

**ERIKA NELSON-WONG, PT, DPT, PhD**  
**Associate Professor, Regis University School of Physical Therapy**  
**3333 Regis Blvd., Denver, Colorado 80221**  
**303-964-5484, enelsonw@regis.edu**

**EDUCATION**

University of Waterloo, 200 University Ave W, Waterloo, ON, Canada, N2L3G1

PhD/2009, Kinesiology/Spine Biomechanics

Dissertation: Biomechanical Predictors of Induced, non-Specific Low Back Pain, and Motor Control Responses to a Stabilization Exercise Based Clinical Intervention

Advisor: Jack P. Callaghan, PhD

University of Waterloo - Centre for Teaching Excellence, 200 University Ave W, Waterloo, ON N2L3G1

Certificate in University Teaching/ 2008

Research Project: Implementation of Problem Based Learning in Undergraduate Kinesiology Education

Advisor: Svitlana Taraban, PhD

Regis University, 3333 Regis Blvd, Denver, Colorado, 80221

DPT/2004, Physical Therapy

Regis University, 3333 Regis Blvd, Denver, Colorado, 80221

MSc/1996, Physical Therapy

Thesis: Effects of Non-Insulin Dependent Diabetes Mellitus on Fibrinolysis in Premenopausal Women

Advisor: Judith Regensteiner, PhD/ Troy Stevens, PhD

Colorado School of Mines, 1500 Illinois St., Golden, Colorado, 80401

BSc/1992, Engineering Physics

Senior Thesis: Low-Level Gamma Ray Emission from Trees Exposed to Known Radioactive Events.

Advisor: Ed Cecil, PhD

**LICENSURE AND CERTIFICATION**

Colorado Licensed Physical Therapist, #5850, Colorado Department of Regulatory Agencies, 1997 – present, Active

Collaborative Institutional Training Initiative (CITI) – Certification for Human Research (Biomedical, Social Behavioral)

**EMPLOYMENT HISTORY**

**Academic Experience**

Visiting Professor on Sabbatical, University of Waterloo, Waterloo, ON, Canada (Jan 2016 – Apr 2016)

Associate Professor, Regis University, School of Physical Therapy, Denver, CO (Aug 2013 – present)

Assistant Professor, Regis University, School of Physical Therapy, Denver, CO (Aug 2009 – Jul 2013)

Affiliate Faculty, Regis University, School of Physical Therapy, Denver, CO (Mar 2005 – May 2009)

Graduate Research Assistant, University of Waterloo, Faculty of Applied Health Sciences,

Department of Kinesiology, Waterloo, ON (Sep 2005 – Aug 2009)

Affiliate Faculty, Regis University, School of Physical Therapy, Denver, CO (Jan 1996 – May 2000)

Research Assistant, University of Colorado Health Sciences, Denver, CO (Mar 1996 – Jun 1997)

### **Clinical Experience**

Staff Physical Therapist, Rock Valley Physical Therapy, Moline, IL (Apr, 2005 – Aug, 2005)

Director of Rehabilitation Services, Option Care, Moline, IL (Feb, 2003 – Mar, 2005)

Staff Physical Therapist, Option Care, Moline, IL (Apr 3, 2002 – Feb, 2003)

PRN Physical Therapist, Genesis Medical Center, Bettendorf, IA (Apr, 2002 – Nov, 2003)

Staff Physical Therapist, Argosyhealth On Site Therapy, Joslin, IL (Dec, 2001 – Feb, 2002)

Staff Physical Therapist, Visiting Nurse's Association of Denver, Denver, CO (Nov, 1998 – Aug, 2001)

Staff Physical Therapist, Mountain View Physical Therapy, Evergreen, CO (Jan, 1997 – Dec, 1998)

### **HONORS AND AWARDS**

#### **Awards**

1. Rueckert-Hartman College for Health Professions Sustained Scholarship Award, 2017
2. Regis University School of Physical Therapy Outstanding Student Research Award, 2016 - (Ferber N, Ingerson E, Jacques E, Olsen B, Renfrow C, Sachs A, **Nelson-Wong E – Faculty Supervisor**)
3. Regis University School of Physical Therapy Outstanding Student Research Award, 2015 - (Bartha D, Beltran M, Dominguez D, Lachtman D, Messerli A, Miller S, Davis AM – Faculty Supervisor, **Nelson-Wong E – Faculty Supervisor**)
4. Regis University School of Physical Therapy Outstanding Student Research Award, 2014 – (Brodie A, Burgemeister M, Conley M, Greiner E, Hargrove J, Kernan K, Davis AM – Faculty Supervisor, **Nelson-Wong E – Faculty Supervisor**)
5. Force & Motion Foundation Travel Award for Best Poster Using Force Platform Data, 2011 – (Gallagher K, **Nelson-Wong E**, Callaghan JP) American Society of Biomechanics Annual Meeting, Long Beach, CA, Aug 2011)
6. Marilyn Gossman Award for Graduate Research American Physical Therapy Association - Section on Research, 2011 - (Appell RK, Nawaz H, McKay M, Roth J, Sigler RL, Third JN, Walker MO, **Nelson-Wong E – Faculty Supervisor**) APTA Combined Sections Meeting, New Orleans, LA, Feb 2011)
7. Marilyn Gossman Award for Graduate Research American Physical Therapy Association - Section on Research, 2010 - (**Nelson-Wong E**, Callaghan JP) APTA Combined Sections Meeting, San Diego, CA, Feb, 2010)
8. Bone and Joint Decade Young Investigators Initiative Mentoring Award, 2010-2011 - Selected to participate in a mentored program with the goal of obtaining extramural funding for research
9. Promotion of Doctoral Studies Award II, Foundation for Physical Therapy, 2008-2009
10. Marilyn Gossman Award for Graduate Research American Physical Therapy Association - Section on Research, 2008 - (**Nelson-Wong E**, Gregory D, Winter DA, Callaghan JP) APTA Combined Sections Meeting, Nashville, TN, Feb 2008)
11. Promotion of Doctoral Studies Award I, Foundation for Physical Therapy, 2006-2007
12. Mary McMillan Doctoral Award, Foundation for Physical Therapy, 2006

13. International Doctoral Student Award, University of Waterloo, 2005-2006
14. Graduate Honors, Regis University (DPT degree), 2004
15. Graduate Honors, Regis University (MSc degree), 1996
16. Bartunek Award for Excellence in Physics Colorado School of Mines, 1992

### **Honor**

1. Eugene Michels New Investigator Award, 2017 - Nominee
2. Eugene Michels New Investigator Award, 2016 - Nominee
3. Margaret L. Moore Award for Outstanding New Academic Faculty Member, 2014 - Nominee
4. Canadian Society for Biomechanics Doctoral Award, 2009 - Finalist

