

CURRICULUM VITAE

Jay L. Alberts, Ph.D.

CITIZENSHIP: US

WORK ADDRESS: Director, Cleveland Clinic Concussion Center /
Vice Chair, Clinical Transformation
Staff, Dept. of Biomedical Engineering / ND20
Cleveland Clinic
9500 Euclid Avenue
Cleveland, OH 44195
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FAX: 216-444-9198
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EDUCATION:

1990-94 B.S. in Kinesiology, May 1994
Iowa State University, Ames, IA

1994-2000 Ph.D. in Kinesiology, August 2000
Arizona State University, Tempe, AZ
Advisor: Dr. George E. Stelmach
Thesis Title: "The Control and Coordination of Complex Bimanual Movements"

PROFESSIONAL APPOINTMENTS:

1992-1994 Undergraduate Research Assistant, Iowa State University, Ames, IA

1993 Human Factors Summer Intern, Ergodyne, St. Paul, MN

1994-2000 Graduate Research Assistant, Arizona State University, Tempe, AZ

1995 Research Fellow, Barrow Neurological Institute, Phoenix, AZ

1998 Graduate Teaching Assistant, Arizona State University, Tempe, AZ

1999-2000 Principal Investigator, NeuroScript LLC, Tempe, AZ

2000-2005 Assistant Professor, School of Applied Physiology, Georgia Institute of
Technology, Atlanta, GA

2001-2005 Assistant Professor, School of Psychology, Georgia Institute of Technology,
Atlanta, GA

2003-2005 Center Investigator, Rehab R & D, Atlanta VA Medical Center, Atlanta, GA

2005-2009 Assistant Staff, Dept. of Biomedical Engineering &
Center for Neurological Restoration, Cleveland Clinic, Cleveland, OH

2006-2009 Assistant Staff, Dept. of Physical Medicine and Rehabilitation, Cleveland Clinic,
Cleveland, OH

2006-2009 Assistant Professor of Molecular Medicine, Cleveland Clinic Lerner College of
Medicine of Case Western Reserve University (CCLCM), Cleveland, OH

2005-pres. Center Investigator, Cleveland FES (Functional Electrical Stimulation) Center,
Louis Stokes Cleveland VA Medical Center, Cleveland, OH

2006-pres. Assistant Professor, Dept. of Biomedical Engineering, Case Western Reserve
University, Cleveland, OH

2009-2014 Director, Neuro-rehabilitation Consortium, Cleveland Clinic Lou Ruvo Center for Brain
Health, Las Vegas, NV

2010-2013 Associate Staff, Dept. of Biomedical Engineering, Center for Neurological
Restoration, and Dept. of Physical Medicine and Rehabilitation, Cleveland
Clinic, Cleveland, OH

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- 2011-pres. The Edward and Barbara Bell Endowed Chair for Parkinson's Research, Cleveland Clinic, Cleveland, OH
- 2012-2014 Director of Clinical Research, Center for Neurological Restoration, Cleveland Clinic, Cleveland, OH
- 2012-pres. Director, Cleveland Clinic Concussion Center, Cleveland Clinic, Cleveland, OH
- 2013-pres. Co-Director, Brain Health and Restoration Program (with Charles Bernick, MD, Cleveland Clinic Lou Ruvo Center for Brain Health, Las Vegas, NV)
- 2013-pres. Staff, Dept. of Biomedical Engineering, Center for Neurological Restoration, and Dept. of Physical Medicine and Rehabilitation, Cleveland Clinic, Cleveland, OH
- 2014-pres. Vice Chairman, Health Enabling Technology, Office of Clinical Transformation

HONORS and AWARDS:

- 2014 F. Mason Sones Innovator Award, Cleveland Clinic
- 2014 *Crain's Cleveland Business*, "Healthcare Heroes Award" (Advancements in Health Care Category: Applied Research)
- 2012 Translational Research Award, Cleveland Clinic Innovations
- 2011 Alumni Achievement Award, College of Human Sciences, Iowa State University, Ames, IA (10-21-11)
- 2011 Innovator Award, Cleveland Clinic Innovations
- 2011 Top 10 Medical Innovation Award, "*Concussion Management System for Athletes*"
- 2009 Top 10 Medical Innovation Award, "*Forced-exercise for the treatment of Parkinson's disease*"
- 2002 *Neurology Today* featured work with deep brain stimulation and force control in Parkinson's disease patients.
- 1999 Article in *Brain* was named "Excellent Article" by the International Review Board and appeared as an extended abstract in the medical journal *Focus on Parkinson's Disease*
- 1997-2000 R. S. Flinn Scholar (Flinn Foundation, Phoenix, AZ); Arizona State
- 1997-2000 Regents Graduate Academic Scholarship, Arizona State University
- 1997-1999 Achievement Reward for College Scientists (ARCS) Foundation Scholar
- 1997 Rousseau Award for Outstanding Achievement in Gerontology Research
- 1994-2000 Member of Flinn Foundation (Phoenix, AZ) Neuroscience Research and Training program: "Adaptive and Computational Aspects of Motor Coordination"
- 1996-1998 Recipient of Graduate College Travel Grant, Arizona State University
- 1993-1994 Iowa State University Dean's List

PROFESSIONAL SOCIETY AFFILIATIONS:

- 1996-pres. Society for Neuroscience
- 1996-pres. American Academy of Neurology
- 1996-pres. North American Society for Psychology of Sport and Physical Activity
- 2007-pres. American College of Sports Medicine

PROFESSIONAL SERVICE:

1. EDITORIAL ACTIVITIES:

Ad Hoc Journal Review:

Brain

Nature Neuroscience

Neuroscience

Stroke

Archives of Physical Medicine and Rehabilitation

Experimental Neurology

Clinical Neurophysiology

Clinical Biomechanics

Experimental Neurology

Experimental Brain Research

Archives of Neurology

Medical Science Monitor

Journal of Neurorehabilitation and Neural Repair

Journal of Gerontology: Medical Sciences

Journal of Motor Behavior

Human Movement Science

Journal of Neuroscience

Journal of Neural Engineering

Journal of Athletic Training

Muscle & Nerve

Journal of Neurophysiology

Motor Control

2. GRANT REVIEW/STUDY SECTION MEMBERSHIP:

Reviewer, NIH CNR Study Section, 2006-2013

Reviewer, NIH MRS Study Section, 2005-2011

Reviewer, NIH CNN Study Section, 2009; 2011

Reviewer, CND Special Emphasis Panel, 2006; 2009

Reviewer, NIH Challenge Grant Program, 2009

Reviewer, Concerted Action Program of the Ministry of Education of Flanders (Belgium)

Reviewer, VA Merit Reviews, 2010-2013

Reviewer, Atlanta VA Rehab Research and Development, 2001-2003

Reviewer, American Alzheimer's Association, 2000-2003

COMMITTEE SERVICE:

1. National:

Co-Chair, International Concussion Symposium sponsored by Institute of Medicine and National Academy of Engineering; 2014-15.

Juniper Networks, Healthcare Advisory Committee Member, 2012-pres.

Iowa State University, Advisory Board Member, College of Sciences, 2012-pres.

Program Committee, 2003 International Graphonomics Society, Phoenix

Session Chair, Rehabilitation and Robotics, 29th Annual American Society of Biomechanics Meeting, August 1-5, 2005.

