

CURRICULUM VITAE

Susan V. Duff, EdD, MPT, OT/L, CHT
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EDUCATION/TRAINING

Eastern Michigan University, Ypsilanti, MI	BS	March. 1981	Occupational Therapy
Drexel (Hahnemann) University, Philadelphia, PA	MPT	June 1988	Physical Therapy
Columbia University, Teachers College, NY, NY	MA	June 1996	Motor Learning
Shriners Hospitals for Children	Pre-doc	1999-2000	Clinical Research
Columbia University, Teachers College, NY, NY	EdD	May 2002	Movement Science
Pennsylvania State University, State College, PA	Post-doc	2004-2005	Kinesiology/Motor Control
University of Southern California, Los Angeles, CA	Fellow	2012-2014	TREET Occ-Phys Therapy

LICENSURE/CERTIFICATION

Physical Therapy License California #294281/ Pennsylvania #PT006638L

Occupational Therapy License California #13235 / Pennsylvania #OC001059L

Certified to administer/score the Kids Assisting Hand Assessment (AHA) 2011- and Mini AHA 2019-

Certified to administer/score the Hand Assessment of Infants 2020-

Certified Hand Therapist (CHT) Hand Therapy Certification Comm 1991- (*Recertified – 1996, 2001, 2006, 2011, 2016*)

EMPLOYMENT AND POSITIONS HELD

2016-	Associate Professor-Tenured, <u>Chapman University</u> , Crean College of Health & Behavioral Sciences, Department of Physical Therapy, Irvine, CA.
2006-16	Associate Professor, <u>Thomas Jefferson University</u> , Physical Therapy Department, Secondary Appointment, Occupational Therapy Department. Philadelphia, PA.
2009-16	Faculty member, Neuroscience Graduate Program, <u>Thomas Jefferson University</u> , Phila., PA
2008-12	Clinical Specialist, Rehabilitation Department, <u>Children's Hospital of Philadelphia</u> , Phila., PA
2014-16	Population: Various inpatient and outpatient pediatric conditions from birth to 18 years of age
2011-12	Physical and Occupational Therapist-Hand Therapist, <u>Northwest Physical Therapy</u> , Wyndmoor, PA.
2015-16	Population: Adults and children with various upper limb disorders
2012-14	T32 Post-doctoral Fellow, Training in Rehabilitation Efficacy and Effectiveness Trials, <u>University of Southern California</u> , Occupational Therapy / Biokinesiology & Physical Therapy, Los Angeles, CA. Advisors: Dr. Carolee Winstein, Dr. Linda Fetters, Dr. Francisco Valero-Cuevas.
2004-05	Postdoctoral Fellow with Dr. Robert Sainburg, Kinesiology Department, <u>Pennsylvania State University</u> , State College, PA.
2004-06	Scientific Staff member, <u>Shriner's Hospitals for Children</u> , Philadelphia, PA.
2003-04	Research Associate, <u>Shriner's Hospitals for Children</u> , Philadelphia, PA.
2000-03	Clinical Coordinator for the Upper Extremity & Limb Deformities Centers of Excellence, <u>Shriner's Hospitals for Children</u> , Philadelphia, PA.
1999-2000	Predoctoral Research Fellow, Sponsor-Dr. Randall Betz. <u>Shriners Hospitals for Children</u> , Phila., PA. Research project: Regulation of Fingertip Forces in Children with Spinal Cord Injury
1996-98	Research Assistant for Dr. Andrew Gordon <u>Teachers College</u> , <u>Columbia University</u> , Biobehavioral Sciences, NY, NY.
1994-98	Instructor, Applied Anatomy, Dance Education. <u>Teachers College</u> , <u>Columbia University</u> , NY, NY
1994-95	Senior Physical Therapist, <u>New York Hospital-Hand Unit-Rehabilitation Department</u> , NY, NY. Population: Adults/children with burns, orthopedic and neurological upper extremity conditions
1993-97	Physical Therapist, <u>New York Foundling Hospital</u> , NY, NY. Population: Developmental disabilities
1990-93	Clinical Hand Specialist, Rehabilitation Dep't, <u>Hospital of the University of Pennsylvania</u> , Phila., PA. Population: Adults/children with musculoskeletal & neurological upper limb disorders
1989-93	Instructor Half-time <u>Thomas Jefferson University</u> , Occupational Therapy Department, Phila., PA. Courses: Applied Anatomy, Advanced Treatment Theory & Practice, and Clinical Skills Lab.
1988-90	Physical Therapist, <u>Rehabilitation & Fitness Inc.</u> , Philadelphia, PA. Population: Adults with Various musculoskeletal and neurological conditions
1987-94	Owner, Physical and Occupational Therapist, <u>Progressive Therapy Services</u> , Audubon, NJ. Population: Various upper limb conditions adults/pediatrics, various pediatric conditions

- 1983-95 Senior Occupational Therapist, Children's Hospital of Philadelphia /Seashore House, Phila., PA. Full-time – 1983 to 1986; Weekend relief - 1986 to 1995. **Population:** various pediatric conditions
- 1981-83 Occupational Therapist, Temple University Hospital, Phila, PA. **Population:** Adults with various musculoskeletal, neurological and general medical disorders
- 1981 Occupational Therapist/Counselor, Camp Northwood, Remsen, NY. **Population:** Children with learning disabilities

Contract Positions as Occupational Therapist or Physical Therapist

Populations: Children/adults with neurological/musculoskeletal upper limb conditions. *Sites:* ATC, Springfield School District, PA; Austill's Rehabilitation Services, Exton, PA; Bryn Mawr Rehab Hospital, Malvern, PA; Cherry Hill PT, Cherry Hill, NJ; Every Child Achieves, North Hollywood, CA; Lifestart of Lenox Hill Hospital, NY, NY; Manhattan Rehab Group, NY, NY; Mid-Atlantic Rehab Services, Phila., PA; Paidos Health Care, Malvern, PA; Phila. Hand Center, Phila., PA; Shriners Hospitals for Children, Phila., PA; Society Hill Sports PT, Phila., PA; St. Christopher's Hospital for Children, Phila., PA; University Ortho, State College, PA.

Consultative and Advisory Positions

- 2021 Rater of proposals for Annual Conference of the American Society of Hand Therapists.
- 2019 Consultant, *Criteria for Disability*, with Joy MacDermid, PT, PhD and Susan Brown, PhD. National Academies of Sciences, Engineering, and Medicine and the Social Security Administration. Washington DC. May 9, 2019.
- 2019-2019 Dissertation Advisor for Ehsan Yaghmaei, MS, Computer Science, Chapman University.
- 2019 Rater of proposals for Annual American Occupational Therapy Conference.
- 2018-19 Master's Thesis advisor, Yasmeen AbuZeid, MS. Graduate student at the University of California, Irvine under the mentorship of Dr. David Reinkensmeyer, Engineering. Advisory team included: Dr. Reinkensmeyer, Dr. Susan Duff and Dr. Dan Cooper.
- 2019-2019 Member American Congress Rehabilitation Medicine (ACRM) Pediatric Stroke Task Force
- 2019-2019 Member Research Division, American Society of Hand Therapists.
- 2019-2017-18 Member Research, Academy of the Hand & Upper Extremity Physical Therapy Inc. of the APTA
- 2017-18 Senior Thesis advisor. Undergraduate students at the University of California, Irvine under the mentorship of Dr. David Reinkensmeyer, Engineering.
- 2015-2014-2009-2019 Member Research Committee of the Academy of Pediatrics, of the APTA
- 2014-2009-2019 Member of Editorial Board for Physical & Occupational Therapy in Pediatrics
- 2009-2019 Research Chair, Academy of the Hand & Upper Extremity Physical Therapy Inc. of the APTA
- 2008-2006- Member of Editorial Board for the Journal of Hand Therapy
- 2006- Manuscript Reviewer: *American Journal of Occupational Therapy; Developmental Medicine and Child Neurology; Journal of Biomechanics, Journal of Hand Therapy; Journal of Motor Behavior; Journal of Motor Learning & Development, Neurorehabilitation and Neural Repair; Pediatric Physical Therapy; Physical Therapy; Physical & Occupational Therapy in Pediatrics; Pilot & Feasibility Studies; Restorative Neuroscience*
- 1995 Reviewer for a "Manual on Rehabilitation in Pediatrics", Children's Seashore House, Phila., PA
- 1994 Coordinator for American Society of Hand Therapists Expo '94.
- 1993-2003 Member of the Re-Certification Committee, Hand Therapy Certification Commission
- 1992-93 Member of the Passing Score Advisory Task Force, Hand Therapy Certification Examination Hand Therapy Certification Commission
- 1992 Coordinator, Sensory Integration International, Thomas Jefferson University, Phila., PA.
- 1993 Coordinator and Assistant Coordinator for ASHT Expo, American Society of Hand Therapists
- 1991-93 Item Writer for the Hand Therapy Certification Exam, Hand Therapy Certification Commission
- 1991 Workshop Coordinator, "Surface Anatomy with Application to Clinical Practice", Thomas Jefferson University, Occupational & Physical Therapy Departments, Phila., PA.
- 1990-95 Nominating Committee Chairperson, Section on Hand Rehabilitation, APTA

Honors

- 2018 Honored Professor. Surgery and Rehabilitation of the Hand: Trending Topics in Hand to Shoulder Therapy. Philadelphia, PA. March 2018.
- 2016 Attendee IV Step. Sponsored by the Pediatric and Neurology Sections of the APTA.

