

ANDREW M. VAHABZADEH-HAGH

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OBJECTIVE

Obtain the knowledge and training to become a safe, effective, innovative and versatile academic head and neck surgeon. Through laryngology fellowship I aim to become a contributing member and leader in academic otolaryngology.

SURGICAL TRAINING

David Geffen School of Medicine at UCLA
Department of Head and Neck Surgery
Laryngology Fellowship, 06/2018

David Geffen School of Medicine at UCLA
Department of Head and Neck Surgery
Otolaryngology Residency Program, 06/2017

EDUCATION

Harvard Medical School, Boston, MA
Harvard-MIT Division of Health Sciences and Technology
Doctor of Medicine
Cum Laude, 05/2012

Arizona State University, Tempe, AZ
College of Engineering and Applied Sciences /
Barrett Honors College
Bachelor of Science in Bioengineering
Minor in Biochemistry, Pre-Med
Summa Cum Laude, GPA 4.0, 05/2007

LICENSURE

California, A128939, Issued 03/04/2014

PROFESSIONAL EXPERIENCE

Post-Graduate Research Associate

July 2014 -

David Geffen School of Medicine at UCLA / Los Angeles, CA

Laryngeal Physiology, Speech Production, and Voice Perception Laboratories

- Computational analysis of voice physiologic and acoustic measures
- Advanced computer modeling of the vocal fold medial surface
- Evaluating novel tools for perceptual voice analysis
- Development of tongue fibrosis and atrophy rodent model to mimic post-treatment state of humans with oral or tongue base cancer
- Application of human mesenchymal stem cells for tissue engineering in the head and neck

Medical Sciences Graduate Research Associate

Jan 2008 – June 2012

Beth Israel Deaconess Medical Center / Boston, MA

Berenson-Allen Center for Noninvasive Brain Stimulation

- Development of near-infrared photobiostimulation (NIR-PBS) as a means of neuromodulation

- Establish the electrophysiological changes associated with NIR-PBS
- Integration of NIR-PBS with transcranial magnetic stimulation (TMS) to optimize treatment of neuronal injury (hypoxia/ischemia, neurodegeneration)
- Development of methods for paired-pulse transcranial magnetic stimulation in rodent models

McGovern Institute for Brain Research at MIT / Cambridge, MA July 2007 – Sept 2007
Cognitive and Affective Neuroscience Lab

- Development and use of real-time functional magnetic resonance imaging as a tool to accelerate learning and treat neurologic disease
- Optimization of event-related experimental design for unique experimental paradigms

Bioengineering Undergraduate Research Associate May 2006 – July 2007

ASU Brain Dynamics Lab; Barrow Neurological Institute / Tempe, AZ

- Mathematical Analysis of brain activity during preictal, ictal, and postictal periods of epileptic seizures for seizure characterization, detection, prediction, and prevention
- In situ AED administration to terminate status epilepticus in rat models
- Automated seizure control via timely prediction of seizures and corresponding electrical stimulation and/or drug administration

The Biodesign Institute at Arizona State University / Tempe, AZ June 2004 – July 2007
Center for Glycosciences and Technology

- Engineering of plant glycosylation pathway (Sialic acid) for medicinal applications
- Performed transient and stable transformations of Tobacco *Nicotiana benthamiana* with a putative human sialyltransferase gene for biochemical and physiological analysis
- Studied the Golgi Localization of Sialyltransferases across plant and mammalian systems

Kaplan Teacher Nov 2005 – May 2007

Kaplan Test Prep and Admissions / Phoenix, AZ

- Teach Physical and Biological Sciences sections of the MCAT
- Serve as a teacher, tutor, and mentor to students preparing to take the MCAT

Medical Scribe Dec 2004 – Dec 2005

Chandler Regional Hospital / Chandler, AZ

- Act to make patient visits to the emergency room efficient and pleasant
- Obtain patient history and current status; track all patient labs and orders while communicating effectively with physicians and other hospital staff

PROFESSIONAL ACTIVITIES

Journal of Otolaryngology Forecast, Editorial Board Member June 2017 –
ScienceForecast Publications, Open Access, Peer-reviewed

Journal of Otolaryngology, Editorial Board Member May 2017 –
Chronicle Publishers, Open Access, Peer-reviewed

