

Mustafa Steven Ascha

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EDUCATION

2016-2019	Case Western Reserve University Center for Clinical Investigation Department of Epidemiology and Biostatistics PhD, Clinical and Translational Science GPA: 4.00
2014-2016	Case Western Reserve University Center for Clinical Investigation Department of Epidemiology and Biostatistics Graduate Certificate in Clinical Research GPA: 4.00
2014-2016	Case Western Reserve University Department of Physiology and Biophysics Master's of the Sciences, Medical Physiology GPA: 3.95
2007 – 2011	Case Western Reserve University Bachelor's of the Arts, Economics Minor, Philosophy GPA: 3.04

WORK AND RESEARCH

2018 – present	Cleveland Institute for Computational Biology Case Western Reserve University, Cleveland Ohio Supervisor: Mark Beno, MSM Title: Biomedical and Patient-Centric Data ETL Specialist
2016 - present	University Hospitals Case Medical Center, Cleveland, Ohio Ear, Nose, and Throat Institute Department of Otolaryngology – Head & Neck Surgery Supervisor: Todd D. Otteson, MD, MPH

Title: Clinical Research Specialist

Donor Funded -- Enlarged Vestibular Aqueduct Research Program

- Submitted and earned approval for EVAR to be listed on ClinicalTrials.gov
 - o <https://clinicaltrials.gov/ct2/show/study/NCT02798783>
- Authored and submitted manuscripts and abstracts for publication and presentation
- Conceived, implemented, and wrote manuscript for a retrospective study of hearing loss in EVA patients
 - o Designed study to reflect longitudinal nature of hearing loss progression
 - o Used repeated measures of hearing to construct linear mixed-effects models
 - o Examined the impact of inner ear morphology on hearing loss
- Consulted with ENT residents to design and implement several retrospective studies
 - o Wrote reproducible reports with methods and results for residents to use writing manuscripts

2014 - present

Cleveland Clinic Foundation, Digestive Disease Institute, Cleveland, Ohio
PI: Ibrahim Hanouneh, MD

- Authored and submitted manuscripts and abstracts for publication and presentation

2010-2011

Louis Stokes Veterans Affairs Medical Center, Cleveland, Ohio
Spinal Cord Injury and Disorders Department
Supervisor: Christine Woo, MS

- Developed telehealth program materials
- Participated in manuscript revision

2008 - 2010

Cleveland Clinic Foundation, Digestive Disease Institute, Cleveland, Ohio
PI: Nizar Zein, MD

- Designed experiments based on questions discovered during literature search
- Retrieved and pre-processed data
- Authored and submitted manuscripts and abstracts for publication and presentation

BIBLIOGRAPHY

Peer Reviewed Publications

1. **Ascha MS**, Ostrom QT, Wright J, Kumthekar P, Bordeaux JS, Sloan AE, Schumacher FS, Kruchko C, Barnholtz-Sloan JS. Lifetime Occurrence of Brain Metastases Arising from Lung, Breast, and Skin Cancers in the Elderly: A SEER-Medicare Study. *Cancer Epidemiol Biomarkers Prev* May 1 2019 (28) (5) 917-925; DOI: 10.1158/1055-9965.EPI-18-1116

