

Sanghee Moon

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[Homepage](#) | [Research Gate](#) | [Google Scholar](#) | [Twitter](#)

EDUCATION

PH.D. IN REHABILITATION SCIENCE | [University of Kansas Medical Center](#)
Aug 2013–Jul 2019 | Kansas City, KS

B.S. IN BIOLOGY | [Minnesota State University](#)
Aug 2010–May 2013 | Mankato, MN
Magna Cum Laude
US-Korea Dual Degree

B.S. IN PHYSICAL THERAPY | [Daegu Catholic University](#)
Mar 2006–May 2013 | South Korea
US-Korea Dual Degree

RESEARCH EXPERIENCE

UNIVERSITY OF KANSAS MEDICAL CENTER

GRADUATE RESEARCH ASSISTANT (PI: WEN LIU) | [Neuromuscular Research Laboratory](#)
Aug 2013–Present

- Effects of a mind-body exercise on non-motor symptoms and inflammatory status in patient with Parkinson's disease (Ph.D. dissertation – NIH-funded (R21))
- Effect of a high-intensity exercise on immune response in females with fibromyalgia
- Effects of an aerobic exercise on cardiovascular and bone health in non-ambulatory stroke survivors
- Benefits of an aerobic exercise in people with spinal cord injury
- Benefits of a mild exercise on gait, cognition, and sleep in Parkinson's disease
- Altered immune response to exercise in patient with fibromyalgia after a mind-body exercise

GRADUATE RESEARCH ASSISTANT (PI: HANNES DEVOS) | [Laboratory for Advanced Rehabilitation Research in Simulation](#)
Aug 2016–Present

- Developing a balance assessment system using virtual reality technology
- Artificial neural network in rehabilitation research
- Classification of Parkinsonian syndromes using artificial neural network
- Population-based assessment of fitness to drive in medical conditions
- Pupillary response to cognitive workload and distraction during driving in breast cancer survivors
- Pupillary response to cognitive workload in Parkinson's disease

STOWER'S INSTITUTE FOR MEDICAL RESEARCH

GRADUATE RESEARCHER (PI: LINGHEN LI) | [Linghen Li Laboratory](#)
Apr–Aug 2014

- Hematopoietic stem cell niche and leukemia

MINNESOTA STATE UNIVERSITY

UNDERGRADUATE RESEARCHER (PI: NAMYONG LEE) | [Mathematics and Statistics Laboratory](#)
Aug 2012–May 2013

- Mathematical models for fatigue muscle fiber mechanism

UNDERGRADUATE RESEARCHER (PI: DOROTHY WIGLEY) | [Microbiology Laboratory](#)
Aug 2012–May 2013

- Effects of amputation on Verminephrobacter in Eisenia fetida

ACADEMIC PUBLICATIONS

PUBLISHED ARTICLES (PEER-REVIEWED)

1. [S Moon](#), CVM Sarmiento, IV Smirnova, Y Colgrove, K Lyons, SM Lai, W Liu. (2019) "Effects of Qigong exercise on non-motor symptoms in Parkinson's disease: A protocol for a randomized controlled trial". *Medicines*. 6(1), 13.
[doi: 10.3390/medicines6010013](#)
2. JS Myers, M Kahya, M Mitchell, J He, J Dai, [S Moon](#), K Hamilton, M Valla, A O'Dea, J Klemp, M Kurylo, AE Akinwuntan, H Devos. (2018) "Pupillary response: cognitive effort for breast cancer survivors". *Supportive Care in Cancer*.
[doi: 10.1007/s00520-018-4401-0](#)
3. M Kahya, [S Moon](#), K Lyons, R Pahwa, AE Akinwuntan, H Devos. (2018) "Pupillary response to cognitive demand in Parkinson's disease: A pilot study". *Frontiers in Aging Neuroscience*. 10, 90.
[doi: 10.3389/fnagi.2018.00090](#)
4. [S Moon](#), M Ranchet, AE Akinwuntan, M Tant, DB Carr, MA Raji, H Devos. (2018) "The impact of advanced age on driving safety in adults with medical conditions". *Gerontology*.
[doi: 10.1159/000486511](#)
5. [S Moon](#), M Ranchet, M Tant, AE Akinwuntan, H Devos. (2017) "Comparison of unsafe driving across medical conditions". *Mayo Clinic Proceedings*. 92(9), 1341-1350.
[doi: 10.1016/j.mayocp.2017.06.003](#) / [Youtube \(Video Abstract\)](#) / [Editorial Comments](#)
6. [S Moon](#), M Schmidt, IV Smirnova, Y Colgrove, W Liu. (2017) "Qigong may alter TNF-alpha in serum and improve sleep in patients with Parkinson's disease". *Medicines*. 4(2), 23.
[doi: 10.3390/medicines4020023](#)