### **SCHOLARSHIP ACTIVITIES**

#### **Peer Reviewed Publications**

1. **Nelson-Wong E**, Glinka M, Noguchi M, Langevin H, Callaghan JP. (2016) Acute fascia injury alters the tensile properties of thoracolumbar fascia in a porcine model. *J Orthop Res*, Submitted, In Review.
2. Sheahan P, **Nelson-Wong E**, Fischer S. (2015) An update on the international status and usage of cross-culturally adapted versions of the Oswestry Disability Index. *Procedia Manufacturing*, 3:3971-3973.
3. Lachtman DS, Bartha DA, Beltran MM, Dominguez DN, Messerli AR, Miller SE, Davis AM, **Nelson-Wong E**. (2015) Rater reliability and concurrent validity of single and dual bubble inclinometry to assess cervical lateral flexion. *Journal of Manipulative and Physiological Therapeutics*, 38(8):572-580.
4. Callaghan JP, De Carvalho DE, Gallagher KM, Karakolis T, **Nelson-Wong E**. (2015) Is standing the solution to sedentary office work? *Ergonomics in Design*, 23(3):20-24.
5. Sheahan P, **Nelson-Wong E**, Fischer S. (2015) A review of culturally adapted versions of the Oswestry Disability Index: The adaptation process, construct validity, test-retest reliability and internal consistency. *Disability and Rehabilitation*. (In Press. PMID: 25738913)
6. **Nelson-Wong E**, Gallant P, Alexander S, Dehmer K, Ingvalson S, McClenahan B, Piatte A, Poupore K, Davis AM. (2014) Multiplanar lumbar control in patients with low back pain: is multiplanar assessment better than single plane assessment in discriminating between patients and healthy controls? *Journal of Manual and Manipulative Therapy*, (Published On-Line. DOI: 10.1179/2042618614Y.0000000078)
7. **Nelson-Wong E**, Callaghan JP. (2014) Transient low back pain development during standing predicts future clinical low back pain in previously asymptomatic individuals. *Spine*. 39(6):1-5.
8. **Nelson-Wong E**, Poupore K, Alexander S, Dehmer K, Gallant P, Ingvalson S, McClenahan B, Piatte A, Davis AM. (2013) Neuromuscular strategies for lumbopelvic control during frontal and sagittal plane movement challenges differ between people with and without low back pain. *Journal of Electromyography & Kinesiology* 23(6):1317-1324.
9. **Nelson-Wong E**, Eigsti H, Hammerich A, Ellison N. (2013) Influence of presentation handout completeness on student learning in a physical therapy curriculum. *Journal of Scholarship of Teaching and Learning*. 13(3):33-47.
10. **Nelson-Wong E**, Alex B, Csepe D, Lancaster D, Callaghan JP. (2012). Altered muscle recruitment during extension from trunk flexion in low back pain developers. *Clinical Biomechanics*, 27(10), 994-998.

11. **Nelson-Wong E**, Appell R, McKay M, Nawaz H, Roth J, Sigler R, Third J, Walker M. (2012) Increased fall risk is associated with elevated co-contraction about the ankle during static balance challenges in older adults. *European Journal of Applied Physiology*, 112(4), 1379-1389.
12. Davis AM, Bridge P, Miller J, **Nelson-Wong E**. (2011) Inter- and intra-rater reliability of the Active Hip Abduction Test. *Journal of Orthopaedic and Sports Physical Therapy*, 41 (12), 953-960.
13. Gallagher K, **Nelson-Wong E**, Callaghan JP. (2011) Do asymptomatic low back pain developers demonstrate different postural control strategies than non-pain developers during unconstrained prolonged standing? *Gait and Posture*, 34 (4), 490-495.
14. Pauk J, Ezerskiy V, **Nelson-Wong E**, Rogalski M. (2010) Assessment of foot morphology in flat feet children. *Methods of Applied Sciences*, 6, 131-140.
15. **Nelson-Wong E**, Howarth SJ, Callaghan JP. (2010) Acute biomechanical responses to a prolonged standing exposure in a simulated occupational setting. *Ergonomics*, 53 (9), 1117-28.
16. **Nelson-Wong E**, Callaghan JP. (2010) Repeatability of clinical, biomechanical, and motor control profiles in people with and without standing-induced low back pain. *Rehabilitation Research and Practice*, Volume 2010, Article ID 289278, 9 pages.
17. **Nelson-Wong E**, Callaghan JP. (2010) Changes in muscle activation patterns and subjective low back pain ratings during prolonged standing in response to an exercise intervention. *Journal of Electromyography & Kinesiology*, 20 (6), 1125-33.
18. **Nelson-Wong E**, Callaghan JP. (2010) The impact of a sloped surface on low back pain during prolonged standing. *Applied Ergonomics*, 41 (6), 787-95.
19. **Nelson-Wong E**, Callaghan JP. (2010) Is muscle co-activation a predisposing factor for low back pain development during standing? A multifactorial approach for early identification of at-risk individuals. *Journal of Electromyography & Kinesiology*, 20, 256-263.
20. **Nelson-Wong E**, Howarth SJ, Winter DA, Callaghan JP. (2009) Application of autocorrelation and cross-correlation analyses in human movement and rehabilitation research. *Journal of Orthopaedic and Sports Physical Therapy*, 39 (4), 287-295.
21. **Nelson-Wong E**, Flynn TW, Callaghan JP. (2009) Development of Active Hip Abduction as a screening test for identifying occupational low back pain. *Journal of Orthopaedic and Sports Physical Therapy*, 39 (9), 649-657.
22. **Nelson-Wong E**, Gregory DE, Winter DA, Callaghan JP. (2008) Gluteus medius muscle activation patterns as a predictor of low back pain during standing. *Clinical Biomechanics*, 23 (5), 545-553.
23. Brandenburg SL, Reusch JE, Felder KK, **Nelson-Wong E**, Lindenfeld J, Manco-Johnson M, Regensteiner JG. (2002) Impaired fibrinolysis in premenopausal women and age-matched men with Type 2 diabetes mellitus: a pilot study. *Journal of Investigative Medicine*, 50 (2), 110-115.

#### **Scholarly Activities: Book Chapters**

1. Callaghan JP, **Nelson-Wong E**. (2012) Existing muscle synergies and low back pain: A case for preventative intervention. In *Spinal Control: the Rehabilitation of Back Pain* ed. P. Hodges, J. van Dieen & J. Cholewicki, Elsevier.

#### **Peer Reviewed Presentations**

1. Sepp LA, Baum BB, **Nelson-Wong E**, Silverman AK. *Dynamic Balance During Running Using Running-Specific Prostheses*. American Society of Biomechanics Annual Meeting, Boulder, CO, Aug 8-11, 2017 (Rapid Platform Presentation).
2. Baker L, Longacre C, Passarelli C, Renslo A, Riggs, D, Tollis R, Viggiani D, Davidson B, Callaghan JP, **Nelson-Wong E**. *Flexion Relaxation Response Between People With and Without Standing*

