.
- Supervising 6 hours a week in the university clinic as an orthodontic consultant.
- Supervise dental students in their final year in the clinic and exams.
- Actively participate in university community events, including strategic planning and career development workshops.

Lecturer, South Valley University, Egypt

2020 – 2021

Department of Orthodontics

- Course director for the undergraduate orthodontic course.
- Practice 6 hours a week in the university clinic as an orthodontic specialist.
- Supervise dental students in their final year in the clinic and exams.
- Actively participate in university community events, including strategic planning and career development workshops.

Visiting Lecturer, October 6 University, Egypt

2020 - 2021

Department of Orthodontics

- Teaching for the undergraduate orthodontic course.
- Supervise dental students and interns in the clinic.

Assistant Lecturer, South Valley University, Egypt

2015 - 2020

Department of Orthodontics

- Prepare for and teach the undergraduate orthodontic practical course.
- Practice 6 hours a week in the university clinic as an orthodontic specialist.
- Supervise dental students in their final year in the clinic.
- Actively participate in university community events, including strategic planning and career development workshops.

Orthodontic Specialist, Egyptian Armed Forces, Egypt

2013 - 2016

North Zone Military Region

- Practiced as an orthodontic specialist for 30 months of obligatory military service at one of the Egyptian army hospitals, where my job was to examine, diagnose, and treat dental malocclusions and orofacial anomalies
- As part of my responsibilities, designed and constructed a variety of appliances used to align teeth and jaws to correct and/or maintain normal orofacial functions and improve dentofacial appearance.
- Became adept at working in a high-stress, fast-paced environment

Teaching Assistant, Sinai University, Egypt

2008 - 2015

Department of Orthodontics

- Taught the practical sections of 2 courses (Orthodontics I ORP 411 and Orthodontics II ORP 412). These courses provide the dental student with the knowledge and skills necessary to recognize an established or developing malocclusion and to institute preventive and therapeutic treatment plans within the scope of general dental practice.

PUBLICATIONS

1. **Hassan MG**, Hassan R. Challenges in Clinical Dental Education during COVID-19 Crisis. *J Egypt Public Health Assoc* 2021;96:12. Doi: 10.1186/s42506-021-00072-3.
2. **Hassan MG** and Amer H (2021) Dental Education in the Time of COVID-19 Pandemic: Challenges and Recommendations. *Front. Med* 2021. 8:648899. doi: 10.3389/fmed.2021.648899.
3. **Hassan MG**, Zaher AR, Athansiou AE. How orthodontic research can be enriched and advanced by the novel and promising evolutions in biomedicine. *J Orthod* 2021. Doi: doi:10.1177/14653125211006116.
4. Yacout Y, **Hassan MG**, Ismail H, ElHarouni N, Zaher AR. Tooth-Bone-Borne Vs. Bone-Borne Palatal Expanders: A Systematic Review. *Front. Dent. Med* 2021. 2:644002. doi: 10.3389/fdmed.2021.644002.
5. **Hassan MG**, Yacout YM, El-Harouni N, Ismail HA, Abdallah E, Zaher AR. Effect of activation protocol on miniscrew-assisted palatal expansion: A systematic review of current evidence. *Egypt Dent J* 2021;67:987-1000. Doi: 10.21608/edj.2021.58196.1453.
6. Zhang X, **Hassan MG**, Scheller E. Neural regulation of bone marrow adipose tissue. *Best Practice & Research Clinical Endocrinology & Metabolism* 2021. Doi: 10.1016/j.beem.2021.101522.
7. **Hassan MG**, Kaler H, Zhang B, Cox TC, Young N, Jheon AH. Effects of multi-generational soft diet consumption on mouse craniofacial morphology. *Front Physiol* 11:783. Doi:10.3389/fphys.2020.00783.
8. **Hassan MG**, Vargas R, Zaher AR, Ismail HA, Lee C, Cox TC, Jheon AH. Altering calcium and phosphorus levels in utero affects adult mouse mandibular morphology. *Orthod Craniofac Res.* 2019;22(Suppl. 1):113–119.
9. **Hassan MG**, Zaher AR, Palomo JM, Palomo L. Sclerostin Modulation Holds Promise for Dental Indications. *Healthcare* 2018, 6, 134; doi:10.3390/healthcare6040134.
10. Palmer K, Fairfield H, Borgeia S, Curtain M, **Hassan MG**, Dionne L, Karst SY, Coombs H, Reinholdt LG, Bergstrom DE, Donahue LR, Cox TC, Murray SA. Discovery and Characterization of spontaneous mouse models of craniofacial dysmorphology. *Developmental Biology* 2015.
11. Slavotinek AM, Baranzini SE, Schanze D, Labelle-Dumais C, Short KM, Chao R, Yahyavi M, Bijlsma EK, Chu C, Musone S, Wheatley A, Kwok PY, Marles S, Li C, Fryns J-P, Maga AM, **Hassan MG**, Gould DB, Madireddy L, Cox TC, Smyth I, Chudley AE, Zenker M. (MOTA) syndrome is caused by mutations in *FREM1*. *Journal of Medical Genetics* 2011.