Medical Student Research Advisor July 2015 –
David Geffen School of Medicine at UCLA / Los Angeles, CA
Mentees: Jayson Fitter ('16), Ezinne Ihenachor ('17), Kevin Chao ('18),
Pranati Pillutla ('19)

Career Advisor May 2015 –
Student Affairs Office, David Geffen School of Medicine at UCLA / Los Angeles, CA

Head and Neck Surgery Physical Exam Instructor Sept 2014 –
Surgery Clerkship, David Geffen School of Medicine at UCLA / Los Angeles, CA

F1000Prime, Associate Faculty Member May 2014 –
 Provide editorials of and recommendations for critical literature in otolaryngology

Tutor in Medicine, Pre-Med Advisor May 2008 – June 2012
Leverett House, Harvard College / Cambridge, MA
 Academic advising to pre-med students. Write composite medical recommendation letters (committee letter). Organize and provide mock interview sessions

Medical Degree Curriculum Committee Class Representative Sept 2007 – June 2009
Harvard-MIT Division of Health Sciences and Technology / Boston, MA

Freshman Year Experience (FYE) Tutor Aug 2004 – May 2007
Arizona State University / Tempe, AZ
 Lead Tutor role: oversaw fellow tutors and worked to promote the program campus-wide

Senator to the College of Engineering April 2004 – Feb 2005
Undergraduate Student Government, Arizona State University / Tempe, AZ

Academic Mentor Aug 2004 – May 2007
Learning and Living Community (LLC), Arizona State University / Tempe, AZ

Neurosciences Research Assistant June 2004 – Jan 2005
Clinical Neurobiology & Bioengineering Research Laboratories, Good Samaritan Regional Medical Center / Phoenix, AZ
 Mentor: Dr. Richard Herman. Studied C-fiber desensitization as an early biomarker of type II diabetes mellitus.

Cardiovascular Research Assistant June 2002 – June 2003
Division of Cardiology at Mayo Hospital, Phoenix / AZ
 Mentor: Dr. F. David Fortuin. Studied the effects of Enhanced External Counterpulsation (ECP) on myocardial perfusion in mild to moderate angina.

VOLUNTEERISM

Care Harbor Free Clinic Jan 2014, Jan 2017
 Provided free medical care to the uninsured, underinsured and at risk population in the County of Los Angeles

Children's Hospital of Orange County Walk in the park fundraiser 2014 – 2016

Venice Family Clinic Silent Auction Aug 2014
 Helped staff the Surf & skate silent auction to raise money and awareness for the Venice Family Clinic for the underserved.

LiveRight Race and Fundraiser, Cambridge, MA 2008

Sun Devil 101 Welcoming Week 2004 – 2006
 Helped organize and participate in freshman welcoming activities at Arizona State University

Race for the Cure, Phoenix, AZ 2003 – 2005

Desert Foothills Fine Arts Theater Cast member of "The Boyfriend" 2002

Habitat for Humanity Construction of homes for the poor 2002

Mayo Hospital Volunteer, Phoenix, AZ 2001 - 2005
Departments: Oncology, Physical Rehabilitation, and Emergency Medicine.

HONORS AND SPECIAL AWARDS

Paul H. Ward Society 29th Annual Scientific Session 1st Place Presentation Award, '17

Head & Neck Scientific Poster Competition Award, 119th Annual Triological Society Meeting

American Laryngological Association 2016 Resident Research Award

Triological Society Combined Sections Meeting Resident Travel Grant, '15-'17

The Linnane Scholarship, '09-'12 – For academic excellence and community leadership at Harvard Medical School

Harvard University Dolores Zohrab Liebmann Fund Nominee, '09

Tylenol Scholar, '07-'08 – Stipend for exceptional students pursuing a career in healthcare

Distinguished Senior Award from the Harrington Department of Bioengineering at ASU

Ira A. Fulton Alumni Scholarship – Stipend provided by the ASU Alumni Association to a student with great academic record and university involvement.

Ira A. Fulton College of Engineering (ASU) Deans List, '03-'07 – Honors outstanding academic achievement (GPA > 3.5)

John F. Kelly Memorial Scholarship, '06-'07 – Awarded to most "Outstanding Junior" in the Harrington Department of Bioengineering at ASU

4.00 GPA Award – Honors recognition at annual Engineering College banquet for students who have maintained a cumulative GPA of 4.00.