2. Ruthberg J, **Ascha MS**, Kocharyan A, Gupta A., Murray GS, Megerian CA, Otteson TD. Sex-specific enlarged vestibular aqueduct morphology and audiometry. *American Journal of Otolaryngology*. 2019 Mar 29. <https://doi.org/10.1016/j.amjoto.2019.03.008>.
3. Hanouneh M, Ritchie MM, Ascha M, **Ascha MS**, Chedid A, Sanguankeo A, Zein NN, Hanouneh IA. A review of the utility of tacrolimus in the management of adults with autoimmune hepatitis. *Scand J Gastroenterol*. 2019 Jan 16;1-5. doi: 10.1080/00365521.2018.1551498. PubMed PMID: 30650311.
4. Archibald HD, **Ascha M**, Gupta A, Megerian C, Otteson T. Hearing loss in unilateral and bilateral enlarged vestibular aqueduct syndrome. *Int J Pediatr Otorhinolaryngol*. 2018 Dec 19;118:147-151. doi: 10.1016/j.ijporl.2018.12.023. [Epub ahead of print] PubMed PMID: 30634102.
5. Wilkinson B, **Ascha M**, Verbus E, Montague M, Morris J, Mercer B, Arora KS. Medicaid and receipt of interval postpartum long-acting reversible contraception. *Contraception*. 2019 Jan;99(1):32-35. doi: 10.1016/j.contraception.2018.08.017. Epub 2018 Sep 5. PubMed PMID: 30194927; PubMed Central PMCID: PMC6289711.
6. Raina R, Chauvin A, Fox K, Kesav N, **Ascha M**, Vachharajani TJ, Krishnappa V. Effect of Immunosuppressive Therapy on the Occurrence of Atypical Hemolytic Uremic Syndrome in Renal Transplant Recipients. *Ann Transplant*. 2018 Sep 7;23:631-638. doi: 10.12659/AOT.909781. PubMed PMID: 30190449; PubMed Central PMCID: PMC6248048.
7. Patel ND, **Ascha MS**, Manzoor NF, Gupta A, Semaan M, Megerian C, Otteson TD. Morphology and cochlear implantation in enlarged vestibular aqueduct. *Am J Otolaryngol*. 2018 Nov - Dec;39(6):657-663. doi: 10.1016/j.amjoto.2018.06.006. Epub 2018 Jun 5. PubMed PMID: 30153950.
8. Tamaki A, Manzoor NF, Babajanian E, **Ascha M**, Rezaee R, Zender CA. Clinical Significance of Sarcopenia among Patients with Advanced Oropharyngeal Cancer. *Otolaryngol Head Neck Surg*. 2018 Aug 14;194599818793857. doi: 10.1177/0194599818793857. [Epub ahead of print] PubMed PMID: 30105922.
9. Montague M, **Ascha M**, Wilkinson B, Verbus E, Morris J, Mercer BM, Arora KS. Role of Bridge Contraception in Postpartum Long-Acting Reversible Contraception and Sterilization Fulfillment Rates. *Obstet Gynecol*. 2018 Sep;132(3):583-590. doi: 10.1097/AOG.0000000000002803. PubMed PMID: 30095782; PubMed Central PMCID: PMC6105446.
10. Ostrom QT, Cote DJ, **Ascha M**, Kruchko C, Barnholtz-Sloan JS. Adult Glioma Incidence and Survival by Race or Ethnicity in the United States From 2000 to 2014. *JAMA Oncol*. 2018 Sep 1;4(9):1254-1262. doi: 10.1001/jamaoncol.2018.1789. PubMed PMID: 29931168; PubMed Central PMCID: PMC6143018.
11. Patel AV, Thuener JE, Clancy K, **Ascha M**, Manzoor NF, Zender CA. Submental artery island flap versus free flap reconstruction of lateral facial soft tissue and parotidectomy defects: Comparison of outcomes and patient factors. *Oral Oncol*. 2018 Mar;78:194-199. doi:

