

CURRICULUM VITAE

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A. EDUCATION

1994 B.Sc. Physiotherapy, College of Medicine, University of Lagos, Lagos, Nigeria
2006 Ph.D. Rehabilitation Science, University of Kansas Medical Center, Kansas City, KS
2015 Doctor of Physical Therapy (DPT), Alabama State University, Montgomery, AL
2016 Master of Business Administration, Louisiana State University – Shreveport, LA
2017 Credentialed Fellowship Graduate, Educational Leadership Institute, American Physical Therapy Association, Fairfax, VA.
2020 Master of Public Health-Global Health, Liberty University, Lynchburg, VA

B. FELLOWSHIP AWARDS

2020 Fellow of the American Heart Association/American Stroke Association
2020 Fellow of the Institute of Management Consultants - NG

C. LICENSURE/CERTIFICATION

Physical Therapist (License # 13170) - Colorado State Physical Therapy Board
Physiotherapist (Registration #0469) - Medical Rehabilitation Therapists (Registration) Board of Nigeria

D. POSITIONS AND HONORS

ACADEMIC APPOINTMENTS

2015-present Associate Professor (Tenured) & Chair, Department of Physical Therapy, Chapman University, Irvine, CA. (Duties: Provide visionary leadership to the academic unit, mentor faculty and students, teaching, research, service and academic advising. See Taught Courses below). As the Department Chair of the oldest Physical Therapy Education program in the country, I am responsible for, and supervise 19 full-time faculty, >65 Part-time faculty, 6 Administrative/Specialist Support staff, 240 students (the program matriculate 80 students per year).

2014-2015 Associate Professor & Director of Research, School of Physical Therapy, Touro University Nevada. (Duties: Mentored faculty in research, as part of an overall effort to boost the research profile of faculty, and lead/direct students' capstone research projects. Providing academic and clinical instruction, academic advising and research projects supervision to entry-level DPT students. Taught courses are listed below)

2011-2014 Associate Professor (Tenure-track), Department of Physical Therapy, Radford University, Roanoke, VA. (**Duties:** Providing academic and clinical instruction, academic advising and research projects supervision to entry-level DPT students. Taught courses are listed below).

2006-2011 Assistant Professor (Tenure-track), Department of Physical Therapy, Howard University, Washington, DC. (**Duties:** Providing academic and clinical instruction, academic advising and capstone projects supervision to entry-level MPT and DPT students. Taught courses are listed below).

- 2006-2011** Director, Motor Control and Neuromuscular Performance Laboratory, Department of Physical Therapy, Howard University, Washington, DC. (**Duties:** As Director, I was responsible for the successful take-off of this laboratory, the initiation and co-ordination of research projects in the area of Motor Control, neuromuscular performance and neuro-rehabilitation especially in stroke and other neurological populations. I also had the responsibility to spearhead grant writing to attract both internal and extramural funding for research projects to be conducted in the laboratory).
- 2005-2006** Graduate Research Assistant & Doctoral Candidate in Georgia Holland Cardiopulmonary & Neuromuscular Laboratory (**Mentors:** Wen Liu, PhD; Robert Gregory, PhD). **Duty:** Coordinating and directing Doctoral Dissertation Research and some other on-going research studies at the time, including:
 *Effects of Stroke, Gender and Age-associated changes on Sense of motor effort.
 *Effect of Stroke on sense of motor effort and weight-matching errors.
- 2004-2005** Graduate Research Assistant, Department of Mechanical Engineering, University of Kansas, Lawrence, KS. **Duty:** I scheduled acoustic neuroma participants and collected data while working as GRA on a National Institute on Deafness and Other Communication Disorders (NIDCD) small business/equipment grant that was focused on the development of systems to assess balance/vestibular function, and develop a new 3-D VOR (vestibular ocular reflex) testing equipment. At the time of study, only 2-D VOR systems were available.
- 2002-2005** Graduate Teaching Assistant, University of Kansas Medical Center, Kansas City, KS. (**Duty:** I assisted Faculty in didactic and laboratory instruction of MSPT and DPT entry level students - see 'Taught Courses' listed below).
- 2002-2005** Graduate Research Assistant, University of Kansas Medical Center, Kansas City, KS. (**Duty:** I participated in the design, data-collection, subject recruitment, manuscript and grant writing research efforts in various laboratories during doctoral training period. Specific research programs I participated in are listed under: RESEARCH EXPERIENCE AND SUPPORT DURING DOCTORAL TRAINING).
- 1996-2002** Associate Lecturer, Federal School of Physiotherapy, Bayero University, Kano, Nigeria. (**Duty:** Lecturing final year (400 level) and 300 level undergraduate Physical Therapy students as the Course Director/Instructor in taught courses (list below)
- 1996-2002** Internal Examiner in Physiotherapy, Federal School of Physiotherapy, Bayero University, Kano, Nigeria. (**Duty:** Preparing examination questions, grading schemes and grading of examination papers in taught courses).
- 1999-2002** B.Sc. Physiotherapy Dissertation Research Project Mentor, Federal School of Physiotherapy, Bayero University, Kano, Nigeria. (**Duty:** Supervision and mentoring of B.Sc. Research Dissertation of 400 level Physical Therapy Students).
- 1999-2002** Adjunct Lecturer, Post-Basic Orthopaedic School of Nursing, National Orthopaedic Hospital, Dala, Kano, Nigeria. (**Duty:** Lecturing students of the above named school on physiotherapy in rehabilitation and the role of nurses in physiotherapy rehabilitation services, and preparing examination questions).

PHYSICAL THERAPY CLINICAL WORK EXPERIENCE

- 1998-2002** Clinical Instructor, Federal School of Physiotherapy, Bayero University, Kano, Nigeria. (**Duty:** Taking 3rd year (300 level) undergraduate PT students of the Federal School of Physiotherapy, Bayero University, Kano, on teaching Clinical Instructions in Physiotherapy during Physiotherapy and Rehabilitation teams ward rounds).
- 1997-2002** Physical Therapist, National Orthopaedic Hospital, Dala, Kano (NOHDK), Nigeria. (**Duty:** Evaluating and treating musculoskeletal, orthopedics, neurological, pediatrics and other conditions referred to the hospital; I rotate at 4 months intervals between

out-patient and in-patient). NOHDK is a Federal Government of Nigerian owned Northern Nigeria Regional Center for Orthopedics, Burns and Spine Trauma Management.

1996-2002 Group Physical Therapist, Mos-Metro Hospitals, Kano, Nigeria.

(**Duty:** I was physical therapist to a group of privately owned hospitals, consulting at several clinics in the group, evaluating and treating various conditions; a standard Physiotherapy Dept. existed at the group's main hospital site).

1994-1995 Physical Therapy Intern, Murtala Mohammed Specialist Hospital, Kano, Nigeria.

(**Duty:** I went through rotations in Medicine, Surgery & Orthopedics, Pediatrics and Obstetrics and Gynecology for 12 months under the supervision/mentorship of licensed senior and experienced Physical Therapists).

1991-1994 Student Physical Therapist, Lagos University Teaching Hospital, Lagos, Nigeria.

POST-PROFESSIONAL COURSES ATTENDED

2001 **MANAGEMENT OF SPINAL CORD INJURIES.** A Workshop organized by the Nigeria Society of Physiotherapy, at the National Orthopedic Hospital, Igbobi, Lagos, Nigeria. 24th-25th May 2001.

2000 **MECHANICAL DIAGNOSIS AND THERAPY, PART B- THE CERVICAL & THORACIC SPINE.** Organized by the McKenzie Institute International at the Conference Center, University of Ibadan, Oyo State, Nigeria. 3rd - 5th May, 2000

1999 **MECHANICAL DIAGNOSIS AND THERAPY, PART A - THE LUMBAR SPINE.** Organized by the McKenzie Institute International at the Conference Center, University of Ibadan, Oyo State, Nigeria. 13th - 16th April 1999.

1998 **RESEARCH METHODS IN CLINICAL PRACTICE**
Organized by the Nigeria Society of Physiotherapy at the College of Medicine, University of Ibadan, Oyo State, Nigeria. 27th-29th April, 1998.

1995 **PHYSICAL TREATMENT OF THE HYPO-MOBILE KNEE.** A Workshop organized by the Nigeria Society of Physiotherapy, at the National Orthopedic Hospital, Dala, Kano, Nigeria. 2nd-5th August 1995.

CONFERENCES AND ONTINUING EDUCATION COURSES ATTENDED

1. APTA's Education Leadership Conference jointly hosted by ACAPT and Academy of Education, October 16-18, 2020 (held Virtually).
2. Annual NEXT Conference and Exposition of the American Physical Therapy Association, scheduled for Phoenix, AZ, June 3-6, 2020 (held Virtually).
3. Combined Sections Meeting of the American Physical Therapy Association held at the Colorado Convention Center, Denver, CO, February 12-15, 2020.
4. APTA's Education Leadership Conference jointly hosted by ACAPT and Academy of Education, held at the Hyatt Regency Hotel, Bellevue, WA, October 18-20, 2019.
5. CPTA Annual & Tri-State (AZ, CA and NV) Conference held at the South Point Hotel and Resort in Las Vegas, NV, October 10-13, 2019.
6. Annual NEXT Conference and Exposition of the American Physical Therapy Association, held at the Hilton Chicago, Chicago, IL, June 12-15, 2019.
7. World Confederation for Physical Therapy, World Congress, held in Geneva, Switzerland, May 10-13, 2019.
8. International Stroke Conference held at the Hawaii Convention Center, Honolulu, HI, TX, February 6-8, 2019.
9. Combined Sections Meeting of the American Physical Therapy Association held at the Walter E. Washington DC Convention Center, Washington, DC, January 23-26, 2019.
10. APTA's Education Leadership Conference jointly hosted by ACAPT and Academy of Education, held at the Hyatt Regency Jacksonville Riverfront Hotel, Jacksonville, FL, October 12-14, 2018.