ASU President's Scholar – Tuition waiver and annual stipend for undergraduate studies (4 yrs)

Robert C. Byrd Scholar: Federally funded and state administered honor for students that show exceptional promise; annual stipend (4 yrs)

Datatel Scholar, '04-'06 – Stipend awarded on an annual basis to students who excel in academic and community involvement; Datatel is a company associated with university business programming.

Best Buy Scholar – Stipend for individuals who show extensive community involvement.

Target All-Around Scholar – Stipend for those who demonstrate all-around excellence.

Kiwanis Club Scholarship – Four-year scholarship for students with high academic achievement and community involvement (4 yrs)

RESEARCH GRANTS AND FELLOWSHIPS

Howard Hughes Medical Institute Research Training Fellowship
Optimization of Stroke Therapy by Transcranial Magnetic Stimulation
Amount: \$38,000 2009 – 2010

Center for Integration of Medicine & Innovative Technology (CIMIT) Science Grant
Study near-infrared photobiostimulation as a means of neuromodulation in stroke.
Amount: \$56,000 2009 – 2010

Harvard Medical School T32 Translational Research in Aging Fellowship,
Study near-infrared photobiostimulation as a means of neuromodulation in stroke.
Amount: \$5,193 2008

Harvard Medical School Office of Enrichment Programs Summer Fellowship
Study near-infrared photobiostimulation as a means of neuromodulation in stroke.
Amount: \$4,000 2008

COURSES / CERTIFICATES

10th Annual Multidisciplinary Transoral Surgery for Head and Neck Cancer Course and Workshop, Feb 22-25, 2017, Mayo Clinic, Phoenix, Arizona

Stryker Surgical Approaches and Techniques in Craniomaxillofacial Trauma Surgery Oct 21-22, 2016, Downers Grove, Illinois

Loma Linda University School of Medicine: 13th Annual Western Resident's Advanced Sinus Course, '15

Loma Linda University School of Medicine: 11th and 12th Annual State of the Arts Concepts in Laryngeal Conservation Surgery, '14-'15

Endoscopic Pituitary and Skull Base Course, Keck School of Medicine, University of Southern California, Sept 14, 2013, Los Angeles, CA

Endoscopic Skull Base Surgery Course, Keck School of Medicine, University of Southern California, Sept 22, 2012, Los Angeles, CA

LECTURES AND ORAL PRESENTATIONS

Vahabzadeh-Hagh, AM, Rwigema, JCM, Nabili, V, Sadeghi, A, Gage, D, Wang, M, Lorentz, W. "Predictors of Prolongation in Radiation Treatment Time in a VA Population Treated with Chemoradiation for Oropharyngeal Cancer". *International Federation of Head and Neck Oncologic Societies 5th World Congress.* 2014.

Vahabzadeh-Hagh, AM, Zhang, Z, Chhetri, DK. "Quantitative Evaluation of the vocal fold medial surface contour upon selective activation of intrinsic laryngeal muscles". *The Triological Society Combined Sections Meeting.* 2016.

Dewan, K, **Vahabzadeh-Hagh, AM,** Chhetri, D. "Neuromuscular Compensation Mechanisms in Vocal Fold Paralysis and Paresis". *American Laryngological Association's Spring Meeting at COSM.* 2016.

Vahabzadeh-Hagh, AM, Zhang, Z, Chhetri, DK. "Changes in the 3-Dimensional Geometry of the Vocal Fold Medial Surface Resulting from Individual and Combined Intrinsic Laryngeal Muscle Activation" *American Laryngological Association's Spring Meeting at COSM*. 2016.

Vahabzadeh-Hagh, AM. "Head and Neck Surgery Pearls". *UCLA Department of Medicine Grand Rounds*, UCLA Medical Center, Santa Monica. October 6th, 2016.

Vahabzadeh-Hagh, AM, Long, JL. "Mesenchymal cell phenotype in tissue-engineered vocal fold mucosa". *The Fall Voice Conference*. Oct 13th, 2016.

Christine, K, **Vahabzadeh-Hagh, AM**, Frederick, JW, Luu, QC. "Failure of multiple imaging modalities to diagnose lymphatic malformation of the tongue". *The Triological Society Combined Sections Meeting*. 2017.