Other:

Organize School of Applied Phys. seminars, 2000-2005; Georgia Tech

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Member, Advisory Committee, College of Sciences Machine Shop, Georgia Tech, 2003-2005

Chair, Search Committee, Motor Behavior Position, 2003, Georgia Tech

Member, Search Committee, Biomechanics Position, 2004, Georgia Tech

Chair, Search Committee, Biomechanics Position, 2004, Georgia Tech

Chair, Search Committee, Neuromechanics Position, 2005, Georgia Tech

2. Cleveland Clinic:

Member, Business Development 2016 – pres.

Member, N.I. Innovations Council 2016- pres.

Member, Distance Health Center 2015 – pres.

Member, Electronic Information Management Governance Committee, 2014-pres

Member, Curriculum Committee, CCLCM (Physiology Thread for medical students) 2005-pres.

Member, Physical Medicine and Rehabilitation Research Steering Committee, CCF, 2006-pres.

Distance Health App Governance Committee, 2012-2013

LRI Committee on Institutional Advancement, 2013-pres.

Co-Leader, Neurological Institution Commercialization Representative, 2014-pres.

Chair, Concussion Center Search Committee for Quantitative Health Sciences faculty, 2013

Chair, BME Search Committee for Deep Brain Stimulation faculty, 2014

Co-Leader (w P. Rasmussen), NI Clinical Technology Committee, 2013

EDUCATIONAL/TEACHING ACTIVITIES:

<u>Semester, year</u>	<u>Cs.#</u>	<u>Course title</u>	<u># of students</u>
Fall 1998	EPE 394	Motor Control & Dev.	45
Spring 1999	EPE 494	Motor Control in Elderly	18
Fall 1999	EPE 894	EMG in Ergonomics	23
Spring 2000	EPE 499	Advanced Motor Control	21
Spring 2001	AP 48/8803	Aging Movt. Cont. System	12
Spring 2002	AP 48/8803	Aging Movt. Cont. System	10
Spring 2003	AP 8803	Aging Movt. Cont. System	12
Spring 2004	AP 3803	Intro. Neural Cont. Movt.	40
Spring 2004	AP 8803	Aging Movt. Cont. System	15
Spring 2005	AP 8803	Aging Movt. Cont. System	12
Spring 2007	EBME 452	Tissue and Organ Sys. Phys.	22
Spring 2008	EBME 452	Tissue and Organ Sys. Phys.	19
Spring 2009	EBME 452	Tissue and Organ Sys. Phys.	23

Cleveland Clinic:

Guest Lecturer, CCLCM first year students, Chris Moravec 2008

Guest Lecturer, Mol. Medicine Ph.D. program, Paul Murray, 2007-2013

Guest Lecturer & Small group facilitator, CCLCM, Innovations, Brian Davis, 2008

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Ph.D. /M.D. Thesis Committees:

Karen Fang, Medical Student, CCLCM, Research Thesis Committee Chair
Andrew Bayzk, Ph.D., Student, Biomedical Engineering, CASE
Sarah Richardson Ozinga, Ph.D. Student, Biomedical Engineering, Cleveland State University, Mentor/Committee Chairman, 2011-pres. (see below)
Elise Baron, Ph.D. Student, Biomedical Engineering, Cleveland State University, Mentor/Committee Chairman, 2011-pres. (see below)
Michael Tee, Medical Student, CCLCM, Research Thesis Committee Chair, 2009-pres.
Jonathan Riley, Medical Student, CCLCM, Research Thesis Committee Chair, 2006-2009 (currently at Emory University)
Katie Hallahan, Medical Student, CCLCM, Research Thesis Committee Chair, 2006-pres.
Anil Thota, Biomedical Engineering, CWRU, 2007-2010
Benjamin Rellinger, Biomedical Engineering, CWRU, 2007-pres.
Amar Nathale, Biomedical Engineering, CWRU, 2006-2011
Thomas Foutz, Biomedical Engineering, CWRU, 2006-2010
Daniel Jacobs, Biomedical Engineering, CWRU, 2005-2011
Aideen Stronge, Psychology, 2004-2005
Timothy Nichols, Psychology, 2004-2005
Elisa Lawler, Psychology, 2004-2005
Simeon Feldstein, Psychology, 2002-2005
Latrice Watkins, Architecture, 2003-2005
Tabitha Payne, Psychology, 2002-2003, currently at Psychology Dept., Kenyon College
David McCabe, Psychology, 2002-2003, currently Post-doc at Washington Uni., St. Louis

Post-doctoral Trainees:

Sarah Ozinga, Ph.D. 2015-2016
Brach Poston, Ph.D. 2011-2014 (Asst. Professor, UNLV, Las Vegas, NV)
Irene Zhong, Ph.D. (CCF Post-doc Epilepsy)
Weidong Xu, MD., Ph.D. (CCF Fellowship)
Claudia Voelcker-Rehage, Ph.D. (currently at University of Bremen, Germany)
William M. Jones, M.D. (Asst. Professor, Dept. of Orthopedic Surgery, University of Texas Health Sciences Center, Houston, TX.)
Stacey Gorniak, Ph.D. 2009-2011 (Asst. Prof., University of Houston)
Angela Ridgel, Ph.D. 2006-2008 (Assoc. Professor, Kent State)
Matthew Plow, Ph.D. 2010-2013 (Asst. Professor, Case Western Reserve University)

Graduate Students Trained:

Aideen Stronge, 2002-2005
Timothy Nichols, 2002-2005
Ellen Frick, 2004-2005 (currently at University of Wisconsin, Madison)
Jenny Wu, 2008 (currently at NYU Medical School)

Current Ph.D. trainees:

Anneke Frankemolle, Case BME Graduate student, 2008-
Sarah Richardson Ozinga, CSU BME Graduate student, 2011-pres.
Elise Baron, CSU BME Graduate student, 2011-pres.

CURRENT FUNDING (direct costs):

Department of Defense, (Alberts, PI)

The quantification of Visual Function and Postural Stability under Single- and Dual-task Conditions Using Mobile Technology.

\$1,499,989

6-1-16 to 5-31-19

DPF1507JA Davis Phinney Foundation (Alberts, PI)

The Effects of Dual Task Training on Motor and Non-Motor Function in Individuals with Parkinson's disease

\$99,035

8/1/15-7/31/17

R01NS073717-01 (Alberts, PI)

The Cyclical Lower-extremity Exercise (CYCLE) Trial for Parkinson's disease

\$2,117,881

9-1-11 to 7-31-17 (no cost extension)

W81XWH-14-1-0532 (Alberts, PI)

Enhancing the detection and management of mTBI in military personnel using the C3 app

\$643,321

9/30/2016-9/29/2017

UEEC-1358579

Undergraduate Engineering in Medical Research (Alberts, PI)

National Science Foundation Research Experiences for Undergraduates (REU)

\$347,223

5-1-14 to 4-30-17

NFL Players Association/The Trust (Alberts and Bernick, Co-PI)

Retired Athlete Brain Health and Restoration Program

Cleveland Clinic Main Campus; Cleveland Clinic Lou Ruvo Center for Brain

Health, Las Vegas, NV; Cleveland Clinic Florida

\$1.700.000 administrative budget + 100% reimbursement of all clinical services

2-1-14 to 1-31-17 (annual contract)

R01CA175100-01 (Nock, PI; Alberts, Co-Inv)

Reving-up Exercise for Sustained Weight Loss by Altering Neurological Reward and Drive

6-1-2013 to 5-31-18

\$1,525,845

2T32EB004314 (R. Kirsch, PI; Alberts Co-Inv)

Integrated Engineering and Rehabilitation Training

7-1-09 to 6-30-14

7-1-14 to 6-30-19 (Renewed)

PREVIOUS FUNDING:

Weigand Family Foundation (Alberts, PI)

Las Vegas, NV

Establish and equip a center for Neurorehabilitation at Cleveland Clinic Lou Ruvo Center for Brain Health, Las Vegas, NV

\$354,000

Ohio Third Frontier Wright Projects Program (Alberts & Damaser, Co-PI)

Clinically Applied Rehabilitation Engineering (CARE) Project

\$3,000,000

6-1-10 to 12-1-16

Biogen-Idec

Development and Validation of MSPT App for MS

9-1-14 to 7-31-16

\$1,450,000

Singer Research Inst. (Allegheny Health Network) (Alberts, PI)

The Characterization of Cognitive and Motor Function in Medically Managed MS Patients with the Cleveland Clinic MS App

3-1-14 to 2-28-15

\$170,000

Novartis (Rudick, PI; Alberts Co-Inv.)