- 10.1016/j.oraloncology.2018.01.027. Epub 2018 Feb 20. PubMed PMID: 29496050.
12. Arora KS, Wilkinson B, Verbus E, Montague M, Morris J, **Ascha M**, Mercer BM. Medicaid and fulfillment of desired postpartum sterilization. *Contraception*. 2018 Jun;97(6):559-564. doi: 10.1016/j.contraception.2018.02.012. Epub 2018 Feb 25. PubMed PMID: 29490290; PubMed Central PMCID: PMC5963995.
 13. Nayfe R, **Ascha MS**, Rehms E. Esophageal Squamous Cell Carcinoma Presenting with Streptococcus intermedius Cerebral Abscess. *Case Rep Pathol*. 2017;2017:5819676. doi: 10.1155/2017/5819676. Epub 2017 Aug 15. PubMed PMID: 28894616; PubMed Central PMCID: PMC5574295.
 14. Ahadizadeh E, **Ascha M**, Manzoor N, Gupta A, Semaan M, Megerian C, Otteson T. Hearing loss in enlarged vestibular aqueduct and incomplete partition type II. *Am J Otolaryngol*. 2017 Nov - Dec;38(6):692-697. doi: 10.1016/j.amjoto.2017.06.010. Epub 2017 Jun 23. PubMed PMID: 28793961.
 15. Ascha M, **Ascha MS**, Tanenbaum J, Bordeaux JS. Risk Factors for Melanoma in Renal Transplant Recipients. *JAMA Dermatol*. 2017 Nov 1;153(11):1130-1136. doi: 10.1001/jamadermatol.2017.2291. PubMed PMID: 28746700; PubMed Central PMCID: PMC5710441.
 16. Ascha M, **Ascha MS**, Gastman B. Identification of Risk Factors in Lymphatic Surgeries for Melanoma: A National Surgical Quality Improvement Program Review. *Ann Plast Surg*. 2017 Nov;79(5):509-515. doi: 10.1097/SAP.0000000000001152. PubMed PMID: 28650410.
 17. **Ascha MS**, Manzoor N, Gupta A, Semaan M, Megerian C, Otteson TD. Vestibular Aqueduct Midpoint Width and Hearing Loss in Patients With an Enlarged Vestibular Aqueduct. *JAMA Otolaryngol Head Neck Surg*. 2017 Jun 1;143(6):601-608. doi: 10.1001/jamaoto.2016.4522. PubMed PMID: 28334328; PubMed Central PMCID: PMC5824227.
 18. **Ascha MS**, Ascha ML, Hanounieh IA. Black Ascites: An interesting presentation of pancreatic duct leak. *Case Reports in Internal Medicine*. 2016; 3(4):18-21. doi: 10.5430/crim.v3n4p18.
 19. Nayfe R, **Ascha MS**, Ismail M, Salvino R. Gastrocolic Fistula as a Presentation of Concomitant Gastric and Colon Cancer in a Patient with a History of Metastatic Pancreatic Adenocarcinoma. *J Gastrointest Cancer*. 2017 Dec;48(4):379-381. doi: 10.1007/s12029-016-9841-5. PubMed PMID: 27251299.
 20. Ascha M, Hanounieh M, **Ascha MS**, Zein NN, Sands M, Lopez R, Hanounieh IA. Transjugular Intrahepatic Porto-Systemic Shunt in Patients with Liver Cirrhosis and Model for End-Stage Liver Disease ≥ 15 . *Dig Dis Sci*. 2016 May 6. PMID: 27154510.
 21. Ascha M, Wang Z, **Ascha MS**, Dweik R, Zein NN, Grove D, Brown JM, Marshall S, Lopez R, Hanounieh IA. Metabolomics studies identify novel diagnostic and prognostic indicators in patients

with alcoholic hepatitis. *World J Hepatol.* 2016 Apr 8;8(10):499-508. doi: 10.4254/wjh.v8.i10.499. PubMed PMID: 27057307; PubMed Central PMCID: PMC4820641.

22. **Ascha MS**, Ascha ML, Hanouneh IA. Management of immunosuppressant agents following liver transplantation: Less is more. *World J Hepatol.* 2016 Jan 28;8(3):148-61. doi: 10.4254/wjh.v8.i3.148. Review. PubMed PMID: 26839639; PubMed Central PMCID: PMC4724578.
23. **Ascha M**, Ascha M, Zein NN, Alkhouri N, Egtesad B, Abu-Elmagd K, Diago T, Hanouneh IA. Treatment of Recurrent Hepatitis C Genotype-4 Post-Liver Transplantation with Sofosbuvir plus Simeprevir. *Int J Organ Transplant Med.* 2015;6(2):86-90. PubMed PMID: 26082832; PubMed Central PMCID: PMC4464282.
24. **Ascha MS**, Hanouneh IA, Lopez R, Tamimi TA, Feldstein AF, Zein NN. The incidence and risk factors of hepatocellular carcinoma in patients with nonalcoholic steatohepatitis. *Hepatology.* 2010 Jun;51(6):1972-8. doi: 10.1002/hep.23527. PubMed PMID: 20209604.