11. CPTA Annual Conference held at the Santa Clara Convention Center, Santa Clara, CA, September 22-23, 2018.
12. Annual NEXT Conference and Exposition of the American Physical Therapy Association, held at the Orange County Convention Center, Orlando, FL, June 27-30, 2018.
13. Combined Sections Meeting of the American Physical Therapy Association held at the Morial Convention Center, New Orleans, LA, February 21-24, 2018.
14. APTA's Education Leadership Conference jointly hosted by ACAPT and Academy of Education, held at the Hyatt Regency Hotel, Columbus, OH, October 13-15, 2017.
15. CPTA Annual Conference held at the San Diego Convention Center, San Diego, CA, September 16-17, 2017.
16. Annual NEXT Conference and Exposition of the American Physical Therapy Association, held at the Convention Center, Boston, MA, June 21-24, 2017.
17. World Confederation for Physical Therapy, World Congress, held at Cape Town, South Africa, July 2-4, 2017.
18. International Stroke Conference held at the George R. Brown Convention Center, Houston, TX, February 22-24, 2017.
19. Combined Sections Meeting of the American Physical Therapy Association held at the Henry B. Gonzalez Convention Center, San Antonio, TX, February 14-18, 2017.
20. APTA's Education Leadership Conference jointly hosted by ACAPT and Academy of Education, held at Phoenix, AZ, October 7-9, 2016.
21. Annual NEXT Conference and Exposition of the American Physical Therapy Association, held at the Gaylord Opryland Resort & Convention Center, Nashville, TN, June 8-11, 2016.
22. Combined Sections Meeting of the American Physical Therapy Association held at the Anaheim Convention Center, Anaheim, CA, February 16-20, 2016.
23. 63rd Annual Meeting & 7th World Congress on Exercise is Medicine®, May 31-June 3, 2016, Boston Convention Center, Boston, MA.
24. International Stroke Conference held at Music City Convention Center, Nashville, TN, February 9-11, 2015.
25. Combined Sections Meeting of the American Physical Therapy Association held at the Indianapolis Convention Center, Indianapolis, IN, February 2-7, 2015.
26. Combined Sections Meeting of the American Physical Therapy Association held at the Venetian Las Vegas Hotel and Resort, Las Vegas, NV, February 1-6, 2014.
27. International Stroke Conference 2013 held at the Honolulu Convention Center, Honolulu, HI, February 4-8, 2013.
28. Primary Care for Stroke Patients: A Surfside View, a Pre-Conference Symposium held during the International Stroke Conference 2013 at the Honolulu Convention Center, Honolulu, HI, February 5, 2013.
29. Combined Sections Meeting of the American Physical Therapy Association held at the San Diego Convention Center, San Diego, CA, January 21-24, 2013.
30. Correlating Neuroanatomy with Patient Presentation and the Neurologic Exam, a Pre-Conference Workshop during the Combined Sections Meeting of the American Physical Therapy Association held at the San Diego Convention Center, San Diego, CA, January 21, 2013.
31. Innovative Clinical Practice in Stroke Rehabilitation, a Pre-Conference Symposium held during the International Stroke Conference at the New Orleans Convention Center, New Orleans, LA, January 31, 2012.
32. International Stroke Conference held at the New Orleans Convention Center, New Orleans, LA, January 31-February 3, 2012.
33. Annual Meeting of the Virginia Physical Therapy Association held at the Sheraton Hotel, Roanoke, VA, October 14-16, 2012.

34. PNF Approach to Gait Training, a Continuing Education Course (16.75 hours) at the Annual Meeting of the Virginia Physical Therapy Association held at the Sheraton Hotel, Roanoke, VA, October 14-16, 2012.
35. The 9th World Confederation for Physical Therapy, Africa Region Congress held at the Jomo Kenyatta International Conference Center, Nairobi, Kenya, June 6-9, 2012.
36. The 59th Annual Meeting of the American College of Sports Medicine and World Congress on Exercise is Medicine held in San Diego, CA, May 29-June 2, 2012.
37. The 8th World Confederation for Physical Therapy, Africa Region Congress held at the West African College of Surgeons Conference Center, Accra, Ghana, July 21-23, 2010.
38. The 57th Annual Meeting of the American College of Sports Medicine and World Congress on Exercise is Medicine held in Baltimore, MD, June 1-5, 2010.
39. The 7th World Confederation for Physical Therapy, Africa Region Congress held at the International Conference Center, Abuja, Nigeria, August 19-22, 2008.
40. The 55th Annual Meeting of the American College of Sports Medicine and World Congress on Exercise is Medicine held in Indianapolis, IN, May 28-31, 2008.
41. Control of Motor Units in the Regulation of Force. A Tutorial Lecture during the 55th Annual Meeting of the American College of Sports Medicine held in Indianapolis, Indiana, May 28-30, 2008.
42. Current Uses of Electromyography to Evaluate Neuromuscular Plasticity and Control of Movement. A Symposium during the 55th Annual Meeting of the American College of Sports Medicine held in Indianapolis, Indiana, May 28-30, 2008.
43. Musculoskeletal Ultrasound of the Foot, Ankle and Leg in Sports. Clinical Workshop-Hands On Demonstration during the 55th Annual Meeting of the American College of Sports Medicine held in Indianapolis, Indiana, May 28-30, 2008.
44. Head Injury. Clinical Case Slide Presentations during the 55th Annual Meeting of the American College of Sports Medicine held in Indianapolis, Indiana, May 28-30, 2008.
45. Research Misconduct: What Every Scholar Should Know. Tutorial Lecture during the 55th Annual Meeting of the American College of Sports Medicine held in Indianapolis, Indiana, May 28-30, 2008.
46. Variability and Coordination in Movement Disorders. Tutorial Lecture during the 55th Annual Meeting of the American College of Sports Medicine held in Indianapolis, Indiana, May 28-30, 2008.
47. Is Exercise Good for the Brain? Tutorial Lecture during the 55th Annual Meeting of the American College of Sports Medicine held in Indianapolis, Indiana, May 28-30, 2008.
48. PAD and Stroke Rehabilitation. Thematic Poster Presentations/Discussions during the 55th Annual Meeting of the American College of Sports Medicine held in Indianapolis, Indiana, May 28-30, 2008.
49. Therapeutic Modalities: An Evidence Based Approach. Continuing Education Seminar by Cross Country Education (Six CEU Credits). Venue: Four Points, 1910 Dual Highway, Hagerstown, MD 21740. 7.30am – 3.30pm, December 13th, 2007.
50. Moving Electrophysical Agents Forward in an Evidence-Based Practice Environment. A Focused Symposia during the 15th International Congress of the World Confederation for Physical Therapy held in Vancouver, British Columbia, Canada, June 2-9, 2007.
51. Synergy Between Neuroscience Research and Neurorehabilitation: Putting Knowledge Translation Into Practice. A Workshop presentation during the 15th International Congress of the World Confederation for Physical Therapy held in Vancouver, British Columbia, Canada, June 2-9, 2007.

CONTINUING EDUCATION COURSES ORGANIZED

2014 Pre-Conference Workshop titled '*Evidence-Based Stroke Rehabilitation*': I was the resource person invited by the WCPT Africa Region to organize this workshop at the 10th Biannual Conference of the WCPT Africa Region, Lusaka, Zambia, May 19-24, 2014.

2012 Continue Education Instructor/Resource person for the Virginia Physical Therapy Association (VPTA), Valley Chapter. I presented a lecture titled "*Virtual Reality and Robotics Aided Neurorehabilitation*" on January 10, 2012 during a VPTA-Valley Chapter Meeting held at the Jefferson College of Health Sciences, Roanoke, VA.

PROFESSIONAL MEMBERSHIPS

1994- Nigeria Society of Physiotherapy, Nigeria

2002-2006 International Society of Biomechanics

2003- American Academy of Neurologic Physical Therapy of the APTA

2003- American Heart/Stroke Association

2003- American College of Sports Medicine

2004-2007 American Society of Biomechanics

2007-2008 American Society of Hypertension

2020- American Public Health Association

SERVICES TO THE UNIVERSITY/COLLEGE/SCHOOL

Chapman University, Orange California

2020- Board member and Treasurer, Black Staff and Faculty Forum: The Chapman University Black Staff & Faculty Forum provides community and support for Black students, staff, and faculty through mutual collaboration with campus partners, alumni, and the greater Chapman and Orange County community.

2016-2017 Crean College Interdisciplinary PhD Committee: Duty: This committee headed by the Dean of the Crean College of Health and Behavioral Sciences is saddled with the responsibilities of exploring the possibility of commencing an Interdisciplinary PhD program with the college.

2016-2017 University Assessment Committee: Duty: This Faculty Senate Assessment Committee assesses annually the Student Learning Outcomes, and Program Goals and Outcomes of all academic programs of study at Chapman University. This annual review becomes bases of incremental database of data used in Regional Accreditation and Annual Reports of Chapman University.

2015- Member, Chapman University Diversity Project; Member, International Community Sub-Committee: Duty: This University wide effort to increase and engender diversity at Chapman University meets regularly to discuss and advise the Chancellor on best practices, policies and other measure that will increase student, staff, and faculty diversity.

2015- Faculty Review Committee: Duty: This Crean College committee reviews the portfolio of faculty members within the college for promotion and tenure. Committee's recommendation to advance or deny promotion and/or tenure is made to the Dean of the Crean College of Health and Behavioral Sciences.

2015- Chair, Department of Physical Therapy

Touro University Nevada, Henderson, Nevada

2014-2015 Member, Faculty Promotion Committee of the College of Health and Human Services: Duty: The committee reviews the profile of faculty due for promotion, and recommend to the Dean their assessment. Committee also advises the Dean on faculty promotion criteria.