Assessing MS Patients in Real-World Settings Using Novel Patient Centered Measurement Methods

5-1-13 to 9-30-14

\$691,247

LRI Chairman's Innovation Fund (Alberts, PI)

Understanding the Acute and Long-Term Effects of Head Impact Dosages on Clinical Measures of Brain Function.

2013-2015

\$100,000

US Department of Defense (Bernick, PI; Alberts, Co-Inv.)

Early Recognition of Chronic Traumatic Encephalopathy Through FDDNP PET Imaging

9-30-13 to 9-29-16

\$746,068

Lincy Foundation (Alberts & Modic, Co-PI)

Support for development of six programs/research projects at Cleveland Clinic Lou Ruvo Center for Brain Health, Las Vegas, NV

\$8,000,000

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9-1-10 to 8-31-13 (Currently in no-cost extension)

R01NS058706-01 (Alberts, PI)

Comparison of unilateral and bilateral subthalamic stimulation in Parkinson's

\$1,250,000

7-1-09 to 6-31-14

R03HD073566-02 (Alberts, PI)

Heart-Brain Retraining: Forced Aerobic Exercise For Stroke Rehabilitation

\$100,000

8-1-20-1 to 7-31-2014

1RC3NS043605-01 (Alberts, PI, Konneman, PI, Wolf, PI)

An Innovative Home Stroke Rehabilitation and Monitoring System

\$3,500,000

5-1-10 to 4-30-13

B6678R VA Merit Review, (Alberts, PI)

Therapeutic Effects of Exercise on Parkinson's Disease

\$812,000

2-1-09 to 9-31-14

Michael J. Fox Foundation for Parkinson's Res. (Poston, PI; Alberts, Co-Inv)

Effects of tDCS on Motor Learning in Parkinson's Disease

\$150,000

6-1-13 to 5-31-14

Cleveland Clinic Innovations Product Development Fund, (Alberts, PI)

Concussion Assessment Application

\$100,000

4-18-11 to 5-1-12

R01 NS058945 (J. Vitek, PI; Alberts, Co-I)

Neurophysiological Mechanisms Underlying Parkinsonian Motor Signs

\$1,897,230

5-1-08 to 4-30-13

R01 NS059736 (C. McIntyre, PI; Alberts, Co-I)

Model-Based Optimization of Clinical Deep Brain Stimulation

\$1,250,000

9-1-07 to 8-31-12

R01 NS057371 (Alberts, PI; J. Vitek, PI)

Pathophysiology of Dystonia

\$1,751,874

10-1-09 to 9-30-11

Davis Phinney Foundation for Parkinson's Research (Alberts, PI)

Neuroprotective Effects of Forced Exercise on Parkinson's Disease: A Preliminary Study

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\$120,000
3-1-11 to 2-28-11

R21 HD056316 (Alberts, PI)

Effects of Forced-Exercise Training on Parkinson's Motor Function

\$275,000
1-1-09 to 12-31-11

R21 HD045514-0 NIH- National Center for Medical Rehabilitation Research (Alberts, PI)

Pneumatic Muscle for Upper Extremity Stroke Rehabilitation
Multi-site Preliminary Clinical Trial

\$353,897
10-1-04 to 9-30-08

R01 NS052566-01 (Phillips, PI; Alberts, Co-I)

fMRI Evaluation of DBS in Parkinson's Disease

\$987,450
6-1-06 to 5-31-11

The Michael J. Fox Foundation for Parkinson's Research (Alberts, PI)

Online Motor and Cognitive Analysis System

\$310,470
11-1-08 to 10-31-10

3R01NS037019-10S1 (Competitive revision) (J. Vitek, PI; Alberts, Co-I)

Deep brain Stimulation in the parkinsonian monkey

\$605,733
9/1-09 – 8/31/11

1RC1NS068231-01 (J. Vitek, PI; Alberts, Co-I)

DBS of the Pedunculo-pontine Nucleus in Parkinsonian Primate

\$717,470
9/30/09-9/29/11

Cleveland Clinic Innovations Product Development Fund (Alberts, PI)

Forced-Exercise System for Neurological Disordered Patients

\$47,997
11-1-09 to 10-31-10

Cleveland Clinic Innovations Product Development Fund, (Alberts, PI)

Online Movement Analysis System

\$44,697
4-18-08 to 12-1-09

B4061L Department of Veterans Affairs, (Alberts, PI)

Center-to-Center Collaborative Research Grant

DBS and Motor Function in Parkinson's Patients

\$249,300
11-1-06 to 10-31-08

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R03 AG20797-01 NIH-NIA, (Alberts, PI)

Deep Brain Stimulation and Force Control in Parkinson's

\$75,289

11-1-03 to 8-31-05

American Parkinson's disease Association, (Alberts, PI)

The Effects of Deep Brain Stimulation on Motor Learning in Parkinson's Disease

Patients

\$35,000

9-1-02 to 12-31-03

CACHET Seed Grant (Univ. of Michigan/Georgia Tech NIH Training grant, Alberts, PI)

The Effects of Dual-task Performance on Force Control in Older Adults

\$12,658

8-1-02 to 7-31-03

Emory/Georgia Tech Biomedical Technology Research Center

Co-Investigators: Alberts, JL & Vitek, JL (Emory University)

The Effects of Deep Brain Stimulation on Movement Control in Parkinson's Disease

Patients

\$30,000

8-1-01 to 7-31-02

American Parkinson's Disease Association (Alberts, PI)

The Influence of Parkinson's Disease on Dexterous Manipulations

\$35,000

10-1-01 to 9-30-02

Department of Veterans Affairs (Schuchard, R. and Ouslander, J., PI's)

Center of Excellence in Rehabilitation of Aging Veterans with Vision Loss

Alberts, J.L. (Inv) Project #1: *Neuromuscular control strategies in older adults with low vision*

Alberts, J.L. (Inv) Project #2: *The use of advance information in older adults*

\$3,750,000

08/01/01 to 07/31/06

Department of Veterans Affairs (Alberts, PI)

Developmental Project (Dr. Steven Wolf, Emory, Co-Investigator)

Atlanta VA Rehab R & D

Force Control Impairments in Older Adults During Dexterous Manipulations

\$20,000

4-1-01 to 12-31-01

R44NS039212 (Alberts, PI; transferred to Teulings)

NIH-NINDS SBIR Phase II

Force Measurement and Analysis System

\$750,000

9-1-00 to 4-30-2004

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R43 NS39212-01 (Alberts, PI)
NIH-NINDS SBIR Phase I
Force Measurement and Analysis System
\$100,000
9-1-99 to 2-29-00