- 2011-2019 Attendee Research Summit. Sponsor: Academy of Pediatric PT, APTA. Alexandria, VA
 ▪ V, *Transitions Across the Lifespan*. 10/2019.
 ▪ IV, *Innovations in Technology for Children with Brain Insults: Maximizing Outcomes*. 10/2015
 ▪ III, *Dosing of Interventions for Children with an Injured Brain*. 10/2011
- 2004/09 ERRIS Workshop attendee, Charlottesville, VA
 2000 Nomination for “The Richmond Cerebral Palsy Award” with Andrew M. Gordon, PhD, Academy of Cerebral Palsy and Developmental Medicine
- 1999 Recipient of the “Dean’s Grant for Student Research”, Teachers College, Columbia University
 1988 Recipient of “Honors for Academic Achievement, Hahnemann University
 1980 Phi Kappa Phi, American Occupational Therapy Association
 1979 Inductee Mortar Board – Honor Society, Eastern Michigan University
 1979 Academic Scholarship, Eastern Michigan University
 1977 Inductee Stoic Society, Eastern Michigan University

PEER REVIEWED PUBLICATIONS

Guest Editor Publication Editorials.

- Duff SV**, Aaron D, Fetters L. Drawing Inspiration from Children. *J Hand Ther*. 2015;28(2):126-33.
 Bear-Lehman J, **Duff SV**. Innovation in Neurological Upper Extremity Rehabilitation. *J Hand Ther*. 2013;26(2).

Peer-reviewed Publications

- Grampurohit N, Bell A, **Duff SV**, Kaplan G, Thielen C, Mulcahey MJ, Marino R. Highlighting Gaps in Spinal Cord Injury Research in Activity-based Interventions for the Upper Extremity: A Scoping Review. *Neurorehabil*. (In Press).
- Miller A, Quinn L, **Duff SV**, Wade E. Comparison of machine learning approaches for classifying upper extremity tasks in individuals post-stroke. *EMBC*. 2020.
- Bell A, Grampurohit N, Marino R, **Duff S**, Kaplan G, Thielen C, Mulcahey MJ. Home activity-based therapy for the neurologically impaired upper extremity: A scoping review. *Home Health Care Management & Practice*: 2020:1-9. doi: 10.1177/1084822320953836.
- Duff SV**, Miller A, Quinn L, Youdan G, Bishop L, Ruthrauff H, Wade E. Novel Method to Quantify Interlimb Coordination in Persons with Hemiparesis Post-Stroke. *In process*.
- Duff SV**, Gringlas MB, Desai SA, KV Shah KV, Adeniyi-Jones SC. Relationship Between Early Sensorimotor Skills and Performance at One-Year After Perinatal Asphyxia and Treatment with Selective Head Cooling. *In process*.
- Grampurohit N, Marino R, **Duff S**, Bell A, Thielen C, Mulcahey MJ. A scoping review of activity-based interventions for rehabilitation of the neurologically impaired upper extremity. *In process*.
- Thielen CC, Marino RJ, **Duff S**, Kaplan G, Mulcahey MJ. Activity-based Rehabilitation Interventions of the Neurologically Impaired Upper Extremity: Description of a Scoping Review Protocol. *Top Spinal Cord Inj Rehabil*. 2018;24(3):288–294.
- Miller A, **Duff SV**, Quinn L, Bishop L, Youdan G, Ruthrauff H, Wade E. Development of Sensor-Based Measures of Upper Extremity Interlimb Coordination. 40th International IEEE Engineering in Medicine and Biology Conference, (EMBC), Honolulu, HI, July 2018.
- Duff SV**, Sargent B, Kutch JJ, Berggren J, Leiby BE, Fetters L. Using contingent reinforcement to increase muscle activation after Perinatal Brachial Plexus Injury. *Phys Occup Ther Peds*. 2017;37(5):555-65.
- Duff SV**, Aaron D, Gogola G, Valero-Cuevas FJ. Innovative evaluation of dexterity in pediatrics. *J Hand Ther*. 2015;28(2):144-9.
- Duff SV**, DeMatteo C. Clinical assessment of the infant and young child following perinatal brachial plexus injury. *J Hand Ther*. 2015;28(2):126-33.
- Duff SV**, He J, Nelsen MA, Lane CJ, Rowe VT, Wolf SL, Dromerick AW, Winstein CJ. Inter-rater reliability of the Wolf Motor Function Test-Functional Ability Scale: Why it Matters. *Neurorehabil Neural Repair*. 2015;29(5):436-43.
- Edwards B, **Duff SV**. Commentary on “Reliability of the detailed assessment of speed of handwriting on Flemish children”. *Pediatr Phys Ther*. 2014;26(3):324.
- Kalsi-Ryan S, Beaton D, Curt A, **Duff S**, Jiang D, Popovic MR, Rudhe C, Fehlings MG, Verrier MC. Defining the role of sensation, strength, and prehension for upper limb function in cervical spinal cord injury. *Neurorehabil Neural Repair*. 2014;28(1):66-74.

- Muratori LM, Lamberg EM, Quinn L, **Duff SV**. Applying principles of motor learning and control to upper extremity rehabilitation. *J Hand Ther*. 2013;26(2):94-102.
- Kalsi-Ryan S, Beaton D, Curt A, **Duff S**, Popovic M, Rudhe C, Fehlings M, Verrier M. The Graded Redefined Assessment of Strength Sensibility and Prehension (GRASSP) – Reliability and Validity. *J Neurotrauma*. 2012;29(5):905-14.
- Duff SV**. Invited Commentary: Clinical measure of dynamic and control in pediatrics for the article, “Evidence of validity in a new method for measurement of dexterity in children and adolescents”. *Dev Med Child Neurol*. 2010;52(10):888-9.
- Dawson A, Buxbaum L, **Duff SV**. The impact of left hemisphere stroke on force control with familiar and novel objects: neuroanatomic substrates and relationship to apraxia. *Brain Res*. 2010;4;1317:124-36.
- Duff SV**, Mulcahey MJ, Betz RR. Adaptation in sensorimotor control after restoration of grip and pinch in children with tetraplegia. *Top Spinal Cord Inj Rehabil*. 2008;13(4):54-71.
- Duff SV**, Sainburg RL. Lateralization of motor adaptation reveals independence in control of trajectory and steady-state position. *Exp Brain Res*. 2007;179(4):551-61.
- Duff SV**, Dayanidhi S, Kozin SH. Asymmetrical shoulder kinematics in children with brachial plexus birth palsy. *Clin Biomech*. 2007;22:630-38.
- Sainburg RL, **Duff SV**. Does motor lateralization have implications for stroke rehabilitation? *J Rehab Res and Dev*. 2006;43(3):311-322.
- Dayanidhi S, Orlin M, Kozin S, **Duff S**, Karduna A. Scapular kinematics during humeral elevation in adults and children. *Clin Biomech*. 2005;20(6): 600-6.
- Duff SV**. Impact of peripheral nerve injury on sensorimotor control. *J Hand Ther* 2005;18(2):277-81. Review.
- Duff SV**, Charles J. Enhancing prehension in infants and children: fostering neuromotor strategies. *Phys Occup Ther Pediatr*. 2004;24(1-2):129-72. Review.
- Duff SV**, Gordon AM. Learning of grasp control in children with hemiplegic cerebral palsy. *Dev Med Child Neurol*. 2003;45(11):746-757.
- Gordon AM, Lewis SR, Eliasson AC, **Duff SV**. Object release under varying task constraints in children with hemiplegic cerebral palsy. *Dev Med Child Neurol*. 2003;45(4):240-8.
- Lewis S, **Duff SV**, Gordon AM. Manual asymmetry during object release under varying task constraints. *Am J Occup Ther*. 2002;56(4):391-401.
- Gordon AM, **Duff SV**. (1999). Relation between clinical measures and fine manipulative control in children with hemiplegic cerebral palsy. *Dev Med Child Neurol*. 41(9):586-591.
- Gordon AM, Charles J, **Duff SV**. (1999). Fingertip forces during object manipulation in children with hemiplegic cerebral palsy II: Bilateral coordination. *Dev Med Child Neurol*. 1999;41:176-185.
- Gordon AM, **Duff SV**. Fingertip forces during object manipulation in children with hemiplegic cerebral palsy I: Anticipatory scaling. *Dev Med Child Neurol*. 1999;41:166-175.