Radford University, Roanoke Campus, VA

- 2013-2014** Member, Institutional Review Board. **Duty:** This Board meets once a month to review research protocols submitted for approval for human or animal research. Member review applications, give comments, and make recommendation to improvements, approvals or denials.
- 2013-2014** Member, Radford University Faculty Senate: **Duty:** The Faculty senate meets every fortnight to deliberate on issues bothering on academic policies and procedures which affects governance, and other affairs of Radford University. I am also a member of the Curriculum Sub-Committee of the Faculty Senate which also meets every fortnight.
- 2012-2014** Member, Waldron College Interdisciplinary (IPE) Symposium Committee. **Duty:** This committee organizes problem-based interdisciplinary symposia every semester which brings together all disciplines within the College to problem solve a presented case study. This has engendered Interprofessional education, and collaborative atmosphere within the College disciplines.
- 2011-2014** Chair, Curriculum Committee, DPT Program. **Duty:** This Committee is responsible for ensuring that the program's curriculum best serve entry-level physical therapy students, and is in compliance with CAPTE requirements.
- 2011-2014** Member, Student Selection Committee. **Duty:** This committee sets admission criteria, review DPT students' applications for admission, organize interviews, and make decisions on admissions into the DPT program.
- 2011-2014** Personnel Committee. **Duty:** This committee sets Departmental policies and criteria for promotion, and tenure in line with University policies; perform annual review of faculty, and recommend non-tenured track faculty for contract renewal or otherwise.
- 2011-2012** Vice-Chair, Waldron College of Health and Human Services Dean Search Committee. **Duty:** The search committee conducted a successful search for a new Dean of the Waldron College. The Provost appointed the new Dean in June 2012.

Howard University, Washington DC

- 2010-2011** Research Day Planning Committee. **Duty:** The Committee's duty was to plan and schedule a day each year dedicated to celebrating faculty, staff and students' research works within the Howard University's Health Sciences Enterprise. The Associate Vice-President for Research and Faculty Development, Howard University Health Sciences heads the Committee.
- 2006-2011** Admissions Committee, Department of Physical Therapy, Howard University, Washington DC. **Duty:** Identify potential MPT/DPT students from applicant pool
- 2009-2011** Seed Grant Review Committee, Howard Health Sciences Enterprise. **Duty:** I participated in reviewing grant applications for a maximum of \$25,000.00 Seed Grant funding submitted by Faculty and staff of Howard University's Colleges of Medicine, Dentistry, Pharmacy, Nursing and Allied Health Sciences.
- 2009-2011** Chair, Research Committee, Department of Physical Therapy, Howard University, Washington DC. **Duty:** The Research Committee was saddled with the responsibility of leading and assisting Faculty in establishing their individual research agenda based on areas of expertise. It was envisioned that Faculty research and scholarly productivity should improve considerably.
- 2007-2009** Division of Allied Health Sciences Website Ad-Hoc Committee, Howard University, Washington, DC. **Duty:** In the absence of a Division's webmaster, the committee was charged with the responsibility to advise the Associate Dean, on how to help revamp and redesign the out-dated Division of Allied Health Sciences website to meet current trends and standards. I made a proposal and a PowerPoint presentation to the Dean, and Associate Deans on how to revamp website for the whole College and the three

Schools/Divisions. A College webmaster was finally employed in Spring 2009 who implemented all our recommendations.

2007-2009 Health Sciences Library Committee, Howard University, Washington DC. **Duty:** The Louis Stokes Health Sciences Library (LSHSL) Advisory Committee advises the Executive Director on any matter pertaining to LSHSL policies or practices and recommends improvements to LSHSL services or resources on behalf of LSHSL users.

2006-2011 Curriculum Committee, Department of Physical Therapy, Howard University, Washington DC. **Duty:** Committee reviews HUPT program curriculum at intervals to ensure CAPTE compliance as well as suggests and implement improvements in the curriculum. I successfully moved that Clinical Skills in PT be separated into two different courses; Tests and Measurements in PT, and Introduction to Physical Agents in PT. This curriculum changes were implemented starting Fall, 2009.

University of Kansas Medical Center

2002-2006 Graduate School International Affairs Committee (IAC), University of Kansas Medical Center (KUMC), Kansas City, KS. **Duty:** The IAC meets once a month, identifies international academic and cultural collaboration opportunities for KUMC, and advises the Vice-Chancellor for Academic Affairs who is also Dean of the Graduate School and in charge of International Programs.

LEADERSHIP, SERVICES TO PROFESSIONAL ASSOCIATIONS, HONORS & AWARDS

2020 **Co-Chair, Scientific Committee** for the WCPT Africa Region Conference, Cotonou, Benin Republic, scheduled to hold July 10-13, 2020. (NB: Postponed till 2021 due to COVID-19 Pandemic).

2019 **Early-Career Achievement in Health Professions Alumnus Award recipient:** Alumnus Award by the University of Kansas Medical Center

2018- **Secretary, American Council for Academic Physical Therapy (ACAPT):** As Secretary of ACAPT, I am on the Board of Directors, and member of the ACAPT's Executive Committee. ACAPT represents all accredited Physical Therapy education programs in the United States.

2013 **Most Outstanding Nigerian Physiotherapist in the Diaspora of the year 2013:** Award by the Nigeria Society of Physiotherapy to recognize meritorious service to the profession worldwide, and especially in Nigeria and Africa; and also for bringing DPT back home to Nigerian based physiotherapists through distance education arrangements brokered with the University of Michigan-Flint.

2013-2014 **Secretary,** Nigeria DPT Curriculum Design Committee. Nigeria Society of Physiotherapy, Nigeria.

2012 **WCPT Africa Region Service Award:** Awarded for selfless service to the WCPT Africa Region, and the profession as Regional Webmaster, and online Technical Support for conferences and abstract management.

2011-2014 **Chair,** Stroke Interest Group of the Neurology Section, American Physical Therapy Association.

2010 **Alumni Merit Award:** Awarded by the Department of Physiotherapy, College of Medicine, University of Lagos for meritorious service to the profession.

2010- **Webmaster,** Africa Association of Physiotherapy Students (www.aapts.org)

2010-2017 **Member, and Co-Chair,** Telecommunications Committee, Neurology Section of American Physical Therapy Association. **Duty:** The Telecommunications Committee is responsible for maintaining and updating the website of the Neurology Section, www.neuropt.org. I was assigned certain pages of the website to keep currently updated.

2010 Listed in Marquis Who is Who in America 2011 Edition.

- 2009- Webmaster**, Nigeria Society of Physiotherapy (www.nigeriaphysio.org)
- 2009- Webmaster**, Journal of Nigeria Society of Physiotherapy (www.jnsp.org)
- 2009 "The Dr. E.B. John Department of Medical Rehabilitation Library"**. The Departmental Library of the Physical Therapy Program at the Nnamdi Azikiwe University, Nnewi, Nigeria was named in my honor: This was in recognition of the fact that I arranged shipment of free textbooks, Journals, and some physical therapy equipment from the United States to the University's new Physical Therapy Program. I currently co-ordinate a '[Giving-Back Program](#)' under the auspices of the Nigeria Physiotherapy Network to help support Physical Therapy programs in Nigeria.
- 2007- Webmaster**, World Confederation for Physical Therapy – Africa Region (www.wcptafrica.org)
- 2006- Webmaster**, Nigerian Journal of Medical Rehabilitation (www.njmr.org.ng)
- 2003- Webmaster**, Nigerian Association of Physiotherapy Students (www.nigaps.org)
- 2002-2006 Graduate Tuition Support**, University of Kansas Medical Center.
- 2002- Executive Editor/Director**, [Nigeria Physiotherapy Network](http://www.nigeriaphysio.net) (www.nigeriaphysio.net)
- 2000-2002 Pioneer Editor**, National PhysioNEWS, the Official Newsletter of the Nigeria Society of Physiotherapy
- 2000-2002 National Assistant Secretary General**, Nigeria Society of Physiotherapy.
- 1999-2002 General Secretary**, Nigeria Society of Physiotherapy, Kano State Chapter.
- 1992-1994 National President**, Nigerian Association of Physiotherapy Students
- 1991-1992 Sports Secretary**, Nigerian Association of Physiotherapy Students

MEMBERSHIP OF ACADEMIC JOURNALS EDITORIAL BOARD

- 2009-** Member, Editorial Board of the Journal of Nigeria Society of Physiotherapy
- 2007-** Member, Editorial Board of the Nigerian Journal of Medical Rehabilitation
- 2007-** Member, Editorial Board of the Journal of Medical Rehabilitation, Nigeria

MANUSCRIPT REVIEWER EXPERIENCE

- 2021-** Journal of Social Science & Medicine - Population Health
- 2021-** International Journal of Health Planning & Management
- 2013-** European Journal of Physiotherapy
- 2013-** Journal of Physical Therapy Education
- 2013-** Gait & Posture Journal
- 2010-** Conference Abstracts Reviewer, World Confederation for Physical Therapy – Africa Region
- 2009-** Journal of Nigeria Society of Physiotherapy (www.jnsp.org).
- 2009-** Conference Abstracts Reviewer, Nigeria Society of Physiotherapy, Nigeria.
- 2007-2016** Journal of Rehabilitation Research & Development, Veterans Affairs Administration.
- 2007-2010** Journal of Medical Rehabilitation, Nigeria (www.jmedrehab.org)
- 2006-** African Journal of Health Sciences, Kenya, East Africa (www.ajhsjournal.or.ke)
- 2006-** Nigerian Journal of Medical Rehabilitation (www.njmr.org.ng)

CURRICULUM DEVELOPMENT AND ASSESSMENT EXPERIENCE

- 2017-** Curriculum Renewal of Chapman University DPT Program: I initiated and led a curriculum renewal of the Doctor of physical Therapy program. Potentially, could lead to cutting program length and total credit units required for graduation.
- 2011** UMFlint-Nigeria tDPT Program Curriculum Design: I worked with Drs. Cindy Pfalzer and Donna Fry of the University of Michigan-Flint to design a customized transitional DPT program for Nigeria based physical therapists. The UMFlint-Nigeria tDPT program accepted its first cohort in Fall of 2011, and graduated the first cohort in May 2013.