Vahabzadeh-Hagh, AM, Zhang, Z, Chhetri, DK. "Hirano's Cover-Body Model and It's Unique Laryngeal Postures Revisited". *American Laryngological Association's Spring Meeting at COSM*. 2017.

POSTER PRESENTATIONS

Shah, M., **Vahabzadeh-Hagh, A.**, Joshi, L. "Comparative studies on Golgi localization signals of α 2-3 sialyltransferases in plant and mammalian systems" *American Society of Plant Biology Abstr* 2006

Vahabzadeh-Hagh, A. et al. "Improved Event-Related Experimental Design when Stimuli have Undefined Event Types" *14th Annual Meeting of the Organization for Human Brain Mapping* Abstr 2008

Vahabzadeh-Hagh, A. et al. "Lateralized Motor Evoked Potentials via Transcranial Magnetic Stimulation" *Soma Weiss Student Research Day* Abstr 2009

Vahabzadeh-Hagh, AM, Fujiwara, N, Mandeville, ET, Xing, C, Rotenberg, A, Lo, E, Pascual-Leone, A. "Optimization of Stroke Therapy by Transcranial Magnetic Stimulation" *HHMI Meeting of Medical Fellows, Research Scholars, and Physician-Scientist Early Career Awardees* Abstr 2010:E13

Muller, P, **Vahabzadeh-Hagh, A**, Jensen, F, Pascual-Leone, A, Rotenberg, A. "Modulation of cortical excitability in anesthetized rats with modified intermittent theta burst rTMS" *Hum Brain Mapp* Abstr 2010:3667

Vahabzadeh-Hagh A, Muller P, Lo E, Pascual-Leone A, Rotenberg A. "Paired-pulse transcranial magnetic stimulation in rats." *Hum Brain Mapp* Abstr 2010:534

Muller, PA, Dhanme, SC, **Vahabzadeh-Hagh, A**, Pascual-Leone, A, Jensen, F, Rotenberg, A. "Demonstration of long-term depression in rat motor cortex with low frequency rTMS." *Soc for Neurosci* Abstr 2010:818.7

Vahabzadeh-Hagh A, Muller P, Pascual-Leone A, Jensen F, Rotenberg A. "Measures of cortical inhibition by paired-pulse transcranial magnetic stimulation in anesthetized rats." *Soc for Neurosci* Abstr 2010:413.12

Hayakawa, K, **Vahabzadeh-Hagh, A**, Arai, K, Lo, EH. "Effects of infrared light therapy on endothelial progenitor cells in mouse focal cerebral ischemia" *International Symposium on Cerebral Blood Flow, Metabolism, and Function* Abstr 2011.

Vahabzadeh-Hagh, AM, Sepahdari, AR, Abemayor, E. “Hypopharyngeal Venous Malformation Presenting with Chronic Globus and Intermittent Dysphagia”. *The Triological Society Combined Sections Meeting*. Abstr 2015.

Vahabzadeh-Hagh, AM, Ishiyama, A. “Unilateral Sudden Sensorineural Hearing Loss in the setting of West Nile Viral Meningitis: a case report and literature review”. *The Triological Society 118th Annual Meeting at COSM*. Abstr 2015.

Vahabzadeh-Hagh, AM, Mendelsohn, AH. “The state of clinical perceptual voice analysis”. *The Fall Voice Conference*. Abstr 2015.

Vahabzadeh-Hagh, AM, Mallen-St. Clair, J, Armin, BB. “More than just tissue diagnosis in a patient with maxillofacial bony lesions and hypercalcemia”. *The Triological Society Combined Sections Meeting*. Abstr 2016.

Vahabzadeh-Hagh, AM, Berke, GS, Long, JL. “Stem Cell Therapy in a Model of Dysphagia Secondary to Tongue Fibrosis”. *The Triological Society Annual Meeting at COSM*. Abstr 2016.

Vahabzadeh-Hagh, AM, Blackwell, KE. “Invasive Oral Tongue Mucormycosis after Orthotopic Liver Transplant”. *American Academy of Otolaryngology – Head and Neck Surgery Foundation Annual Meeting*. 2016.

Vahabzadeh-Hagh, AM, Ramirez, EA. “The Israel Retractor Modification for Oropharyngeal Surgery on Patients of Larger Body Habitus”. *The Triological Society Combined Sections Meeting*. Abstr 2017.