- Induced Low Back Pain and a Clinical Comparison Group*. American Society of Biomechanics Annual Meeting, Boulder, CO, Aug 8-11, 2017 (Poster Presentation).
3. Glinka M, **Nelson-Wong E**, Noguchi M, Langevin H, Callaghan JP. *Movement Restriction Affects Thoracolumbar Fascia Stiffness in a Porcine Model*. American Society of Biomechanics Annual Meeting, Boulder, CO, Aug 8-11, 2017 (Platform Presentation).
  4. Viggiani D, Davidson B, Callaghan JP, **Nelson-Wong E**. *A Comparison of Muscle Activity During Spine Extension in People With and Without Standing-Induced Back Pain, and Those With Chronic Low Back Pain*. American Society of Biomechanics Annual Meeting, Boulder, CO, Aug 8-11, 2017 (Poster Presentation).
  5. Viggiani D, Mannen E, **Nelson-Wong E**, Wong A, Ghiselli G, Shelburne K, Callaghan JP, Davidson B. *Time-Varying Contributions to Lumbar Lordosis During an Unstable Sitting Task in People Who Do and Do Not Develop Low Back Pain During Standing*. American Society of Biomechanics Annual Meeting, Boulder, CO, Aug 8-11, 2017 (Thematic Poster Presentation).
  6. Passarelli C, Baker L, Longacre C, Renslo A, Riggs D, Tollis R, Viggiani D, Davidson B, Callaghan J, **Nelson-Wong E**. *Males and Females Exhibit Differences in Flexion Relaxation Response Independent of Low Back Pain Status*. Presented at the Rocky Mountain Regional Meeting of the American Society of Biomechanics, Estes Park, CO, April 7-8, 2017 (Poster Presentation)
  7. Sepp L, Baum B, **Nelson-Wong E**, Silverman A. *Whole Body Angular Momentum During Running Using Running-Specific Prostheses*. Presented at the Rocky Mountain Regional Meeting of the American Society of Biomechanics, Estes Park, CO, April 7-8, 2017 (Poster Presentation).
  8. Engelsgerd A, Lyle A, Edgar K, Appel A, Clay N, Hill L, Leeseberg E, **Nelson-Wong E**. *Influence of Sacroiliac Bracing on Trunk Musculature Co-activation During Return to Stand from Forward Flexion in Standing-Tolerant and Standing-Intolerant Individuals*. Presented at the URSC Celebration of Scholarship and Research, Denver, CO, April 11, 2017 (Poster Presentation).
  9. Viggiani D, **Nelson-Wong E**, Callaghan JP. *Posterior Muscle Timing and Lumbopelvic Rhythm in Persons with Chronic, Transient and No Low Back Pain in a Sit-to-Stand Task*. Presented at the Ontario Biomechanics Conference, Alliston, ON, Can, March 10-12, 2017 (Platform Presentation).
  10. Glinka M, **Nelson-Wong E**, Noguchi M, Langevin H, Maple R, Fox J, Callaghan JP. *Injury and Movement Restriction Affect Thoracolumbar Fascia Stiffness in a Porcine Model*. Presented at the Ontario Biomechanics Conference, Alliston, ON, Can, March 10-12, 2017 (Platform Presentation).
  11. Edgar K, Appel A, Clay N, Engelsgerd A, Hill L, Leeseberg E, Mayer A, **Nelson-Wong E**. *Influence of Sacroiliac Bracing on Trunk Coactivation During Return to Stand in Healthy People who are Standing Intolerant*. Presented at the Combined Sections Meeting of the American Physical Therapy Association, San Antonio, TX, Feb 16, 2017 (Poster Presentation).
  12. Glinka M, **Nelson-Wong E**, Noguchi M, Langevin H, Maple R, Fox J, Callaghan JP. *Changes in the Viscoelastic Properties of Porcine Thoracolumbar Fascia in Response to a Local Surgical Injury*. Presented at the Canadian Society for Biomechanics Annual Meeting, Hamilton, ON, July, 2016 (Poster Presentation).
  13. **Nelson-Wong E**, Glinka M, Noguchi M, Langevin H, Maple R, Fox J, Callaghan JP. *Stress Relaxation Response is Decreased in Porcine Thoracolumbar Fascia Following Surgical Injury*. Presented at the Canadian Society for Biomechanics Annual Meeting, Hamilton, ON, July, 2016 (Platform Presentation).
  14. **Nelson-Wong E**, Glinka M, Noguchi M, Langevin H, Maple R, Fox J, Callaghan JP. *Mechanical Response to Thoracolumbar Fascia Injury Using a Porcine Model*. Presented at the American Society of Biomechanics Annual Meeting, Raleigh, NC, August, 2016 (Poster Presentation).

15. Soliday K, **Nelson-Wong E**, Reiser, R. *The Effect of Prolonged Standing on Ground Reaction Force Control*. Presented at the Rocky Mountain ASB Annual Meeting, Estes Park, CO, April 16, 2016 (Poster Presentation).
16. Ingerson E, Renfrow C, Ferger N, Jacques E, Olson B, Sachs A, **Nelson-Wong E**. *Clinical Response to Stabilization Based Exercise in a Subgroup of Individuals with Low Back Pain*. Presented at the Rocky Mountain ASB Annual Meeting, Estes Park, CO, April 16, 2016 (Poster Presentation).
17. Ingerson E, Renfrow C, Ferger N, Jacques E, Olson B, Sachs A, **Nelson-Wong E**. *Clinical Response to Stabilization Based Exercise in a Subgroup of Individuals with Low Back Pain*. Combined Sections Meeting of the American Physical Therapy Association, Anaheim, CA, Feb 18, 2016 (Poster Presentation).
18. **Nelson-Wong E**. *Extensor Muscle Sequencing During Return to Stand in a Subgroup of Individuals with Low Back Pain: Response To Exercise*. American Society of Biomechanics, Columbus, OH, August 7, 2015 (Thematic Poster Presentation).
19. Sheahan P, **Nelson-Wong E**, Fischer S. *A Review and Update on the International Status and Usage of Cross-Culturally Adapted Versions of the Oswestry Disability Index*. International Conference on Applied Human Factors and Ergonomics, Las Vegas, NV, July 28, 2015 (Platform Presentation).
20. Holmes K, Burks M, Anderson C, Artery J, Kealy L, Olson G, Sercel K, Littmann A, **Nelson-Wong E**. *Muscular Bracing as an Effective Strategy for Maintaining Lumbopelvic Control*. Rocky Mountain Regional Meeting of the American Society of Biomechanics, Estes Park, CO, April 17, 2015 (Poster Presentation).
21. Soliday K, Board WJ, **Nelson-Wong E**, Reiser RF. *The Effect of Prolonged Standing on Weight-Bearing and Muscle Activation Asymmetries*. Rocky Mountain Regional Meeting of the American Society of Biomechanics, Estes Park, CO, April 18, 2015 (Platform Presentation).
22. Soliday K, Board WJ, **Nelson-Wong E**, Reiser RF. *The Effect of Prolonged Standing on Weight-Bearing and Muscle Activation Asymmetries*. Rocky Mountain Regional Meeting of the American College of Sports Medicine, Ft. Collins, CO, March, 2015 (Platform Presentation).
23. **Nelson-Wong E**, Bartha DA, Beltran M, Dominguez D, Lachtman D, Messerli A, Miller S, Davis AM. *Rater Reliability of Single and Dual Inclinometry in the Cervical Spine: Does Experience Make a Difference?* Combined Sections Meeting of the American Physical Therapy Association, Indianapolis, IN, February, 2015 (Poster Presentation).
24. Lachtman D, Bartha DA, Beltran M, Dominguez D, Messerli A, Miller S, Davis AM, **Nelson-Wong E**. *Concurrent Validity of Single and Dual Inclinometry for Assessing Cervical Lateral Flexion*. Combined Sections Meeting of the American Physical Therapy Association, Indianapolis, IN, February, 2015 (Poster Presentation).
25. Bishop K, Bandelier J, Bissett S, **Nelson-Wong E**, Davis AM. *Can Observation-Based Tests of Lumbopelvic Control Discriminate Between Runners with and without a History of Running Related Injuries?* Combined Sections Meeting of the American Physical Therapy Association, Indianapolis, IN, February, 2015 (Poster Presentation).
26. Burks M, Anderson C, Artery J, Holmes K, Kealy L, Olson G, Sercel K, Littman A, **Nelson-Wong E**. *Muscular Bracing as an Effective Strategy for Maintaining Lumbopelvic Control During Frontal Plane Stability Challenges in a Subgroup of Patients with Low Back Pain*. Combined Sections Meeting of the American Physical Therapy Association, Indianapolis, IN, February, 2015 (Platform Presentation).
27. **Nelson-Wong E**, Callaghan JP. *Low Back Pain Development During Standing Predicts Future Clinical Low Back Pain in Previously Asymptomatic Individuals*. World Congress on Biomechanics, Boston, MA, July, 2014 (Poster Presentation).
28. Davis AM, Brodie A, Burgemeister M, Conley M, Greiner E, Hargrove J, Kernan K, **Nelson-Wong E**. *Is the Active Hip Abduction Test a Valid Assessment Tool for Lumbopelvic Control in Pregnant*

