# (Hannah) Aura Shoval

### Curriculum Vitae

### **Employment**

2022-present Chief of Pediatric Physiatry, Atlantic Health System, Morristown Medical Center

2022-present Clinical Associate Professor, Rutgers New Jersey Medical School, Department of Physical

Medicine Rehabilitation

2018–2022 Clinical Assistant Professor, Rutgers New Jersey Medical School, Department of Physical

Medicine Rehabilitation

2021–2022 Pediatric Rehabilitation Associate Fellowship Director, Children's Specialized Hospital

2017–2022 Attending Pediatric Physiatrist, Children's Specialized Hospital, Clifton, NJ

#### Certifications

- o American Board of Physical Medicine and Rehabilitation (ABPMR) diplomate
- o Board Certified in Pediatric Rehabilitation Medicine
- o Board Certified in Brain Injury Medicine
- o Performing Arts Medicine Certification (by the American College of Sports Medicine (ACSM) and Performing Arts Medicine Association (PAMA))
- o New Jersey State Medical License

#### Education

June 2022 –	Master	of Business	Administration,	Rutgers	Business	School,	Newark,	NJ
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July 2015 - Pediatric Rehabilitation Medicine Fellow, New York-Presbyterian Hospital, New York, NY

July 2017 Clinical Sites: Columbia University Medical Center Blythedale Children's Hospital

July 2014 - Chief Resident in Physical Medicine & Rehabilitation, New York-Presbyterian Hospital,

June 2015 New York, NY

July 2012 - Physical Medicine & Rehabilitation Resident, New York-Presbyterian Hospital, New York,

June 2015 NY

Clinical Sites: Hospital for Special Surgery Memorial Sloan-Kettering Cancer Center

Columbia University Medical Center Blythedale Children's Hospital Weill Cornell Medical Center Burke Rehabilitation Center

July 2011 - Preliminary Internal Medicine Resident, Winthrop University Hospital, Mineola, NY

June 2012

Aug 2006 – Medical Doctor, Tufts University School of Medicine, Boston, MA

June 2011

- Sep 2000 Bachelor of Arts (BA), Barnard College, New York, NY
- May 2005 Major in Neuroscience and Behavior; Major in Dance
- Sep 2000 Bachelor of Arts (BA), Jewish Theological Seminary of America, New York, NY
- May 2006 Major in Bible Studies

#### Honors and Awards

- 2022 Faculty Quality Leadership Award, Rutgers New Jersey Medical School, Department of Physical Medicine Rehabilitation
- 2021 Listed in "Top Doctors" in Bergen County, Magazine/ USA Today Network
- 2020 Listed in "Top Doctors" in Bergen County, Magazine/ USA Today Network
- 2019 First author of manuscript chosen as one of the "Top 10 Research Articles in Pediatric Rehabilitation Medicine", AAPMR "Top 10 Pediatric Rehabilitation Medicine"
- 2013 Employee of the Month, New York-Presbyterian Hospital
- 2006 Magna cum laude, Barnard College
- 2006 Irving and Mary Kremsdorf Award for Academic Achievement, Jewish Theological Seminary of America
- 2000–2006 **The Fellows Program**, Jewish Theological Seminary of America Full merit based scholarship

### Leadership Positions

- 2024-present Board Member of Atlantic Accountable Care Organization, Atlantic Health System
  - Dec. 2023 **Health Equity Medical Advisor**, Rutgers Institute for Corporate Social Innovation present
- 2023-present Founder and Director of Prosthetic Clinic, Atlantic Health System
- 2023-present Co-director of MDA clinic, Atlantic Health System
- 2022-present Medical Director of the Spasticity and Gait Clinic, Atlantic Health System
  - 2021–2022 Pediatric Rehabilitation Associate Fellowship Director, Children's Specialized Hospital Co-organized a national fellowship fair for all the pediatric rehabilitation programs in the country.
  - 2021–2022 Medical Executive Committee, Children's Specialized Hospital
  - 2020–2021 Past Chair, Adapted Sports and Recreation Committee, AACPDM
  - 2019–2020 Chair, Adapted Sports and Recreation Committee, AACPDM
    Presentation of the Duncan Wyeth Award on Sep 26, 2020: https://youtu.be/ZsBQ0eqD1cs
  - 2019–2022 Steering Committee: Performance Improvement, Children's Specialized Hospital
  - 2015–2016 Pediatric Rehabilitation Quality Chair, New York-Presbyterian Hospital, New York, NY
  - 2014–2015 Chief Resident in Physical Medicine and Rehabilitation, New York-Presbyterian Hospital, New York, NY
  - 2014–2015 Quality Chief for Physical Medicine and Rehabilitation Residents, New York-Presbyterian Hospital, New York, NY
  - 2013–2014 Vice Chair, House Staff Quality Council, New York-Presbyterian Hospital/Weill Cornell Medical Center, New York, NY
    - Hand Off initiative
    - Good catch program to promote a culture of safety
    - Consult guide
    - O Deep Vein Thrombosis prophylaxis group
    - o Electronic Medical Records Radiology selection

- Oct 2, 2013 Team Leader, PM&R on Capitol Hill, AAPM&R
  - O Political advocacy for AAPM&R
- 2012–2015 Residency workflow efficiency projects, New York-Presbyterian Hospital, New York, NY
  - Epic templates
  - Eclipsys templates
  - Resident to resident guide for incoming PGY-2
  - PM&R Consult sheet
  - 2012 Quality Improvement Committee, Winthrop University Hospital, Mineola, NY
- 2011–2012 EMR Quality Improvement Pilot Committee, Winthrop University Hospital, Mineola, NY
- Winter 2008 Board Member/Choreographer/Performer, Multi-Cultural Performing Arts Group, Boston, MA
  - o Helped organize, choreographed and performed at a fundraiser for the Colleen Romain Scholarship
  - 2007 Case Manager and Board Member, Sharewood, Boston, MA Sharewood is Tufts' student run free Health Clinic
  - 2006 Volunteer Coordinator, Jewish Home & Hospital, New York, NY
    - Organized and led a weekly song & motion session

### Leadership Training

- 2021–2022 Medical Leadership Academy, Children's Specialized Hospital
  - O Selected to attend as a physician leader of the institution
  - Collaborated with team to achieve innovative way to achieve hospital strategic initiatives
  - 2018 Managers Training: Highly Reliable Organization, RWJBarnabas Health, Clifton, NJ Chosen as one of the leaders at Children's Specialized Hospital to attend a full day course in Highly Reliable Organization with an emphasis on its applications in a hospital setting, and how to promote that enivronment as a manager.
- June 1-5,2015 Leadership Retreat, Columbia Medical Center, New York, NY

Chosen as one of 20 out of 1,800 residents (top 1%) for this intensive, week-long leadership retreat that covers topics on quality initiatives, health care economics, patient safety, teamwork and leadership.