SELECTED TALKS

1. **Hassan MG**. “Review like an expert: Guidelines for reviewing scientific articles” Continuous Education Seminar, Department of Orthodontics, Alexandria University, Egypt 2020.
2. **Hassan MG**. “Environmental regulation of craniofacial development and morphology” Regenerative Medicine Special Virtual Seminar, Washington University, St. Louis, MO, USA 2020.
3. **Hassan MG**. “Alteration of osteoclasts count in utero affects mouse mandibular morphology” Virtual Annual Meeting of the Greek Orthodontic Society, and the European Federation of Orthodontics, Greece 2020.
4. **Hassan MG**. “The role of osteoclasts in the craniofacial philharmonic orchestra” Research Seminar, Washington University, St. Louis, MO, USA 2020.
5. **Hassan MG**. “Challenges in Preparing your first scholarship application” Young Researchers Forum, South Valley University, Qena, Egypt.
6. **Hassan MG**. “The effect of altering osteoclast in utero on the mandibular morphology”, Northwestern University, Chicago, IL, USA 2020.
7. **Hassan MG**. “Moving Towards Customized Orthodontic Therapy” Scientific Annual Meeting, Department of Orthodontics, Alexandria University, Egypt 2019.
8. **Hassan MG**. “How the experiences of previous generations affect TMJ Morphology” 6th Mediterranean Orthodontic Congress, Alexandria, Egypt 2018.
9. **Hassan MG**. “A Novel Gene Mutation Causing Class III Malocclusion” Annual Meeting of European Federation of Orthodontics, Limassol, Cyprus 2017.

POSTERS

1. **Hassan MG**, Kaler H, Zhang B, Cox TC, Young N, Jheon AH. Multi-generational Soft Diet Consumptions Leads to Changes in Adult Mouse Mandibular Morphology. 119th AAO Annual Meeting, Charley Schultz Resident Award. Los Angeles, CA, May 2019.
2. A Khalifa, A AbdelKarim, **MG Hassan**, A Ghoneima. Three-dimensional Assessment of the Pharyngeal Airway in Growing Vs Non-growing Subjects with/without Cleft Lip and Palate. 119th AAO Annual Meeting, Los Angeles, CA, May 2019.
3. **Hassan MG**, Zaher AR, Boughner JC. Orofacial clefting and caries: do they share a genetic etiology? AAO Session Charley Schultz Resident Award, San Diego, May 2017.
4. **Hassan MG**, Cox TC, Ismail HA, Mowafy MI, Fu T, Camci E. 3D Micro-CT scanning and geometric morphometric analysis of craniofacial shape of mice with midface hypoplasia. 19th Alexandria International Dental Congress, Alexandria. October 2014.
5. E. Camci, S.M. Rolfe, **M.G. Hassan**, M. Kircher, T. Fu, M. Lacourse, M. Cunningham, J. Shendure, T.C. Cox. New mouse models for investigating the pathogenesis of midface hypoplasia. IADR General Session. Seattle, WA. March 2013.
6. **M.G. Hassan**, A.M. Maga, L. Felker, W. Huei, M. Rieder, M.L. Cunningham, J. Shendure, T.C. Cox. Identifying new genes for craniosynostosis-associated midfacial hypoplasia. 32nd Annual David W. Smith Workshop on Malformations and Morphogenesis. Lake Arrowhead, CA. Sept 2011.
7. **M.G. Hassan**, A.M. Maga, L. Felker, W. Huei, M. Rieder, M.L. Cunningham, J. Shendure, T.C. Cox. Identifying new genes for craniosynostosis-associated midfacial hypoplasia. FaceBase Annual Meeting, Denver, CO. May 2011.