Achievement Reward for College Scientists (Alberts, PI)
General Support for Parkinson's Research
\$18,000
8-15-97 to 5-15-00

R01NS039352 (Stelmach, PI; Alberts, Res. Associate)
Movement Organization Dysfunction in Parkinson's
\$684,811
9-1-00 to 8-31-06

PENDING FUNDING:

NSF SCH (Alberts, PI)
Integrating Cognitive and Frailty Vital Signs into the Care of Heart Failure Patients
\$1,980,654
6/1/2017 – 5/31/2021

Department of Defense, (Alberts, PI)
“Motor and non-motor outcomes associated with a nationwide Pedaling for Parkinson's community-based exercise program”
2,922,209
7/1/17- 6/30/2021

NSF REU (Alberts, PI)
An Immersive Research Engineering Training Program for Undergraduates
\$314,773
3/1/2017-2/28/2020

PHILANTHROPIC SUPPORT:

Farmer Foundation; 1-1-16 to 12-31-17
Support to develop a mobile application to facilitate the programming of Deep Brain Stimulation devices for Parkinson's disease.
\$1,000,000

Scott and Mark Luikart, New Philadelphia, OH
Selected my laboratory as their charitable cause during the 2009 bicycle race, *Race Across America*
\$93,450

This gift was provided by a gentleman in Las Vegas with Parkinson's disease. It will be used to establish a second study site for my current exercise trial with PD patients at the Cleveland Clinic Lou Ruvo Center for Brain Health (LRCHB), Las Vegas, NV. Funds will also support the deployment of the i-COMET system to select patients at the Cleveland Clinic LRCBH.

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\$375,000

Bill & Dorothy J. Keyser Foundation, Las Vegas, NV

\$80,000 to support research activities at the CCLRCBH in Las Vegas.

PEER REVIEWED PUBLICATIONS:

1. Rand, M.K., **Alberts, J.L.**, Stelmach, G.E., and Bloedel, J.R. The influence of movement segment difficulty on movements with two stroke sequence. *Experimental Brain Research*, (1997) 115:137-146.
2. Saling, M., **Alberts, J.L.**, Bloedel, J.R. and Stelmach, G.E. Reach-to-grasp movements during obstacle avoidance. *Experimental Brain Research*, (1998) 118: 251-258.
3. **Alberts, J.L.**, Tresilian, J.R., Stelmach, G.E. The coordination and phasing of a bilateral prehension task: the influence of Parkinson's disease. *Brain*, (1998) 121:725-742 (*Named Excellent Article and was republished in Focus on Parkinson's disease*).
4. **Alberts, J.L.**, Tresilian, J.R., and Stelmach, G.E. The coordination and phasing of a bimanual prehension task: The influence of Parkinson's disease, *Focus on Parkinson's disease*, (1999) 11:9-12.
5. **Alberts, J.L.**, Saling, M. and Adler, C.H. Stelmach, G.E. Disruptions in the reach-to-grasp actions of Parkinson's patients. *Experimental Brain Research*, (2000) 134:353-362.
6. Seidler, R.D. **Alberts, J.L.** and Stelmach, G.E. (2001). Disruptions in joint coordination in Parkinson's disease patients. *Experimental Brain Research*, 140:335-344.
7. **Alberts, J.L.**, Adler, C.H., Saling, M., and Stelmach, G.E. (2001). Kinematic analysis of prehension patterns in butlerbitlers Syndrome patients, *Parkinsonism and Related Disorders*, (2001): 81-88.
8. Seidler, R. D., **Alberts, J. L.**, and Stelmach, G. E. Changes in multi-joint performance with age. *Motor Control* (2002) 6:19-31.
9. **Alberts, J.L.**, Saling, M., and Stelmach, G.E. Alterations in transport path differentially affect temporal and spatial movement parameters, *Experimental Brain Research*, (2002) 143:417-425.
10. Alberts, J.L., Elder, C., Okun, M.S., and Vitek, J.L (2003). Deep Brain Stimulation Improves Force Control in Parkinson's disease patients, Proceedings of the 11th Conference of the International Graphonomics Society, p. 5-9.
11. Park, S. W., Butler, A.J., **Alberts, J.L.** and Wolf, S.L. (2004). Changes in serial optical topography and TMS during task performance after constraint-induced movement therapy in stroke: a case study. *Neurorehabilitation and Neural Repair*, (2004) 18:95-105.

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12. **Alberts, J.L.**, Elder, C., Okun, M.S., and Vitek, J.L. Comparison of Pallidal and Subthalamic Stimulation on Force Control in Patient's with Parkinson's Disease. *Motor Control*, (2004) 8: 484-499.
13. **Alberts J.L.**, Butler, A.J. and Wolf S.L. (2004). Kinetics of Grasping Among Patients with Sub-Acute Stroke After Constraint-Induced Therapy. *Neurorehabilitation and Neural Repair*, 18: 250-258
14. Wolf, S.L., Butler, A.J. and M.W. Kim, **Alberts, J. L.**, Contemporary linkages between EMG, kinetics and stroke rehabilitation. *Journal of Electromyography and Kinesiology*. (2005) 5:229-39. PMID: PMC3572513
15. Voelcker-Rehage C., **Alberts, J.L.** Age-related changes in Grasping Force Modulation. *Experimental Brain Research*, (2005) 166:61-70.
16. Voelcker-Rehage, C., Stronge, A. and **Alberts, J.L.** The Effects of Dual-task Performance on Working Memory and Force Control in Older Adults. *Neuropsychology Development: Aging Neuropsychology Cognition*, (2006) 13:366-84.
17. Frick, E. and **Alberts, J.L.** Combined Use of Repetitive Task Practice and an Assistive Robotic Device in Subacute Stroke. *Physical Therapy* (2006) 86:1378-86.
18. Voelcker-Rehage C., **Alberts, J.L.** Effect of Motor Practice on dual-task performance in older adults. *Journal of Gerontology* (2007) 62:141-8.
19. Rosenstein, L., Ridgel, A.R., Thota, A., Samame, B., and **Alberts, J.L.** The Effects of Combined Robotic Therapy and Repetitive Task Practice on Upper Extremity Function of a Chronic Stroke patient. *American Journal of Occupational Therapy*, (2008) 61:28-35.
20. **Alberts, J.L.**, Okun, M.S. and Vitek, J.L. The persistent effects of unilateral pallidal and subthalamic deep brain stimulation on force control in advanced Parkinson's patients. *Parkinsonism and Related Disorders* (2008) 14:481-8. PMID:PMC2605295
21. **Alberts, J.L.**, Hass, C.J., Vitek, J.L. and Okun, M.S. Are two leads always better than one: An emerging case for unilateral subthalamic deep brain stimulation in Parkinson's disease. *Experimental Neurology* (2008) 214:1-5. PMID: PMC2888769.
22. **Alberts, J.L.**, Voelcker-Rehage C., Hallahan, K., Vitek, M., Bamzai, R., and Vitek, J.L. Bilateral subthalamic stimulation impairs cognitive-motor performance in Parkinson's disease patients. *Brain* (2008) 131:3348-60. PMID:PMC26339204
23. Mera, T.O., Johnson, M.D., Rothe, D., Zhang, J., Xu, W., Ghosh, D., Vitek, J.L., and **Alberts, J.L.** Objective quantifying of arm rigidity in MPTP-treated primates. *Journal of Neuroscience Methods*, (2009) 177:20-9. PMID: PMC2632780
24. **Alberts JL**, Wolf SL. The use of kinetics as a marker for manual dexterity after stroke and stroke recovery. *Top Stroke Rehabilitation*. (2009) 16:223-36.