Vahabzadeh-Hagh, AM, Ramirez, EA. “Chronic Asymptomatic Parotid Mass as a Unique Focal Manifestation of Immunoglobulin G4 Related Disease”. *The Triological Society Combined Sections Meeting*. Abstr 2017.

RESEARCH PAPERS

1. Rotenberg A, Muller PA, **Vahabzadeh-Hagh AM**, Navarro X, Lopez-Vales R, Pascual-Leone A, Jensen F. Lateralization of forelimb motor evoked potentials by transcranial magnetic stimulation in rats. *Clin Neurophysiol* 2010; 121:104-108.
2. Pascual-Leone A, Freitas C, Oberman L, Horvath JC, Halko M, Eldaief M, Bashir S, Vernet M, Shafi M, Westover B, **Vahabzadeh-Hagh AM**, Rotenberg A. Characterizing brain cortical plasticity and network dynamics across the age-span in health and disease with TMS-EEG and TMS-fMRI. *Brain Topogr* 2011; 24:302-315.
3. **Vahabzadeh-Hagh AM**, Muller PA, Pascual-Leone A, Jensen FE, Rotenberg A. Measures of cortical inhibition by paired-pulse transcranial magnetic stimulation in anesthetized rats. *J Neurophysiol* 2011; 105:615-624.
4. Demirtas-Tatlidede A, **Vahabzadeh-Hagh AM**, Bernabeu M, Tormos JM, Pascual-Leone A. Noninvasive brain stimulation in traumatic brain injury. *J Head Trauma Rehabil* 2012; 27:274-292.
5. **Vahabzadeh-Hagh AM**, Muller PA, Gersner R, Zangen A, Rotenberg A. Translational neuromodulation: approximating human transcranial magnetic stimulation protocols in rats. *Neuromodulation* 2012; 15:296-305.

6. Demirtas-Tatlidede A, **Vahabzadeh-Hagh AM**, Pascual-Leone A. Can noninvasive brain stimulation enhance cognition in neuropsychiatric disorders? *Neuropharmacology* 2013; 64:566-578.
7. Muller PA, Dhamne SC, **Vahabzadeh-Hagh AM**, Pascual-Leone A, Jensen FE, Rotenberg A. Suppression of motor cortical excitability in anesthetized rats by low frequency repetitive transcranial magnetic stimulation. *PLoS One* 2014; 9:e91065.
8. **Vahabzadeh-Hagh AM**, Yim C, Fitter J, Chhetri DK. Atrial Septal Defect and Left Recurrent Laryngeal Nerve Paralysis: A Case of Ortner's Syndrome and Literature Review. *International Journal of Otolaryngology and Head & Neck Surgery* 2015; 4:61-65.
9. **Vahabzadeh-Hagh AM**, Sepahdari AR, Fitter J, Abemayor E. Hypopharyngeal venous malformation presenting with foreign body sensation and dysphagia. *Am J Otolaryngol* 2016; 37:34-37.
10. **Vahabzadeh-Hagh AM**, Zipser BD, Tan HT, Hong AY, Clair JM, Armin BB. More than just tissue diagnosis in a patient with maxillofacial bony lesions and hypercalcemia. *Laryngoscope* 2016.
11. Dewan K, **Vahabzadeh-Hagh AM**, Soofer D, Chhetri DK. Neuromuscular compensation mechanisms in vocal fold paralysis and paresis. *Laryngoscope* 2017.
12. **Vahabzadeh-Hagh AM**, Zhang Z, Chhetri DK. Three-dimensional posture changes of the vocal fold from paired intrinsic laryngeal muscles. *Laryngoscope* 2017; 127:656-664.
13. **Vahabzadeh-Hagh AM**, Zhang Z, Chhetri DK. Quantitative Evaluation of the In Vivo Vocal Fold Medial Surface Shape. *Journal of voice : official journal of the Voice Foundation* 2017.