Oral Presentations – Meetings and Conferences

1. **Ascha MS**. “make Dissertation: Reproducibility in Research”. Cyberinfrastructure Day 2018. UTech Research Computing and Cyberinfrastructure Team. April 13, 2018. Presented by Ascha MS.
2. Arora KS, Wilkinson B, Verbus E, Montague M, Morris J, **Ascha M**, Mercer B. "Two-Tiered Reproduction - Normative and Quantitative Analysis of Barriers to Equitable Postpartum Sterilization." American Society for Bioethics and the Humanities Annual Meeting. October 2017.
3. Ascha M, **Ascha MS**, Gastman B. “Identification of Risk Factors in Lymphatic Surgeries for Melanoma: A NSQIP Review.” Ohio Valley Society of Plastic Surgeons 60th Annual Meeting, Pittsburgh, PA (June 2, 2017). Presented by Ascha M.
4. Ascha M, Hanouneh M, **Ascha MS**, Zein NN, Sands M, Lopez R, Hanouneh IA. “Transjugular Intrahepatic Portosystemic Shunt in Patients with Liver Cirrhosis and Model for End-Stage Liver Disease ≥ 15 .” Lepow Day 2016, Case Western Reserve University School of Medicine, Cleveland, OH (August 18, 2016). Presented by Ascha M.
5. Ascha M, **Ascha MS**, Dweik R, Zein N, Brown M, Marshall S, Hazen S, Wang Z, Grove D, Hanouneh I. “Metabolomics Studies Identify Novel Prognostic Indicators in Patients with End-Stage Liver Disease.” Translational and Basic Science Research Plenary Session, Digestive Disease Week, Washington, DC (May 17, 2015). Presented by Ascha M.
6. Ascha ML, **Ascha MS**, Hanouneh IA. “Treatment of recurrent hepatitis C genotype 4 post-liver transplantation with sofosbuvir plus simeprevir: a case series.” Case Western Reserve University QGrad LGBT Symposium, Cleveland, Ohio (April 23, 2015). Presented by Ascha MS.

7. Ascha ML, **Ascha MS**, Dweik R, Zein NN, Brown M, Marshall S, Hazen S, Wang Z, Grove D, Hanounieh IA. “Metabolomics: Identifying novel prognostic indicators in patients with end-stage liver disease.” Case Western Reserve University QGrad LGBT Symposium, Cleveland, Ohio (April 23, 2015). Presented by Ascha MS.
8. **Ascha MS**, Hanounieh IA, Lopez R, Abu-Rajab Tamimi TI, Albeldawi M, Feldstein AE, McCullough AJ, Zein NN. “Cumulative Incidence and Risk Factors of Hepatocellular Carcinoma (HCC) in Patients with END-Stage Liver Disease Secondary to Nonalcoholic Steatohepatitis (NASH).” *Gastroenterology*, Volume 136, Issue 5, Supplement 1, May 2009, Page A-797, ISSN 0016-5085, [http://dx.doi.org/10.1016/S0016-5085\(09\)63676-3](http://dx.doi.org/10.1016/S0016-5085(09)63676-3). Presented by Ascha MS.

Oral Presentations - Academic

1. **Ascha MS**, Saroufim P, Beno M, Barnholtz-Sloan JS. “Health Informatics and Big Data”. Case Western Reserve University School of Medicine, Systems and Scholarship Session 3, April 23 and 25, 2019.
2. **Ascha MS**, Saroufim P, Beno M, Barnholtz-Sloan JS. “Health Informatics and Big Data”. Case Western Reserve University School of Medicine, Systems and Scholarship Session 2, April 9 and 11, 2019.
3. **Ascha MS**. “Finding data and working with it in R: An interactive coding session”. Fundamentals of Clinical Information Systems, Systems Biology, Case Western Reserve University. October 2, 2018. Instructor: Colin Drummond.
<https://gist.github.com/mustafaascha/1812b1d13c6b5b9b4564c323c47c1c70>
4. **Ascha MS**, Saroufim P, Beno M, Barnholtz-Sloan JS. “Health Informatics and Big Data”. Case Western Reserve University School of Medicine, Systems and Scholarship Session 1, August 29 and 30, 2018.
5. **Ascha MS**. “Working with NHANES data in R: An interactive coding session”. Fundamentals of Clinical Information Systems, Systems Biology, Case Western Reserve University. October 3, 2017. Instructor: Colin Drummond.
<https://gist.github.com/mustafaascha/4fdf4a9971f957f6bd0dfe10b3563a12>

Software and Reproducibility Materials

1. **Ascha MS**. (2018, August 5). mustafaascha/nsqipr: Plastic Surgery and the presence of a July Effect (Version v0.0.0.9003). Zenodo. <https://doi.org/10.5281/zenodo.1209963>
2. **Ascha MS**. (2018, August 5). mustafaascha/brain-mets-seer: Reproducibility repository for a study of brain metastases in SEER-Medicare (Version v1.0.2). Zenodo.
<https://doi.org/10.5281/zenodo.1300052>