SUBMITTED MANUSCRIPTS

1. M Kahya, [S Moon](#), M Ranchet, R Vukas, KE Lyons, R Pahwa, AE Akinwuntan, H Devos. "Neurophysiology of cognitive-motor interference in aging and age-related neurodegenerative conditions". *Experimental Neurology* (Submitted; Under Review)
2. [S Moon](#), P Ahmadnezhad, HJ Song, J Thompson, K Kipp, AE Akinwuntan, H Devos. "Artificial neural networks in neurorehabilitation: A scoping review". *Annals of Physical and Rehabilitation Medicine* (Submitted; Under Review)
3. [S Moon](#), M Kahya, K Lyons, R Pahwa, AE Akinwuntan, H Devos. "Cognitive workload during verbal abstract reasoning in Parkinson's disease: A pilot study". *BMJ Innovations* (Submitted; Under Review)
4. CVM Sarmiento, [S Moon](#), T Pfeifer, W Liu. "The altered immune response to exercise in patients with fibromyalgia before and after a mind-body intervention: A study protocol for a double-blinded randomized clinical trial". *BMC Complementary and Alternative Medicine* (Submitted; Under Review)
5. JS Myers, N Alissa, M Mitchell, J Dai, J He, [S Moon](#), A O'Dea, J Klemp, M Kurylo, AE Akinwuntan, H Devos. (2018) "Pupillary response, driving simulation, and increased cognitive load: Assessment of cognitive effort for breast cancer survivors". *Supportive Care in Cancer* (Submitted; Under Review)
6. [S Moon](#), CVM Sarmiento, Y Colgrove, W Liu. "Complementary and alternative medicine for people with Parkinson's disease". *Archives of Physical Medicine and Rehabilitation* (Submitted; Under Review)
7. AS Alqahtani, R Alajam, [S Moon](#), CVM Sarmiento, SM Eickmeyer, S Jernigan, IV Smirnova, W Liu. "Reduction of risk for cardiovascular disease in non-ambulatory stroke survivors using an assisted-walking aerobic exercise: A pilot study". *Clinical Rehabilitation* (Submitted)
8. AS Alqahtani, R Alajam, [S Moon](#), CVM Sarmiento, IV Smirnova, M Pang, M Phadnis, W Liu. "Changes in bone biomarkers after an 8-week walking exercise in non-ambulatory stroke survivors - A pilot study". (In submission)
9. CVM Sarmiento, [S Moon](#), IV Smirnova, SM Lai, Y Colgrove, M Maz, W Liu. "Immune response to a bout of high-intensity exercise in females with fibromyalgia: A pilot study". (In submission)

MANUSCRIPTS IN PREPARATION

1. [S Moon](#), CVM Sarmiento, M Steinbacher, IV Smirnova, K Lyons, Y Colgrove, SM Lai, W Liu. "Can Qigong exercise improve non-motor symptoms in people with Parkinson's disease?". (In preparation)
2. [S Moon](#), CVM Sarmiento, IV Smirnova, K Lyons, Y Colgrove, SM Lai, W Liu. "Effects of Qigong exercise on inflammatory status in people with Parkinson's disease". (In preparation)
3. CVM Sarmiento, [S Moon](#), W Liu. "Low compliance to exercise in patients with fibromyalgia: What to blame, psychological or physiological factors?". (In preparation)

4. CVM Sarmiento, [S Moon](#), IV Smirnova, SM Lai, M Maz, W Liu. "The impact of qigong on immune responses due to a bout of high-intensity exercise". (In preparation)
5. [S Moon](#), HJ Song, K Kipp, VD Sharma, K Lyons, AE Akinwuntan, H Devos. "Classification of Parkinsonism using artificial neural networks: A retrospective database study". (In preparation)
6. VD Sharma, [S Moon](#), H Devos, K Lyons, R Pahwa. "Quantitative gait assessment of patients with essential tremor using wireless sensors". (In preparation)