Oct 2, 2013 Association Leadership Workshop, National Harbor, MD

Chosen as a rising leader of physiatry at the national level to attend a leadership course with other prominent leaders in PM&R.

- Full day leadership course through AAPM&R
- o Facilitated by Glenn Tecker of Tecker International, Inc
- 2001–2004 Resident Assistant training, Barnard College, New York, NY

Full week intensive training, repeated each year. Included live simulated scenarios with professional feedback and performance evaluation.

#### Research

- 2023-present **Principal Investigator: Pediatric Shoulder Ultrasound**, Atlantic Health System, Morristown Medical Center
  - o Creating a standardized approach for early identification of subluxation
  - O Creating a database of standardized dimension by age
  - o Early diagnosis of shoulder subluxation and pain sources in children with neurological impairment.
- 2023—present Co-Principal Investigator: Biomechanics of gait limitations of spasticity, Atlantic Health System, Kessler Foundation, West Orange, NJ
  - 2021–2023 **Co-Investigator**, New Jersey Institute of Technology Motion Capture Lab, Newark, NJ

    The effects of surgical and nonsurgical treatments for spasticity and contractures on gait lab analysis in children with Cerebral Palsy.
  - 2020–2023 **Principal Investigator**, Children's Specialized Hospital, New Brunswick, NJ Investigation of Socio Demographics and Functional Level on Access to Care for Children with Cerebral Palsy.
  - 2018–2023 **Co-Principal Investigator**, *Children's Specialized Hospital*, New Brunswick, NJ Investigation in Sleep Patterns in Inpatient Rehabilitation.

    Awarded funding from Children's Specialized Hospital Foundation.
  - 2017–2023 **Co-investigator**, Children's Specialized Hospital, Mountainside, NJ Treadwall Rock Climbing for Children with Hemiplegic Cerebral Palsy.
  - 2017–2023 Co-investigator, Children's Specialized Hospital & Kessler Foundation
    Visual biofeedback gait training study.
    A collaboration between Children's Specialized Hospital and the Center for Mobility and Rehabilitation
  - Engineering Research, Kessler Foundation.

    2015–2017 **Resident Research**, Pediatric Rehab Research, Columbia Medical Center, New York, NY Under the supervision of Heakyung Kim, MD
    - Long Term Efficacy of Repeated Botulinum Toxin A Injections to Salivary Glands for the People with Neuromuscular Disorders
    - Single Event Multi-level Chemoneurolysis combined with Salivary gland injections Safety and Efficacy
      of Botox Injections to Salivary glands in patients with SMA
    - o Improved Balance in patients with CP and Valgus foot deformity after Botox injections
  - 2012–2016 **Resident Research**, Cardiopulmonary Rehab Research Group, Columbia Medical Center, New York, NY

Under the supervision of Matthew Bartels, MD

- The therapeutic effect of cardiovascular exercise in Schizophrenia in terms of function as related to autonomic dysreflexia and other cardiovascular parameters
- 2005–2006 Research Assistant, Pediatric Neurology, Montefiore Medical Center, Bronx, NY Under the supervision of Kathryn McVicar, MD and Shlomo Shinnar, MD Ph.D.
  - o Helped plan and implement the study. Reviewed medical charts. Created/managed the database.
  - o Recruited and followed up on patients. Administered childhood autism rating scale.
- 2004–2005 **Volunteer Research Assistant**, Sergievsky Center for Neurological Disorders, Columbia University, New York, NY

Under the supervision of Brady Butterfield, PhD and Yaakov Stern, PhD

- $\,\circ\,$  Reviewed and summarized literature for research on brain function using fMRI.
- Neuroscience Research Thesis "An fMRI Investigation of the neurobehavioral Impact of sleep deprivation and stimulus degradation on a working memory task"
- 2004–2005 Neuroscience Senior Thesis, Barnard College, New York, NY
  An fMRI Investigation of the Neurobehavioral Impact of Sleep Deprivation and Stimulus Degradation on a Working Memory Task
- 2004–2005 **Dance Senior Thesis**, Barnard College, New York, NY
  Treatment for Chronic and Recurring Lower Back Pain must be Informed by the Psychological Component