Abstracts

1. Kurlander DE, Ascha M, Marshall D, Wang D, **Ascha M**, Tripi PA, Reeves, HM, Downes, KA, Ahuja S, Rotta AT, Tomei, K, 2017. Striving for Transfusion-Free Open Cranial Vault Remodeling: A Novel Protocol. *Plastic and Reconstructive Surgery Global Open*, 5(9 Suppl). PMCID: PMC5636509
2. Manzoor NF, Hoppe K, **Ascha MS**, Mowry SE, Megerian CA, Otteson TD, Semaan MT; Delineating hearing loss at radiographic diagnosis in enlarged vestibular aqueduct syndrome. AOS 150th Annual Meeting, April 2017.
3. Manzoor NF, Clancy K, Rezaee RP, **Ascha MS**, Zender CA, Lavertu P, , Megerian CA, Semaan MT; Multidisciplinary management of head and neck malignancies involving the lateral skull base. ANS 52nd Annual Spring Meeting, April 2017.

Poster Presentations

1. **Ascha MS**, Ostrom QT, Bordeaux JS, Sloan AE, Schumacher F, Kruchko C, Barnholtz-Sloan JS; CMET-41. Lifetime lung, breast, and skin cancer brain metastases incidence: a reproducible SEER-Medicare study, *Neuro-Oncology*, Volume 20, Issue suppl_6, 5 November 2018, Pages vi62, <https://doi.org/10.1093/neuonc/now148.251>
2. Wang JF, **Ascha MS**, Sloan A, Kruchko C, Barnholtz-Sloan JS. Bevacizumab for the treatment of lung cancer with brain metastases. Irwin H. Lepow Medical Student Research Day, Case Western Reserve University, September 20, 2018. Cleveland, Ohio. Presented by Wang JF.
3. **Ascha MS**, Ostrom QT, Wright J, Kumthekar P, Bordeaux J, Schumacher FR, Sloan A, Kruchko C, Barnholtz-Sloan JS. Lifetime occurrence of brain metastases arising from breast, lung, and melanoma cancers: A reproducible SEER-Medicare study. Case Comprehensive Cancer Center Retreat, July 26-27, 2018. Presented by Ascha MS.
4. Wang JF, **Ascha MS**, Sloan A, Kruchko C, Barnholtz-Sloan JS. Bevacizumab for the treatment of lung cancer with brain metastases. Case Comprehensive Cancer Center Retreat, July 26-27, 2018. Presented by Wang JF.
5. Yong V, **Ascha MS**, Awan M, Abrol Anish, Zender C. Interpreting Indeterminate Post-Treatment PET/CT Results in Patients with Head and Neck Squamous Cell Carcinoma. American Head and Neck Society, Combined Otolaryngological Spring Meeting. April 18 - 19, 2018. National Harbor, Maryland. Presented by Yong V.
6. Archibald H, **Ascha MS**, Otteson TD. "Unilateral enlarged vestibular aqueduct syndrome may reflect a different disease process than bilateral". American Society of Pediatric Otolaryngology, Combined Otolaryngological Spring Meeting. April 18 - 22, 2018. H078. Presented by Archibald H.