- Women?* Combined Sections Meeting of the APTA, Las Vegas, NV, Feb 4, 2014. (Platform Presentation)
29. Bourgeois G, DeGrandis C, Hamilton N, Kirven I, Pieratt K, Thornton W, **Nelson-Wong E.** *Neuromuscular Strategies During Frontal Plane Movement in a Subgroup of Subjects with Low Back Pain: Implications of Poor Lumbopelvic Control.* Combined Sections Meeting of the APTA, Las Vegas, NV, Feb 4, 2014. (Poster Presentation)
  30. **Nelson-Wong E,** Bourgeois G, DeGrandis C, Hamilton N, Kirven I, Pieratt K, Thornton W. *Lumbopelvic Control During Frontal Plane Motion and Hip Muscle Activation in Low Back Pain Cases versus Controls.* American Society of Biomechanics, Omaha, NE, Sept 8, 2013 (Platform Presentation)
  31. Seay J, **Nelson-Wong E.** *Biomechanical Factors Related to the Etiology of Low Back Pain.* Annual Meeting of the American College of Sports Medicine, Indianapolis, IN, June, 2013 (Platform Symposium).
  32. Pieratt K, Bourgeois G, DeGrandis C, Hamilton N, Kirven I, Thornton W, **Nelson-Wong E.** *Lumbopelvic Control and Hip Muscle Activation in Low Back Pain Cases vs Controls.* Rocky Mountain American Society of Biomechanics Regional Meeting, Estes Park, CO, April 2013 (Poster Presentation).
  33. Eigsti H, Hammerich A, Ellison N, **Nelson-Wong E.** *Effect of Learning Preferences and Lecture Handouts on Student Performance.* Teacher-Scholar Forum, Metropolitan State University, Denver, CO, February, 2013 (Platform Presentation)
  34. **Nelson-Wong E,** Eigsti H, Hammerich A, Ellison N. *Influence of Lecture Handout Completeness on Student Learning in a Physical Therapy Curriculum.* American Physical Therapy Association, Combined Sections Meeting, San Diego, CA, January, 2013 (Platform Presentation).
  35. Gallant P, Alexander S, McClenahan B, Dehmer K, Ingvalson S, Piatte A, Poupore K, Davis AM, **Nelson-Wong E.** *Does Combined Frontal and Sagittal Plane Assessment Improve Discrimination of People with Low Back Pain?* Combined Sections Meeting of the American Physical Therapy Association, San Diego, CA, January, 2013 (Platform Presentation).
  36. Poupore K, Dehmer K, Ingvalson S, Piatte A, Alexander S, McClenahan B, Gallant P, Davis AM, **Nelson-Wong E.** *Muscle Activation During Frontal and Sagittal Plane Movement: Differences Between Patients with Low Back Pain and Matched Controls.* Combined Sections Meeting of the American Physical Therapy Association, San Diego, CA, January, 2013 (Poster Presentation).
  37. **Nelson-Wong E,** Eigsti H, Hammerich A, Ellison N. *Influence of Lecture Slide Completeness on Student Learning in a Biomechanics Course Within a Physical Therapy Curriculum.* American Society of Biomechanics, Annual Meeting, Gainesville, FL., August, 2012 (Platform Presentation).
  38. **Nelson-Wong E,** Benz A, Bridge P, Craig K, Miller J, Stobie WM, Davis AM. *Altered Neuromuscular Control During the Active Hip Abduction Test: A Case Control Study.* Canadian Society for Biomechanics, Vancouver, BC, Canada, May, 2012 (Poster Presentation).
  39. Csepe D, Alex B, Lancaster D, Callaghan JP, **Nelson-Wong E.** *Differences and Response to Exercise in Extensor Muscle Sequencing During Return to Stand From Lumbar Flexion in Subjects That Develop Low Back Pain During Standing.* American Physical Therapy Association, Combined Sections Meeting, Chicago, IL, February, 2012 (Poster Presentation).
  40. Stobie WM, Miller JA, Bridge PM, Craig KD, Benz AJ, Davis AM, **Nelson-Wong E.** *Muscle Activation Differences Between People with and without Low Back Pain During the Active Hip Abduction Test: An Exploratory Study.* American Academy of Orthopaedic Manual Physical Therapists, Annual Meeting, Anaheim, CA, October, 2011 (Poster Presentation).
  41. **Nelson-Wong E,** Alex B, Csepe D, Lancaster D, Callaghan, JP. *Muscle Recruitment During Return to Stand From Forward Flexion is Altered in People who Develop Low Back Pain During Prolonged*

- Standing*. American Society of Biomechanics, Annual Meeting, Long Beach CA, August, 2011 (Platform Presentation).
42. Gallagher K, **Nelson-Wong E**, Callaghan, JP. *Does the Development of Transient Low Back Pain Affect Postural Changes During Prolonged Standing?* American Society of Biomechanics, Annual Meeting, Long Beach CA, August, 2011. \*Force and Motion Foundation Award for Best Poster Using Force Platform Data.
  43. McKay M, Nawaz H, Appell R, Roth J, Sigler R, Third J, Walker M, **Nelson-Wong E**. *Increased Fall Risk is Associated with Elevated Co-contraction About the Ankle in Older Adults*. Rocky Mountain American Society of Biomechanics Regional Meeting, Estes Park, CO, April 2011 (Poster Presentation).
  44. Lancaster D, Alex B, Csepe D, Callaghan JP, **Nelson-Wong E**. *Recruitment of Musculature During the Extension Phase of Lumbar Forward Flexion is Altered in People who Develop Low Back Pain During Prolonged Standing*. Rocky Mountain American Society of Biomechanics Regional Meeting, Estes Park, CO, April 2011 (Poster Presentation).
  45. Gallagher K, **Nelson-Wong E**, Callaghan, JP. *Postural Control and the Development of Transient Low Back Pain*. Ontario Biomechanics Conference, Barrie, ON, Canada, March 2011 (Platform Presentation).
  46. Appell RK, Nawaz H, McKay M, Roth J, Sigler RL, Third JN, Walker MO, **Nelson-Wong E**. *Muscle Co-contraction About the Ankle is Associated With Fall-risk in Older Adults*. American Physical Therapy Association, Combined Sections Meeting, New Orleans, LA, February, 2011 (Platform Presentation). \*Marilyn Gossman Graduate Award Seminar.
  47. **Nelson-Wong E**, Howarth SJ, Callaghan JP. *Acute Biomechanical Responses to a Prolonged Standing Exposure: Implications for Job Rotation Design*. American Society of Biomechanics, Providence, RI, August, 2010 (Poster Presentation).
  48. **Nelson-Wong E**, Callaghan JP. *Repeatability of Motor Control Patterns During Prolonged Standing in People with and without Standing-Induced Low Back Pain*. Canadian Society for Biomechanics, Kingston, ON, Canada, June, 2010 (Poster Presentation).
  49. **Nelson-Wong E**, Callaghan JP. *The Impact of a Sloped Surface on Low Back Pain and Muscle Activation Patterns During Standing Work*. Canadian Society for Biomechanics, Kingston, ON, Canada, June, 2010 (Platform Presentation).
  50. **Nelson-Wong E**, Callaghan JP. *Changes in Muscle Activation Patterns and Subjective Low Back Pain Ratings During Standing in Response to an Exercise Intervention*. American Physical Therapy Association, Combined Sections Meeting, San Diego, CA, February, 2010 (Platform Presentation). \*Marilyn Gossman Graduate Award Seminar.
  51. **Nelson-Wong E**, Callaghan JP. *Is Muscle Co-activation a Causal Factor for Low Back Pain Development During Standing?* Ontario Biomechanics Conference, Barrie, ON, Canada, March 2009 (Platform Presentation). \*Finalist for Canadian Society for Biomechanics Doctoral Award.
  52. **Nelson-Wong E**, Flynn TW, Callaghan JP. *Active Hip Abduction: A Proposed Screening Test for Identification of Low Back Pain Developers*. American Physical Therapy Association, Combined Sections Meeting, Las Vegas, NV, February, 2009 (Poster Presentation).
  53. **Nelson-Wong E**, Howarth SJ, Winter DA, Callaghan JP. *Application of Cross Correlation Analyses for the Rehabilitation and Movement Scientist*. American Physical Therapy Association, Combined Sections Meeting, Las Vegas, NV, February, 2009 (Poster Presentation).
  54. **Nelson-Wong E**, Callaghan JP. *Is Muscle Co-Activation a Predisposing Factor for Low Back Pain Development During Standing?* American Society of Biomechanics, State College, PA, August, 2009 (Platform Presentation).