Book Chapters

- Duff SV**, Rachwani J, Santamaria VF. Clinical management of reach, grasp, and manipulation disorders. In Shumway-Cook A, Woollacott MH, eds. *Motor Control: Theory and Practical Applications*. 6th ed. Baltimore: Lippincott Williams & Wilkins. In-Press.
- Duff SV**, Schmieg S, Werner J. Brachial Plexus Injury. In: Palisano RJ, Orlin MN, Schreiber J, eds. *Campbell's Physical Therapy for Children*. 5th ed. Elsevier Inc; In-Process.
- Duff SV**, Estilow T, Novak CB. Therapist's Management of Peripheral Nerve Injury. In: Skirven T, Fedorczyk J, Feldscher S, Osterman AL, Amadio P, Shin E, eds. *Rehabilitation of the Hand and Upper Extremity*. 7th ed. Philadelphia, PA: Elsevier; 2020. ISBN-10: 0323056024.
- Roller ML, **Duff SV**, Umphred D, Byl N. Contemporary Issues and Theories of Motor Control, Motor Learning, and Neuroplasticity. In: Lazaro R, Umphred's Neurological Rehabilitation, 7th ed. Elsevier; 2020. ISBN: 9780323611176
- Duff SV**, Wolff AL Fine Motor Skill Development in Children and Youth with Unilateral Cerebral Palsy. Miller F, Bachrach S, Lennon N, O'Neil M, eds. *Cerebral Palsy*, 2nd ed. Springer Pub; 2020. ISBN: 978-3-319-74557-2.
- Atkinson H, **Duff SV**. Examination and Evaluation of Neuromotor Function. In Atkinson H, Nixon-Cave K, Smith SE, eds. *Pediatric Stroke Rehabilitation: An Interprofessional & Collaborative Approach*. Slack; 2017.
- Duff SV**, Vanderlinden DW. Brachial Plexus Injury. In: Palisano RJ, Orlin MN, Schreiber J, eds. *Campbell's Physical Therapy for Children*. 5th ed. Elsevier Inc; 2017.

- Duff SV**, Shumway-Cook A, Woollacott MH. Clinical management of reach, grasp, and manipulation disorders. In Shumway-Cook A, Woollacott MH, eds. *Motor Control: Theory and Practical Applications*. 5th ed. Baltimore: Lippincott Williams & Wilkins. 2017.
- Duff SV**. Functional development. In: Abzug JM, Kozin SH, Zlotolow DA, eds. *The Pediatric Upper Extremity*. Springer Pub; 2015:25-36.
- Duff SV**, Levy T. Anatomy and Biomechanics of the Upper Extremity. *ASHT Test Prep for the CHT Exam*. Chicago, Ill: American Society of Hand Therapists; 2013.
- Duff SV**. Prehension. In: Cech D, Martin S, eds. *Functional Movement Development Across the Life Span*. 3rd ed. Philadelphia, PA: WB Saunders; 2012.
- Duff SV**, Humpl, D. Therapist's Management of Tendon Transfers. In Osterman AL, Skirven T, Fedorczyk J, eds. *Rehabilitation of the Hand and Upper Extremity*. 6th ed. Philadelphia, PA: Mosby; 2011:781-791.
- Duff SV**, Estilow T. Therapist's Management of Peripheral Nerve Injuries. In Osterman AL, Skirven T, Fedorczyk J, eds. *Rehabilitation of the Hand and Upper Extremity*. 6th ed. Philadelphia: Mosby; 2011.
- Duff SV**, Shumway-Cook A, Woollacott MH. Clinical management of reach, grasp and manipulation disorders. In Shumway-Cook A, Woollacott MH, eds. *Motor Control: Theory and Practical Applications*. 4th ed. Baltimore, MD: Lippincott Williams & Wilkins; 2011.
- Duff SV**, Shumway-Cook A, Woollacott MH. Clinical management of reach, grasp and manipulation disorders. In Shumway-Cook A, Woollacott MH, eds. *Motor Control: Theory and Practical Applications*. 3rd ed. Baltimore, MD: Lippincott Williams & Wilkins; 2007.
- Duff SV**. Pathomechanics of MSD's. In Sanders MJ, ed. *Ergonomics and the Management of Musculoskeletal Disorders*. 2nd ed. Boston, MA: Butterworth-Heinemann; 2004:63-88.
- Duff SV**. Treatment of MSD's and Related Conditions. In Sanders MJ, ed. *Ergonomics and the Management of Musculoskeletal Disorders*. 2nd ed. Boston, MA: Butterworth-Heinemann; 2004:89-131.
- Duff SV**, Quinn L. Motor learning and skill acquisition. In Cech D, Martin S, eds. *Functional Movement Development across the Life Span*. 2nd ed. Philadelphia: WB. Saunders; 2002.
- Duff SV**. Prehension. In Cech D, Martin S, eds. *Functional Movement Development Across the Life Span*. 2nd ed. Philadelphia, PA: WB Saunders; 2002.
- Duff SV**, Shumway-Cook A, Woollacott MH. Clinical management of reach, grasp, and manipulation disorders. In Shumway-Cook A, Woollacott MH, eds. *Motor Control: Theory and Practical Applications*. 2nd ed. Philadelphia, PA: Lippincott Williams & Wilkins; 2001: 517-560.
- Duff SV**. Prehension. In Cech D, Martin S, eds. *Functional Movement Development Across the Life Span*. Philadelphia: WB Saunders. 1995:313-353.
- Duff SV**. Anatomy and kinesiology of the upper limb. Review manual in preparation for the CHT exam. *American Society of Hand Therapists*; 1995.

PEER-REVIEWED SCIENTIFIC AND PROFESSIONAL PRESENTATIONS (peer-reviewed)

- 2020, Oct **Duff SV**. Assessments that can be used Across the Lifespan. Symposium: Assessment Strategies to Guide Occupational and Physical Therapy Interventions After Pediatric Brain Injury: Considering Individual Goals and Transition into Adulthood. Other Co-Presenters - Levy TJ, Atkinson HL, Binkowski A, Ichord R, Domi T. 97th *American Congress of Rehabilitation Medicine (ACRM) Annual Virtual Conference*. Oct 23, 2020.
- 2020, Oct **Duff SV**, Levy TJ. Incorporating Motor Learning Principles and Basic Cognitive / Behavioral Strategies into Occupational & Physical Therapy Sessions. Symposium: *Optimizing Activity- and Participation-level Outcomes for Children Following Brain Injury by Addressing Neurobehavioral and Neurocognitive Barriers to Success*. Other Co-Presenters - Atkinson HL, Nagele D, Gordon AM, Krivitzky L, Ichord R. 97th *ACRM Annual Virtual Conference* Oct 23, 2020.
- 2020, Oct **Duff SV**, Heathcock J, Prosser LA. Early Pediatric Rehabilitation: State of the Science. 97th *ACRM Annual Virtual Conference*. Oct 24, 2020.
- 2020, Oct Grampurohit N, **Duff SV**, Kains G, Burke S, Pivarunas C, Marino R. Client Perspectives on Using Technology-Guided Activity-Based Upper Extremity Interventions for Spinal Cord Injury Rehabilitation Poster presentation, 97th *ACRM Annual Virtual Conference*. Oct 2020.
- 2020, Sept **Duff SV**, Heathcock J, Prosser LA. Efficacy of Activity-Based Interventions to Expand Motor Function & Mobility in Infants & Toddlers. 74th *Annual Meeting, American Academy of Cerebral Palsy and Developmental Medicine (AACPD)*. New Orleans, LA. Sept 26, 2020.