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25. Ridgel AL, Vitek JL, **Alberts JL**. Forced, not voluntary, exercise improves motor function in Parkinson's disease patients. *Neurorehabilitation Neural Repair*. (2009) 23:600-8.
26. Stewart KC, Fernandez HH, Okun MS, **Alberts JL**, Malaty IA, Rodriguez RL, et al. Effects of dopaminergic medication on objective tasks of dexterity, bradykinesia and force control. *Journal of Neurology*. (2009) 256:2030-5
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28. **Alberts, J.L.**, Hallahan, K., Thota, A., Noecker, A.M., Vitek, J.L. and McIntyre, C.M. Reducing cognitive-motor declines associated with bilateral subthalamic deep brain stimulation through computational modeling in a Parkinson's disease patient. *Journal of Neurology, Neurosurgery and Psychiatry* (2010) 81:1170-2. PMID: PMC3086293
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31. Ridgel, A, **Alberts, JL**. Changes in executive function after acute bouts of passive cycling in Parkinson's disease. *Journal of Aging and Physical Activity* (2011) 19(2):87-98.
32. McIntyre CC, Richardson SJ, Frankemolle AM, Varga G, Noecker AM, **Alberts JL**. Improving postural stability via computational modeling approach to deep brain stimulation programming. *Conf Proc IEEE Eng Med Biol Soc*. (2011):675-6.
33. Mera T, Vitek JL, **Alberts JL**, Giuffrida JP. Kinematic optimization of deep brain stimulation across multiple motor symptoms in Parkinson's disease. *Journal of Neuroscience Methods* (2011) 198:280-6. PMID: PMC3122330
34. **Alberts JL**, Linder SM, Penko AL, Lowe MJ, Phillips M. It is not about the bike, it is about the pedaling: forced exercise and Parkinson's disease. *Exercise and Sport Sciences Reviews*. (2011) 39:177-86
35. Gorniak SL, McIntyre CC, **Alberts JL**. Bimanual force coordination in Parkinson's disease patients with bilateral subthalamic deep brain stimulation. *PLoS One*. (2013) 11;8(11). PMID: PMC3823934
36. Linder SM, Rosenfeldt AB, Reiss A, Buchanan S, Sahu K, Bay CR, Wolf SL, **Alberts JL**. The home stroke rehabilitation and monitoring system trial: a randomized

- controlled trial. *International Journal of Stroke* (2013) 8:46-53. PMID: PMC4362540
37. Beall EB, Lowe MJ, **Alberts JL**, Frankemolle AM, Thota AK, Shah C, Phillips MD. The effect of forced-exercise therapy for Parkinson's disease on motor cortex functional connectivity. *Brain Connectivity*. (2013) 3:190-8. PMID: PMC3634143
 38. Gorniak SL, **Alberts JL**. Effects of task complexity on grip-to-load coordination in bimanual actions. *Experimental Brain Research*. (2013) 225:559-67.
 39. Ridgel AL, Abdar HM, **Alberts JL**, Discenzo FM, Loparo KA. Variability in cadence during forced cycling predicts motor improvement in individuals with Parkinson's disease. *IEEE Trans Neural Syst Rehabil Eng*. (2013) 21:481-9. PMID: PMC4139093
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 41. Gorniak SL, Machado AG, **Alberts JL**. Force coordination during bimanual task performance in Parkinson's disease. *Experimental Brain Research*. (2013) 229:261-71.
 42. Gorniak SL, **Alberts JL**. Effects of aging on force coordination in bimanual task performance. *Experimental Brain Research*. (2013) 229:273-84
 43. Linder SM, Reiss A, Buchanan S, Sahu K, Rosenfeldt AB, Clark C, Wolf SL, **Alberts JL**. Incorporating robotic-assisted telerehabilitation in a home program to improve arm function following stroke. *Journal of Neurologic Physical Therapy*. (2013) 37:125-32. PMID: PMC4154939
 44. Glielmi CB, Butler AJ, Niyazov DM, Darling WG, Epstein CM, **Alberts JL**, Hu XP. Assessing Low-frequency Repetitive Transcranial Magnetic Stimulation with Functional Magnetic Resonance Imaging: A Case Series. *Physiotherapy Research International*. (2014)19: 117–125
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 46. Penko AL, Hirsch JR, Voelcker-Rehage C, Martin PE, Blackburn G, **Alberts JL**. Asymmetrical pedaling patterns in Parkinson's disease patients. *Clinical Biomechanics* (2014) 29:1089-94. PMID:PMC4362538
 47. Gorniak SL, Plow M, McDaniel C, **Alberts JL**. Impaired Object Handling during Bimanual Task Performance in Multiple Sclerosis. *Multiple Sclerosis International*. (2014) 2014:450420. PMID: PMC4142153
 48. Ozinga SJ, **Alberts JL**. Quantification of postural stability in older adults using mobile technology. *Experimental Brain Research*. (2014) 232:3861-72.
 49. Mills KA, Markun LC, San Luciano M, Rizk R, Allen IE, Racine CA, Starr PA, **Alberts**

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51. Linder SM, Rosenfeldt AB, Rasanow M, **Alberts JL**. Forced Aerobic Exercise Enhances Motor Recovery After Stroke: *The American Journal of Occupational Therapy*. (2015) 69(4). PMID: PMC4482578
52. Linder SM, Rosenfeldt AB, Bay RC, Sahu K, Wolf SL, **Alberts JL**. Improving Quality of Life and Depression After Stroke Through Telerehabilitation. *The American Journal of Occupational Therapy*. (2015) 69(2): PMCID: PMC4480056
53. **Alberts JL**, Thota A, Hirsch J, Ozinga S, Dey T, Schindler DD, Koop MM, Burke D, Linder SM. Quantification of the Balance Error Scoring System with Mobile Technology. *Medicine & Science in Sports & Exercise*. (2015) 47:2233-40
54. Ozinga SJ, Machado AG, Miller Koop M, Rosenfeldt AB, **Alberts JL**. Objective assessment of postural stability in Parkinson's disease using mobile technology. *Movement Disorders*. (2015) 30:1214-21.
55. **Alberts JL**, Hirsch JR, Koop MM, Schindler DD, Kana DE, Linder SM, Campbell S, Thota AK. Using Accelerometer and Gyroscopic Measures to Quantify Postural Stability. *Journal of Athletic Training*. (2015) 50:578-88.
56. Wolf SL, Sahu K, Bay RC, Buchanan S, Reiss A, Linder S, Rosenfeldt A, **Alberts JL**. The HAAP (Home Arm Assistance Progression Initiative) Trial: A Novel Robotics Delivery Approach in Stroke Rehabilitation. *Neurorehabilitation Neural Repair*. (2015) 29:958-68
57. Shah C, Beall EB, Frankemolle AM, Penko A, Phillips MD, Lowe MJ, **Alberts JL**. Exercise Therapy for Parkinson's Disease: Pedaling Rate Is Related to Changes in Motor Connectivity. *Brain Connectivity*. (2016) 6:25-36. PMID:PMC4744893
58. **Alberts JL**, Phillips M, Lowe MJ, Frankemolle A, Thota A, Beall EB, Feldman M, Ahmed A, Ridgel AL. Cortical and motor responses to acute forced exercise in Parkinson's disease. *Parkinsonism Related Disorders*. 2016 24:56-62. PMID:PMC4775282
59. Xiao R, Miller JA, Lubelski D, **Alberts JL**, Mroz TE, Benzel EC, Krishnaney AA, Machado AG. Quality of life outcomes following cervical decompression for coexisting

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Parkinson disease and cervical spondylotic myelopathy. *The Spine Journal*. 2016 Aug 2.