#### **Publications**

#### Peer Reviewed Manuscripts

- 2023 Treatment of Postprandial Hypotension with Acarbose in an Adult with Cervical Spinal Cord Injury: A Case Report. Accepted 10.12.2023. Pending Publication. H. A. Shoval, SS. Dieffenbach. Spinal Cord Series and Cases
- 2023 Safety and Effectiveness of Ethanol Neurolysis With and Without OnabotulinumtoxinA in Children with Cerebral Palsy. H. A. Shoval, J. Ace, M. Reddy, E. Grew, J. Cheng. PM&R. Nov, 2023
- 2022 Ultrasound-Guided OnabotulinumtoxinA Injections to Treat Oromandibular Dystonia in Cerebral Palsy. F. I. Reyes, H. A. Shoval, A. Tenaglia, H. Kim. Toxins. 2022; 14(3):158. https://doi.org/10.3390/toxins14030158
- 2022 Therapeutic Engagement Mediates the Effect of Sleep Fragmentation on Rehabilitation Progress after Pediatric Brain Injury. A. H. Lequerica, H. A. Shoval, J. Ace, T. Yip, SS. Dieffenbach, C. Marchetta, J. DeLuca. Journal of Head Trauma Rehabilitation. New York City, NY, USA. September 2022.
- 2022 Examining the Use of a Rest-Activity Ratio in a Pediatric Rehabilitation Setting. A. H. Lequerica, H. A. Shoval, K. Yalamanchi, J. Lengenfelder, C. Marchetta, J. Ace, J. DeLuca. (2022). Archives of Physical Medicine and Rehabilitation, 0(0). https://doi.org/10.1016/J.APMR.2021.12.027
- 2021 Feasibility of a real-time pattern-based kinematic feedback system for gait retraining in pediatric cerebral palsy. X. Liu, N. Oliveira, N. Ehrenberg, J. Cheng, K. Bentley, S. Blochlinger, H. A. Shoval, P. Barrance. Journal of Rehabilitation and Assistive Technologies Engineering. 2021.
- 2020 Cumulative Efficacy of Longitudinal Repeat Salivary Gland OnabotulinumtoxinA Injection: A Retrospective Study. Hannah Aura Shoval, MD, Kathleen Friel, PhD, Jared Levin, MD, Heakyung Kim, MD. Am J Phys Med Rehabilitation. Dec 29;Published Ahead of Print.
- 2020 Utility Of A Rest-activity Ratio In A Pediatric Brain Injury Rehabilitation Sample: A Pilot Study. A. H. Lequerica, J. Lengenfelder, H. Genova, J. DeLuca, C. Marchetta, H. A. Shoval, K. Yalamanchi. Sleep 43(Supplement 1):A374-A374 DOI:10.1093/sleep/zsaa056.981
- 2019 Safety of combined salivary gland and multilevel intramuscular onabotulinum A injections with and without ethanol in pediatric patients with cerebral palsy: A retrospective study. Hannah Aura Shoval, MD, Jared Levin, MD, Kathleen Friel, PhD, Heakyung Kim, MD. Journal of Pediatric Rehabilitation Medicine. 01 Jan 2019, 12(2):189–196
- 2018 The Impact of Hypomania on Aerobic Capacity and Cardiopulmonary Functioning—A Case Report. Hannah Aura Shoval, MD, Hilary F. Armstrong, PhD, Julia Vakhrusheva, Jacob S. Ballon, MD MPH, Matthew Bartels, MD, David Kimhy, PhD.. Frontiers in Psychiatry.
- 2018 Onabotulinumtoxin-A injections into the salivary glands for spinal muscle atrophy type I: A prospective case series of four patients. Hannah Aura Shoval, MD, Esther Antelis, Andrew Hillman, Xiaofang Wei, MD, Patricia Tan, MD, Ruth Alejandro, MD, Heakyung Kim, MD. American Journal of Physical Medicine and Rehabilitation.
- 2016 The Impact of Aerobic Exercise Training on Cardiopulmonary Functioning in Individuals with Schizophrenia. Hilary F. Armstrong, PhD, Matthew Bartels, MD, Orest Paslavski, Darnell Cain, Hannah Aura Shoval, MD, Jacob S. Ballon, MD MPH, Samira Khan, Richard P. Sloan, PhD, David Kimhy, PhD.. Schizophrenia Research.

#### Book Chapters

- 2021 Pediatric Neurological Disorders. Hannah Aura Shoval, MD. In R. Mitra (Ed.), Principles of Rehabilitation Medicine: Case-Based Board Review. Mcgraw-Hill Education.
- 2021 Muscle and Joint pain in Pediatric Rehabilitation. Hannah Aura Shoval, MD. In R. Mitra (Ed.), Principles of Rehabilitation Medicine: Case-Based Board Review. Mcgraw-Hill Education.
- 2019 Pediatric Neurological Disorders. Heakyung Kim, MD, Hannah Aura Shoval, MD, Kim N in Principles of Rehabilitation Medicine. R. Mitra (Ed.), (pp. 1005-1028). Mcgraw-Hill Education.

2019 Pediatric Musculoskeletal Medicine. Heakyung Kim, MD, Hannah Aura Shoval, MDin Principles of Rehabilitation Medicine. R. Mitra (Ed.), (pp. 1047-1067). Mcgraw-Hill Education.

#### Abstracts

- 2023 Botulinum Neurotoxin Injections Improve Hip Rotation in Children With Cerebral Palsy. A. Kanchan, G.B. De Carvalho, C.A. Mazzola, J. Cheng, F. Edobor-Osula, H. A. Shoval, S. Pal. Abstract presented in American Society of Biomechanics 2023. August 2023
- 2022 Treatment of Postprandial Hypotension with Acarbose in an Adult with Cervical Spinal Cord Injury: A Case Report. SS. Dieffenbach, H. A. Shoval. Poster Presented at 2022 Annual Assembly of American Academy of Physical Medicine and Rehabilitation, Baltimore, MD, USA. October 2022.

Effects of Socio-Demographics on Access to Care in Children with Cerebral Palsy. H. A. Shoval, M. Reddy, J. Cheng. American Academy for Cerebral Palsy and Developmental Medicine. September 2022.

Assessing the Safety and Efficacy of Alcohol Nerve Block Injections with and Without Onabotulinumtoxina in the Management of Pediatric Spasticity. J. Ace, H. A. Shoval, M. Reddy, PCgrew, V. Dhruva, J. Cheng. American Academy for Cerebral Palsy and Developmental Medicine. Sept 2022

Therapeutic Engagement Mediates the Effect of Sleep Fragmentation on Rehabilitation Progress after Pediatric Brain Injury. A. H. Lequerica, H. A. Shoval, J. Ace, T. Yip, SS. Dieffenbach, C. Marchetta, J. DeLuca. Poster presented at 2022 Joint Conference on Brain Injury New York City, NY, USA. September 2022.