- 2019, Nov Grampurohit N, Marino R, Bell A, **Duff S**, Kaplan G, Thielen C, Mulcahey MJ. *A scoping review of activity-based therapy for the neurologically impaired upper extremity*. American Congress of Rehabilitation Medicine (ACRM) 9th Annual Conference, Chicago, IL. Nov 5-8, 2019.
- 2019, April **Duff SV**, Gringlas MB, Desai SA, KV Shah KV, Adeniyi-Jones SC. Relationship Between Early Sensorimotor Skills and Performance at One-Year After Perinatal Asphyxia and Treatment with Selective Head Cooling. *Implementation of Early Detection and Intervention for Cerebral Palsy Conference*, Columbus OH, April 11, 2019.
- 2019, Jan **Duff SV**, Kantak S, Thielman G, Hill VA. Arm & Hand Rehabilitation after Stroke: From Physiology to Participation. *Combined Sections Meeting (CSM), American Physical Therapy Association (APTA)*. Washington DC. January 25, 2019.
- 2019, Jan. **Duff SV**, Miller A, Quinn L, Bishop L, Youdan G, Ruthrauff H, Espnoza-Wade E. Quantifying Interlimb Coordination in Persons with Hemiparesis. Platform presentation, CSM, APTA. Washington DC. January 24, 2019.
- 2018, Nov. **Duff SV**, Miller A, Quinn L, Bishop L, Youdan G, Ruthrauff H, Wade E. A Novel Method for Quantifying Interlimb Coordination in Persons with Hemiparesis Post-Stroke. Poster presentation, American Society of Neurorehabilitation (ASNR) Conference, San Diego, CA.
- 2018, Oct. Wolff A, **Duff SV**. Breakfast Seminar: Quantitative techniques for assessment of upper extremity movement and function. American Academy of Cerebral Palsy and Developmental Medicine (AACPDM). Cincinnati, OH.
- 2017, Nov. **Duff SV**. Reinforcing Muscle Activation to Improve Arm Function in Infants & Toddlers. Research Symposium: Pediatric Early Intervention. California Physical Therapy Association. West Coast University. Los Angeles, CA.
- 2017, Sept. **Duff SV**, Friel K, Gutierrez Farwik E, Jaspers E, Simon-Martinez, Pontén, E, Stout J, Wolff A. Symposium: Quantitative Techniques for Assessment of Upper Extremity Movement Dysfunction. GCMAS Symposium, AACPDM, Montreal, Canada.
- 2017, Feb. **Duff SV**, Harris G, Saavedra S, Christy J, Bjornson, O'Neil M. YOU'VE GOT TO MOVE IT! Applications of Technology for Physical Activity. Workshop at CSM, APTA. San Antonio, TX.
- 2017, Feb. **Duff SV**, Aaron D, Gogola G. Emerging UE Assessment and Intervention Strategies for Pediatric Musculoskeletal Conditions. Educational session at CSM, APTA. San Antonio, TX.
- 2016, Feb. **Duff SV**, Billmers C, Brindle S, Graver S, Kelly M, Wade E. Accelerometry to Quantify Daily Upper Extremity Activity in Individuals with Hemiparesis Within 9 Months Post-Stroke. Platform presentation at the CSM, APTA. Anaheim, CA.
- 2015, Oct. **Duff SV**, Sargent B, Kutch JJ, Berggren J, Feters L. Self-Generated Feedback to Increase Muscle Activation in Children. Poster presentation at the AACPDM Conference. Austin, TX.
- 2015, Oct. **Duff SV**, Sargent B, Kutch JJ, Berggren J, Feters L. Self-Generated Feedback to Increase Muscle Activation in Children. Poster presentation at the Society for Neuroscience (SFN) Annual Meeting. Chicago, Ill.
- 2015, Oct. **Duff SV**, Sargent B, Kutch JJ, Berggren J, Feters L. Self-Generated Feedback to Increase Muscle Activation in Children. Poster presentation at the American Society of Hand Therapists (ASHT) Annual Conference. Denver, CO.
- 2015, Feb. Sargent B, **Duff SV**. Optimizing therapeutic interventions for young infants. 2-hour Workshop at the CSM, APTA. Las Vegas, NV.
- 2015, Feb. **Duff SV**, Sargent B, Kutch JJ, Berggren J, Feters L. Self-Generated Feedback to Increase Muscle Activation in Infancy. Poster presentation at the CSM, APTA. Las Vegas, NV.
- 2014, May **Duff SV**. Invited talks: 1) Exploiting neuroplasticity to foster prehensile skill; 2) Strengthening the efficacy of neurorehabilitation intervention; and 3) Methods to augment prehensile skill for congenital & acquired hemiplegia. *Wisconsin Hand Experience Conference*. Milwaukee, WI.
- 2014, March **Duff SV**, Thielman G, Westlake K. Invited workshop. The Neurologic Upper Extremity: Neural Plasticity & Implications for Hand Rehab. *Philadelphia Hand Symposium*. Philadelphia, PA.
- 2014, Feb Stegink Jansen CW, **Duff SV**, Field-Fote E, Gibbs K, Sinnott M, Sullivan JE. Measures of Arm and Hand Function Across Practice Patterns: An EDGE Approach. CSM, APTA. Panel.
- 2014, Jan Hentz V, Lee SK, Wolfe SW, **Duff SV**, Spinner R. IC 202: What Works, What Doesn't in Brachial Plexus Surgery & Rehabilitation. Invited session. *American Association for Hand Surgery (AAHS)*. Honolulu, HI.
- 2014, Jan Elhassan B, Kozin SH, **Duff SV**, de Pawlikowski W, Clarke HM. IC 115 Pediatric Brachial Plexus: Managing the Shoulder. Invited session – AAHS Annual Conference. Honolulu, HI.

- 2013, Jan. **Duff SV**, Heuer G, Berggren J. Infant brachial plexopathy: non-surgical & surgical management. *CSM, APTA*, San Diego, CA.
- 2012, Oct. **Duff SV**. Workshop, Pediatric Brachial Plexus Injury. *Annual Meeting ASHT*, San Diego, CA.
- 2011, April Shah K, **Duff SV**. Evaluation, intervention, and outcomes for infants with hypoxic ischemic encephalopathy who undergo selective head cooling. *American Occupational Therapy Association (AOTA) 91st Annual Conference & Expo*. Philadelphia, PA.
- 2010, June **Duff SV**, Toth-Cohen S, Finley R. Panel - Perspectives: The Doctor of Nursing Practice Degree Lessons from the history and experience of the professional doctorate in other health Disciplines. *2nd Annual Doctor of Nursing Practice Symposium on Healthcare Policy/Advocacy*.
- 2010, April **Duff SV**, Besser MP, DeLiso, M, Humpl D, Finkel R. Reach to grasp control in infants with Brachial Plexus Birth Palsy, Platform presentation, *AOTA Annual Conference*. Orlando, FL.
- 2010, March **Duff SV**, Adeniyi-Jones S, Gringlas M, Shah K, Aldridge H, Desai S. Neural recovery in neonates treated with head cooling: early motor skills and developmental assessment at 12 months. Platform, *Eastern Society for Pediatric Research 22nd Annual Meeting*. Phila., PA.
- 2010, March **Duff SV**, Rawool N. Evaluation of Infants with Brachial Plexus Birth Palsy. *School of Health Professions, Thomas Jefferson University*.
- 2009, Sept. **Duff SV**, Gogola G. Glenohumeral Joint Dysplasia After Perinatal Brachial Plexus Palsy. Platform presentation, *Annual meetings of the American Society of Hand Surgeons and Hand Therapists*. San Francisco, CA.
- 2009, March **Duff SV**, Kozin SH, Ashworth S, Humpl D. Special Topics in Hand Rehabilitation. Platform presentation, *Surgery and Rehabilitation of the Hand with Emphasis on the Wrist*. Sponsored by the *Hand Rehabilitation Foundation*. Phila., PA.
- 2004, March **Duff SV**. Enhancing Neuromotor Control Following Peripheral Nerve Injury and Repair. Presentation, *Surgery and Rehabilitation of the Hand with Emphasis on Tendon and Nerve Injuries*. Sponsored by the *Hand Rehabilitation Foundation*. Phila., PA.
- 2003, April **Duff SV**. Management of the Wrist in Hemiplegic Cerebral Palsy. Platform presentation, *Cerebral Palsy at Shriners Hospitals for Children*, Phila, PA.
- 2003, March **Duff SV**, Pitts G. Concepts of Motor Control: It's Not Just About the Peripheral Tissues. Platform presentation, *Surgery and Rehabilitation of the Hand with Emphasis on Tendon and Nerve Injuries*. Sponsored by the *Hand Rehabilitation Foundation*. Phila., PA.
- 2003, March **Duff SV**. Balancing the Pediatric Wrist: Therapist's Perspective. Platform presentation, *Surgery and Rehabilitation of the Hand with Emphasis on the Wrist*. Sponsored by the *Hand Rehabilitation Foundation*. Phila., PA.
- 2003, Jan. **Duff SV**. Prehension Across the Lifespan – A Motor Control Perspective. Presentation as part of the *Lynnette Byarm Memorial Lectureship. Children's Hospital of Philadelphia*. Phila., PA
- 2001, June **Duff SV**. *Therapy Management of Hemiplegic Cerebral Palsy*. Presentation as part of conference on *Management of Cerebral Palsy at Shriners Hospitals for Children*. Phila, PA.
- 2001, April **Duff SV**. Occupational Therapy and Hemiplegic Cerebral Palsy. Presentation as part of an Institute on Management of Upper Limb Disorders presented by *Shriners Hospitals Upper Extremity Center of Excellence, at the Annual Conference of the AOTA*. Phila., PA.
- 2000, Oct. **Duff SV**. Tendon Transfers. Panel, *American Academy for Surgery of the Hand*. Seattle, WA.
- 1996, Sept. **Duff SV**. Critical Review of Research Paper. "Cooling of hand skin temperature following electroacupuncture may be mediated by local somatosympathetic reflex" by Michael D. Landry, MSc(PT), CAFC & Roger A. Scudds, BSc(PT), PhD. *19th Annual ASHT*. Scientific Papers.
- 1998, Sept **Duff SV**. Learning of anticipatory force scaling in children with hemiplegic cerebral palsy. *AACPDM*. Toronto, Canada.
- 1995, Sept. **Duff SV**. Splinting: Problem-Solving in Difficult Patient Cases. Instructional Course *ASHT, 19th Annual Meeting*. San Francisco, CA.
- 1995, Feb. **Duff SV**, Harris L, Beliefeld T. Management of Wrist Disorders. Moderator/Presenter. Case studies. *CSM, APTA*. Reno, NV.
- 1994, Aug. **Duff SV**. Dislocations and Fracture Management. Part of Conference entitled "Current Topics in Hand Rehabilitation". *Section on Hand Rehabilitation of the APTA*, Milwaukee, WI.
- 1994, May **Duff SV**. Electrical Modalities. ASHT Upper Extremity Expo. May 1994, Boston, MA.
- 1988, Feb. **Duff SV**. Therapy Perspectives with Ventilator Dependent Infants. *Children's Rehabilitation Hospital*, Phila, PA.