60. Ozinga SJ, Linder SM, **Alberts JL**. Use of mobile device accelerometry to enhance evaluation of postural instability in Parkinson's disease. *Archives of Physical Medicine Rehabilitation*. (2016) [Epub ahead of print]
61. Rosenfeldt AB, Dey T, **Alberts JL**. "Aerobic Exercise Preserves Olfaction Function in Individuals with Parkinson's Disease" *Parkinsons Disease*. (2016) Article ID 9725089, 6 pages. PMID: PMC5141565.
62. Rao SM, Losinski G, Mourany L, Schindler D, Mamone B, Reece C, Kemeny D, Narayanan S, Miller DM, Bethoux F, Bermel RA, Rudick R, **Alberts J**. Processing speed test: Validation of a self-administered, iPad®-based tool for screening cognitive dysfunction in a clinic setting. *Multiple Sclerosis Journal* (2017) [Epub ahead of print]

SUBMITTED/REVISED/IN PROGRESS MANUSCRIPTS:

1. Mueller, D.M, Vitek, J.L., Ridgel, A.L., Alberts, J.L. The effects of exercise mode and intensity on motor improvement in Parkinson's disease. *Physical Medicine and Rehabilitation*
2. Stewart, K.C., Fernandez, H.H., Okun, M.S., Thota, A.M. Alberts, J.L., Hass, C.J. Side onset influence on upper extremity motor functioning in Parkinson's disease. *Experimental Neurology*
3. Xu, W., Hirsch, J., Vitek, J.L., Alberts, J.L. A modified Klüver board test on primate reach-retrieval task and computer data analysis. *Journal of Neuroscience Methods*
4. Xu, W., Zhang, J., Hirsch, J., Alberts, J.L., Vitek, J.L. Stimulation in the subthalamic nucleus in the normal primate modulates spontaneous neuronal activity in the motor cortex. *Journal of Neuroscience*
5. ***8 additional manuscripts In Review/In Progress***

BOOK CHAPTERS:

1. Hass, C.J. and Alberts, J.L. "Improving motor function in Parkinson's disease patients: Behavioral and Surgical Interventions." In *Advances in Neuromuscular Physiology of Motor Skills and Muscle Fatigue*. Edited by Shino Shinohara, Human Kinetics, Champaign, IL. *Published March 2009*.
2. Alberts, J.L. and Cherian, N. "Headaches, Traumatic Brain Injury and Concussion." In *Cleveland Clinic Manual of Headache Therapy*. Edited by Stewart Tepper, Springer International Publishing, Switzerland, 2014.
3. Ringenbach, S. D. R., Holzapfel, S. D., Richter, M., & Alberts, J.L. (2017). Management of executive function following assisted cycle therapy (ACT) in adolescents with Down

syndrome. In T. Mendez (Ed.), *Down syndrome (DS): Perspectives, Challenges and Management*, (pp. 17-38). Hauppauge, NY. Nova Science Publishers, Inc. ISBN: 978-1-53610-431-8.

INVITED SEMINARS/SYMPOSIA/GRAND ROUNDS (selected):

1. "Bringing Biomechanics to the bedside." Department of Biomechanics and the Center for Research in Human Movement Variability of the University of Nebraska Omaha, 1-20-17.
2. "Advances in the assessment and management of concussion." International Brain Injury Association, San Francisco, CA, 3-20-14.
3. "The implementation of a multi-disciplinary concussion carepath." American Physical Therapy Association (APTA) Combined Sections Meeting, Las Vegas, NV, 2014.
4. "The implementation of a multi-disciplinary concussion carepath." APTA Combined Sections Meeting, Las Vegas, NV, 2014
5. Validation and field utilization of an ipad based concussion assessment tool. International Conference on Concussion in Sport, Zurich, Switzerland, 2012
6. "Quantitative and comprehensive Evaluation of athletes post-concussion: development and validation of the Cleveland Clinic COMET Concussion Application using the iPad2." APTA National Conference, Tampa, 2012
7. "The clinical application of forced exercise and rehabilitation in the treatment of Parkinson's disease." APTA Combined Sections Meeting, Chicago, IL, 2-10-12.
8. "Forced-exercise and Parkinson's disease." Davis Phinney Foundation, Grand Haven, MI, 8-20-11.
9. "Assessment of cognitive-motor function in Parkinson's disease patients and its role in DBS programming." Boston Scientific, 8-10-11.
10. "The role of exercise in the treatment of Parkinson's disease." Teva Patient Education Symposium, Carroll, IA, 7-25-11.
11. "From the cornfields to a clinical trial to clinical medicine: The use of exercise in the treatment of Parkinson's disease." CCF BME Seminar, Dr. Geoff Vince, 7-8-11.
12. "Parkinson's disease and the young patient." CCF Beachwood Young Onset Education Seminar, Dr. Andre Machado, 6-14-11
13. "Development of a control algorithm for exercise prescription in Parkinson's disease patients." Rockwell Automation Technology Seminar, Dr. Fred Discenzo, 5-31-11.
14. "Improving surgical outcomes in Parkinson's disease with biomedical engineering tools" VA Seminar for Neuroscience, 3-17-11.
15. "Using exercise in the treatment of Parkinson's disease." Pease Scholar Lecture, Dept. of Kinesiology, Iowa State University, Dr. Philip Martin, 3-10-11.
16. "Is exercise medicine for Parkinson's disease?", Case Western Reserve University, Dept. of Neuroscience Seminar, Dr. Michael Zigmund, 2-3-11.

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17. "How can exercise be used as medicine for Parkinson's disease?", American Parkinson's Disease Association Research Symposium, Sarasota, Florida, Dr. William Langston, 1-22-11.
18. "Improving Outcomes for Patients with Neurodegenerative Disorders." Cleveland Clinic Government Relations Presentation to U.S. Representative Shelley Berkley, Dr. Paul Murray, 10-12-10.
19. "Exercise and the Treatment of Parkinson's disease." Cleveland Clinic Health Talks, Dr. Andre Machado, 10-9-10.
20. "Forced Exercise: A New Approach for Patients with Parkinson's disease." American Parkinson Disease Association (APDA) Hope Conference, Las Vegas, NV, Dr. Charles Bernick, 10-6-10.
21. "Accountant or Scientist" Keynote Address, West Tech High School, Las Vegas, NV, Dr. Monte Smith, Principal, 10-6-10.
22. "The Role of Exercise in the Treatment of Parkinson's disease." 4th Annual University of Kansas Medical Center (KUMC) Parkinson's Disease Patient Symposium, Drs. Raj Pahwa and Kelly Lyons, Kansas City, MO (CME credits) 8-21-10.
23. "What have we learned this year for the Treatment of Parkinson's disease." APDA Parkinson's symposium, Waterloo, IA 7-25-10
24. "New Approach to the Treatment of Parkinson's disease: Exercise your Brain." Mr. Davis Phinney, Founder, Davis Phinney Foundation, Boulder, CO 7-16-10.
25. "Exercise for the Brain: A new approach to the treatment of Parkinson's disease." Michael J. Fox Foundation (MJFF) Research Roundtable, Denver, CO, Debbie Brooks, Co-Founder MJFF, 7-14-10.
26. "Exercise and Parkinson's disease." Update in Neurodegenerative disease Mechanisms, Cleveland Clinic Lou Ruvo Center for Brain Health and Keep Memory Alive, Las Vegas, NV, Dr. Randolph Schiffer, 5-21-10.
27. "Parkinson's Disease and Exercise." Movement Disorder Symposium, Dubois, PA, Dr. Mary Feldman, 4-24-10.
28. "Surgical and behavioral approaches to the treatment of Parkinson's disease." Dept. of Neurology Grand Rounds, University of Minnesota, Dr. David Anderson, 4-1-10.
29. "Is Exercise Medicine for Parkinson's disease?" Keynote Address, American Parkinson's Disease Association, Conference on Young Onset Parkinson's disease, Sacramento, CA, Dr. Michael Okun, 3-6-10.
30. "Exercise and Parkinson's Disease: Is Exercise Medicine?" Cleveland Clinic Nevada Leadership Board Meeting, Lou Ruvo Center for Brain Health, Las Vegas, NV, Dr. Michael Modic, 1-13-10
31. "The Science of Cycling and Parkinson's Disease." Stark County Cycling Club, Stark County, OH, Mr. Mark Luikart., 6-15-09.
32. "Brain Surgery or Exercise?" BME Dept. Seminar, Cleveland Clinic, Dr. Linda Graham, 11-20-09.
33. "Surgical and behavioral approaches to the treatment of Parkinson's disease." Keynote address, Sigma Beta Sorority, Inc. Chattanooga, TN, Louise Bisogni, National Charity Chairman, 10-17-09.