- 2021 Peach: a validated tool to assess physical therapists' proficiency in assessing "hips at risk" in children with cerebral palsy. J. Chan, J. Cheng, M. Armento, D. Scher, P. Selber, H. A. Shoval, K. Murphy, J. Jezequel, B. Assip, F. Edobor-Osula. Abstracts for the American Academy for Cerebral Palsy and Developmental Medicine 6–9 October 2021. https://doi.org/10.1111/dmcn.15005
- 2020 Adaptation to multi-session real-time visual feedback training of knee joint pattern in pediatric cerebral palsy: a case report. X. Liu, N. Oliveira, N. Ehrenberg, J. Cheng, K. Bentley, S. Blochlinger, H. A. Shoval, P. Barrance. 44th Meeting of the American Society of Biomechanics. Aug 5-7, 2020 (virtual conference)
  - Validation of IMU-derived knee flexion angle measurements for use in visual kinematic feedback.. X. Liu, N. Oliveira, N. Ehrenberg, J. Cheng, K. Bentley, S. Blochlinger, H. A. Shoval, P. Barrance. 44th Meeting of the American Society of Biomechanics. Aug 5-7, 2020 (virtual conference)
  - Use of the Climbing Treadwall in Physical Rehabilitation: A Pilot Study. Kathryne Bartolo, MD, Hannah Aura Shoval, MD, Jenfu Cheng MD, Ghaith Androwis, PhD. AAP, 2020.
- 2019 The short term effect of gait retraining using real-time visual kinematic feedback in a child with cerebral palsy. X. Liu, N. Oliveira, N. Ehrenberg, J. Cheng, K. Bentley, S. Blochlinger, H. A. Shoval, P. Barrance. International Society of Biomechanics, 2019.
- 2018 The Mysterious Tale of Wilson's Disease Spasticity Presenting as a Radial Nerve Palsy: A case Report. N. Rakesh, K. Eison, H. A. Shoval, P. Tan, R. Alejandro. AAP, 2018.
- 2017 Duration and Efficacy Of Repeat Salivary Gland Onabotulinum Toxin-A Injection: A Retrospective Cohort Study. H. A. Shoval, J. Levin, K. Friel, H. Kim. AACPDM, 2017.
  - Efficacy and Negative Outcome Profile Of Single Event Multilevel Onabotulinumtoxin A Injections For Sialorrhea And Spasticity in Pediatric Patients with Cerebral Palsy. H. A. Shoval, J. Levin, K. Friel, H. Kim. AACPDM, 2017.
  - Paraplegia Following Surgical Treatment of Idiopathic Scoliosis: A Case Report. M. Chi, H. A. Shoval, P. Tan. AAP, 2017.
- 2016 Peripheral Nerve Injury in the Setting of Concurrent Anoxic Brain Injury: A Case Report. J. Moody, J. Singh, H. A. Shoval, R. Alejandro, M. Wei. AAPM&R, October 2016.

- Addressing Open Mouth Posture in Children with Cerebral Palsy through Chemodenervation of the Lateral Pterygoid Muscles: A Case Series of Pediatric Patients. F. I. Reyes, H. A. Shoval, H. Kim. AAPM&R, October 2016.
- 2015 Ultrasound-guided Interspinous Ligament Steroid Injection for Symptomatic Interspinous Ligament Edema in Two Young Athletes with Back Pain: A Case Series. Anish Mirchandani D.O., Hannah Aura Shoval, MD, Peter Moley, MD. AAPM&R, November 2015
  - Adrenoleukodystrophy Diagnosed in a Patient Admitted to a Pediatric Inpatient Rehabilitation Hospital for Hypoxic, Ischemic Encephalopathy: A Case Report. F. I. Reyes, H. A. Shoval, R. Alejandro, H. Kim. AAPM&R, November 2015.
- 2014 Radiation-induced Funicular Pain from Treatment of a Spinal Metastases. H. A. Shoval, M. Stubblefield. AAPM&R, November 2014.
  - The Role of Acute Rehab in Stiff Person Syndrome: A Case Series. H. A. Shoval, O. Hamer, U. Nanda, K. Chantasi. AAPM&R, November 2014.
  - Acute Worsening of Parkinson's Disease Symptoms Following Infection with Tick-Borne Illness: A Case Report. J. S. Chu, H. A. Shoval, J. Padro-Guzman, D. Cormier. AAPM&R, November 2014.
  - Spasticity and Pain in an Adaptive Water Skier. D. Sarno, H. A. Shoval, D. Cormier, K. Chantasi, American College of Sports Medicine, May 2014.
  - Case Report: Bilateral femoral neuropathy following a traumatic sacral fracture and bilateral iliopsoas hematomas. J. S. Chu, H. A. Shoval, J. Padro-Guzman. AAP, February 2014.
  - Case Report: Sensory Mediated Bowel, Bladder, and Sensory Dysfunction in Chemotherapy Induced Peripheral Neuropathy. H. A. Shoval, L. Ruppert. AAP, February 2014.
  - Case Report: Brown-Séquard-Plus syndrome after spinal stroke in the setting of thoracic aortic aneurysm repair. H. A. Shoval, J. S. Chu, J. Padro-Guzman. AAP, February 2014.
- 2013 Autonomic Dysregulation and Exercise Capacity in Individuals with Schizophrenia. M. N. Bartels, H. A. Shoval, J. Vakhrusheva, H. F. Armstrong, R. P. Sloan, J. I. Gomez, D. A. Kimhy. American Autonomic Society, October 2013.
  - Autonomic Dysregulation and Altered Affective Functioning in Schizophrenia. M. N. Bartels, H. A. Shoval, J. Vakhrusheva, H. F. Armstrong, R. P. Sloan, J. I. Gomez, D. A. Kimhy. American Autonomic Society, October 2013.
  - Recurrent Miller Fisher Variant of Guillain-Barré Syndrome: A Case Report. H. A. Shoval, A. Shrikhande. AAPM&R, October 2013.
  - Rapid Emergence from Akinetic Mutism with Methylphenidate in a Patient with an Old Stroke after VP Shunt Placement. H. A. Shoval, L. Sorkin. AAP, March 2013.
- 2007 Follow up of Children with Language Regression. K. A. McVicar, M. Valicenti-McDermott, I. Rapin, H. A. Shoval, R. Steinman, K. Ballaban-Gil, S. L. Moshe, S. Shinnar. Department of Neurology, Pediatric Academic Society Annual Meeting, May 2007.