- 1994 **Duff SV.** Management of Peripheral Nerve Injuries. *ASHT Upper Extremity Expo.* May 1994: Boston, MA. March 1994: Atlanta GA.
- 1994, Feb. **Duff SV.** Anatomy & Physiology of The Peripheral Nervous System. CSM, APTA.
- 1993, June **Duff SV.** Management of Peripheral Nerve Injuries. *ASHT Upper Extremity Expo.* May 1994, Boston, MA, March 1994. Atlanta GA.
- 1992 **Duff SV.** Tendon Transfers & Functional Anatomy of the Upper Extremity, as part of a *Review Course sponsored by The Hand Therapy Certification Commission*, March 1992 San Diego, CA; May 1992: Chicago, Ill.
- 1990, March **Duff SV.** Children and Readiness for Sports. Thomas Jefferson University Hospital, Phila, PA. 1990, Oct. *Annual Pennsylvania Occupational Therapy Conference*, Phila., PA.
- 1984, Sept. **Duff SV.** Therapy Perspectives with Ventilator Dependent Infants. *Children's Specialized Hospital.* West Mountainside, NJ.
- 1984, June **Duff SV.** Occupational Therapy in Ventilator Dependent Infants. Assisted in preparation of this conference. *Children's Hospital of Philadelphia.* as part of a multi-disciplinary conference.

Keynote Lectures

- 2016, April Motor Development and Re-Learning: Introduction & Fundamentals. *It's a Control Thing: Select Medical's 8th Annual Upper Extremity Symposium.* Select Medical Corporation. Phila., PA
- 2007, Sept. Exploration of Methods to Enhance Reach, Grasp, & Manipulation Across the Lifespan. *Patricia Leahy Lectureship.* University of the Sciences, Physical Therapy Department, Phila., PA

ABSTRACTS (peer reviewed)

- 2020 **Duff S,** Stevanovic S, Jamie Berggren J, Sargent B, Kimbel A, Rakovski C, Yaghmaei, E, Pidcoe P, Leiby B, Seruya M, Eric Wade E. Rewarding Arm Activity in Infants At-Risk: Feasibility of a Home-Based Program. American Occupational Therapy Association Annual Conference. Poster presentation. March 26, 2020.
- 2020 **Duff SV,** Miller A, Quinn L, Youdan G, Bishop L, Ruthrauff H, Wade E. Novel Method to Assess Interlimb Coordination in Persons With Hemiparesis. American Occupational Therapy Association Annual Conference. Poster presentation. March 26, 2020.
- 2018, July Miller A, **Duff SV,** Quinn L, Bishop L, Youdan G, Ruthrauff H, Wade E. Quantitative Assessment of Interlimb Coordination in Persons with Hemiparesis. *Progress in Clinical Motor Control I: Neurorehabilitation.* Pennsylvania State University. State College, PA. 7- 23, 2018.
- 2018, April Hunter VM, Pontoriero ML, Reeve AV, Wands CM, Mill A, Bishop L, Youdan G, Ruthrauff H, Quinn L, Wade E, **Duff SV.** Sensor-Based Measures of Upper Extremity Interlimb Coordination *Rinker Health and Science Research Day.* Chapman University. April 5, 2018.
- 2016, Feb Hunter L, Berzins D, Riekema H, Lenzo A, Turoff D, Andrews M, Alderfer J, Nelson K, Skaria J, **Duff S,** Marino R, Kern S. Understanding the Changing Healthcare Needs of Individuals Aging with Spinal Cord Injury. CSM, APTA. Anaheim, CA.
- 2015, May Kern S, Hunter L, **Duff SV.** Understanding the changing healthcare needs of individuals aging with spinal cord injury. Poster presentation at *The International Spinal Cord Society (ISCoS) and American Spinal Cord Injury Association (ASIA) joint conference.* Montreal, CA.
- 2014, March **Duff SV,** Sargent, B, Kutch, JJ, Berggren J, Fetters L. Activity-based intervention for infants with Neonatal Brachial Plexus Injury. Poster presentation at Research Day, *Ostrow School of Dentistry, University of Southern California.* Los Angeles, CA.
- 2013, April **Duff SV,** Levy TL, Zelonis S, Hassink A, Kimbel A, Kushner R, Smith SA, Finkel R, Gabriel DA. Early Identification of asymmetry in infants at-risk. Poster presentation at *Research Day, Ostrow School of Dentistry, University of Southern California.* Los Angeles, CA.
- 2011, Sept. Barbe MF; Elliott ME; Clark BD; Kietrys DM; Wade CK; **Duff S;** Harris MY; Amin, M; Barr AE. Reflexive pain behaviors (mechanical hypersensitivity and decreased reflexive grip strength) can persist even after conservative secondary interventions due to presence of spinal cord sensitization changes. Poster: *The National Occupational Research Agenda Manufacturing Sector Conference: Partnerships to Improve Occupational Safety and Health.* Cincinnati, OH.
- 2011, May **Duff SV,** Adeniyi-Jones S, Gringlas M, Shah K, Aldridge H, Desai S. Neural recovery in neonates treated with head cooling: early motor skills and developmental assessment at 12 months. Poster: *3rd Annual DHSA Research Symposium, Thomas Jefferson University (TJU).*
- 2011, May Gringlas M, **Duff SV,** Desai S, Adeniyi-Jones S, Aldridge H, Desai S. Neurodevelopmental

- outcome in neonates treated with Head Cooling: early post natal variables and developmental outcome at 12-36 months. Poster *3rd Annual DHSA Research Symposium. TJU.*
- 2011, May **Duff SV**, Besser MP, DeLiso, MC, Kimbel AM, Humpl D, Finkel R. Biceps Recovery and Reach-to-Grasp Control After Brachial Plexus Injury, Poster Presentation at the *3rd Annual DHSA Research Symposium. TJU.* May 17, 2011.
- 2011, April Shah K, **Duff SV**. Evaluation, Intervention, and Outcomes for Infants with Hypoxic Ischemic Encephalopathy who Undergo Selective Head Cooling. Poster, *AOTA Annual Conference & Expo.* Philadelphia, PA.
- 2010, Mar **Duff SV**, Besser MP, DeLiso, M, Cooper L, Rawool N, Humpl D, Finkel R. Recovery of biceps and reach to grasp control following neonatal brachial plexus injury. *International Society of Infant Studies.* Baltimore, MD.
- 2009, Nov Elliott MB, Barr AE, Keitrys DM, Duff S, Wade C, Harris MY, Barbe MF. Increased sickness behavior after induction of systemic inflammation in aged rats with repetitive strain injury. Submitted to *Brain Behavior and Immunity.*
- 2009, Oct. **Duff SV**, Besser MP, DeLiso M, Cooper L, Rawool N, Humpl D, Finkel R. Emergence of Reach-to-Grasp Control after Neonatal Brachial Plexus Injury. *SFN.* Chicago, Ill.
- 2009, Aug. **Duff SV**, DeLiso M, Besser MP, Cooper L, Rawool N, Humpl D, Finkel R. Reach-to-Grasp Control in Infants with Neonatal Brachial Plexus Injury. Poster presentation Research Section, *APTA, Seminar on Force Generation.* Asilomar Conference Center, Pacific Grove, CA.
- 2009, Feb. **Duff SV**, Morris C, Gringlas M, Desai S, Stanley C, Adeniyi-Jones S, Damle V, Neural Recovery in Infants Who Sustained Perinatal Asphyxia and Received Head Cooling. *CSM, APTA.* LV, NV
- 2009, Feb. **Duff SV**, Sullivan MA, Keating C, Mulcahey MJ, Betz RR. Evidence of Anticipatory Control in Children with Tetraplegia. *CSM, APTA.* Las Vegas, NV.
- 2008, Feb. **Duff SV**, Morris C, Gringlas M, Desai S, Stanley C, Adeniyi-Jones S, Damle V. Early Sensorimotor Development in Infants Who Received Head Cooling After Perinatal Asphyxia. *International Society of Infant Studies.* Vancouver, BC.
- 2007, June **Duff SV**, Mulcahey MJ, Betz RR. Regaining Grasp Control Following Spinal Cord Injury in Children. Poster presentation as part of the *33rd Annual ASIA conference.* Tampa, FL.
- 2007, June **Duff SV**, Mulcahey MJ, Betz RR. Retention of Control Strategies During Lifts of Familiar Objects in Children with Spinal Cord Injury. Poster, *33rd Annual ASIA conference.* Tampa, FL.
- 2007, May Desai S, Stanley C, Adeniyi-Jones S, **Duff SV**, Damle v, Greenspan J. Neonatal Course and Early Outcome of Infants with Hypoxic Ischemic Encephalopathy (HIE) Treated with Selective Brain Cooling. Poster presentation, *Pediatric Academic Societies Annual Meeting. Co-sponsored by the Society for Pediatric Research,* Toronto, Canada.
- 2006, Sept. Dayahindi S, **Duff SV**, Kozin S. Scapular Mobility in Children with Brachial Plexus Birth Palsy. Poster presentation at the *29th Annual American Society of Biomechanics.* Richmond, VA.
- 2005, Nov. **Duff, SV**, Sainburg RL. Interlimb Differences During Adaptation to a Novel Inertial Load. Poster Presentation as part of the *SFN Annual Meeting.* Washington DC.
- 2005, Aug. **Duff SV**, Sainburg RL. Differential Adaptation to a Novel Inertial Load. *Motor Control Conference.* State College, PA.
- 2004, Oct. **Duff, SV**, Mulcahey MJ, Betz RR. Temporal and Force Coordination During Grasping in Children with Spinal Cord Injury. Poster presentation, *SFN Annual Meeting.* San Diego, CA.
- 2004, May **Duff SV**, Bhat A, Heathcock J, Galloway JC. Movement Training in Infants with Erb's Palsy. Poster presentation as part of *International Conference on Infant Studies.* Chicago, IL
- 2004, Feb. **Duff SV**, Dayahindi S, Kozin S, Karduna A. Shoulder Kinematics in Children with Brachial Plexus Birth Palsy. Poster presentation as part of the *CSM, APTA.* Nashville, TN.
- 2003, Dec. **Duff SV**, Bhat A, Heathcock J, Galloway JC. Novel Movement Training in Infants with Erb's Palsy. Poster presentation as part of the *NIH Trainee Workshop.* Silver Springs, MD.
- 2003, Sept. Dayanidhi S, Orlin M, Kozin S, **Duff S**, Karduna A. Scapular Kinematics in Adults and Children. Poster presentation at the *27th Annual Meeting of the American Society of Biomechanics.*
- 2001, May **Duff SV**, Gordon AM. Learning of Anticipatory Force Scaling in Children with Hemiplegic Cerebral Palsy. *Annual Conference of the AOTA.* Philadelphia, PA.
- 1999, June **Duff SV**, Gordon AM. Anticipatory Control of Fingertip Forces in Children with Hemiplegic Cerebral Palsy. *Annual Conference of the APTA.* Orlando, FL.
- 1998, April Duff SV, Gordon AM. Fingertip Force Scaling in Children with Hemiplegic Cerebral Palsy. *Annual Motor Control Conference, Teachers College, Columbia University.*