55. **Nelson-Wong E**, Gregory DG, Winter DA, Callaghan JP. *Muscle Co-activation as a Predictor for Who Will Develop Low Back Discomfort During a Prolonged Standing Task*. American Physical Therapy Association, Combined Sections Meeting, Nashville, TN, February, 2008 (Platform Presentation). \*Marilyn Gossman Graduate Award Seminar.
56. **Nelson-Wong E**, Gregory DE, Winter DA, Callaghan JP. *Gender Differences in Postural Control During Prolonged Standing*. North American Congress on Biomechanics, Ann Arbor, MI. August, 2008 (Poster Presentation).
57. Callaghan JP, Durkin J, Gregory DG, **Nelson-Wong E**. *Can Low Level EMG be Used to Predict Subjective Discomfort Scores?* International Society of Electromyography and Kinesiology, Niagara Falls, ON, Canada, May 2008 (Platform Presentation).
58. **Nelson-Wong E**, Gregory DG, Winter DA, Callaghan JP. *Postural Control Strategies During Prolonged Standing: Is There a Relationship with Low Back Discomfort?* American Society of Biomechanics, Palo Alta, CA, August, 2007 (Platform Presentation).
59. **Nelson-Wong E**, Gregory DG, Winter DA, Callaghan JP. *Postural Control Strategies During Prolonged Standing: Is There a Relationship with Low Back Discomfort?* Ontario Biomechanics Conference, Barrie, ON, Canada, March 2007 (Platform Presentation).
60. **Nelson-Wong E**, Miyasike-da-Silva V, Tomescu S, King E, Patla AE. *Path Selection Strategies During Walking Through Tall Obstacles*. Canadian Society for Biomechanics, Waterloo, ON, Canada, August, 2006 (Poster Presentation).
61. **Nelson-Wong E**, Kenny-Scherber C, Patla AE. *Where do People Look When Walking in a Stepping Stone Environment?* Canadian Society for Biomechanics, Waterloo, ON, Canada, August, 2006 (Poster Presentation).
62. Miyasike-da-Silva V, **Nelson-Wong E**, Tomescu S, Patla AE. *Young and Older Adults in a Simulated Forest: Path Selection Strategies*. International Computational Neuroscience Symposium, Montreal, QC, Canada, May, 2006 (Poster Presentation).
63. Miyasike-da-Silva V, **Nelson-Wong E**, Tomescu S, Patla AE. *Walking Through a Forest: Route Selection Strategies*. Ontario Biomechanics Conference, Barrie, ON, Canada, March 2006 (Platform Presentation).
64. **Nelson-Wong E**, Kenny-Scherber C, Patla AE. *Gaze Fixations in a Constrained Stepping Task: Elevated and Non-Elevated Stepping Stones*. Ontario Biomechanics Conference, Barrie, ON, Canada, March 2006 (Platform Presentation).

### Invited Talks

1. **Nelson-Wong E**. *Multiplanar Assessment in People with Low Back Pain: Linking Biomechanics with Traditional Clinical Approaches*. Biomechanics Graduate Seminar, Department of Kinesiology, Faculty of Applied Health Sciences, University of Waterloo, Waterloo, ON, Canada, Jan 28, 2016.
2. **Nelson-Wong E**. *Multiplanar Assessment in People with Low Back Pain: Can Biomechanical Approaches Lead to Improved Clinical Outcomes?* Health and Exercise Science Graduate Seminar, Colorado State University, Ft. Collins, CO, Oct 9, 2015.
3. **Nelson-Wong E**. *Alternate Planes of Existence: Strategies to Integrate Multi-planar Assessment in Patients with Low Back Pain*. United States Army Research Institute for Environmental Medicine, Natick, MA, April 2, 2013.
4. **Nelson-Wong E**, Herzog W, Yack J, Martin P. *A Tribute to Dr. David Winter*. American Society of Biomechanics, Annual Meeting, Gainesville, FL., August, 2012 (Keynote Presentation).

5. **Nelson-Wong E**, Davis AM. *A New Clinical Test Shows Differences in Muscle Activation Strategies Between Individuals With Low Back Pain and Healthy Controls*. Rueckert-Hartman College of Health Professions Faculty Forum, Denver, CO, January, 2012.
6. **Nelson-Wong E**. *Muscle Synergies and Low Back Pain: A Case for Preventative Intervention*. Rueckert-Hartman College of Health Professions Faculty Forum, Denver, CO, February, 2010.
7. **Nelson-Wong E**. *Muscle Synergies and Low Back Pain: A Case for Preventative Intervention*. Regis University School of Physical Therapy, Clinical Grand Rounds, Denver, CO, January, 2010.

### **GRADUATE STUDENT SUPERVISION/COMMITTEES**

1. Robyn A. Capobianco, PhD Student, *Neuromechanical Determinants of Flexibility*, Department of Integrative Physiology, University of Colorado, Boulder, CO, Advisor: Dr. Roger Enoka (Committee Member – 2016 - 2018)
2. Lauren Sepp, PhD Student, *Comparing Running-Specific and Traditional Prostheses During Running*, Department of Mechanical Engineering, Colorado School of Mines, Golden, CO, Advisor: Dr. Anne Silverman (Committee Member – 2017-2018)
3. Daniel Viggiani, *Muscle Activation Patterns and Onset Timing in non-Clinical, pre-Clinical and Clinical Low Back Pain Groups During Tasks Involving Spine Motion*; PhD Student, Faculty of Applied Health Sciences, Department of Kinesiology, University of Waterloo, Waterloo, ON, Advisor: Dr. Jack P. Callaghan (Research Advisor, Visiting Scholar Exchange to Regis University – 2016-2017).
4. Daniel Viggiani, *Relating intervertebral motion of the lumbar spine to low back pain developed during standing*, PhD Student, Faculty of Applied Health Sciences, Department of Kinesiology, University of Waterloo, Waterloo, ON, Advisor: Dr. Jack P. Callaghan (Research Advisor, Visiting Scholar Exchange to University of Denver – 2016-2017).

### **DPT STUDENT RESEARCH SUPERVISION**

1. Class of 2018: *A Comparison of Muscle Activation Strategies During Lumbar Flexion in Standing Between Pain Developers, non-Pain Developers, and People with Low Back Pain*. 6 students, in process
2. Class of 2017: *Influence of Sacroiliac Bracing on Muscle Activation in Standing Intolerant People*. 7 students (co-mentored with Dr. Bradley Davidson, University of Denver), in process, resulted in 1 conference proceeding (to date)
3. Class of 2016: *Clinical response to stabilization based exercise in a subgroup of individuals with low back pain*. 6 students, resulted in 2 conference proceedings, 2 manuscripts in preparation, **\*Winner** Outstanding Student Research Award, Regis School of Physical Therapy
4. Class of 2015: *Multiplanar movements in runners*. 3 students (co-mentored with Dr. Alice Davis), resulted in 1 conference proceeding
5. Class of 2015: *Reliability and validity of single and dual inclinometry for measuring cervical range of motion*. 6 students (co-mentored with Dr. Alice Davis), resulted in 1 published manuscript, 4 conference proceedings, **\*Winner** Outstanding Student Research Award, Regis School of Physical Therapy
6. Class of 2015: *Muscular bracing as an effective strategy for maintaining lumbopelvic control during frontal plane stability challenges in a subgroup of patients with low back pain*. 7 students, (co-mentored with Dr. Andrew Littman), resulted in 2 conference proceedings
7. Class of 2014: *Frontal Plane Control Response to Exercise in People with a History of Low Back Pain: A Pilot Study*. 6 students, resulted in 3 conference proceedings

8. Class of 2014: *Is the Active Hip Abduction Test a valid assessment tool for lumbopelvic control in pregnant women?* 6 students (co-mentored with Dr. Alice Davis), resulted in 1 conference proceeding, \***Winner** Outstanding Student Research Award, Regis School of Physical Therapy
9. Class of 2013: *Biomechanical Differences During Clinical Assessment Tests Between Patients with Low Back Pain and Matched Controls.* 7 students (co-mentored with Dr. Alice Davis), resulted in 2 published manuscripts, 2 conference proceedings
10. Class of 2012: *EMG Analysis to Determine Muscle Activation Patterns During the Active Hip Abduction Test in Healthy Individuals.* 5 students, resulted in 2 conference proceedings
11. Class of 2012: *Muscle Recruitment During the Extension Phase of Forward Flexion is Altered in People Who Develop Low Back Pain Compared to People Who Do Not Develop Pain During Prolonged Standing.* 3 students, resulted in 1 published manuscript, 3 conference proceedings
12. Class of 2011: *Muscle Co-Contraction of the Ankle is Associated with Fall-Risk in Older Adults.* 7 students, resulted in 1 published manuscript, 2 conference proceedings, \***Marilyn Gossman Seminar**

### **GRANT ACTIVITY**

#### **External Grants Submitted, In Review (Total: \$129,807.00)**

1. *Does an Individualized Intervention Improve Standing Tolerance in Standing-Intolerant Office Workers?* (\$129, 807.00) **Erika Nelson-Wong (PI)**, Jack P. Callaghan (Co-I). Centers for Disease Control and Prevention, PAR-12-200, NIOSH-R, July 1, 2017 – June 30, 2019.