#### Online

- 2023 Spacticity. H. A. Shoval, K. Heckert, E.H. Hatch. MedLink Neurology.
- 2016 Osteogenesis Imperfecta Refresh. H. Kim, H. A. Shoval. PM&R Knowledge NOW, 2016. [http://me.aapmr.org/kn/article.html?id=230]
- 2015 Congenital and Acquired Myotonia. H. Kim, H. A. Shoval, J. Dastgir. PM&R Knowledge NOW, 2015. [http://me.aapmr.org/kn/article.html?id=323]
- Virtual reality/robotic applications in rehabilitation. J. Stein, H. A. Shoval, E. Rand. PM&R Knowledge NOW, 2014. [http://me.aapmr.org/kn/article.html?id=260]
- 2014 Biomechanics of gait and treatment of abnormal gait patterns. H. Kim, H. A. Shoval, T. Ploypetch. PM&R Knowledge NOW, 2014. [http://me.aapmr.org/kn/article.html?id=292]

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2023-present	Research Committee, AACPDM			
	• Review applications for grants			
	Organize and lead research training programs			
2024	Editor, Frontiers in Bioengineering and Biotechnology Journals			
	Special Edition on Technology-aided Personalized Motor Rehabilitation for Individuals with Neurological			
2023-present	Diseases.  PICU Early Mobilization Initiative, Atlantic Health System			
	Telemedicine Committee, Children's Specialized Hospital			
	Curriculum Committee for Kessler Residency Program, Kessler Institute for Rehabilitation			
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	Medical Education Committee, Children's Specialized Hospital			
2018-2021	Let's move!, AACPDM Organized and led movement and sports activities during the conference. https://youtu.be/4ULRByKmK5g			
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-	Reviewer, PM&R Journal			
2020	Reviewer, Association of Academic Physiatrists			
2010	Conference abstract reviewer			
_	Reviewer, Journal of Pediatric Rehabilitation Medicine (JPRM)			
2018–present	Reviewer, American Journal of Physical Medicine & Rehabilitation (AJPMR)			
2018	Reviewer, The Journal of Spinal Cord Medicine (JSCM)			
2017 – 2022	Physiatry PI/QI Representative, Children's Specialized Hospital			
2017-present	Adapted Sports and Recreation Committee, AACPDM			
2016 – 2017	Abstract Reviewer, $AAPM\&R$			
2014 – 2015	Resident Mentor, Columbia University Medical School PM&R Student Interest Group, Columbia			
	Medical School, New York, NY			
2013 – 2014	Volunteer Events Committee, New York Society of PM&R, New York, NY			
2012 – 2016	Physical Medicine and Rehabilitation Representative, House Staff Quality Council, New			
	York-Presbyterian Hospital/Weill Cornell Medical Center, New York, NY			
	Fundraising			
Aug 7, 2023	Keynote Speaker, Timthy J Piazza foundation Anual Golf Fundraiser			

- Aug 7, 2023 **Keynote Speaker**, Timthy J Piazza foundation Anual Golf Fundraiser To help raise funds for children in need of prosthetics.
- May 3, 2023 Presenter, Goryeb Philanthropic Council
  Presented Clinical Outcomes of the Pediatric Rehabilitation Medicine Department as well as vision for the future of the department.
- June 3, 2022 **Presenter**, "Dinner with the Docs" Presented in front of donors and potential donors.
- Winter 2008 Board Member/Fund Raiser, Multi-Cultural Performing Arts Group, Boston, MA

  o Fundraised for the Colleen Romain Scholarship

#### In the Media

- Mar 2024 Physician is earning an MBA to broaden her influence in healthcare, https://www.business.rutgers.edu/news/physician-earning-mba-broaden-her-influence-healthcare
- Sep 2023 Focus on Pediatrics, https://drshoval.com/assets/img/news/focus-on-pediatrics-09-2023.pdf#page=6

- Apr 2022 Examining the use of a rest-activity ratio in a pediatric rehabilitation setting, https://todayuknews.com/health/actigraphy-shows-promise-as-objective-noninvasive-measure-of-sleep-wake-regulation-in-children-with-brain-injury
- Apr 2022 What is a Physiatrist?, https://www.njfamily.com/ask-the-expert-what-is-a-physiatrist/
- Oct 2021 Researcher Highlight at CSH, https://drshoval.com/assets/img/news/CSH%20Research% 20Newsletter%20-%2011.2021.pdf
- Oct 2020 With Love, You Can Do Anything: A patient story, https://web.archive.org/web/20201022054708/https://www.childrens-specialized.org/for-patients-and-families/our-families/meet-our-families/eduardo-patino
- Oct 2018 Pediatric physiatry offers medical treatments for brain, nerve, muscle and bone conditions, https://www.mycentraljersey.com/story/sponsor-story/rwj-barnabas/2018/10/25/pediatric-physiatry-offers-medical-treatments-brain-nerve-muscle-and-bone-conditions/1697073002/
- March 2018 AED and StevensTHON invite CSH Pediatric Physiatrist Aura Shoval, https://thestute.com/2018/03/02/aed-and-stevensthon-invite-csh-pediatric-physiatrist-aura-shoval/
  - Feb 2018 **AAP 2018**, https://www.eventscribe.com/2018/aap/ajaxcalls/PresentationInfo.asp?efp=WVhBR1BISEw0NjIz&PresentationID=321775&rnd=0.3820107
  - Sep 2017 Burke-Blythedale Research Shines at the American Academy of Cerebral Palsy and Developmental Medicine Annual Meeting, http://burke.weill.cornell.edu/burke-blythedale-pediatric-neuroscience-research-collaboration/impact/presentations/burke-blythedale
  - June 2015 Advances in Rehabilitation Medicine, https://me.columbia.edu/files/seasdepts/mechanical-engineering/pdf-files/NYPAdvances\_Rehabilitation\_June22.pdf
  - Oct 2014 NewYork-Presbyterian/Columbia to Launch Pediatric Rehabilitation Medicine Fellowship in 2015, https://rehabmed.weill.cornell.edu/newyork-presbyteriancolumbia-launch-pediatric-rehabilitation-medicine-fellowship-2015
  - Sep 2014 Advances in Rehabilitation Medicine, http://med-e-mail.biz/nyp/rehab\_sep2014.pdf
  - Nov 2012 Barnard Dances at Miller, http://www.worldcat.org/title/barnard-dances-at-miller-editholub-november-21-2002/oclc/191730550