1995, Nov. **Duff SV**, Flanagan JR. Coupling between release and anticipated object size. Poster. *SFN Annual Meeting*. San Diego, CA

NON-PEER REVIEWED PUBLICATIONS

Duff SV. (Dec. 1994). Promoting skill acquisition within the rehabilitation team. *Developmental Disabilities Newsletter of The American Occupational Therapy Association*

NON-PEER REVIEWED PRESENTATIONS

- 2018, March *Innovative Treatment Strategies for Peripheral and Central Neurological Conditions*. Workshop presentation. Surgery and Rehabilitation of the Hand: Trending Topics in Hand to Shoulder Therapy. Philadelphia, PA. March 25, 2018.
- 2018, March *Optimizing Sensorimotor Control After Peripheral Nerve Injury*. Surgery and Rehabilitation of the Hand: Trending Topics in Hand to Shoulder Therapy. Philadelphia, PA. March 25, 2018.
- 2018, March *Fostering Motor Learning and Control During Upper Extremity Rehabilitation*. Platform presentation. Surgery and Rehabilitation of the Hand: Trending Topics in Hand to Shoulder Therapy. Philadelphia, PA. March 26, 2018.
- 2018, March *Project Splint Pan*. Judge. Surgery and Rehabilitation of the Hand: Trending Topics in Hand to Shoulder Therapy. Philadelphia, PA. March 26, 2018.
- 2017, Nov. *Fostering Interlimb Coordination in Children and Adults with Hemiparesis*. Orange County Stroke Network, Sponsored by University of California–Irvine/Chapman University, Orange, CA.
- 2017, Nov. *Reinforcing Muscle Activation to Increase Arm Function in Infants & Toddlers*. Research Symposium: Pediatric Early Intervention. California Physical Therapy Association. West Coast University. Los Angeles, CA.
- 2016, Nov. *Using contingent reinforcement to increase muscle activation after Perinatal Brachial Plexus Injury*. Ann Gentile Memorial Conference: The Future of Motor Learning in Rehabilitation and Movement Sciences. New York, NY.
- 2013, July *Facilitating motor learning and control in pediatric rehabilitation*. Invited talk. Rehabilitation Dep't of Children's Hospital of Los Angeles. Los Angeles, CA.
- 2006-11. *Brachial Plexus Birth Palsy*. Neuroscience Dep't, Thomas Jefferson University. Annual lecture.
- 2007, Jan. *Peripheral Nervous System and Associated Disorders*. Board Review for Neurosurgery and Neurology Residents. Thomas Jefferson University. Phila., PA.
- 2005, Oct. *Interlimb Asymmetries During Adaptation to a Novel Inertial Load*. 1) Thomas Jefferson Un, Physical Therapy Dep't, Phila., PA; 2) University of Maryland, PT Dep't, Baltimore, MD
- 2004, Oct. *Neurological Rehabilitation*. Lecture to Neuroscience undergraduate students of Pennsylvania State University. State College, PA.
- 2003, April *Upper Extremity Motor Control*. Drexel University, Program in Physical Therapy. Phila., PA
- 2001 - 2009 *Prehension Across the Lifespan – A Motor Control Perspective*. Philadelphia University, Occupational Therapy Program. Phila., PA. Annual Lecture.
- 2001, April *Tendon Transfers*. Hahnemann University, Physical Therapy, Phila., PA.
- 2000 - 2004 *Hand Evaluation*. Lab/Demonstration, New York Medical College, Physical Therapy Class, Valhalla, NY. Annual Lecture.
- 2000, Feb. *Use of Thermal Agents in Pediatrics*. Children's Hospital of Philadelphia, Occupational Therapy Department, Phila., PA.
- 1999 - 2000 *Management of Combined Injuries of the Hand*. New York Medical College, *Hand Evaluation*. Lab/Demonstration, New York Medical College, Physical Therapy Class, Valhalla, NY.
- 1999, Nov. *Children with Physical Disabilities in the Schools*. Widener University, Ed Dep't, Chester, PA.
- 1999, Nov. *Use of the Bruininks-Oseretsky Test of Motor Proficiency*. New York University (NYU), Graduate School of Occupational Therapy, NY, NY.
- 1999, July *Motor Development*. New York Board of Education, School Based Therapists. NY, NY.
- 1999, July *Motor Learning*. New York Board of Education, School Based Therapists. NY, NY
- 1998, July *Management of PNI*. New York Medical College, Valhalla, NY.
- 1996, Dec. *Hand Evaluation*. Lecture/Demonstration to Physical Therapy Class of NYU of Manhattan Rehabilitation Group, NY, NY.
- 1994, Nov. *Motor Learning and Skill Acquisition*. Thomas Jefferson University Occupational Therapy Program and Hospital of the University of Penn. Phila., PA.
- 1994, Oct. *Motor Control*. Thomas Jefferson University Occupational Therapy Program.

CURRENT GRANT ACTIVITY

Role: Co-Investigator

California Physical Therapy Fund Inc.

PI: Alison McKenzie, PT, DPT, PHD. Consultant: Jill See, MPT,

Stroke Boot Camp: A Unique Approach to Chronic Stroke Intervention & Integrated, Interprofessional Clin-Ed
June 2021 to May 2022

Funding: \$20,000

Role: PI

Faculty Opportunity Fund, Chapman University

Co-Investigators/Consultants: Cyril Rakovski, MS, Ph.D; Ehsan Yaghmaei, MS; David J. Reinkensmeyer, Ph.D
Infants Reaching for Rewards.

June 15, 2020 to November 30, 2021.

Funding: \$15,000

Role: Lead PI

Planning Grant. American Academy of Pediatric Physical Therapy, APTA.

Co-PIs: Noelle G. Moreau, PT, PhD; Kathleen M. Friel, PhD

Co-Investigators: Theresa Sukal Moulton, PT, DPT, PhD; Richard Stevenson, MD; Marybeth Grant-Beuttler, PT, PhD, PCS; Sudarshan Dayanidhi, PT, PhD

An Individualized Multimodal Intervention for Bone and Muscle Health in Pre-Adolescents with Cerebral Palsy: Promoting Healthy Transitions into Adulthood

January 1, 2020 to June 30, 2021.

Funding: \$24,780

Role: PI

American Foundation for Surgery of the Hand.

Co-Investigators/Consultants: Milan Stevanovic, MD; Jamie Berggren, OTR/L; Barbara Sargent, PT, PhD, PCS; Peter Pidcoe, PT, DPT, PhD; Eric Wade, PhD; Benjamin Leiby, PhD; Mitchel Seruya, MD

A Home-Based Program to Increase Muscle Activation after Brachial Plexus Injury

Amount of Funding Award - \$40,000. 8/2017 – current.

Role: Co-Investigator

NIH National REACT Center Pilot Studies Program.

PI: Gregory Thielman, EdD, PT, ATC, CSRS. Co-Investigators: SS. Katak, PhD, PT; F. Mohamed, PhD

Priming with tDCS: Expanding the Window of Recovery in Chronic Stroke.

Amount of Funding Award - \$57,063. 2018 – current

Role: Co-Investigator. NIDILRR – Spinal Cord Injury Model Systems

Regional SCI Center of the Delaware Valley. PI: Ralph Marino, MD.

Feasibility of Tele-Rehabilitation-Supported Home Activity-Based Rehabilitation for the Upper Extremity in Persons with Cervical Incomplete Spinal Cord Injury.

September 30, 2016 - 60 months

Funding: FY 16 \$468,364; FY 17 \$468,364; FY 18 \$468,364; FY 19 \$468,364; FY 20 \$468,364.