- 2011** Chair, Anatomy Ad-Hoc Committee. The summer anatomy course for the DPT program with another institution fell through. As chair of the Curriculum Committee, I set up and headed a 3-person Anatomy Ad-hoc Committee to design a new anatomy course, brought it in-house, and have it taught by Physical Therapy Faculty.
- 2010-2011** Transitional DPT Curriculum Design Committee, Howard University DPT Program. This committee was mandated to design a transitional DPT curriculum as a bridge program, specifically designed for graduates of Howard University MPT and BSPT program to obtain a post-professional DPT program.
- 2008** Member, Physical Therapy Program Accreditation Site Visit Panel to the Department of Medical Rehabilitation, Faculty of Health Sciences and Technology, Nnamdi Azikiwe University, Nnewi, Nigeria. I was invited on this accreditation site visit by the Medical Rehabilitation Therapists (Registration) Board of Nigeria (MRTRB). The MRTRB is the Federal Government of Nigeria's regulatory Body for Physical Therapy Education and Practice. United States equivalence of the MRTRB is the CAPTE.
- 2008** Howard University CAPTE Site Visit Committee. Along with other Faculty, I was actively involved in program and University preparation for the CAPTE site visit to Howard University's PT program. The PT program received continuing full accreditation from CAPTE in 2010.
- 2003** Curriculum Development Consultant (*Pro bono* service) for Jimma University, Ethiopia, East-Africa. **Duty:** I development of a 4-year BS in Physical Therapy curriculum. The curriculum was approved for implementation by the University in 2004.

COMMUNITY SERVICE EXPERIENCES, HONORS and AWARDS

- 2005** I presented a talk to the Acoustic Neuroma Support Group of Kansas City titled "*Development of a new 3-D Device to track Eye and Head Motion in Vestibular Problems*" at St. Joseph Health Center, Kansas City, MO.
- 2003** I taught 3rd Graders "Vital signs"- JS Chick Elementary School, Kansas City, MO
- 2002** I taught 5th Graders "The Musculoskeletal System" at Banneker Elementary School, Kansas City, KS
- 1993** Rotary Youth Leadership Award (RYLA)
- 1992-1993** **President**, Rotaract Club of Medilag, University of Lagos
- 1991-1992** **Club Service Director**, Rotaract Club of Medilag, University of Lagos
- 1986-1987** **President**, Science Club of Ansar-ud-Deen College, Isolo, Lagos, Nigeria

E. PEER-REVIEWED PUBLICATIONS

1. Harper B, Aron A, **John E**. The role of pre-season health characteristics as injury risk factors in female adolescent soccer players. [*The Journal of Physical Therapy Science* 2021; 33: 439-443.](#)
2. Agho AO, **John EB**. Occupational Therapy and Physiotherapy Education and Workforce in Anglophone Sub-Saharan Africa Countries. [*Human Resources for Health*. 2017;15:37. doi:10.1186/s12960-017-0212-5.](#)
3. Barfield JP, Newsome L, **John EB**, Sallee D, Frames C, Soangra R, Malone LA: A case report of shoulder fatigue imbalance in wheelchair rugby: implications to pain and injury. [*Spinal Cord Series And Cases* 2016, 2:16002.](#)
4. Chesbro SB, Asongwed E, Haile N, **John EB** (2013). Reliability of Ankle-Brachial Index (ABI) Measurements: A Comparison of Standard and Vascular Blood Pressure Cuffs'. [*Topics in Geriatric Rehabilitation* 2013; 29\(4\):195-202.](#)
5. **John EB**, Pfalzer CA, Fry D, Glickman L, Masaaki S, Sabus C, Okafor UAC, Al-Jarrah M. Establishing and Upgrading Physical Therapist Education in Developing Countries: Four case examples of service by Japan and United States PT Programs to Nigeria, Suriname, Mongolia, and Jordan. [*Journal of Physical Therapy Education* 2012; 26\(1\):29-39](#)

6. Chesbro SB, Asongwed E, Brown J, **John EB**. Reliability of Doppler and stethoscope methods of determining systolic blood pressures: Considerations for calculating an ankle-brachial index. [*Journal of the National Medical Association* 2011; 103:863-869.](#)
7. **John EB**, Liu W, Gregory RW. Biomechanics of Muscular Effort: Age Related Changes. [*Medicine & Science in Sports & Exercise* 2009; 41\(2\):418-25.](#)

F. MANUSCRIPTS IN PREPARATION

1. Gregory RW, **John EB**, Liu W. Biomechanics of muscular effort: Part I: measurement validity and reliability. (Manuscript in preparation for *Medicine & Sciences in Sports and Exercise*).
2. Liu W, Gregory RW, **John EB**. Biomechanics of muscular effort: Part II: applications. (Manuscript in preparation for *Medicine & Sciences in Sports and Exercise*)

G. PEER-REVIEWED PUBLISHED ABSTRACTS

1. Xu, P., Haik, D., Jiang, P., Brevik, A., Peta, A., Okhunov, Z., Soangra R, **John, E.**, Clayman, R. (2021). Pd58-11 Beyond Efficiency: Surface Electromyography Enables Further Insights into the Quality of Surgical Movement of Expert Urologists. *Journal of Urology*, 206(Supplement 3). doi:[10.1097/ju.0000000000002092.11](#).
2. Scott W, Tan V, Hoang D, DeGuia J, Kim C, Lee E, Oakes L, Phu D, Yamasaki K, Soangra R, **John E**. Evaluating Driving Performance during Texting using Driving Simulator. Presented at the [Biomedical Engineering Society \(BMES\) 2020 Virtual Meeting, October 14-17, 2020](#).
3. **John EB**, Akanle OT, Useh U, Amosun SL. Challenges of Regulating the Scope of Practice of Physiotherapists in Africa when multiple Entry-Level Education Co-exist. Plenary Session Presentation at the 2017 Conference of the International Network of Physiotherapy Regulatory Authorities, Cape Town, South Africa, June 30-July 1, 2017. [INPTA 2017 Proceedings](#).
4. Haase G, **John EB**, Distad S, Lane M, Petlicki SE, Yokubison J. Integrated Clinical Experience: Does it Enhance Clinical Affiliation Confidence and Performance? [Conference Proceedings of the Combined Sections Meeting of the American Physical Therapy Association, February 15-18, 2017, p98](#).
5. Newsome LJ, Barfield JP, Sallee DN, **John EB**, Malone LA. Accelerometry and Muscle Fatigue in Elite Paralympic Athletes. [*Medicine & Science in Sports & Exercise* 2016 May;48\(5 Supplement 1\):847.](#) doi: 10.1249/01. **John EB** mss.0000487537.98556.07.
6. Barfield J, Newsome L, **John E**, Sallee D, Malone L. EMG assessment of muscle fatigue in elite paralympic athletes. [*Medicine & Science in Sports & Exercise* 2015, 47:5S:419.](#)
7. **John EB**, Okafor UC, Creps J, Fry D, Pfalzer L (2015). UMFlint-Nigeria Distance Transition DPT Collaboration – Changing Physical Therapists Education and Practice in a Resource Limited Country. [*Physiotherapy* 2015, 101 \(S1\).](#)
8. **John EB**, Frames C, Soangra R, Gregory RW (2014). Perceptions Of Motor Effort Is Not Dependent On Muscle Mass Or Extremity. [*Medicine & Science in Sports & Exercise* 2014, 46:5 \(Supplement 1\):s688.](#)
9. Lee J, LaPorte C, Chesbro SB, **John EB** (2014). Use of a measurement-based formula to determine desired tension in therapeutic taping: Developing a reliable process. *Physical Therapy*. Retrieved on June 13, 2014 from: <http://apps.apta.org/custom/abstracts/next2014/1078.html>.
10. **John EB**, Gaskell DJ, Herbertson RK. Effects of time to Physical Therapy Order on Length of Stay and Discharge NIH Stroke Scale Scores in an Acute Stroke Unit. [*Circulation: Cardiovascular Quality and Outcomes*, 2013;6:A100.](#)
11. **John EB**. Concurrent Validation of a Clinical Differential Diagnosis Algorithm for Poliomyelitis and Injection Palsy using Referring Physician's Medical Diagnosis. [*Physiotherapy* 2011;97\(S1\).](#)