### Prior Employment/Teaching

- Feb 24, 2021 Instructor, Kessler Institue for Rehabilitation, Medical Student Fair, West Orange, NJ Hands on Workshop: Spasticity Management.
- Jan 16, 2020 Instructor, Kessler Institue for Rehabilitation, Medical Student Fair, West Orange, NJ Botox Injections: Hands on Workshop.
- Dec 11, 2019 Instructor, University Hospital, Newark, NJ Ultrasound Procedure Workshop
- Dec 21, 2018 Instructor, University Hospital, Newark, NJ Ultrasound Procedure Workshop
- Nov 23, 2015 Instructor, Columbia Medical Center, New York, NY Columbia Medical School Advanced Musculoskeletal Tutorial
- Mar 10, 2015 Instructor, Weill Cornell Medical Center, New York, NY Weill Cornell Medical School Musculoskeletal Tutorial
  - Dec 1, 2014 Instructor, Columbia Medical Center, New York, NY Columbia Medical School Advanced Musculoskeletal Tutorial

Oct 19, 2014 Organizer and Instructor, Columbia Medical Center, New York, NY Columbia Medical Student Ultrasound Workshop on the Shoulder Dec 2, 2013 Instructor, Columbia Medical Center, New York, NY Columbia Medical School Musculoskeletal Physical Exam Workshop Summer 2007 Stretch Trainer, Rye Personal Training, Rye, NY  $\circ$  Created individualized stretching/exercise programs to prevent and rehabilitate injuries. 2005–2006 **Teacher**, Westchester Jewish Center, Mamaroneck, NY o Taught Hebrew, prayer and ethics. Organized a community service fair. O Directed an end of year performance. 2001–2005 Resident Assistant, Barnard College Office of Residential Life, New York, NY Served on-duty for 1000 undergraduates, responded to medical emergencies. • Provided peer counseling and mediation for 50 residents. Managed annual programming budget of \$800. Organized events that promoted diversity. Summer 2002 Teacher, Barnard College H.E.O.P (Higher Education Opportunity Program), New York, NY o Taught calculus and computer science to economically disadvantaged first year students. 2000–2001 **Teacher**, Greenburgh Hebrew Center, Dobbs Ferry, NY o Taught a group of 15 students Hebrew, prayer and ethics. Individually evaluated their progress. 2001–2004 **Tutor**, Brainstorm Tutorial, New York, NY o Tutored high school students in math and science. Prepared students for the NY Regents Exams. Summer 2001 Special Needs Counselor, JCC Inclusion Program, La Jolla, CA Organized activities for sixty kids. Integrated special needs children into these camp activities. Worked intensely one-on-one with a severely autistic child teaching sensory and language skills. Mentoring 2023 Mentor, 3 medical students at Rutgers New Jersey Medical School and 2 PM&R residents at Rutgers New Jersey Medical School, Department of Physical Medicine Rehabilitation Mentored in research. 2021 Mentor, Pre-medical Student Mentored in research. 2018 - 2020Mentor, Incoming Resident Mentored in research. 2018–2020 Mentor, Resident Research Project On Treadwall Training in CP 2018-2019 Mentor, Resident Research Project On Sleep quality and rehabilitation outcome in patients with brain injuries. 2018–2020 Mentor, Pre-Medical College Student 2018–2020 Mentor, Pre-Medical College Student

2016–2017 Mentor, Columbia Medical Center, New York, NY Mentored undergraduate in medical research
 2016–2020 Mentor, Columbia Medical Center, New York, NY Mentored resident in medical research

### Additional Training

- April 7–11, Musculoskeletal Ultrasound: A Comprehensive Approach, San Diego, CA 2018
- Jan 17, 2018 Safety Culture Design Workshop: Safety Behaviors to Prevent Human Error, Monmouth Medical Center, Long Branch, NJ
- Sept 13, 2017 Ultrasound Symposium: Neuromuscular Ultrasound: Hands on Ultrasound Trainig course for Chemodenervation Procedures, AACPDM 2017, Montreal, Canada
  - June 7–10, Clinical Gait Analysis: A Focus on Interpretation, Center for Motion Analysis, Farmington, 2017 CT
  - Oct 1, 2015 Ultrasound Guidance For Chemodenervation Procedures, Hands On Workshop: Lower Limb Muscles, AAPM&R, Boston, MA
  - Oct 2, 2015 Ultrasound Guidance For Chemodenervation Procedures, Hands On Workshop: Head And Neck, AAPM&R, Boston, MA
  - Oct 2, 2015 Ultrasound Intensive: The Ankle in Musculoskeletal Medicine, AAPM&R, Boston, MA
- April 19, 2015 Orthotics Workshop, NYU School of Medicine, New York, NY
- Mar 29, 2015 Prosthetics and orthotics course with Heikki Uustal, Livingston, NJ
- May 8, 2014 US Workshop: Knee and Shoulder, American Osteopathic College of Physical Medicine and Rehabilitation, New York, NY
- Winter 2008 The Ixchel Spanish School, Antigua, Guatemala

#### Volunteer Activities

- 2023-present Volunteer, Rutgers Institute for Corporate Social Innovation
- Nov 2, 2023 Adaptive Sports

Atlantic Health System Community Outreach Educational Event.

- Organized and led a discussion focused on families with children with disabilities to discuss solutions of benefits.
- Encourage physical activity and discussing physical health, as well as mental and emotional benefits of adaptive sports participation.
- 2021–2022 **Volunteer**, Community Food Bank of New Jersey, with Children's Specialized Hospital Helped provide food for families with food insecurities
- 2020–2021 Accessible Dance Director, Seeds Arts
  Co-organizing wheelchair dance classes for all ages
- Sep 18, 2016 Volunteer, Olympic Field Day, New York, NY

For children with all abilities. Partnered with Achilles International and IamMore Foundation

- Feb 28, 2015 **Presenter**, Dancer Wellness Workshop, New York, NY Prepared and presented information on female athlete triad
- August 2015 Medical Volunteer, Battery Dance Festival, New York, NY
- October 2014 Ballet Class with New York City Ballet / Weinberg Family Cerebral Palsy Center, New York City Ballet, New York, NY https://www.youtube.com/watch?v=wp6LeOIkUuQ
- May 4, 2014 Multiple Sclerosis Walk, New York, NY

To fundraise for support programs, research initiative and promote awareness

- Nov 3, 2013 Medical Volunteer, New York City Marathon, New York, NY
  - 2013 Challenged Athlete Foundation
    - July 14, 2013 Aquaphor New York City Triathlon, New York City, New York
      - June 2013 Annual Gala and Fundraiser "A Celebration of Heroes, Heart and Hope", New York City, New York