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34. "Beneficial effects of exercise in the treatment of Parkinson's disease." Davis Phinney Foundation for Parkinson's Research, Victory Summit, Milwaukee, WI, Amy Howard, CEO, 10-10-09.
35. "The efficacy of assessing cognitive and motor function of Parkinson's disease patients remotely." Michael J. Fox Foundation, New York, NY, Ms. Katie Hood, CEO, 10-9-09.
36. "The role of exercise in the treatment of Parkinson's disease." Cleveland Clinic Health Exchange, Moving Forward: A Focus on Movement Disorders, Dr. Andre Machado, 10-6-09.
37. "Benefits of exercise for Parkinson's disease." 6th Annual Progress in Understanding Multiple Sclerosis and Parkinson's disease, MS Center of Carolinas Healthcare System, Kiawah Island, SC, attendees received 3 CME credits. 9-27-09.
38. "Exercise for the Parkinson's brain." Central Iowa PD Education and Support Group, Indianola, IA, Dr. Heather Bahr, 7-23-09
39. "A new approach to the treatment of Parkinson's disease: Forced-exercise." Iowa APDA Roundtable, J. Sam Irwin, University of Iowa, 7-22-09.
40. "The effects of Exercise on Parkinson's disease patients motor function." Neurology Grand Rounds, Univ. of North Carolina-Charlotte, NC, Dr. Sanjay Iyer, 5-4-09.
41. "Exercise the Brain: Exercise for Patients with Parkinson's disease." Cleveland Clinic Wellness Series, Independence, OH, Dr. Ali Rezai, 11-8-08.
42. "Exercise Interventions for Parkinson's disease." Neurology Grand Rounds, Mary Greeley Hospital, Ames, IA, 7-22-08.
43. "Improving Motor Function in Parkinson's patients through Exercise." Keynote Address, American Parkinson's disease Association, *Progress in Parkinson's disease Conference*, Des Moines, IA, 6-13-08
44. "Restoring Motor Function in Parkinson's disease with Deep Brain Stimulation." Cleveland FES Center of Excellence Seminar Series, Dr. Hunter Peckham, 4-16-08.
45. Panelist, Michael J. Fox Foundation for Research Roundtable, Cleveland Clinic, 10-25-07.
46. Exercise and Parkinson's disease: A new Approach to the Treatment of PD. MJFF Young Onset Meeting, Cleveland Clinic, 10-25-07
47. Deep Brain Stimulation and Parkinson's, Cleveland PD Patient Education Group, Steve Derman, 10-18-07
48. "Development of Robotic Systems for the Treatment of Patients with Stroke: What Engineers need to know." Dept. Seminar, Biomedical Engineering, Milwaukee School of Engineering, Dr. Darrin Rothe, 8-16-07
49. "Pedaling over Pills for the Treatment of Parkinson's disease." Iowa Chapter of the American Parkinson's disease Association, Iowa Methodist Hospital, 7-26-07
50. "The Future in Robotics in the Rehabilitation of Patients with Stroke." Dept. of Neurosurgery, Grand Rounds, Cleveland Clinic, Dr. Ali Rezai, 5-08-07.
51. "The Effects of Force-Exercise on Motor Function in Parkinson's disease patients. Department of Kinesiology, University of Florida, 3-9-07, Dr. Steven Dodd.

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52. "Unilateral Approach to Deep Brain Stimulation for Parkinson's disease, Department of Neurology, University of Florida, Dr. Michael Okun, 3-8-07.
53. "Future of Robotics in Rehabilitation." Department of Health Sciences, Physical Therapy Program, Cleveland State University, Dr. Paul Sung, 10-30-06.
54. "Improving Upper Extremity Motor Function in Stroke and Parkinson's disease patients." Physical Medicine, Panther Grand Rounds, University of Pittsburgh, Dr. Douglas Weber, 4-26-06.
55. "Robotic Therapy and Repetitive Task Practice for Upper Extremity Stroke Rehabilitation." Cleveland FES Center of Excellence Seminar Series, Dr. P. Hunter Peckam, 4-6-06.
56. "Translational Research in Practice in Rehabilitation Medicine." Department of Health Sciences, Physical Therapy Program, Cleveland State University, Dr. Paul Sung, 3-22-06
57. "Role of Robotics in Improving Upper Extremity Function in Stroke Patients." Grand Rounds, Rehabilitation Medicine, Cleveland Clinic, Dr. Fredrick Frost, 2-23-06
58. "Long-term Effects of Unilateral Pallidal vs. Subthalamic Nucleus Deep Brain Stimulation in Parkinson's disease." BME Spring 2006 Seminar Series, Case Western Reserve University, Dr. Patrick Crago, 2-9-06
59. "Long-term Effects of Thalamic and Pallidal Stimulation on Upper Extremity function of Advanced Parkinson's patients." Dept. of Physiology, Doings in Motor Control Seminar Series, University of Arizona, Tucson, AZ, Drs. Cindy Rankin and Becky Farley, 11-18-05
60. "Stimulating Evidence for Brain Surgery in Parkinson's disease patients," School of Applied Physiology Seminar, Georgia Institute of Technology, Atlanta, Dr. Young-Hui Chang, 5-5-05.
61. "The Impact of Deep Brain Stimulation on Manual Dexterity in Advanced Parkinson's disease patients." Grand Rounds, Department of Rehabilitation Medicine, School of Medicine, Emory University, Dr. William M. Jones, 4-15-05.
62. "Improving Motor Function in Parkinson's patients through Deep Brain Stimulation." Georgia Tech College of Sciences Advisory Board Meeting. College of Sciences Dean, Gary Schuster, 10-15-04.
63. "Force Control in Older Adults." Cognitive Aging Seminar Series, School of Psychology, Dr. Wendy Rogers, Georgia Institute of Technology, 9-8-04.
64. "Grasping Upper Extremity Function in Older Adults and Parkinson's disease patients." Biomedical Engineering Seminar Series, Lerner Research Institute, Cleveland Clinic, Dr. Peter Cavanagh, 4-13-04.
65. "The Effects of Unilateral Pallidal or Thalamic Stimulation on Bimanual Force Control in Advanced Parkinson's Disease Patients." Issues and Trends in Motor Behavior Conference, Dr. Diana Romeo and Dr. George E. Stelmach, 5-17-04.
66. "Grasping the Effects of Deep Brain Stimulation on Force Control in Parkinson's Patients." Cleveland FES Center, Case Western Reserve University, Dr. Dawn Taylor, 1-28-04.
67. "Impact of Exercise on Parkinsonian Motor Symptoms." APDA Atlanta Chapter, Barbara Forcier, 1-17-04.