Role: Consultant.

National Science Foundation. Career Award

PI: Eric Wade, PhD

Mapping Constraint Induced Movement Therapy intervention to Telehealth

January 2020 to December 2024.

Funding: 5 year - \$100K per year

PRIOR GRANT ACTIVITY

Role: PI

American Society of Neurorehabilitation (ASNR) Clinical Research Network – Seed Funding.

Co-Investigators: Eric Wade, PhD; Lori Quinn, EdD, PT
Assessment of Interlimb Coordination in Adults with Hemiparesis
Amount of funding award – \$5000. November 2016-May 2019

Role: PI

Leslie Harris Lindsey Grant for Research in the Hand and Upper Quadrant/ Academy of Hand & Upper Extremity Physical Therapy, APTA. Co-Investigators: Eric Wade, PhD; Lori Quinn, EdD, PT; Heather Ruthrauff, MS, OTR/L
Assessment of Interlimb Coordination in Children and Adults with Hemiparesis
Amount of funding award – \$5000. October 2016-19

Role: Key Personnel

Craig H. Neilsen Foundation.

Responsiveness of the Capabilities of Upper Extremity Test (CUE-T). PI: Ralph Marino, MD.
Amount of funding awarded - \$298,650 for 2 years/5% effort. August 2015-16.

Role: PI (Fundable score)

American Hand Therapy Foundation (American Society of Hand Therapists) - Founders Grant
Home-based Intervention to Promote Muscle Activation and Maximize Prehension in Infants with Perinatal Brachial Plexus Injury. Co-Investigators/Consultants: Jamie Berggren, OTR/L; Barbara Sargent, PT, PhD, PCS; Peter Pidcoe, PT, DPT, PhD; Eric Wade, PhD. Amount of funding award - \$16,300. 2017.

Role: PI

Research Award. APTA – Section on Pediatrics.

Co-investigators: Linda Fetters, PT, PhD, FAPTA, Barbara Sargent, PT, PhD, Jason Kutch, PhD.
Augmenting Muscle Activation and Function Following Perinatal Brachial Plexus Injury
Amount of funding award – \$24,500. 2013-15

Role: Post-doctoral Fellow

NIH T32 fellowship award, co-sponsored by the NICHD and NINDS, *Training in Efficacy and Effectiveness Trials*. PI-Florence Clark, PhD, OTR/L, FAOTA and Co-Investigator – James Gordon, PT, EdD. Occupational Therapy and Biokinesiology & Physical Therapy Departments. University of Southern California.
Amount of funding awarded - \$228,228 per year / 5-year grant. Trainee 2012-14:

Role: Key Personnel

Disability and Rehabilitation Research Projects (DRRPs) and Special Projects and Demonstrations for Spinal Cord Injury Program Spinal Cord Injury Model Systems (SCIMS) Centers Program CFDA Number 84.133N-1
US Department of Education, National Institute on Disability and Rehabilitation Research, 2011-2016,
PI: Ralph Marino, MD, Thomas Jefferson University Hospital
Amount of funding awarded - \$ 2,446,326.00. 2011-16

Role: Co-Investigator

Delaware Health Science Alliance (DHSA) - Pilot Grant Award
Relationships between cortical motor organization and response to exercise interventions in children with cerebral palsy. PI: Stuart Binder-Macleod, PT, PhD, University of Delaware
Amount of funding awarded - \$74,968.00. 2010-12

Role: PI

K01 – National Institutes of Health, Washington DC
Neural Recovery and Adaptation After Brachial Plexus Injury in Infants
2009 and 2010 submissions - 2nd submission Score 29 Just in time notice received yet, unfunded.

Role: PI

New Investigator Award- Jefferson College of Health Professions, Committee on Research, Thomas Jefferson University
Activity-Based Training in Infants with Brachial Plexus Birth Palsy

Amount of funding awarded - \$11,840. 2009-10.

Role: PI

Exploration of Developmental Outcomes from Perinatal Asphyxia Following Neonatal Brain Cooling
Cerebral Palsy International.

Fundable Score – did not meet pay line - August 2009

Role: PI

Children's Hospital of Philadelphia, Center for Pediatric Clinical Effectiveness
Identification of Asymmetry in Infants at Risk for Upper Limb Dysfunction

Amount of funding awarded - \$10,000. 2008-9.

Role: PI

P34 NIH grant – Subaward - Center for Neurorehabilitation Training. PI: M. Selzer, MD, PhD
Natural and Augmented Neural Recovery in Infants with Brachial Plexus Birth Palsy

Amount of funding awarded - \$52,000. 2008-9.

Role: PI

Coordinated Grasp and Release of Familiar and Novel Objects

Thomas Jefferson University - Summer Funds

Amount of funding awarded - \$400.00. 2007.

Role: PI

Thomas Jefferson University - Summer Funds

Enhancing Functional Prehension in Infancy

Amount of funding awarded - \$1000.00. 2006

Role: PI

Fellowship Award - Shriners Hospitals for Children

Regulation of Fingertip Forces in Children with Spinal Cord Injury

Amount of funding awarded - \$50,000 per year (2 years). 1999 – 2000.

Role: PI

Dean's Grant - Columbia University, Teachers College

Anticipatory Control During Object Manipulation in Children with Hemiplegic Cerebral Palsy

Amount of funding awarded - \$1500. 2000.

Role: Research Assistant

The United Cerebral Palsy Foundation Research and Educational Foundation.

Sensorimotor Control of the Hand in Children with Hemiplegic Cerebral Palsy

Amount of funding awarded - \$50,000 per year (2 years) PI: Andrew M. Gordon, PhD. 1996-1998.

Scholarly Products

2019 – Preparing submission for a Design Patent of Device for Contingent Reinforcement

2006- Member International Task Force to design/test: *Graded Redefined Assessment of Strength, Sensation and Prehension (GRASSP)*. Tool will be used in clinical trials to examine recovery after spinal cord injury.

Continuing Education Workshops Conducted/Organized

2010, July *Assessment and Treatment of Upper Extremity Disorders*. University of West Virginia, Morgantown, WV.

2004, March *Neuromuscular Stimulation* (co-presenter: Carla Cleary) Workshop presentation at the Surgery and Rehabilitation of the Hand with Emphasis on Tendon and Nerve Injuries. Phila., PA.

2003, Dec. *Hand Splinting in Children*. Stepping Stone Day School, Flushing, NY.

2003, March *Pain Management and Therapeutic Modalities*. (Co-presenter: Pam Steelman). Workshop at the Surgery & Rehabilitation of the Hand with Emphasis on The Wrist. Phila., PA.

2002, March *Pediatric Splinting*. Presented to Kencrest Early Intervention Staff, Shriners Hospitals of

- Philadelphia, Phila., PA.
- 2002, Feb. *Progressive Management of Brachial Plexus Birth Palsy*. Combined Sections Meeting, American Physical Therapy Association, Boston, MA.
- 2001, April *Upper Extremity Splinting*. Presented as part of an Institute "Management of Upper Extremity Disorders at the American Occupational Therapy Annual Conference", Phila., PA.
- 1998 - 2001 *Splinting the School-aged Child*. New York Board of Ed., Brooklyn, NY.
- 1995, Oct. *Hand Splinting with Ease*. Royal Oak, MI. Oct. 14, & Phila., PA. Oct. 28.
- 1995, April *Comprehensive Management of Shoulder Disorders*. 3-day course sponsored by The Louisiana Occupational Therapy Association. New Orleans, LA.
- 1994, July *Clinical Examination of the Wrist Workshop*. Co-presented with Terri Skirven, OTR/L, CHT. Canadian-American National Occupational Therapy Conference, Boston, MA.
- 1993, Oct. *Clinical Examination of the Wrist Workshop*. (Co-presenter: Terri Skirven), Pennsylvania Annual Occupational Therapy Conference, Phila., PA.
- 1993, Aug. *Tendon Injuries*. Part of Conference entitled "Current Topics in Hand Rehabilitation". Sponsored by the Section on Hand Rehabilitation of the APTA, Milwaukee, WI.
- 1993, June. *Anatomy Review of the Upper Extremity as part of Workshop on Serial Casting*, American Occupational Therapy Association Annual Conference. Phila., PA.
- 1993, March *Cyriax Physical Exam of the Upper Quarter*, (co-presenters: Gisele Larose & Kimberly Smith). Workshop presented at "Surgery and Rehabilitation of the Hand", Phila., PA.
- 1993 Assistant Coordinator for American Society of Hand Therapists Expo '93.
- 1992, Sept. *Anatomy Review of the Upper Extremity as part of Workshop on Serial Casting*, Pennsylvania Occupational Therapy Conference, Phila., PA.
- 1992, May *Anatomy Review of the Upper Extremity as part of Workshop on Serial Casting*. Children's Seashore House, Phila., PA.
- 1992, March *Shoulder Anatomy, with Application to Clinical Practice* (co-presenter: Vince Verno, PT). Workshop held at The American Occupational Therapy Conference, Houston, Texas.
- 1992 Coordinator. Four conferences sponsored by Sensory Integration International, March 1992, April 1992, June 1992 & Aug. 1992. Thomas Jefferson University, Phila., PA.
- 1991, Oct. *Surface Anatomy and Application to Treatment of Hand Injuries*. Course sponsored by Thomas Jefferson University, Phila., PA.
- 1991, Oct. Coordinator *Surface Anatomy with Application to Clinical Practice* workshop sponsored by Thomas Jefferson University by Occupational and Physical Therapy Departments, Phila., PA.
- 1990, Oct. *Progressive Upper Extremity Splinting*. Co-presented with Susan Toth-Cohen, OTR/L. Sponsored by Germantown Hospital's Physical Therapy Department. Phila., PA.