- June 2, 2013 Special Olympics Metro Tournament, Queens, New York video available at http://www.youtube.com/watch?v=gPye82t6iDU May 7, 2013 Pre-participation Physicals, Saint Peter's College, Jersey City, New Jersey April 28, 2013 Multiple Sclerosis Walk, New York, NY To fundraise for support programs, research initiative and promote awareness 2009 Tutor Teaching and tutoring academics and physical activity and dance as part of a free afterschool program for kids at risk 2006–2007 Sharewood, Boston, MA Sharewood is Tufts' student run free Health Clinic O Case Manager Board Member Fall 2006 Dance Instructor and Homework tutor, YMCA after school program, Boston, MA Started a dance program, taught dance, and tutored children aged 8–15 Academic Presentations Mar 19, 2024 Kessler PM&R Board Review Course, Kessler Institute for Rehabilitation Topics in Pediatric Rehabilitation and Q & A session Mar 12, 2024 Developmental Outcomes of Pediatric Brain Injury, Brain Injury Alliance of NJ Regional Training on Brain Injury in Children and Adolescents Feb 14, 2024 Early Diagnosis of Cerebral Palsy: How and Why, Atlantic Health System, Morristown Medical Center Neonatology Fellowship Dec 12, 2023 Burn Out? Sustainability of Employees, Association of National Advertisers, hosted at Rutgers Business School, Rutgers Institute for Corporate Social Innovation Tapping Brand Potential for Social Good Sep 20, 2023 Cerebral Palsy: Early Diagnosis and Current Therapies, CentraState Healthcare System Grand Rounds Sep 6, 2023 Statistical Review of QI Outcome Measures, Kessler Institute for Rehabilitation, West Orange, NJ Jun 21, 2023 QI Final Presentations, Kessler Institute for Rehabilitation, West Orange, NJ Mar, 2023 Spinal Cord Injury Lecture (Resident Lecture), Atlantic Health System, Morristown Medical Center Mar, 2023 Kessler PM&R Board Review Course, Kessler Institute for Rehabilitation Topics in Pediatric Rehabilitation and Q & A session Mar 8, 2023 Quality Improvement, Kessler Institute for Rehabilitation, West Orange, NJ Jan 31, 2023 Developmental Disabilities Faculty Panel, Rutgers New Jersey Medical School May 19, 2022 General Pediatric Symposium: CP for the GP, Atlantic Health System, Morristown Medical Center
- Physical Medicine and Rehabilitation Overview (Resident Lecture), Atlantic Health Apr 13, 2022 System, Morristown Medical Center
  - Mar, 2022 Kessler PM&R Board Review Course, Kessler Institute for Rehabilitation Topics in Pediatric Rehabilitation and Q & A session
- Jan 17, 2023 Quality Improvement, Kessler Institute for Rehabilitation, West Orange, NJ
- Oct 9, 2021 Adaptive Sports and Recreational Panel, AACPDM video here
- Apr 29, 2021 Quality Improvement, Kessler Institute for Rehabilitation, West Orange, NJ

- Sep 26, 2020 Adaptive Sports and Recreational Panel, AACPDM
  Organized and moderated an International Panel for the American Academy of Cerebral Palsy and
  Developmental Medicine. https://www.youtube.com/watch?v=AuBd1zoOIvU
- Jan 13, 2021 Neuromuscular Disorders, Kessler Institute for Rehabilitation, West Orange, NJ
- Oct 2, 2020 Creation of QI/PI projects, Kessler Institute for Rehabilitation, West Orange, NJ
- Sep 23, 2020 Methodology of QI/PI, Kessler Institute for Rehabilitation, West Orange, NJ
- May 13, 2020 Traumatic Brain Injuries, Kessler Institute for Rehabilitation, West Orange, NJ
- Feb 11, 2020 Schwartz Rounds Panelist, Children's Specialized Hospital, Newark, NJ
- Oct 23, 2019 Quality and Outcome Measures, Kessler Institute for Rehabilitation, West Orange, NJ
- Oct 30, 2018 Quality Improvement, Kessler Institute for Rehabilitation, West Orange, NJ
- Aug 30, 2018 Cerebral Palsy, New York-Presbyterian Hospital, New York, NY
- May 18, 2018 Updates in Cerebral Palsy, New Jersey Medical School, Newark, NJ
- Mar 2, 2018 Overview of Pediatric Physiatry, Riverside Pediatrics, Edgewater, NJ
- Feb 28, 2018 Overview of Pediatric Physiatry, Stevens institute of technology, Hoboken, NJ
- Feb 22, 2018 **Botox Injections for Sialorrhea**, Invited International Speaker: Mexican Academy of Cerebral Palsy and Neurodevelopmental Disorders, Querétaro, Mexico
- Feb 22, 2018 An Overview and Practical Applications for Adaptive Sports, Invited International Speaker: Mexican Academy of Cerebral Palsy and Neurodevelopmental Disorders, Querétaro, Mexico
- Feb 15, 2018 Standardizing Screening and Management for Neurogenic Bladder in Children with Neurological Disorders, AAP '18, Atlanta, GA
- Jan 29, 2018 Botox Injections for Sialorrhea, Bleshman School, Paramus, New Jersey
- Jan 25, 2018 Overview of Pediatric Physiatry, Children's Specialized Hospital, Bayonne, NJ
- Jan 18, 2018 Diagnosis and Treatment of Cerebral Palsy, JFK Medical Center, Edison, New Jersey
- Jan 10, 2018 Physiatry Management of Cerebral Palsy and other Neurological disorders, Dinner Talk, Hackensack, New Jersey
- Jan 10, 2018 Botox Injections for Sialorrhea, Clinical Grand Rounds, Mountainside, New Jersey
- Dec 14, 2017 Overview of Pediatric Physiatry, Children's Specialized Hospital, Clifton, NJ
- Sep 7, 2017 Treatment of Sialorrhea, Grand Rounds, Columbia Medical Center
- June 29, 2017 Neurogenic Bladder: Pathophysiology, Medical Management, and Quality Improvement Initiative, Grand Rounds, Blythedale Children's Hospital
- June 22, 2017 Cerebral Palsy: Pathophysiology and Medical Management, Resident Lecture, Columbia Medical Center
- June 22, 2017 Botox Injections: Hands on workshop, Resident Lecture, Columbia Medical Center
  - June 2017 Neurogenic Bladder in Cerebral Palsy, Pediatric Journal Club with Dr. Kim, Columbia Medical Center
  - May 2017 Constraint Induced Therapy vs. Bimanual Therapy, Pediatric Journal Club with Dr. Kim, Columbia Medical Center
  - April 2017 Pain Management in Pediatric Medicine, Pediatric Journal Club with Dr. Kim, Columbia Medical Center
- Mar 21, 2017 Pathophysiology and Rehabilitation of Traumatic Brain Injuries, Occupational Therapy Lecture, Columbia Medical Center
  - Feb 2017 **Botox Injections to Salivary Glands**, *Pediatric Journal Club with Dr. Kim*, Blythedale Children's Hospital
  - Dec 2016 **Electrical Stimulation for Neuromuscular recovery**, Pediatric Journal Club with Dr. Kim, Blythedale Children's Hospital