12. Okafor UAC, **John EB** (2011). Clinical Residency Program versus Transitional DPT: Immediate Preference of Nigerian Physiotherapists for a Pathway to Post-Graduate Physiotherapy Clinical Training. *Physiotherapy 97:Supplement S1:eS560-eS561*. Available online at: [WCPT2011a Abstracts Archives](#).
13. Bond V, Blakely R, **John EB** (2011). Restricted Blood Flow Exercise on Vascular Function in African Americans With and Without Parental Hypertension. *Medicine & Science in Sports & Exercise 2011, 43:5; 647*.
14. Asongwed E, Chesbro S, **John EB** (2011). The Saving Leg Project (TSLP): Web-based instruction on Peripheral Arterial Disease and use of the Ankle Brachial Index. *Physical Therapy*. Accessible online at: [PT2011 Abstract Link](#)
15. Ling X, Reicherter A, **John E** (2010). The Translation and Use of The Profile of Chronic Pain (PCP:S) to Assess the Impact of Pain on the Lives of Chinese Older Adults Residing in the United States: A Pilot Study. *Physical Therapy*. [PT2010 Abstract Link](#)
16. **John EB**, Liu W, Gregory RW. Effects of Age and Joint Kinematics on Perception of Effort. *Medicine & Science in Sports & Exercise 2009, 41:5 (Supplement);S168*.
17. Haile N, Asongwe E, Chesbro S, **John EB** (2009). Reliability of ABI Measurements: A Comparison of Vascular and Standard Blood Pressure Cuffs. *Physical Therapy*. Accessible online at: [PT2009a Abstract Link](#)
18. Sanusi M, Green RA, **John EB**, Tavakol K (2009). A Comparison of the Rate of Utilization of Physical Therapy among Nigerians and African Americans in Washington, DC. *Physical Therapy Abstracts*. Accessible Online at: [PT2009b Abstract Link](#)
19. **John EB**, Popoola AO, Allen AA. Eight-Days Isometric Exercise Training Lowers Blood Pressure in Normotensive Subjects. *Journal of Clinical Hypertension 2008, 10:5 (Supplement A):A59*.
20. Brown JN, Asongwed ET, Chesbro SB, **John EB**. Inter-rater and intra-rater reliability of ankle-brachial index measurements using stethoscope and Doppler. *Physical Therapy 2008*. Available online at: http://apps.apta.org/Custom/abstracts/pt2008/abstractsPt.cfm?m_id=17314
21. **John EB**, Mukherjee M, Kim SH, Liu W, Gregory RW. A Quantitative Method for Assessing Stroke-impaired Sense of Motor Effort: A Preliminary Study. *Medicine & Science in Sports & Exercise 2008, 40:5 (Supplement);S318*.
22. Gregory RW, **John EB**, Liu W. Biomechanical Measures of Muscular Effort: Validity and Reliability. *Medicine & Science in Sports & Exercise 2007; 39:5 (Supplement), S256*.
23. **John EB**. Injection Palsy: A true 25-years (1968-1993) endemic rate of a usually misdiagnosed acute flaccid paralytic condition in a Lagos University Teaching Hospital. *Physiotherapy 2007; 93 (Suppl 1):S773*.
24. **John EB**, Liu W, Gregory RW. Effects of Age and Joint Kinematics on Perception of Effort. *American Society of Biomechanics Conference Proceedings 2006. Blacksburg, VA*
25. **John EB**, Santos M, Larson J, Bouckhout V, Jernigan S, Kapros I, Gobert D. Effect of Resistance Exercise Training on Resting Blood Pressure of Chronic Stroke Survivors. *Stroke 2005; 36 (2): A519*.
26. Gobert D, Santos M, Bouckhout V, Jernigan S, Kapos I, **John E**. AN 8-week exercise program leads to decreased risk factors for secondary stroke in chronic stroke survivors. *Journal of Aging and Physical Activity; 12(3) October 2004*.
27. **John EB**, Gajewski B, Gobert D, Bouckhout V, Billinger SA, Cho JK. Cardiovascular Response of Chronic Stroke Survivors to an Aerobic Exercise Training Program. *Medicine & Science in Sports & Exercise 2003; 35(Supplement):S195*

H. **NON-PEER-REVIEWED PUBLICATIONS**

1. **John EB**, Okafor UAC (2011). Interest of Nigerian PTs to enroll in University of Michigan-Flint online post-professional programs: a Nigeria physiotherapy network survey. Available online: <http://www.nigeriaphysio.net/umf-tdpt-survey>.

I. INVITED KEYNOTE PRESENTATIONS AND GUEST LECTURES

1. John EB. A Vision for Nigeria's Doctor of Physical Therapy Program. A Keynote Address to the Nigeria DPT Entry-Level Program Stakeholders Conference, hosted by the Medical Rehabilitation Therapists (Registration) Board of Nigeria, at the Conference Center of the Nigerian Institute of Medical Research, Yaba, Lagos, Nigeria, July 4-5, 2018.
2. **John EB.** [Medical Rehabilitation Services in Community and Primary Health Care in Nigeria and Sub-Sahara Africa](#). Invited keynote Address to the International Conference of medical Rehabilitation Professional, hosted by the Medical Rehabilitation Therapists (Registration) Board of Nigeria, Lagos Airport Hotel, Ikeja, Lagos State, Nigeria, September 20th, 2017.
3. **John EB.** "Genetically Modified" Patient Interventions: Implication for Training Health Care Professionals of the Future. Invited (Maiden) Guest Lecture Presentation at the University of Benin, Benin City, Edo State, Nigeria, March 28th, 2017.

J. SCHOLARLY PRESENTATIONS

1. **John EB.** [From Advocacy to Action against Non Communicable Diseases Through Physiotherapist Education](#). An Invited Keynote Address presented to the 10th WCPT Africa Region Congress held in Lusaka, Zambia, May 19-24, 2014.
2. **John EB,** Gaskell DJ, Herbertson RK. Effects of time to Physical Therapy Order on Length of Stay and Discharge NIH Stroke Scale Scores in an Acute Stroke Unit. Paper accepted for Poster presentation at the [Quality of Care and Outcomes Research in Cardiovascular Disease and Stroke 2013](#) Scientific Sessions, American Heart/Stroke Association, Washington, DC, May 15, 2013.
3. Harper B, Jagger J, Castleberry J, Siyufy A, Aron A, Huth R, Swanson E, **John E.** Developing an Autonomous Entry-Level Doctor of Physical Therapy Practitioner: The Science and Art of a Clinical Education Program. Paper presented at the Conference on Higher Education Pedagogy, Virginia Tech, Blacksburg, VA, February 6-8, 2013.
4. Chesbro S, Polk C, Stephens J, Thomas P, **John E.** Effect of Time and Use of Pictographs on Exercise Performance in Adults Aged 50 Years and Older. Paper accepted for Poster presentation during the [Combined Sections Meeting 2013 of the American Physical Therapy Association, San Diego, CA, January 21 - 24, 2013](#).
5. Asongwed E, Chesbro S, **John EB.** Effect of an online education program on clinicians' knowledge about peripheral arterial disease and the ankle-brachial index: Considerations for health disparity reduction in Washington, DC. Paper accepted for Poster Presentation during the National Institutes of Health's 2012 Science of Eliminating Health Disparities Summit, October 31-November 3, 2012.
6. **John EB.** Establishing and Upgrading African Physiotherapy Education through Collaborative Partnerships with Resource Rich Countries. Plenary Session presentation during the 9th Biennial Conference of the World Confederation for Physical Therapy, Africa Region, Nairobi, Kenya, June 6-9, 2012.
7. Julia C, Harper B, Huth R, Jagger K, **John E,** Siyufy A, Swanson E. An Integrated Doctor of Physical Therapy Curriculum: Fulfilling a Growing Community Need. Conference on Higher Education Pedagogy, Virginia Tech, Blacksburg, VA, February 8-10, 2012.
8. **John EB.** Concurrent Validation of a Clinical Differential Diagnosis Algorithm for Poliomyelitis and Injection Palsy using Referring Physician's Medical Diagnosis. A Poster Presentation scheduled for 16th World Congress of the World Confederation for Physical Therapy, Amsterdam, Netherlands, June 20-23, 2011.
9. Okafor UAC, **John EB.** Clinical Residency Program versus Transitional DPT: Immediate Preference of Nigerian Physiotherapists for a Pathway to Post-Graduate Physiotherapy Clinical Training. A Poster Presentation scheduled for 16th World Congress of the World Confederation for Physical Therapy, Amsterdam, Netherlands, June 20-23, 2011.

10. Asongwed E, Chesbro S, **John EB**. The Saving Leg Project (TSLP): Web-based instruction on Peripheral Arterial Disease and use of the Ankle Brachial Index. A Technology Poster Presentation scheduled for 2011 Annual General Meeting of the American Physical Therapy Association, National Harbor, MD, June 8-11, 2011.
11. Bond V, Blakely R, **John EB**. Restricted Blood Flow Exercise on Vascular Function in African Americans With and Without Parental Hypertension. Slide/Platform presentation scheduled for the 58th Annual meeting of the American College of Sports Medicine, Denver, CO. May 31-June 4, 2011.
12. **John EB**, Okafor UAC. Clinical Residency Program versus Transitional DPT: Immediate Preference of Nigerian Physiotherapists for a Pathway to Post-Graduate Physiotherapy Clinical Training. A platform presentation during the 50th Annual Scientific Conference and Annual General Meeting of the Nigeria Society of Physiotherapy, Enugu, Enugu State, Nigeria, October 27-30th, 2010
13. **John EB**. Moving Physiotherapy Forward in Africa: International Long-Distance Education Collaborations Using Latest Information Technologies. A Plenary session presentation during the 8th Biannual Conference of the World Confederation for Physical Therapy, Africa Region, Accra, Ghana, July 21-23, 2010.
14. **John EB**. Formation of African Association of Academic Physiotherapists. A Plenary session presentation during the 8th Biannual Conference of the World Confederation for Physical Therapy, Africa Region, Accra, Ghana, July 21-23, 2010.
15. **John EB**. A Clinical Differential Diagnosis Algorithm for Poliomyelitis and Injection Palsy. A platform presentation during the 8th Biannual Conference of the World Confederation for Physical Therapy, Africa Region, Accra, Ghana, July 21-23, 2010.
16. Haile N, Asongwe E, Chesbro S, **John EB**. Reliability of ABI Measurements: A Comparison of Vascular and Standard Blood Pressure Cuffs. Poster presentation at annual meeting of the American Physical Therapy Association, June 10-13, 2009, Baltimore, MD.
17. Sanusi M, Green RA, **John EB**, Tavakol K. A Comparison of the Rate of Utilization of Physical Therapy Among Nigerians and African America in Washington, DC. (Member, MPT Capstone Committee). Poster presentation at annual meeting of the American Physical Therapy Association, June 10-13, 2009, Baltimore, MD.
18. **John EB**, Liu W, Gregory RW. Effects of Age and Joint Kinematics on Perception of Effort. Slide/Platform presentation scheduled for the 56th Annual meeting of the American College of Sports Medicine, Seattle, WA. May 27-30, 2009.
19. **John EB**, Mukherjee M, Kim SH, Liu W, Gregory RW. A Quantitative Method for Assessing Stroke-impaired Sense of Motor Effort: A Preliminary Study. Poster presentation at the 7th Biannual meeting of the World Confederation for Physical Therapy – Africa Region, International Conference Center, Abuja, Nigeria, August 18-22, 2008.
20. Brown JN, Asongwed ET, Chesbro SB, **John EB**. Inter-rater and intra-rater reliability of ankle-brachial index measurements using stethoscope and Doppler. Poster presentation at annual meeting of the American Physical Therapy Association, June 11-14, 2008, San Antonio, TX.
21. **John EB**, Mukherjee M, Kim SH, Liu W, Gregory RW. A Quantitative Method for Assessing Stroke-impaired Sense of Motor Effort: A Preliminary Study. Poster presentation at the 55th Annual meeting of the American College of Sports Medicine, Indianapolis, IN. May 28-31, 2008.
22. **John EB**. Injection Palsy: A true 25-years (1968-1993) endemic rate of a usually misdiagnosed acute flaccid paralytic condition in a Lagos University Teaching Hospital. Special Interest Group platform presentation at the 15th World Congress of the World Confederation for Physical Therapy, Vancouver, British Columbia, Canada, June 2nd-7th 2007.