#### **External Grants Awarded**

##### **Current (Total: \$697,999.00)**

1. *Comparing Running-Specific and Traditional Prostheses during Running: Assessing Performance and Risk.* (\$697,999.00) Brian Baum (PI), Anne Silverman (Co-I), **Erika Nelson-Wong (Co-I)**. United States Department of Defense (DoD) Orthotics and Prosthetics Outcomes Research Award, Award #W81XWH-15-1-0518, August 20, 2015 – August 19, 2018.

##### **Completed (Total: \$28,250.00)**

1. *Predictive Factors in Workers at Risk for Standing-Related Low Back Pain: Early Identification and Response to a Targeted Exercise Intervention.* (Mentoring Grant) **Nelson-Wong E. (PI)**, April 1, 2010 – November 30, 2011, Bone and Joint Decade Young Investigators Initiative.
2. *Inter- and Intra-rater Reliability of the Active Hip Abduction Test.* (\$750) **Nelson-Wong E, Davis AM (Co-I)**, May 1, 2010 – April 30, 2012, Colorado Spine Therapy, LLC (Foundation).
3. *Biomechanical Predictors of Induced, non-Specific Low Back Pain, and Motor Control Responses to a Stabilization Exercise Based Clinical Intervention.* (\$15,000) **Nelson-Wong E (PI)**, September 1, 2008 – August 31, 2009, Promotion of Doctoral Studies Award II, Foundation for Physical Therapy.
4. *Biomechanical Predictors of Induced, non-Specific Low Back Pain, and Motor Control Responses to a Stabilization Exercise Based Clinical Intervention.* (\$7,500) **Nelson-Wong E (PI)**, September 1, 2006 – August 31, 2007, Promotion of Doctoral Studies Award I, Foundation for Physical Therapy.
5. *Biomechanical Predictors of Induced, non-Specific Low Back Pain, and Motor Control Responses to a Stabilization Exercise Based Clinical Intervention.* (\$5,000) **Nelson-Wong E (PI)**, January 1, 2006 – August 31, 2006, Mary McMillan Doctoral Award, Foundation for Physical Therapy.

#### **Internal Grants Awarded**

##### **Completed (Total: \$16,729.00)**

1. *Lumbopelvic Control Differences and Response to Exercise in People With and Without Low Back Pain.* (\$3949.00) **Nelson-Wong E (PI)** Nov 1, 2013 – April 30, 2014, Regis University, University Research and Scholarship Council (URSC), Faculty Research Grant.
2. *Qualitative Analysis of Different Lecture Slide Completeness in Physical Therapy Education: Student and Faculty Perceptions.* (\$980.59) Hammerich A, Eigsti H, Marcisz N, **Nelson-Wong E (Co-I)**, May 1, 2012 – April 30, 2013, Regis University, Sponsored Projects Academic Research Council
3. *Equipment for Synchronous Collection of Muscle Activation, Force Platform, and Motion Capture Data for Biomechanical Analysis of Human Movement.* (\$2,000) **Nelson-Wong E (PI)**, May 1, 2011 – April 30, 2012, Regis University, Sponsored Projects Academic Research Council (SPARC) Faculty Research Grant.
4. *Biomechanical Differences in Sub-groups of Patients with Low Back Pain.* (Salary Buyout – 36 Contact Hours of Teaching), **Nelson-Wong E (PI)**, January 1, 2011 – May 15, 2011, Faculty Seed Grant, Regis University Rueckert-Hartman College for Health Care Professionals Council on Research and Scholarship.
5. *Biomechanical Differences Between Sub-groups of Patients with Low Back Pain: Linking Sub-classification to Mechanism.* (\$750) **Nelson-Wong E (PI)**, Feb 15, 2011 – April 30, 2011, Regis University, Sponsored Projects Academic Research Council (SPARC) Faculty Research Grant.

**Student Grants Awarded (Total: \$8,166.00)**

1. *Influence of Sacroiliac Bracing on Trunk Coactivation During Return to Stand in Healthy People who are Standing Intolerant.* (\$500.00) Edgar K., **Nelson-Wong E.** Jan 2017 - Feb 2017, Regis University, University Research and Scholarship Council (URSC), Student Travel Grant.
2. *Clinical response to stabilization based exercise in a subgroup of individuals with low back pain.* (\$500.00) Ingerson E, **Nelson-Wong E** Nov, 2015 – Feb 2016, Regis University, University Research and Scholarship Council (URSC), Student Travel Grant
3. *Muscular bracing as an effective strategy for maintaining lumbopelvic control during frontal plane stability challenges in a subgroup of patients with low back pain.* (\$500.00) Burks M, Littman A, **Nelson-Wong E.** Nov, 2014 - Feb 2015, Regis University, University Research and Scholarship Council (URSC), Student Travel Grant
4. *Concurrent validity of single and dual inclinometry for measuring cervical range of motion.* (\$500.00) Lachtman D, Davis AM, **Nelson-Wong E.** Nov, 2014 - Feb 2015, Regis University, University Research and Scholarship Council (URSC), Student Travel Grant
5. *Multiplanar movements in runners.* (\$500.00) Bishop K, **Nelson-Wong E,** & Davis AM. Nov, 2014 - Feb, 2015, Regis University, University Research and Scholarship Council (URSC), Student Travel Grant
6. *Reliability and validity of single and dual inclinometry for measuring cervical range of motion.* (\$270.00) Bartha D, Beltran M, Dominguez D, Lachtman D, Messerli A, Miller S, Davis AM, **Nelson-Wong E.** Feb 15, 2014 – April 30, 2014, Regis University, University Research and Scholarship Council (URSC), Student Research Grant
7. *Multiplanar movements in runners.* (\$296.00) Bishop K, Bandelier J, Bissett S, **Nelson-Wong E,** Davis AM. Feb 15, 2014 – April 30, 2014, Regis University, University Research and Scholarship Council (URSC), Student Research Grant
8. *Neuromuscular Strategies During Frontal Plane Movement in a Subgroup of Subjects with Low Back Pain: Implications of Poor Lumbopelvic Control.* (\$500.00) Bourgeois G, **Nelson-Wong E.** Feb 15, 2014 – April 30, 2014, Regis University, University Research and Scholarship Council (URSC), Student Travel Grant
9. *Frontal Plane Control Response to Exercise in People with a History of Low Back Pain: A Pilot Study.* (\$500.00) Bourgeois G, DeGrandis C, Hamilton N, Kirven I, Pieratt K, Thornton W, **Nelson-**