- Nov 3, 2016 Growth Attenuation Therapy, Pediatric Journal Club with Dr. Kim, Blythedale Children's Hospital
- Oct 13, 2016 Anterior Distal Femoral Hemi-epiphysiodesis for fixed knee flexion contracture, Pediatric Journal Club with Dr. Kim, Blythedale Children's Hospital
- Sep 21, 2016 Neurosurgical Management Of Childhood Spasticity: Case Presentation and Discussion: What is Best?, AACPDM 70th Annual Meeting Pre-Conference, Hollywood, Florida
- July 22, 2016 Children's Orientation and Amnesia Test, Pediatric Journal Club with Dr. Kim, Columbia Medical Center
- July 10, 2016 Moderator, Plenary II: Dance Medicine, Performing Arts Medicine Association Annual Symposium 2016, New York, NY
- June 16, 2016 Diagnosis, Treatment, and Prevention of Cerebral Palsy in NearTerm/Term Infants, Pediatric Journal Club with Dr. Kim, Columbia Medical Center
- June 2, 2016 Surviving the PM&R Boards, with Ethan Rand, MD, Columbia Medical Center
- May 12, 2016 Workshop Botulinum Toxin Injections to Upper Extremity, Functional Anatomy of the Elbow, Columbia Medical Center
- Mar 10, 2016 The Evidence for Amantadine in Brain Injury, Pediatric Journal Club with Dr. Kim, Blythedale Children's Hospital
- Feb 26, 2016 Botox in Distraction Osteogenesis in Children, Pediatric Journal Club with Dr. Kim, Columbia Medical Center
- Feb 23, 2016 Instructor, Blythedale Children's Hospital, Valhalla, NY Introduction to Pediatric Rehabilitation
- Jan 8, 2016 Predictors of Success in Selective Dorsal Rhizotomy, Pediatric Journal Club with Dr. Kim, Columbia Medical Center
- Jan 7, 2016 Resident Board Review: Pediatrics, Columbia Medical Center
- Dec 29, 2015 Amantadine in Children, Pediatric Journal Club with Dr. Kim, Columbia Medical Center
- Oct 30, 2015 Neurological Injury in the Surgical Treatment of Idiopathic Scoliosis, Journal Club, Columbia Medical Center
- Sep 17, 2015 **Pediatric Use of Tylenol v Motrin**, *Pediatric Journal Club with Dr. Kim*, Blythedale Children's Hospital
- June 25, 2015 Hand Offs: Research and Clinical Application, Columbia Medical Center
- April 28, 2015 Neuromuscular Disorders, Columbia University Programs in Occupational Therapy
  - Dec 2014 Matrix-Induced Autologous Chondrocyte Transplantation, Journal Club with Dr. Moley, Hospital for Special Surgery
  - Nov 2014 Moderator, Optimizing Musculoskeletal Performance in the Aging Athlete, AAPM&R, San Diego CA
  - Sep 2014 Muscular Dystrophy, Blythedale Children's Hospital
- Sep 12, 2014 Hip pathology, diagnosis and treatment, Columbia Medical Center
- May 8, 2014 House Staff Quality Yearly Review, Medical Board, New York-Presbyterian Hospital
  - Feb 2014 Infection Control Update, Board of Trustees, New York-Presbyterian Hospital
- March 2014 Stiff Person Syndrome, Memorial Sloan-Kettering Cancer Center
- Mar 20, 2014 **House Staff Quality Council Update**, Graduate Medical Education Committee, Weill Cornell Medical Center
- August 2013 Pathophysiology of the Lumbar Spine, Anatomy Series, Columbia Medical Center
- July 23, 2013 Motor recovery after stroke, Journal Club with Dr. Padro-Guzman, Columbia Medical Center
- Sep 20, 2013 Hamstring tear, Journal club with Drs. Visco and Smith, Columbia Medical Center

Aug 23, 2013	<b>Steroid injections for herniated discs</b> , <i>Journal club with Drs. Visco and Smith</i> , Columbia Medical Center
April 26, 2013	The Elbow and Forearm, Anatomy Series, Columbia Medical Center
Oct 31, 2012	Syringomyelia, Memorial Sloan-Kettering Cancer Center
Aug 27, 2012	Wheelchairs: From everyday use to wheels of the future, Blythedale Children's Hospital
July 27, 2012	When there is a Death on the Rehab Unit, Columbia Medical Center
	Extra curricular Activities

### Extracurricular Activities

2010-present	Gymnastics
2015 – 2018	Columbia Ballroom Dance Team
2011 - 2012	Gymnastics Team, East Rockaway, NY
2004 - 2009	Columbia, Harvard, MIT Ballroom Dance Teams
2001 - 2002	Columbia University Dance Team, placing 11th at Nationals
Summer 1998	Selected for Israeli National Women's Soccer Team

## Languages

o English: Fluent

 $_{\odot}\left( \mathrm{Medical}\right)$  Spanish: Intermediate

o Hebrew: Proficient

## Professional Memberships

AAPM&R, AAP, AACPDM, AMA, ACHE