23. Gregory RW, **John EB**, Liu W. Biomechanical Measures of Muscular Effort: Validity and Reliability. Poster Presentation at the 54th Annual Meeting of the American College of Sports Medicine, New Orleans, Louisiana, May 31st- June 2nd, 2007.
24. Gregory RW, **John EB**, Liu W. Gender-Related Differences in Muscular Effort. Platform Presentation at the 2007 Northeast American Society of Biomechanics conference, University of Maryland (College Park, MD), March 30-31, 2007.
25. **John EB**, Liu W, Gregory RW. Age-Related Changes in Muscular Effort. Abstract presented at the 30th American Society of Biomechanics Conference, in Blacksburg, VA, Sept. 6-9, 2006.
26. **John EB**, Santos M, Larson J, Bouckhout V, Jernigan S, Kapros I, Gobert D. Effect of Resistance Exercise Training on Resting Blood Pressure of Chronic Stroke Survivors. *Journal of Stroke*. Poster Presentation at the 30th International Stroke Conference, New Orleans, Louisiana, February 2-4, 2005.
27. Gobert D, Santos M, Bouckhout V, Jernigan S, Kapros I, **John E**. An 8-week exercise program leads to decreased risk factors for secondary stroke in chronic stroke survivors. Oral Presentation at 6th World Congress on Aging and Physical Activity, Ontario, Canada, August 3-7th 2004.
28. **John EB**, Santos M, Larson J, Bouckhout V, Jernigan S, Kapros I, Gobert D. Cardiovascular Response of Chronic Stroke Survivors to a Resistance Exercise Training Program. *Poster Presentation at the 29th International Stroke Conference, San Diego, CA, February 4-7, 2004.*
29. Bouckhout V, Gobert DV, Jernigan S, Kapros I, Santos M, **John E**, Guillory A. Does total body reciprocal training improve functional body symmetry in persons with hemiparesis? Award Winning *Oral Presentation at the Central States ACSM Meeting, October 12th-13th, 2003, Kansas City, MO*
30. Gobert DV, Bouckhout V, Jernigan S, Kapros, I, Santos M, **John E**. Guillory A. Effects of Total Body Reciprocal Training on Ambulation Skills in Persons with Hemiparesis. Oral Presentation at the *Central States ACSM Meeting, Kansas City, MO, October 12th-13th, 2003.*
31. **John EB**, Gajewski B, Gobert D, Bouckhout V, Billinger SA, Cho JK. Cardiovascular response of chronic stroke survivors to an aerobic exercise training program. Oral Presentation at the 50th Annual Meeting of the American College of Sports Medicine. *June 5-8, 2003. San Francisco, CA.*

K. COMPLETED MENTORED STUDENT RESEARCH PROJECTS

1. Chirino A, Florence R, Ayres S (2021). A Systematic Review of Sense of Motor Effort and Motor Performance Effects of CRT in Individuals with Neurological Lesions (DPT Terminal Project, Chapman University).
2. Scott W, Tan V, Hoang D, DeGuia J, Kim C, Lee E, Oakes L, Phu D, Yamasaki K (2020). Evaluating Driving Performance during Texting using Driving Simulator. (DPT Terminal Project, Chapman University).
3. Sandoval M, Leung V, Nagy B, Vargas E, Wah M (2019) Reliability and Validity of the Armeo®Spring to Quantify Sense of Motor Effort – Part 2 (DPT Terminal Project, Chapman University).
4. Aquino M, Lei L, Son J (2018). Reliability and Validity of the Armeo®Spring to Quantify Sense of Motor Effort (DPT Terminal Project, Chapman University).
5. Brown A, Bukofsky E, Quach A (2017). Effects of Virtual Reality Rehabilitation on Sense of Motor Effort in Stroke Survivors (DPT Terminal Project, Chapman University).
6. Lee J, Norwood J, Olivarez M, Tam, A (2017). Effects of Virtual Reality Rehabilitation on Sense of Motor Effort in Stroke Survivors (DPT Terminal Project, Chapman University)
7. Damaso T, Jacinto A (2016). The Effects of Slack-line Training on Dynamic Balance in Physically Active Young Adults (DPT Terminal Project, Touro University Nevada).

8. Dickson D, Gibson, C (2016). Does Wii gaming promote increased usage of the affected upper extremity in daily activities for chronic stroke patients: a pilot study (DPT Terminal Project, Touro University Nevada).
9. Yokubison J, Lane, M, Distad S, Petlicki S (2016). Perceived Confidence Levels for the First Clinical Affiliation: Perspectives of Entry-Level Physical Therapy Students (DPT Terminal Project, Touro University Nevada).
10. Branch B, DPT (2011). Clinical use of S.W.A.S.H orthotic and electrical stimulation on pediatric patient with spastic quadriplegic cerebral palsy to increase static standing: Case Report (Member, DPT Capstone Committee, Howard University, Washington, DC).
11. Adams M, MPT/DPT (2010). Survey of District of Columbia Family Practice/Internist Physicians' Knowledge of the Field of Physical Therapy (Member, MPT/DPT Capstone Committee, Howard University, Washington, DC).
12. Taylor C, MPT (2010). Do physical activity, diet and anthropometric information correlate with blood pressure, total cholesterol and glucose levels, and percent body fat in persons who attended a health screening event (Member, MPT/DPT Capstone Committee, Howard University, Washington, DC).
13. Haile N, MPT (2008). Reliability of ABI Measurements: A Comparison of Vascular and Standard Blood Pressure Cuffs. (Chair, MPT Capstone Committee, Howard University, Washington, DC). *Accepted for presentation at APTA June 2009 meeting in Baltimore, MD.*
14. Lewis J, MPT (2008). The Effect of Gender on the Sense of Motor Effort in Older Adults (Chair, MPT Capstone Committee, Howard University, Washington, DC).
15. Riley I, MPT (2008). Effect of Isometric Handgrip Exercise Training on Resting Blood Pressure of Normotensive African American Adults. (Chair, MPT Capstone Committee, Howard University, Washington, DC).
16. Sanusi M, MPT (2008). A Comparison of the Rate of Utilization of Physical Therapy Among Nigerians and African America in Washington, DC. (Member, MPT Capstone Committee, Howard University, Washington, DC). *Accepted for presentation at APTA June 2009 meeting in Baltimore, MD.*
17. Brown JN, MPT (2007). Inter-rater and intra-rater reliability of ankle-brachial index measurements using stethoscope and Doppler. 2007. (Member MPT Capstone Committee). [*Received Best Abstract Award and presented at APTA June 2008 meeting at San Antonio, TX.*](#)
18. Ling X, MPT (2007). Chronic Pain in Older Chinese Adults in Northern Virginia - A Preliminary Study. (Member, MPT Capstone Committee, Howard University, Washington, DC). *Accepted for presentation at the Combined Section Meeting of the American Physical Therapy Association, San Diego, CA, February 17-20, 2010.*
19. Zubair R, BScPT (2000). Comparative Study of the Therapeutic Efficacy of Short Wave Diathermy and Ultrasound Therapy both coupled with Quadriceps Strengthening Exercises in the Management of Osteoarthritis of the Knee. - 2000. (Member – BScPT Dissertation Committee, Federal School of Physiotherapy, Dala, Kano, Nigeria).
20. Iyanda K, BScPT (2001). A Comparative Study of the Relative Effectiveness of Chemotherapy and Conventional Transcutaneous Electronic Nerve Stimulator (TENS) in the Modulation of Dysmenorrhea Pain in Nulliparous African Women (A Preliminary Study) – 2001 (Member – BScPT Dissertation Committee, Federal School of Physiotherapy, Dala, Kano, Nigeria).

L. B.Sc. PHYSIOTHERAPY DISSERTATION TOPIC

John EB. Effect of Isometric Exercise Training on Resting Blood Pressure of Normotensive Subjects. B.Sc. (Hons) Physiotherapy Dissertation, College of Medicine, University of Lagos, March 1994.