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68. "Dual-task Performance in Older Adults: A New Perspective." Atlanta VA Rehab R & D Research Seminar, Dr. Ronald Schucard, 11-25-03.
69. "Getting a Grip on Dual-Task Performance in Older Adults." Ph.D Motor Control Seminar, Dr. George E. Stelmach, Department of Kinesiology, Arizona State University, 11-04-03.
70. "We can do better than Movement Time." EXCITE Stroke Seminar, Emory University, 10-12-03.
71. "A New Device to Facilitate Upper Extremity Rehabilitation for Stroke Patients." Grand Rounds, Dr. Dale Strasser, Department of Rehabilitation Medicine, School of Medicine, Emory University, 9-4-03.
72. "Getting a Grip on the Effects of Deep Brain Stimulation on Force Control in Parkinson's Disease Patients." McKnight Brain Institute Neuroscience Seminar, Dr. Michael Okun, Department of Neurology, University of Florida, 11-19-02
73. "Deep Brain Stimulation and Parkinson's Disease." Cognitive Aging Seminar Series, School of Psychology, Dr. Wendy Rogers, Georgia Institute of Technology, 2-6-02.
74. "Force Control Impairments in Older Adults During Manipulative Actions." Cognitive Aging Seminar Series, School of Psychology, Dr. Wendy Rogers, Georgia Institute of Technology, 4-11-01.
75. "Disruptions in the control of bimanual actions in Parkinson's disease patients." Neurodegenerative Disease & Basal Ganglia Seminar, Department of Neurology, Dr. Thomas Wichmann, Emory University, 2-8-01.
76. "Evidence of scaling during the production of asymmetrical bimanual forces." Society for Neuroscience, 2000 Meeting, New Orleans, LA, 11-9-00.
77. "Getting a Grip on Force Control Deficits in Older Adults and Parkinson's disease patients." Atlanta VA Rehab R&D, Motor Control Seminar, 10-25-00.
78. "New paradigms in the diagnosis and treatment of Parkinson's disease." ARCS Foundation (Achievement Rewards for College Scientists), Phoenix Chapter, 5-15-99.
79. "Obtaining outside funding for graduate education and research." Funding Opportunities for Graduate Students, Arizona State University Graduate College and Bianca Bernstein, Dean, Graduate College, 2-12-99
80. "The Effects of Parkinson's Disease on a Bimanual Manipulation Task." ARCS Foundation, Phoenix Chapter, 1-4-99.
81. "Parkinson's disease patients are impaired in predictive feedforward control." University of Texas, Dr. Waneen Spriduso, Behavioral Neuroscience Group, 10-30-98.
82. "The coordination of manipulative forces in Parkinson's patients." Doings in Motor Control Seminar, University of Arizona, Dr. Douglas Stuart, Department of Neurobiology, 1-12-98.

Conference Presentations:

- Society for Neuroscience, San Diego, CA (1995)
- Society for Neuroscience, Washington, D.C. (1996)
- Society for Neuroscience, New Orleans, LA (1997)
- Society for Neuroscience, Los Angeles, CA (1998)

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Society for Neuroscience, New Orleans, LA (2000)
Society for Neuroscience, San Diego, CA (2001)
Society for Neuroscience, Orlando, FL (2002)
Society for Neuroscience, New Orleans, LA (2003)
Society for Neuroscience, San Diego, CA (2004)
Society for Neuroscience, Washington, D.C. (2005)
Society for Neuroscience, Atlanta, (2006)
Society for Neuroscience, San Diego (2007)
Society for Neuroscience, Washington, D.C. (2008)
Society for Neuroscience, Washington, D.C. (2009)
Society for Neuroscience, San Diego (2010)
Society for Neuroscience, Washington, D.C. (2011)
Society for Neuroscience, New Orleans, (2012)
Society for Neuroscience, San Diego (2013)
American Society of Sports Medicine (2012 & 2013)
4th International Congress on Concussion, Zurich, (2012)
Gerontological Society of America (New Orleans), (2013)
World Congress on Parkinson's disease, Miami, FL (2009)
Biomedical Engineering Society (BMES), Los Angeles, (2007)
International Graphonomics Society, Scottsdale, AZ (2003)
International Congress of Movement Disorders and Parkinson's disease,
Vienna, Aus (1996)
International Congress of Movement Disorders and Parkinson's disease, New
York, NY (1998)
International Congress of Movement Disorders and Parkinson's disease,
Rome, Italy (2004)
International Congress of Movement Disorders and Parkinson's disease,
Chicago (2008)
International Congress of Movement Disorders and Parkinson's disease,
Paris (2009)
American Society of Biomechanics, Penn State, (2009)
American College of Sports Medicine, Indianapolis, (2008)
American College of Sports Medicine, Indianapolis, (2009)
American Academy of Neurology, San Francisco, CA (1996)
American Academy of Neurology, Boston, MA (1997)
American Academy of Neurology, Denver, CO (2002)
Robert S. Flinn Foundation, Biomedical Research Enrichment Initiative,
Tempe, AZ (1996)
*XIII*th International Symposium on Parkinson's Disease, London (1997)
North American Society for the Psychology of Sport and Physical Activity,
Denver, CO (1997)
AAPHPERD (1997)--Presented by R. Engelhorn

Patents:

Issued:

U.S. Patent 8,608,622, Systems and Methods for Improving Motor Function with Assisted Exercise, Issued: 12-17-13.

U.S. Patent 8,562,488, Systems and Methods for Improving Motor Function with Assisted Exercise, Issued: 10-22-13.

Pending:

US 13/510,683, System and Method for Motor and Cognitive Analysis

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US 13/644,371, System and Method to Facilitate Analysis of Brain Injuries and Disorders
PCT/US2012/58628, System and Method to Facilitate Analysis of Brain Injuries and Disorders
US 61/839,634 Balance Animation Features for i-COMET
Copyright "Cleveland Clinic Concussion App" software 3-7-12

Commercialization

MSPT application licensed to Biogen-Idec 12-31-14

Concussion Application licensed to Neurologix 2-1-15

Community Service and Media Coverage:

Pedaling for Parkinson's, Founder/President.

Aim of this non-profit program is to raise awareness and funds for Parkinson's disease research and support of caregiver respite programs. In the summers of 2003-2015, I rode a tandem bicycle with a Parkinson's patient across Iowa. To date, more than \$250,500 has been raised and donated to local chapters of the American Parkinson's Disease Association and other Parkinson's charitable organizations. Numerous print and broadcast reports were generated as a result of these rides; see

www.pedalingforparkinsons.org for NBC Nightly News, ABC World News Tonight and ABC Good Morning America clips. My lab was a "clue" on the game show *Jeopardy*.

Currently, 32 licensed, *Pedaling for Parkinson's* Community Exercise Programs at YMCA's across North America: Seattle, Michigan, Ohio, Iowa, Florida, New York

>100 Broadcast affiliates carried initiation of Cleveland Clinic NFL Players Assn.'s "The Trust" project.