FELLOWSHIPS

Rita Levi-Montalcini Postdoctoral Fellowship

Expected to start June 2021

Role: Postdoctoral Fellow

Place: Center of Regenerative Medicine, Washington University in St. Louis, USA.

Fulbright Research Student Grant

2017 - 2018

Role: Non-Degree, Research Scholar

Amount: \$32,700

Place: School of Dentistry, University of California, San Francisco.

HONORS & AWARDS

- Winner & Travel Award, International Association of Dental Research (IADR), Egyptian Section (2020).
- Travel Grant for Bisphosphonate 2019 Meeting, American Society for Bone and Mineral Research (2019).
- Travel Award, American Association of Orthodontists (2019).
- Travel Award, American Association of Orthodontists (2017).
- Travel Award, European Federation of Orthodontics (2016).
- Scientific Publishing Award, South Valley University (2015).
- Postgraduate Research Award, Faculty of Dentistry, Alexandria University (2014).

TECHNICAL AND COMMUNICATION SKILLS

- **3D Rendering and Geometric Morphometric Analysis:** Statistical shape analysis, use of 3D volume rendering and shape analysis software such as Drishti, Avizo, Landmark, MorphoJ, tpsDIG232, Geomorph.
- **Computational and Bioinformatic:** Custom script writing (R), statistical analysis and graphing with R, RNA-seq analysis.

- **Communication:** strong writing and presenting experience including review and research publications as well as talks at multiple conferences, adept designer of figures and illustrations using Adobe Illustrator.
- **Language:** Arabic (native), English (Fluent), French (Fluent).

JOURNAL REVIEWER

- Scientific Reports.
- Journal of Biomechanics.
- The Angle Orthodontist.
- PeerJ Life and Environment.
- Bioprinting.

FACULTY & LEADERSHIP SKILLS & CONTINUOUS EDUCATION

- **Single Cell RNA-Seq Bioinformatics Workshop:** University of California, Davis, USA, 2017.
- **Member of Strategic Planning Committee:** South Valley University, since 2017.
- **Egyptian University Young Forum:** South Valley University, Qena, 2017.
- **Preparing University Teacher:** Mansoura University, Mansoura, 2016.
- **The Road To Research & Active Learning:** Alexandria University, Alexandria, 2016.
- **2nd & 3rd Young Researchers in Egyptian Universities Conference:** South Valley University, Qena, 2015 & 2016.
- **International Publishing of Research:** Alexandria University, Alexandria, 2015.
- **Examination and Evaluation Systems Students:** Alexandria University, Alexandria, 2015.
- **Research Methods:** Alexandria University, Alexandria, 2015.
- **Decision-making and problem-solving:** Alexandria University, Alexandria, 2015.
- **Competitive Research Projects:** Alexandria University, Alexandria, 2015.
- **Biostatistical Analysis Using SPSS:** Alexandria University, Alexandria, 2015.
- **HIPAA Compliance:** Seattle Children's Research Institute, Seattle, 2010.
- **Emergency and Disaster Preparedness:** Seattle Children's Research Institute, Seattle, 2010.
- **Corporate Compliance:** Seattle Children's Research Institute, Seattle, 2010.
- **Research Orientation:** Seattle Children's Research Institute, Seattle, 2010.
- **Workplace Diversity:** Seattle Children's Research Institute, Seattle, 2010.

REFERENCES

- 1. Dr. Andrew Jheon**
Assistant Professor, University of California, San Francisco, USA
Email: andrew.jheon@ucsf.edu
- 2. Prof. Timothy Cox**
Endowed Professor in Musculoskeletal Tissues
School of Dentistry, University of Missouri-Kansas City, USA
Email: tccox@uw.edu
- 3. Prof. Hanan Ismail**
Chair, Department of Orthodontics
Faculty of Dentistry, Alexandria University, Egypt
Email: hananaminismail@gmail.com