Memberships

American Physical Therapy Association (APTA) / American Occupational Therapy Association (AOTA)
 American Society of Hand Therapists (ASHT) / Society for Neuroscience (SFN)

Community Service

- July 2018 Clinician and Mentor for camp for children with Unilateral Cerebral Palsy, All Hands-on-Deck, Children's Hospital of Philadelphia, Philadelphia PA.
- 2016-2019 Stroke Boot Camp Clinician and Mentor, Chapman University, Irvine, CA (Fall, Summer)
- 2012- Volunteer, Brachial Plexus Clinic, Children's Hospital of Los Angeles, Los Angeles, CA
- 2006-2012 Developmental testing, Special Babies Clinic, Thomas Jefferson Univ Hospital, Phila., PA

Teachers College, Columbia University Teaching Responsibilities

1994-98 Applied Anatomy in the Dance Education Department.

Thomas Jefferson University Teaching Responsibilities

- Spring 2016 to Spring 2017 – Capstone Faculty advisor.
- Fall 2014-2016 – Clinical UE Conditions in the Occupational Therapy Program
- Spring 2015 and 2016 (16 hours course content) - PT 517 Neuroscience
- Summer 2014-2016 (8 weeks) - PT527 Critical Inquiry I – *on-line* course
- Summer-Fall 2014 and 2015 – PT627 Critical Inquiry III– Faculty Research Advisor two groups of 4
- Fall 2014 and 2015 (8 weeks) PT626 – Critical Inquiry II

2006 to 2012 – PT Clinical Decision Making, on campus DPT and *on-line* for transitional DPT; Pediatrics, Lab instructor Kinesiology and Biomechanics.
Fall 1989 to Spring 2004 - Applied Anatomy and Kinesiology, Clinical Skills and Advanced Treatment Theory and Practice, Occupational Therapy Department.

Thomas Jefferson University Committees

2014-16 Department of Physical Therapy Awards
2014-15 Department of Physical Therapy Curriculum
2011-12 Chair, JSHP Research
2010 Member, JSHP PT Chair Search
2010-12 Member, Department of Physical Therapy, Curriculum
2010-14 Doctoral Mentor: OTD students, Occupational Therapy Department of Thomas Jefferson University; Mirella Spaventa, OTR/L, CHT and Karol Spraggs-Young, MS, OTR/L, CHT
2006-2016 Graduate Research Assistants: DPT students from TJU, Department of Physical Therapy

Chapman University Teaching Responsibilities

2016 to 2020

- PT 643 01/PT 643L 01-02 Course Coordinator - Motor Control/Motor Learning (Summer, Fall)
- PT 647 01-02 - Pediatric Practice Management (Course Coordinator 2017 only) (Spring, Summer)
- PT 752/753 - Student Immersion in Faculty Research (Fall, Spring, Summer)
- PT 651 01/02 - Scientific Inquiry II (2016 only)
- Stroke Boot Camp Clinician and Mentor (Fall, Summer)

Chapman University Committees

2018-19 Faculty Search Committee – Communication Sciences & Disorders
2017- IRB Committee, Chapman University
2017 Faculty Search Committee – Senior Librarian Chapman University, Rinker Campus
2016- Faculty Review Committee (Tenure) – Crean College of Health & Behavioral Sciences
2016-18 Chair and member of Faculty Search Committee – Department of Physical Therapy

Continuing Education Attended (abbreviated to past 8 years)

- 2021 Virtual American Society of Neurorehabilitation Annual Meeting. April 2021.
- 97th Annual Virtual Meeting. ACRM. October 2020.
- 94th Annual Virtual Meeting. AACPDM. September 2020.
- Grant Writer's Boot Camp, Chapman University, August 20-21, 2020.
- Hand Assessment of Infants Training Course. London, England. Nov. 2019.
- Mini Assisting Hand Assessment (AHA) Training Course. Houston, TX. Sept. 2019.
- Research Summit V. Academy of Pediatric PT, APTA. Alexandria, VA. Oct. 2019.
- American Society of Hand Therapists (ASHT). Washington DC. Sept. 2019.
- American Academy of Cerebral Palsy and Developmental Medicine (AACPDM). Anaheim, CA. Sept. 2019.
- Plexus Nexus. Annual Meeting. Las Vegas, NV. Sept. 2019.
- 2nd Annual Implementation of Early Detection and Intervention for Cerebral Palsy Conference, Columbus OH, April 10-13, 2019.
- Ann Gentile Memorial Conference, Optimizing Outcome in Locomotor Training. Teachers College, Columbia University, New York, NY. April 6, 2019.
- 2nd International Conference on Neuroscience and Free Will. Irvine, CA. March 15-17, 2019.
- Progress in Motor Control: Neurorehabilitation. State College, PA. July 23-25, 2018.
- Spring 2018 National Science Foundation (NSF) Grants Conference. Detroit, MI. June 4-5, 2018.
- Surgery & Rehabilitation of the Hand: Trending Topics in Hand to Shoulder Therapy. Phila., PA. 3/23-27/18.
- Research Symposium: Pediatric Early Intervention. California Physical Therapy Association. West Coast University. Los Angeles, CA. November 2017.
- American Society for Neurorehabilitation, Annual Meeting. Baltimore, MD. November 9-10, 2017.
- American Society of Hand Therapists, Pre-con: Musculoskeletal Sonography. Anaheim, CA. Oct 12, 2017.
- Academy of Developmental Medicine and Child Neurology, Montreal, Canada. Sept. 13-16, 2017.
- Dance Symposium. Chapman University, Orange, CA. June 2017.
- American Occupational Therapy Association Annual Conference. Philadelphia, PA. April 2017.

- NC NM4R tDCS workshop. National Center of Neuromodulation for Rehabilitation, Medical University of South Carolina College of Health Professions. Charleston, SC. March 27-29, 2017.
- NYC tDCS Workshop. Neuromodec City College, NY, NY. January 12, 2017.
- Stroke Rehabilitation Workshop. Orange County Stroke Rehab Network, Orange, CA. November 19, 2016.
- American Society for Neurorehabilitation. San Diego, CA. November 10-11, 2016
- Ann Gentile Memorial Conference: The Future of Motor Learning in Rehabilitation and Movement Sciences. Teachers College, Columbia University, New York, NY. November 5-6, 2016.
- IV Step: Prevention, Prediction, Plasticity, & Participation, APTA. Columbus, OH. July. 14-19, 2016.
- International Conference on Cerebral Palsy and other Childhood-onset Disabilities 2016. Stockholm, Sweden. May 31 to June 4, 2016.
- American Spinal Cord Injury Association (ASIA): Translational Panel Discussion. Phila., PA. April 13, 2016.
- Combined Sections Meeting – American Physical Therapy Association – past 5 years: Jan 2019 – Wash DC; Feb 2018–New Orleans, LA; Feb 2017–San Antonio, TX; Feb 2016–Anaheim, CA; Feb 2015 – Ind., IN
- Getting to Know PCORI. Washington DC. January 28, 2016.
- 1st Annual Arcadia Faculty Symposium Rotator Cuff Disorders: Questions, Consensus, and Controversies. Arcadia University, Glenside, PA. December 12, 2015.
- American Academy of Cerebral Palsy and Developmental Medicine (AACPDM). Austin, TX October 2015.
- Society for Neuroscience Annual Meeting 2015, Chicago Ill October 17-21, 2015.
- Research Summit IV. Section on Pediatrics of the APTA. Alexandria, VA October 15-17, 2015.
- American Society of Hand Therapists, Denver CO. October 2015.
- Evidence-Based Practice Institute: Expanding Evidence-Based Practice in Your Professional Curriculum. Linda Fetters, PT, PhD, FAPTA and Julie Tilson, DPT. Rutgers University, Newark, NJ. March 7-8, 2015.
- American Society of Neurorehabilitation. Washington DC. November 2014.
- American Society of Hand Therapists and Hand Surgeons. Boston, MA. Sept. 18-20, 2014.
- Wisconsin Hand Experience 2014 – Brain to Hand: Progressive Approaches to Pain, Impairment, and Function. Milwaukee, WI. May 2014.
- American Association of Hand Surgeons (AAHS) Annual Conference. Honolulu, HI. January 2014.
- Transcranial Magnetic Stimulation (TMS) Methods and Practice. 5-day workshop. University of Southern California, Los Angeles. August 8-11, 2013.
- Rehabilitation Research Career Development Program. 6th Annual Mtg. Los Angeles, CA. May 20-21, 2013.
- American Congress in Rehabilitation Medicine. Vancouver, British Columbia, Canada. October 2012.
- RERC: State of the Science. University of Southern California. Santa Monica, CA. October 2012.