- Wong E.** Nov 1, 2012 – April 30, 2013, Regis University, Sponsored Projects Academic Research Council (SPARC) Student Research Grant.
10. *Does Combined Frontal and Sagittal Plane Assessment Improve Discrimination of People With Low Back Pain?* (\$500) Gallant P, **Nelson-Wong E.** Nov 1, 2012 – April 30, 2013, Regis University, Sponsored Projects Academic Research Council (SPARC) Student Travel Grant.
  11. *Muscle Activation During Frontal and Sagittal Plane Movements in Patients with Low Back Pain and Matched Controls.* (\$500) Poupore K, **Nelson-Wong E.** Nov 1, 2012 – April 30, 2013, Regis University, Sponsored Projects Academic Research Council (SPARC) Student Travel Grant.
  12. *Biomechanical Differences During Clinical Assessment Tests Between Patients with Low Back Pain and Matched Controls.* (\$500.00) Alexander S, Billingsley P, Dehmer K, McClenahan B, Pecoraro K, Piatte A, Suhadolnik S, Davis AM, **Nelson-Wong E.** Oct 15 2011 – April 30, 2012, Regis University, Sponsored Projects Academic Research Council (SPARC) Student Research Grant.
  13. *Muscle Activation Differences Between People With and Without Low Back Pain During the Active Hip Abduction Test: An Exploratory Study.* (\$500.00) Stobie M, **Nelson-Wong E.** Oct 15 2011 – April 30, 2012, Regis University, Sponsored Projects Academic Research Council (SPARC) Student Travel Grant.
  14. *Muscle Recruitment During the Extension Phase of Forward Flexion is Altered in People Who Develop Low Back Pain Compared to People Who Do Not Develop Pain During Prolonged Standing.* (\$500.00) Csepe D, **Nelson-Wong E.** Oct 15 2011 – April 30, 2012, Regis University, Sponsored Projects Academic Research Council (SPARC) Student Travel Grant.
  15. *Muscle Co-Contraction of the Ankle is Associated with Fall-Risk in Older Adults.* (\$500) Appell RK, **Nelson-Wong E.** Oct 15, 2010 – April 30, 2011, Regis University, Sponsored Projects Academic Research Council (SPARC) Student Travel Grants.
  16. *EMG Analysis to Determine Muscle Activation Patterns During the Active Hip Abduction Test in Healthy Individuals.* (\$500) Benz A, Bridge P, Craig K, Miller J, Stobie M, **Nelson-Wong E.** Oct 15, 2010 – April 30, 2011, Regis University, Sponsored Projects Academic Research Council (SPARC) Student Research Grants.
  17. *Muscle Co-Contraction of the Ankle is Associated with Fall-Risk in Older Adults.* (\$500) Appell RK, Nawaz H, McKay M, Roth J, Sigler RL, Third JN, Walker MO, **Nelson-Wong E.** Oct 15, 2009 – April 30, 2010, Regis University, Sponsored Projects Academic Research Council (SPARC) Student Research Grants.

#### **Grants Submitted, Not Funded (Total: \$1,965,743.00)**

1. *Interpreting Neuromuscular Mechanics Underlying Recurrent Back Pain: A Novel Systems Engineering and Motor Control Approach.* (\$433,714.00) Bradley Davidson (PI), Sheri Silfies (Co-I), **Erika Nelson-Wong (Co-I).** National Institutes for Health, R-21, August 1, 2017 – July 31, 2019.
2. *An activity enabling discretely-variable 'exoskeletal' thoracic-lumbar-sacral orthosis.* (\$998,000.00). Johnson A (PI), Davidson B (Co-I), Shelburne K (Co-I), Akuthota V (Co-I), Mandelbaum M (Co-I), McIlwain S (Co-I), **Nelson-Wong E (Co-I).** DARPA, Not selected for funding, 2014.
3. *Identifying the root causes of rotator cuff pathology related to muscle fatigue.* (\$174,000.00) Dickerson C (PI), **Nelson-Wong E (Co-I).** Canadian Institute for Health Research (CIHR), Not selected for funding, 2014, 2015.
4. *Muscle Activation Strategies in Low Back Pain Subgroups: A Case-Control Study.* (\$305,100.00). **Nelson-Wong E (PI)**, Davis AM (Co-I). National Institutes of Health, #1R15AR062838-01. Not selected for funding, 2011.

5. *Biomechanical differences between subgroups of patients with low back pain: a missing link for sub-classification?* (\$14,929.00). **Nelson-Wong E (PI)**, Davis AM (Co-I), Little C (Co-I). Orthopaedic Section of the American Physical Therapy Association Research Grant. Not selected for funding. 2011.
6. *Biomechanical differences in sub-groups of patients with low back pain: Can the Treatment Based Classification approach be improved upon?* (\$40,000.00). **Nelson-Wong E (PI)**, Davis AM (Co-I). Foundation for Physical Therapy Research Grant. Not selected for funding. 2010.

## **PROFESSIONAL SERVICE**

### **International Grant Panels**

Dec, 2016, Reviewer, *Swiss National Science Foundation, Research Grant*

Sep, 2016, Reviewer, *Swiss National Science Foundation, Research Grant*

July, 2016, Reviewer, *Austrian Science Fund, Erwin Schrödinger Fellowship*

Dec, 2015, Reviewer, *Austrian Science Fund, Erwin Schrödinger Fellowship*

Jan, 2015, Reviewer, *Swiss National Science Foundation, Research Grant*

Feb, 2015, Reviewer, *UKLeuven Belgium, Research Grant*

Sept, 2014, Mitacs, *Elevate Post-Doctoral Fellow Grant Review, Canada*

Mar, 2014, Reviewer, *UKLeuven Belgium, Research Grant*

Dec, 2013, Reviewer, *Swiss National Science Foundation, Research Grant (Division of Biology and Medicine)*

Dec, 2013, Reviewer, *Swiss National Science Foundation, Collaborative Research Grant (International Research)*

Dec, 2012, Reviewer, *Swiss National Science Foundation, Research Grant*

Feb, 2012, Reviewer, *Natural Science Engineering Research Council (NSERC) Canada, Canada Research Chair in Ergonomics*

Jan, 2012, Reviewer, *Natural Science Engineering Research Council (NSERC) Canada, Discovery Grant (2 Grants Reviewed)*

Jan, 2010, Reviewer, *Natural Science Engineering Research Council (NSERC) Canada, Discovery Grant*

### **Abstract Review Committees**

2010-2016 - *American Society of Biomechanics Annual Meeting*

2010 - 2014 - *APTA Section on Research Abstract Review Committee*

2014 - *World Congress on Biomechanics*

### **Manuscript Peer Reviewer - Journals**

*Gait and Posture, Human Movement Science, Human Factors, Journal of Electromyography & Kinesiology, Journal of Orthopaedic Sports Physical Therapy, Journal of Rehabilitation Research and Development, Physical Therapy in Sport, Physical Therapy, Archives of Physical Medicine and Rehabilitation, Journal of Sport Rehabilitation, Ergonomics, Physiotherapy Theory and Practice, Journal of Biomechanics, Applied Ergonomics, Muscle and Nerve, Geriatrics & Gerontology, Journal of Applied Biomechanics, Medical Science Monitor, Manual Therapy*

**Editorial Review Board Appointments**

2017 – 2019 - *Journal of Applied Biomechanics*

**Professional, Scientific, Honorary Associations or Societies**

American Physical Therapy Association (APTA), Member 1995 – present

Section on Research (SOR), Member 2005 – present

Biomechanics Special Interest Group

Orthopaedic Section, Member 2007 – present

Pain Special Interest Group

Education Section, Member 2005 - present

Home Health Section, Member 2000 – 2005

Geriatric Section, Member 2000 - 2005

American Society of Biomechanics (ASB), Member 2009 – present

Canadian Society for Biomechanics (CSB), Member 2005 – present

International Society of Biomechanics (ISB), Member 2005 – present

American Academy of Orthopaedic and Manual Physical Therapy (AAOMPT), Member 2007 - present

**Positions, Committees, Task Forces**

ASB, Education Committee Member, 2013 – present

ASB, Student Grant-in-Aid Subcommittee (Education), Chair, 2016-2017

CSB, Masters Student Awards Committee, 2016

ASB, Awards Committee, 2016

CSB, Chair, Low Back Pain Platform Presentations, 2016

ASB – Co-Organizer, 4<sup>th</sup> Annual Rocky Mountain ASB Regional Meeting, Estes Park, Co, 2014.