M. Ph.D. REHABILITATION SCIENCE DISSERTATION

John EB. Effects of Age, Gender and Dominance on Sense of Motor Effort and Potential Application in Stroke. PhD in Rehabilitation Sciences Dissertation, [University of Kansas Medical Center, Kansas City, KS, August 2006](#). Mentors: Wen Liu, PhD; Robert Gregory, PhD

N. TAUGHT COURSES

Course Director/Instructor – B.Sc. Physiotherapy Curriculum - Federal School of Physiotherapy, Bayero University, Kano, Nigeria

1996-2002 Physiotherapy in Surgical Conditions [PTY 4303] (36 contact hours)
1996-2002 Physiotherapy in Medical Conditions [PTY 4304] (36 contact hours)
1996-2002 Geriatrics Physiotherapy [PTY 4106] (18 contact hours)
1997-2002 Neurophysiological Basis of Therapeutic Exercise [PTY 4108] (18 contact hours)
1999-2002 Therapeutic Exercise [PTY 3403] (30 contact hours)

Graduate Teaching Assistantship - Duty: Assisted Core Faculty in Teaching/Coordinating Labs in the MPT/DPT curriculum – University of Kansas Medical Center

2002-2003 MPT Curriculum

Professional Interactions [PHTH 701] (18 contact hours)
Interventions in PT I - Electrotherapy [PHTH 702] (36 contact hours)
Physical Therapy Test and Measures [PHTH 703] (36 contact hours)
Research in Physical Therapy [PHTH 706] (18 contact hours)
Musculoskeletal Physical Therapy [PHTH 760] (36 contact hours)
Acute Care and Therapeutic Exercises [PTRS 704] (36 contact hours)

2003-2005 DPT Curriculum

PT Tests and Measures [PTRS 703] (36 contact hours)
Basics of Acute Care Physical Therapy [PTRS 704] (36 contact hours)
Physical Therapy Interventions [PTRS 705] (36 contact hours)
Research in Evidence-Based PT Practice [PTRS 750] (18 contact hours)
Musculoskeletal Physical Therapy [PTRS 760] (36 contact hours)

Course Director/Instructor, MPT Curriculum - Howard University, Washington DC

2006-2011 Neurobiology [PHTH 556] (36 contact hrs)
2007-2011 Intro. to Neuromuscular System [PHTH 562] (48 contact hrs)
2007-2011 Clinical Skills in PT-Modalities Module [PHTH 554] (30 contact hrs)
2007-2011 Integrative Clinical Issues in Physical Therapy – Electrotherapy and Electrodiagnosis Module [PHTH 583] (24 hrs contact hrs)
2009-2011 Introduction to Evidence-Based Practice [PHTH 565] (30 contact hrs)
2010-2011 Applied Clinical Research [PHTH 582] (30 contact hrs)

Course Director/Instructor, DPT Curriculum - Howard University, Washington DC

2009-2011 Intro. to Physical Agents in PT [PHTH 704] (36 contact hrs)
2009-2011 Neurobiology [PHTH 710] (48 contact hrs)
2009-2011 Intro. to Evidence-Based Practice [PHTH 714] (30 contact hrs)
2009-2011 Intro. to Neuromuscular System [PHTH 722] (36 contact hrs)
2009-2011 Integrative Clinical Issues in Physical Therapy – Electrotherapy and Electrodiagnosis Module [PHTH 731] (24 contact hrs)
2010-2011 Applied Clinical Research [PHTH 735] (30 contact hrs)

Course Director/Instructor, PRE-PT, Howard University, Washington DC

2009-2011 Fundamentals of Scientific Enquiry [HSEC 405] (36 Contact hrs)

Course Director/Instructor – Radford University DPT Program, Roanoke, VA		
2011-2013	Neuroscience	[AHPT 818] (28 contact hrs)
2011-2013	Neuromuscular Development & Control I	[AHPT 844] (60 contact hrs)
2011-2013	Neuromuscular Development & Control II	[AHPT 866] (60 contact hrs)
2012	Anatomy (Neuroanatomy Module)	[AHPT 800] (60 contact hrs)
2013	Pharmacology	[AHPT 848] (28 contact hrs)

Course Director, Touro University Nevada, School of Physical Therapy, Henderson, NV

2014-2015	Research & Statistics I	[DPT 711](45 contact hrs)
2014-2015	Research & Statistics II	[DPT 712](45 contact hrs)
2014-2015	DPT Terminal Research Project I	[DPT 895](30 contact hrs)
2014-2015	DPT Terminal Research Project II	[DPT 896](30 contact hrs)

Course Director/Instructor – Chapman University DPT Program

2016-	Scientific Inquiry I & II	[PT 650] (30 contact hrs)
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O. RESEARCH SUPPORT

Current Research Support

Kay Family Foundation Grant Douglas, Jason (PI) 04/10/20-04/09/21

COVID-19 Rapid Research award supported from the Kay Family Foundation.

The purpose of the comparative study is to collect data in the cities of New York, NY and Los Angeles, CA, with the aims of: (1) identifying social and environmental factors that may manifest in COVID-19-related health disparities, and (2) developing a Viral Pandemic Risk Index based on neighborhood characteristics.

Role: Co-Principal Investigator.

Completed Research Support

RIMI/DC Govt Grant Chesbro, Asongwed (PIs) 07/01/09-06/30/15

UDC RIMI and District of Columbia's Health Professional Licensing Administration Grant

The Saving Legs Project

The purpose of this study is to develop an online course to increase clinicians' knowledge and skill regarding use of the Ankle Brachial Index (ABI) to identify and guide clinical management of lower extremity Peripheral Arterial Disease (PAD).

Role: Co-Investigator, online course website developer, webmaster, data analyst and provide technical support to online users. The website www.happylegs.org will remain online until 2015.

Radford University Seed Grant Program John (PI) 01/25/2013-01/24/2014

Impact of Discharge Destination, and Socioeconomic factors on Functional Recovery status, and Quality of Life of Chronic Stroke Survivors in the Roanoke Valley and New River Valley Areas: A 6-months Longitudinal Pilot Study.

The goal of this research project is to follow up stroke survivors for a 6 months period, and document their functional recovery status and quality of life. A stroke registry will be created in the process.

Role: PI

WCHHS Seed-Grant John (PI) 10/17/2011-06/30/12

Effects of Stroke on Sense of Motor Effort

The goal of this research project was to identify the effects of stroke on the sense of motor effort in static, single-joint (elbow) movements.

Role: PI

FRS 217418 John (PI) 07/01/07-06/30/08

Provost's Office, New-Faculty Start-up Grant, Howard University

Effects of Stroke on Sense of Motor Effort

The goal of this research project was to identify the effects of stroke on the sense of motor effort in static, single-joint (elbow) movements. Supported by a New-Faculty Start-up Grant for establishing a Motor Control and Neuromuscular Performance Laboratory (MNCPL) within the Department of Physical Therapy at Howard University. The MNCPL was successfully established and is now operational.

Role: PI

Doctoral Dissertation Gregory (PI) 07/01/05-06/30/07

American Federation for Aging Research Grant

Effects of Age on Movement Related Effort.

The goal of this research project was to identify the effects age, gender and dominance on the sense of motor effort in static, single-joint (elbow) movements. Support by a grant from the American Federation for Aging Research; Robert W. Gregory (PI), University of Kansas, Lawrence, KS.

Role: Graduate Research Assistant (Doctoral Dissertation Research Project)

Stroke Database Project Quaney (PI) 07/01/05-06/30/06

KUMC/Landon Center on Aging

This was a KUMC internal Inter-departmental funded Stroke Database Acquisition Project. Stroke patients around Kansas City metropolitan area were attracted, recruited and entered into a database (registry) so that researchers at the KUMC will have easy access to stroke subjects for their various on-going and future stroke research studies.

Role: Graduate Research Assistant

P03-66 Parker (PI) 07/01/04-06/30/05

NIH/NIDCD, Balance/Vestibular Program

Tracking Head Motion and Orientation in VOR testing

This was a National Institute on Deafness and Other Communication Disorders (NIDCD) small business/equipment grant that was focused on the development of systems to assess balance/vestibular function, and develop new 3-D VOR (vestibular ocular reflex) testing equipment. Only 2-D VOR system existed at the time of study, University of Kansas, Lawrence, KS.

Role: Graduate Research Assistant.

TB060103 Gobert (PI) 07/01/03-06/30/04

TheraBand Research Division

Resistance Exercise Training Program for Chronic Stroke Survivors

The purpose of this study was to investigate and document blood pressure responses of hypertensive chronic stroke survivors to a customized resistance exercise training program, University of Kansas Medical Center, Kansas City, KS.

Role: Graduate Research Assistant.

G1805260

Gobert (PI)

07/01/02-06/30/04

American Stroke Foundation

Wellness and Fitness Program for Stroke Survivors (Phase 1)

The purpose of this study was to establish normative and reference exercise protocol that will be effective to maintain wellness and fitness status of chronic stroke survivors, University of Kansas Medical Center, Kansas City, KS.

Role: Graduate Research Assistant.

G1805260

Gobert (PI)

07/01/02-06/30/04

American Stroke Foundation

Cardiovascular Response of Chronic Stroke Survivors to a 6-Month Aerobic Exercise Training Program

The purpose of this study was to assess the response of chronic stroke survivors to a 6-months aerobic exercise protocol that will be effective to maintain wellness and fitness status, University of Kansas Medical Center, Kansas City, KS.

Role: Graduate Research Assistant.

G1805260

Cho (PI)

07/01/02-06/30/03

Kansas University Research Institute & American Stroke Foundation

Cardiovascular Response of Chronic Stroke Survivors to an 8-Week Aerobic Exercise Training Program

The purpose of this study was to investigate and document changes in cardiovascular fitness and quality of life in stroke survivors participating in a community exercise program, University of Kansas Medical Center, Kansas City, KS.

Role: Graduate Research Assistant.

Chapman University, Irvine, CA

John (PI)

08/01/2015-05/31/2018

Effects of Virtual Reality Rehabilitation training on sense of motor effort impaired by stroke, and other neurologic lesions.