7. Arora KS, Wilkinson B, Verbus E, Montague M, Morris J, **Ascha M**, Mercer B. "Disparities in Postpartum Sterilization Fulfillment for Women Covered by Medicaid Versus Private Insurance." MetroHealth Research Day. November 2017. Presented by Arora KS.
8. Arora KS, Wilkinson B, Verbus E, Montague M, Morris J, **Ascha M**, Mercer B. "Disparities in Postpartum Sterilization Fulfillment for Women Covered by Medicaid Versus Private Insurance." North American Forum on Family Planning. October 2017. Presented by Arora KS.
9. Ruthberg J, **Ascha MS**, Gupta A, Otteson TD. Sex-specific differences and hearing fluctuation in patients with an enlarged vestibular aqueduct. Irwin H. Lepow Medical Student Research Day, Case Western Reserve University, September 20, 2018. Cleveland, Ohio. Presented by Ruthberg J.
10. Johnson A, **Ascha MS**, Manzoor NF, Gupta A, Semaan M, Megerian C, Otteson T. "Operculum width and hearing loss in patients with enlarged vestibular aqueduct". Case Western Reserve University Irwin H. Lepow Medical Student Research Day. August 2017. Presented by Johnson A. Winner of a poster prize.
11. Johnson A, **Ascha MS**, Manzoor NF, Gupta A, Semaan M, Megerian C, Otteson T. "Air-bone gap in patients with enlarged vestibular aqueduct". Case Western Reserve University Irwin H. Lepow Medical Student Research Day. August 2017. Presented by Johnson A.
12. Ahadizadeh E, **Ascha MS**, Manzoor NF, Gupta A, Semaan M, Megerian C, Otteson T. "Hearing loss in enlarged vestibular aqueduct and incomplete partition type II. Case Western Reserve University Irwin H. Lepow Medical Student Research Day. August 2017. Presented by Ahadizadeh E.
13. Marshall D, Kurlander DE, Ascha M, Wang D, **Ascha M**, Tripi PA, Reeves, HM, Downes, KA, Ahuja S, Rotta AT, Tomei, K . Striving for Transfusion-Free Open Cranial Vault Remodeling: A Novel Protocol. Case Western Reserve University Irwin H. Lepow Medical Student Research Day. August 2017. Presented by Marshall D.
14. **Ascha MS**, Ascha ML, Hanouneh IA. "Black ascites: an interesting presentation of pancreatic duct leak". American College of Gastroenterology, October 17, 2016. Las Vegas, Nevada. Presented by Ascha MS.
15. Ascha ML, Hanouneh M, **Ascha MS**, Zein NN, McCullough A, Hanouneh IA. "The utility of tacrolimus in the management of adults with difficult-to-treat autoimmune hepatitis: review of literature". American College of Gastroenterology, October 18, 2016, Las Vegas, Nevada. Presented by Ascha MS.
16. Ascha M, Hanouneh M, **Ascha MS**, Zein NN, Sands M, Lopez R, Hanouneh IA. "Transjugular Intrahepatic Porto-Systemic Shunt in Patients with Liver Cirrhosis and Model for End-Stage Liver Disease ≥ 15 ." Department of Medicine Research Day, Case Western Reserve University, Cleveland, OH (May 6, 2016). Presented by Ascha M.
17. Ascha ML, **Ascha MS**, Hanouneh IA. "Treatment of recurrent hepatitis C genotype 4 post-liver transplantation with sofosbuvir plus simeprevir: a case series." Case Western Reserve University Department of Physiology and Biophysics Retreat, Cleveland, Ohio (September 25, 2015).

Presented by Ascha MS.

18. **Ascha MS**, Hanouneh IA, Lopez R, Feldstein AE, Zein NN. "Risk score for predicting the lack of response to antiviral treatment in patients with chronic HCV infection." American College of Gastroenterology, Orlando, Florida (October 3 – 8, 2008). Presented by Ascha MS

TEACHING EXPERIENCE

- Summer 2016 Teaching Assistant, **Introduction to R Programming**
Case Western Reserve University, Clinical Research Scholars Program
Course Director: Steven Lewis, MS, MBA
- Met with students to review core R Programming concepts
 - Graded and designed homework assignments
 - Lectured regarding the use of R Markdown
 - o <https://github.com/mustafaascha/rmarkdownTutorial>
- Fall 2016, Spring 2017 Teaching Assistant, **Statistics I and Statistics II**
Case Western Reserve University, Department of Epidemiology and Biostatistics
Course Director: Thomas Love, PhD
- Updated course notes and assignment solutions to reflect modern R practices
 - o Re-wrote figures to use the R package ggplot2
 - o Re-wrote code to use the R package dplyr
 - Converted R Markdown notes for use with the R package bookdown
 - o Organized notes for use both in website or PDF format
 - Wrote exploratory data analysis convenience functions
- Summer 2017 Teaching Assistant, **Epidemiology Clinical Research Block**
Cleveland Clinic Lerner College of Medicine at Case Western Reserve University
Course Director: Paola Raska, PhD
- Aided in clinical research training for medical students
 - Responsibilities included explaining measures of disease frequency, identifying confounding, direct and indirect adjustment, and clinical study design
 - Provided guidance for students pursuing their own projects; this involved helping develop testable hypotheses, perform power analysis, and implement analysis using R and JMP

COMMUNITY SERVICE

- Jan. – Jun. 2013 Volunteer, Perioperative Care Center
Hillcrest Hospital, Cleveland Clinic Health System, Mayfield Heights, Ohio
- Prepared rooms for post-surgery patients

- Transported patients to hospital exit for pick-up

2015

Volunteer, Preventing Incident Delirium in the Elderly (PRIDE) Program
University Hospitals Case Medical Center, Cleveland, Ohio

- Re-oriented elderly patients to place and time
- Spent time in conversation with elderly patients

Languages: Conversant in French and Syrian Arabic

Interests: Playing guitar, working with electronics, computer science