APTA, Section on Research, Biomechanics Special Interest Group, Awards Committee, 2013 – 2018

ASB, Chair, Low Back Pain Platform Presentations, 2013

ASB, Student Mentoring Program, Member, 2010-2014, 2016

ASB, Membership Committee, Member, 2010-2012

APTA, SOR, Chair SOR Platform Presentations, 2010

CSB, Co-Chair Motor Control Platform Presentations, 2010

**Service to the College/University**

**Regis University**

Institutional Review Board, Member, 2013-2019

Institutional Review Board, Member (Alternate), 2011-2012

Professional Learning Community for Research/Grant Writing (Organizer), 2016-present

**Rueckert-Hartman College for Health Professions**

Faculty Awards Committee, Member, 2015 - 2016

**School of Physical Therapy**

Awards Committee, Member, 2015 – 2018  
Evidence Based Practice Task Force, Chair, 2016 - 2017  
Evidence Based Practice Task Force, Member, 2015 - 2016  
Health and Exercise Science Team, Member, 2009 - 2016  
Awards Committee, Chair, 2012 – 2015  
Class Advisor – DPT Class of 2013  
DPT Team, Member, 2009 - 2012  
Learning Technologies Clicker Task Force, Member, 2011 - 2012  
Critical Inquiry (Evidence Based Practice) Team, Member, 2009 - 2011

### **Teaching Responsibilities**

Biomechanics and Kinesiology – Extremities, DPT 703, Course Coordinator  
Perspectives in Persistent Pain Elective, DPT 7810, Course Coordinator  
Biomechanics and Kinesiology – Spine, DPT 705, Course Coordinator  
Critical Inquiry, DPT 776, Instructor  
Kinesiology II, DPT 707, Instructor  
Biomechanics of Exercise Lab, HES 451, Instructor

### **Service to the Community**

Jefferson County Open Space, Raptor Monitor - volunteer to observe/monitor golden eagle nesting sites in Boulder Canyon, serve as a liaison between land managers and the rock climbing community, 2016-17

Boulder Climbing Community, USFS Eagle Monitoring Program – volunteer to observe/monitor golden eagle nesting sites in Boulder Canyon, 2016

American Alpine Club – Front Range Section, Golden, CO – wrote a grant (funded through The Access Fund Anchor Replacement Initiative) to replace unsafe fixed hardware and train climbers in fixed hardware replacement in Clear Creek Canyon, October 2015 – December 2016.

Front Range Pika Project, CO – performed high altitude bio-surveys of pika and marmot populations as a ‘citizen scientist’ for joint projects through University of Colorado, Colorado State University, Colorado Division of Wildlife, and the Denver Zoo, 2011 - 2015

National Sports Center for the Disabled, Denver, CO – volunteered with the blind climbers program, assisted students from the Colorado School for the Blind learn rock climbing, 2013 - 2014.

US Forest Service/Bureau of Land Management, Penitente Canyon, La Garita, CO replaced fixed hardware (bolts and anchors) for climber safety, trail building, landscaping for erosion control and safe public access, 2012 - 2014

First Ascenders, Denver, CO – volunteered with program that serves underprivileged high school kids by exposing them to opportunities in the outdoors to develop self-efficacy, confidence, teamwork and leadership skills, 2013.

9HealthFair, Golden, CO - supervise 1<sup>st</sup> year DPT students in cardiovascular risk assessments, 2010, 2012

Adopt-a-Crag Trail Days, North Table Mountain, Golden, CO, Eldorado Canyon State Park, Boulder, CO - performed trail building for erosion prevention and to improve public access, 2011 - 2012



Provision of *pro bono* physical therapy services to individuals in financial need, average 3 patients per year, 2009 - 2014

HERA Climb4Life, Boulder, CO – volunteered as a hiking guide for individuals with ovarian cancer and their families, worked registration and silent auction to raise funds for ovarian cancer research, 2011

Parkinson's Yoga, Asana Yoga, Golden, CO – assisted twice weekly in free community yoga classes for individuals with Parkinson's Disease, 2010 - 2011

Flagstaff Mountain Trash Bash, Boulder, CO – trash clean-up to improve community relationships between user groups at Flagstaff Mountain, 2010

Learn to Row Coach, Moline, IL – coached beginning rowers in a community based rowing program, 2003 - 2005 (US Rowing Level 1 Coach)

Multiple Sclerosis Aquatics Program Volunteer, YMCA Moline, IL – volunteered on a weekly basis to assist in a free cool-water aquatics program for individuals with MS, 2002 - 2004 (Certified in MS Aquatics Training – Illinois Chapter of the MS Society)

### **PROFESSIONAL DEVELOPMENT**

*Piecing Together the Pain Puzzle: The Biopsychosocial Model*, APTA Section on Research Retreat, Bryant University, Smithfield, RI, July 26-30, 2015.

*Communicating Science Training*, Foundation for Physical Therapy, Indianapolis, IN, Feb 4, 2015.

*Discerning Ethics Excellence Panel Discussion*, Academic Grants Office, Regis University, Denver, CO, November 29, 2012.

*Public Speaking Workshop*, Center for Excellence in Teaching and Learning, Regis University, Denver CO, November 7, 2012.

*ASB Fellows Symposium*, Annual Meeting of the American Society of Biomechanics, Gainesville, FL, August, 2012.

*Aging and Gait Symposium*, Annual Meeting of the American Society of Biomechanics, Gainesville, FL, August, 2012.

*Young Investigators Initiative Grant Writing Workshop*, Bone and Joint Decade, Rosemont, IL, November 10-12, 2011.

*Promoting Better Teaching*, Fall Faculty Conference, Regis University, Denver, CO, October 7, 2011.

*Transgressing Teaching*, Fall Faculty Conference, Regis University, Denver, CO, October 7, 2011.

*Teaching in Biomechanics Symposium*, Annual Meeting of the American Society of Biomechanics, Long Beach, CA, August, 2011.

*Engaging Your Learners*, Learning Technologies, Regis University, Denver, CO, May 26, 2011.

*Faculty Development Workshop for New Faculty*, Education Section of the APTA, Chicago, IL, June 3-6, 2010.

*Young Investigators Initiative Grant Writing Workshop*, Bone and Joint Decade, Rosemont, IL, April 16-18, 2010.

*Teaching in an E-Learning Age: Using Web-based Blended Learning and 3D Virtual Environments to Facilitate Student Learning, Parts 1 and 2*, Combined Sections Meeting of the APTA, San Diego, CA, February 2010.

*Funded Research and Early Career Development Opportunities for Faculty Members*, Combined Sections Meeting of the APTA, San Diego, CA, February 2010.

*Concussion and Mild Traumatic Brain Injury: Update 2010*, Combined Sections Meeting of the APTA, San Diego, CA, February 2010.

*How to Design and Conduct RCTs: Real-World Considerations*, Combined Sections Meeting of the APTA, San Diego, CA, February 2010.

*Eugene Michels Research Forum: Neuroimaging - The Story Behind the Blob*, Combined Sections Meeting of the APTA, San Diego, CA, February 2010.

*Best Practices for Designing Power Points*, Learning Technologies, Regis University, Denver, CO, November 3, 2009.

*Protecting Human Research Participants*, National Institutes of Health Office of Extramural Research, August 25, 2009.

*Psychological Influence on Musculoskeletal Pain: A Clinical Update for the Practicing Manual Therapist*, AAOMPT Annual Meeting, Seattle, WA, October 30, 2008.

*So the Student Asked About Odds Ratios (Again): Interpretation and Application of Evidence Based Practice for the Practicing Clinician*, AAOMPT Annual Meeting, Seattle, WA, October 29, 2008.

*Concentrated Education Series in Manual Therapy*, APTA Annual Meeting, Denver, CO, June 27-30, 2007.

*Professionalism Across the Generations*, Education and Health Policy and Administration Sections of the APTA, New Orleans, LA, February 23, 2005.