RESEARCH GRANTS

1. [S Moon \(PI\)](#), H Devos. (2018) "Artificial Brain Mapping", The NSF 2026 Idea Machine, National Science Foundation, \$26,000 (Not funded).
2. W Liu, IV Smirnova, SM Lai, K Lyons, J Qiu, [S Moon \(RA\)](#), CVM Sarmiento, V Gangeddula. (2018) "Assessment of mind-body intervention in patients with Parkinson's disease", R21HD094003, National Institutes of Health, \$191,250 (Funded).
3. H Devos, D Carr, R Mukaila, AE Akinwuntan, [S Moon \(RA\)](#). (2017) "Driving safety in the oldest-old", Evidence for Action: Investigator-Initiated Research to Build a Culture of Health, Robert Wood Johnson Foundation, \$119,159 (Not funded).
4. H Devos, [S Moon \(Co-I\)](#), R Mukaila, AE Akinwuntan. (2017) "Driving safety in the oldest-old", Center for Large Data Research and Data Sharing in Rehabilitation, \$25,000 (Not funded).

AWARDS & ACHIEVEMENTS

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| • Scientific Inquiry Award for the Best Overall Poster Presentation Kansas Physical Therapy Association Research Committee | Apr 2019 |
| • PTRS Best Presentation Award (\$200) Department of Physical Therapy and Rehabilitation Science, University of Kansas Medical Center | Apr 2019 |
| • Student Governing Council Travel Award (\$200) Student Governing Council, University of Kansas Medical Center | Oct 2018 |
| • Ringle Health Professions Scholarship (\$4,000) School of Health Professions, University of Kansas Medical Center | Aug 2018 |
| • One University Open Access Fund at KU (\$ 1,250) KU Libraries, University of Kansas & University of Kansas Medical Center | May 2018 |
| • Graduate Student Professional Development Award (\$250) Office of Graduate Studies, University of Kansas Medical Center | Apr 2018 |
| • Student Governing Council Travel Award (\$300) Student Govenring Council, University of Kansas Medical Center | Feb 2018 |
| • Ringle Health Professions Scholarship (\$5,200) School of Health Professions, University of Kansas Medical Center | Aug 2017 |
| • School of Health Professions Dean's Diversity Scholarship (\$500) School of Health Professions, University of Kansas Medical Center | Jul 2017 |
| • Scientific Inquiry Award for the Best Presentation Kansas Physical Therapy Association Research Committee | Apr 2017 |
| • PTRS Best Presentation Award (\$200) Department of Physical Therapy and Rehabilitation Science, University of Kansas Medical Center | Apr 2017 |
| • Graduate Student Professional Development Award (\$500) Office of Graduate Studies, University of Kansas Medical Center | Oct 2016 |
| • Student Governing Council Travel Award (\$400) Student Governing Council, University of Kansas Medical Center | Oct 2016 |
| • Bittel Family Scholarship (\$300) Department of Physical Therapy and Rehabilitation Science, University of Kansas Medical Center | Oct 2016 |

- Ringle Health Professions Scholarship (\$4,400) Aug 2016
School of Health Professions, University of Kansas Medical Center
- Outstanding Graduate Teaching Assistant Award Oct 2015
Department of Physical Therapy and Rehabilitation Science, University of Kansas Medical Center
- Ringle Health Professions Scholarship (\$7,000) Aug 2015
School of Health Professions, University of Kansas Medical Center
- Undergraduate Research Grant (\$100) Oct 2012
Undergraduate Research Council, Minnesota State University
- Certificate of Appreciation Jan 2012, Aug 2012
Kearney International Center, Minnesota State University
- Who's Who Among Students May 2012
Who's Who Among Students in American Universities & Colleges
- Certificate of Recognition Oct 2010
Department of Ethnic Studies, Minnesota State University
- Dean's List 2010, 2011, 2012, 2013
College of Science, Engineering & Technology, Minnesota State University
- US-Korea Dual Degree Scholarship (\$100,000) 2006–2007, 2010–2013
Daegu Catholic University, South Korea

ACADEMIC MEMBERSHIP

- American Congress of Rehabilitation Medicine (ACRM) Since 2018
- American Association for the Advancement of Science (AAAS) Since 2017
- International Parkinson and Movement Disorder Society Since 2017