RESEARCH PAPERS (SUBMITTED)

1. **Vahabzadeh-Hagh, AM**, Ramirez, E. The Israel retractor modification for oropharyngeal surgery on patients of larger body habitus. *The Journal of Laryngology & Otology* 2017.
2. **Vahabzadeh-Hagh, AM**, Rwigema, JCM, Nabili, V, Wang, MB, Lorentz, WC. Predictors of prolongation in radiation treatment time in a veteran population treated with chemoradiation for oropharyngeal cancer. *Journal of Cancer Research and Therapeutics* 2017.
3. **Vahabzadeh-Hagh, AM**, Goel, AN, Frederick, JW, Palma Diaz, F, Berke, GS, Long, JL. Transplanted human multipotent stromal cells reduce acute tongue fibrosis in rats. *Tissue Engineering, Part C: Methods* 2017.
4. **Vahabzadeh-Hagh, AM**, Zhang, Z, Chhetri, DK. Hirano's Cover-Body Model and It's Unique Laryngeal Postures Revisited. *Laryngoscope* 2017.
5. **Vahabzadeh-Hagh, AM**, Chao, KY, Blackwell, KE. Invasive oral tongue mucormycosis presenting acutely after orthotopic liver transplant. *Am J Otolaryngol* 2017.
6. **Vahabzadeh-Hagh, AM**, Ramirez, E. Chronic asymptomatic parotid mass as a focal manifestation of Immunoglobulin G4-Related Disease. *The Journal of Laryngology & Otology* 2017.

CHAPTERS

1. **Vahabzadeh-Hagh AM.** Paired-pulse Transcranial Magnetic Stimulation (TMS) Protocols. In: Rotenberg A, Horvath JC, Pascual-Leone A, eds. *Transcranial Magnetic Stimulation*. New York: Springer, 2014:117-127.
2. **Vahabzadeh-Hagh AM,** Kuan EC, Nabili V. Aural Fullness, Hearing Loss, and Tinnitus. In: de Virgilio C, Frank PN, Grigorian A, eds. *Surgery: A Case Based Clinical Review*. New York: Springer, 2015:143-150.
3. Cherry, JD, **Vahabzadeh-Hagh, AM,** Shapiro, NL. Chapter 17: Mastoiditis. In: *Feigin and Cherry's Textbook of Pediatric Infectious Diseases, 8th ed.* Elsevier [In Press].

EDITORIALS

1. **Vahabzadeh-Hagh, AM,** Shapiro, N: F1000Prime Recommendation of 'Wentzel, JL et al. *Balloon laryngoplasty for pediatric laryngeal stenosis: a case series and systematic review. Laryngoscope 2014' F1000.* 2014.
2. **Vahabzadeh-Hagh, AM,** Shapiro, N: F1000Prime Recommendation of 'Prows, CA et al. *Codeine-related adverse drug reactions in children following tonsillectomy: a prospective study. Laryngoscope 2014' F1000.* 2014.
3. **Vahabzadeh-Hagh, AM,** Shapiro, N: F1000Prime Recommendation of 'Oyewumi, M et al. *Ultrasound to differentiate thyroglossal duct cysts and dermoid cysts in children. Laryngoscope 2015' F1000.* 2015.

ACADEMIC THESES

Barrett, The Honors College at Arizona State University: Honors Thesis: Vahabzadeh-Hagh, Andrew M. "Golgi Localization of Human Sialyltransferase in Plants". 2007 *The Barrett Honors College*.

Harrington Department of Bioengineering: Senior Design Capstone Project: Vahabzadeh-Hagh, Andrew M. "Automated Epileptic Seizure Control: Dynamic Drug Delivery". 2007 *Harrington Dept. of Bioengineering, ASU*.

Harvard Medical School: Honors MD Thesis: Vahabzadeh-Hagh, Andrew M. "Transcranial Magnetic Stimulation in Rats". 2012 *Harvard Medical School*.

PROFESSIONAL SOCIETIES, PAST and PRESENT

- The American Laryngological, Rhinological and Otological Society (The Triological Society)
- F1000Prime Associate Faculty Member
- AAO-HNS – American Academy of Otolaryngology-Head and Neck Surgery
- SFN – Society for Neuroscience
- OHBM – Organization for Human Brain Mapping
- AAN – American Academy of Neurology
- SNMA – Student National Medical Association
- MMS – Massachusetts Medical Society
- JWSS – John Warren Surgical Society
- ASCB – American Society of Cell Biology
- AEMB – Biomedical Engineering Honors Society
- BMES – Biomedical Engineers Society
- AED – National Health Professional Honor Society

- FACES – Fostering & Achieving Cultural Equity & Sensitivity in the Health Professions

REFERENCES

Available upon request