Role: PI

Touro University Nevada Seed Grant Award
12/01/2017

John (PI)

12/04/2014-

Impact of Discharge Destination, and Socioeconomic factors on Functional Recovery status, and Quality of Life of Chronic Stroke Survivors in the Las Vegas Valley: A 6-months Longitudinal Pilot Study.

The goal of this research project is to follow up stroke survivors for 6 months period, and document their functional recovery status and quality of life. A stroke registry will be created in the process.

Role: PI

P. FUNDED RESEARCH GRANTS AND TRAINING FUNDS

- **John E.B.**, Pierce T. Impact of Discharge Destination, and Socioeconomic factors on Functional Recovery status, and Quality of Life of Chronic Stroke Survivors in the Las Vegas Valley: A 6-months Longitudinal Pilot Study. Touro University Nevada Seed-Grant Program, December 2014. Principal Investigator, **\$20,000.00**.
- **John E.B.**, Castleberry J, Pierce T. Impact of Discharge Destination, and Socioeconomic factors on Functional Recovery status, and Quality of Life of Chronic Stroke Survivors in the Roanoke Valley and New River Valley Areas: A 6-months Longitudinal Pilot Study. Radford University Seed-Grant Program, January 2013. Principal Investigator, **\$20,000.00**.

- **John E.B.** Effects of Age, Muscle Mass, and Stroke on Sense of Motor Effort. Waldron College of Health and Human Services Seed-Grant, October 2012. Principal Investigator, **\$4,495.00.**
- **John E.B.** Effects of Stroke on Sense of Motor Effort. Waldron College of Health and Human Services Seed-Grant, October 2011. Principal Investigator, **\$9,475.00.**
- **John E.B.** Effects of Stroke on Sense of Motor Effort. New Faculty Start-up Fund awarded by The Howard University, June 2007. Principal Investigator, **\$47,000.00.**
- **John, E.B.** Doctoral Training Support (monetary value of tuition waivers, stipend, and other support), University of Kansas Medical Center, June 2002-May 2006, **\$108,460.00.**

Q. OTHER SCHOLARLY PRODUCTS

2007 Design of an arm-rest modification for Biodex System 3 Pro and Biodex System 4 upper-limb Attachment

R. OTHER EXTRA-CURRICULAR SKILLS

Graphics and Website Designing: In my free time, I have some level of proficiency in websites design, development and management; and a little bit of graphics design. I use Adobe Macromedia Design Studio suite, Corel Draw Suite and Namo Web-Editor and some other graphics/web design software. Some notable works done include websites of the Nigeria Physiotherapy Network (www.nigeriaphysio.net), Nigeria Society of Physiotherapy (www.nigeriaphysio.org), World Confederation for Physical Therapy, Africa Region (www.wcptafrica.org), The Saving Legs Project (www.happylegs.org) and a few others.

S. RESEARCH AGENDA

Gender, Age-Related and Neuropathological changes in a Feed-forward Model of Human Voluntary Motor Tasks Performance.

A well-established thought in motor control research literature is that the central nervous system (CNS) uses an internal model to predict force production (feedforward) in order to avoid time delays in sensory feedback. Several studies have explored this suggested CNS feedforward model of force control by extensively studying self-produced forces by subjects in anticipation of particular motor tasks such as grip and grasp forces and dynamic hand movements in human subjects. Their results suggest that when healthy subjects are instructed to grasp, grip or manipulate objects, the force exerted will always be slightly higher than the minimum force required to prevent the object from slipping and will be precisely scaled relative to properties of the object such as weight, surface, friction and shape. In each of these earlier studies, the CNS feedforward models of force control have been studied from the premise of a 'supply based on demand' (SBOD) paradigm, i.e. subjects generate anticipatory self-generated forces (supply) in response to specific motor tasks or 'demand' placed on the CNS such as instructing subjects to lift, grasp or manipulate objects. The resulting self-generated force or torque generated by appropriately contracting muscles is then measured. However, the SBOD approach to studying feedforward models is unable to capture or quantify an important component of the CNS feedforward model which is the perception of volitional motor effort. Perceived volitional motor effort or sense of motor effort (SOE) is a necessary sensorimotor function precursor of volitional force-generating capacity. For instance, SOE in the CNS determines the ability of subjects to generate appropriate levels of anticipatory self-produced forces in response to specific motor tasks. Conversely, an impairment of this important sensorimotor component of the CNS feedforward model has been shown in some clinical populations such as stroke to be directly linked to inability to initiate or generate appropriate levels of volitional motor effort in response to motor task demands. A new feedforward motor control research paradigm that will capture SOE hence addressing this shortcoming of the SBOD approach therefore becomes necessary.

I currently design and carry out studies which address the short-coming of the SBOD feedforward model of force control research paradigm. To achieve this, I am exploring a relatively new reverse paradigm which I tagged the 'supply based on self-perceived demand' (SBSPD) approach to develop a procedure to measure or quantify SOE. This new research paradigm is similar to the novel approach first introduced to motor control research by Rosenbaum and Gregory (2002). Rosenbaum and Gregory (2002), in their study of movement related efforts in young healthy subjects had instructed their subjects to produce self-generated force/torque based on a self-perceived demand on varying volitional effort levels during cyclic single-joint movements. This new SBSPD paradigm of studying feedforward models becomes attractive as it appears plausible that such an approach if found viable may become a useful tool for evaluating intact and or impaired neurological deficits of sense of perceived motor effort in normal and clinical populations. To the best of my knowledge, no previous study has examined the feedforward model of force control from the SBSPD paradigm. I am also interested in studying SBSPD of sense of motor effort across age, gender, and limb dominance first in healthy and later in clinical populations. Preliminary results from my doctoral dissertation research and current studies on-going in the research lab at Radford University are showing promising results that will open a new vista of motor control research paradigm. fMRI studies of the brain during sense of effort and sense of force task performance in healthy and pathological populations is a very attractive route to go in the future, as well as robotics and virtual rehabilitation interventions for sense of motor effort deficits.

References

1. Allman, B. L., & Rice, C. L. (2003). Perceived exertion is elevated in old age during an isometric fatigue task. *European Journal of Applied Physiology*, 89(2), 191-197.
2. Falla, D., Jull, G., & Hodges, P. W. (2004). Feedforward activity of the cervical flexor muscles during voluntary arm movements is delayed in chronic neck pain. *Experimental Brain Research*, 157(1), 43-48.
3. Flanagan, J. R., Vetter, P., Johansson, R. S., & Wolpert, D. M. (2003). Prediction Precedes Control in Motor Learning. *Current Biology*, 13(2), 146-150.
4. Flanagan, J. R., & Wing, A. M. (1997). The Role of Internal Models in Motion Planning and Control: Evidence from Grip Force Adjustments during Movements of Hand-Held Loads. *J. Neurosci.*, 17(4), 1519-1528.
5. Gandevia, S. C. (1982). The perception of motor commands or effort during muscular paralysis. *Brain*, 105(1), 151-159.
6. Gandevia, S. C., Smith, J. L., Crawford, M., Proske, U., & Taylor, J. L. (2006). Motor commands contribute to human position sense. *J Physiol (Lond)*, 2005.1030-93.
7. Hermsdörfer, J., Hagl, E., & Nowak, D. A. (2004). Deficits of anticipatory grip force control after damage to peripheral and central sensorimotor systems. *Human Movement Science*, 23(5), 643-662.
8. Hermsdörfer, J., Nowak, D. A., Lee, A., Rost, K., Timmann, D., Mühlau, M., et al. (2005). The representation of predictive force control and internal forward models: evidence from lesion studies and brain imaging. *Cognitive Processing*, 6(1), 48-58.
9. Imamizu, H., Kuroda, T., Miyauchi, S., Yoshioka, T., & Kawato, M. (2003). Modular organization of internal models of tools in the human cerebellum. *PNAS*, 100(9), 5461-5466.
10. **John EB**, Liu W, Gregory RW. Biomechanics of Muscular Effort: Age Related Changes. *Medicine & Science in Sports & Exercise* 2009; 41:2 (In Press).
11. Komura, T., Shinagawa, Y., & Kunii, T. L. (1997). A Muscle-based Feed-forward Controller of the Human Body. *Computer Graphics Forum*, 16(3), C165-C176.
12. Lafargue, G., Paillard, J., Lamarre, Y., & Sirigu, A. (2003). Production and perception of grip force without proprioception: is there a sense of effort in deafferented subjects? *European Journal of Neuroscience*, 17(12), 2741-2749.
13. Lafargue, G., & Sirigu, A. (2002). Sensation of effort is altered in Huntington's disease. *Neuropsychologia*, 40(10), 1654-1661.
14. Patla, A., Ishac, M., & Winter, D. (2002). Anticipatory control of center of mass and joint stability during voluntary arm movement from a standing posture: interplay between active and passive control. *Experimental Brain Research*, 143(3), 318-327.
15. Praamstra, P., Turgeon, M., Hesse, C. W., Wing, A. M., & Perryer, L. (2003). Neurophysiological correlates of error correction in sensorimotor-synchronization. *NeuroImage*, 20(2), 1283-1297.
16. Rosenbaum, D., & Gregory, R. (2002). Development of a method for measuring movement-related effort. *Experimental Brain Research*, 142(3), 365-373.
17. Somodi, L. B., Robin, D. A., & Luschei, E. S. (1995). A Model of Sense of Effort during Maximal and Submaximal Contractions of the Tongue. *Brain and Language*, 51(3), 371-382.
18. Takarada, Y., Nozaki, D., & Taira, M. (2006). Force overestimation during tourniquet-induced transient occlusion of the brachial artery and possible underlying neural mechanisms. *Neuroscience Research*, 54(1), 38-42.
19. Toffin, D., McIntyre, J., Droulez, J., Kemeny, A., & Berthoz, A. (2003). Perception and Reproduction of Force Direction in the Horizontal Plane. *J Neurophysiol*, 90(5), 3040-3053.