ACADEMIC PRESENTATIONS

SYMPOSIUM TALK

1. [S Moon](#), J Thompson, K Kipp, AE Akinwuntan, H Devos. (2019) "Artificial Neural Networks: Shaping the future of neurorehabilitation research". American Congress of Rehabilitation Medicine, Chicago, IL. (Scheduled; Nov 5-8th, 2019)
[url: ACRM.org/551435](https://url:ACRM.org/551435)

PLATFORM PRESENTATION

1. [S Moon](#), P Ahmadnezhad, HJ Song, J Thompson, K Kipp, AE Akinwuntan, H Devos. (2019) "Artificial Neural Networks: A Powerful Tool for Neurorehabilitation Research". Student Research Forum at University of Kansas Medical Center, Kansas City, KS.
2. [S Moon](#), M Ranchet, M Tant, A Akinwuntan, D Carr, M Raji, H Devos. (2018) "Driving safety in the oldest-old". Student Research Forum at University of Kansas Medical Center, Kansas City, KS.
3. [S Moon](#), M Schmidt, IV Smirnova, Y Colgrove, W Liu. (2017) "A mind-body exercise for Parkinson's disease: A pilot study". Kansas Physical Therapy Association Conference, Wichita, KS.
4. [S Moon](#), M Ranchet, M Tant, A Akinwuntan, H Devos. (2017) "Impact of medical conditions on driving safety". Student Research Forum at University of Kansas Medical Center, Kansas City, KS.
5. [S Moon](#), M Schmidt, IV Smirnova, Y Colgrove, W Liu. (2017) "A mind-body exercise for Parkinson's disease: A pilot study". American Physical Therapy Association Combined Section Meeting, San Antonio, TX.
6. [S Moon](#), M Schmidt, W Liu. (2014) "Benefits of a mild exercise on gait, cognition, and sleep in Parkinson's disease". Student Research Forum at University of Kansas Medical Center, Kansas City, KS.

POSTER PRESENTATION

1. C Sarmento, [S Moon](#), T Pfeifer, M Steinbacher, M Maz, SM Lai, Y Colgrove, IV Smirnova, W Liu. (2019) "The efficacy of Qigong on the main symptoms of fibromyalgia. A randomized clinical trial". American College of Sport Medicine, Orlando, FL.
2. [S Moon](#), M Kahya, KE Lyons, R Pahwa, AE Akinwuntan, H Devos. (2019) "Can we detect early cognitive declines in people with Parkinson's disease using an eye-tracker?". Kansas Physical Therapy Association Conference, Wichita, KS.
3. [S Moon](#), M Kahya, KE Lyons, R Pahwa, AE Akinwuntan, H Devos. (2019) "The eyes as a window to understanding abstract reasoning in Parkinson's disease". Annual Rare KC Meeting. Kansas City, MO.
4. [S Moon](#), M Schmidt, IV Smirnova, Y Colgrove, W Liu. (2018) "Can a mindfulness exercise make your sleep better and change your inflammatory status in Parkinson's disease?". American Congress of Rehabilitation Medicine. Dallas, TX.
[doi: 10.1016/j.apmr.2018.09.014](#)
5. [S Moon](#), M Kahya, KE Lyons, R Pahwa, AE Akinwuntan, H Devos. (2018) "The eyes as a window to understanding abstract reasoning in Parkinson's disease". American Congress of Rehabilitation Medicine. Dallas, TX.
[doi: 10.1016/j.apmr.2018.09.082](#)
6. [S Moon](#), M Ranchet, M Tant, A Akinwuntan, D Carr, M Raji, H Devos. (2018) "Risks of Unsafe Driving in the Oldest-old With Medical Conditions: A Comparative Analysis". American Congress of Rehabilitation Medicine. Dallas, TX.
[doi: 10.1016/j.apmr.2018.07.266](#)
7. [S Moon](#), M Schmidt, IV Smirnova, Y Colgrove, W Liu. (2018) A mindfulness exercise may improve sleep quality and change inflammatory biomarker level in Parkinson's disease: A pilot study". 2nd Pan American Parkinson's Disease and Movement Disorder Congress, Miami, FL.
[doi: 10.1002/mds.27434](#)
8. M Kahya, [S Moon](#), K Lyons, R Pahwa, AE Akinwuntan, H Devos. (2018) "Increased mental effort during abstract thinking and verbal reasoning in Parkinson's disease: A pilot study". 2nd Pan American Parkinson's Disease and Movement Disorder congress, Miami, FL.
[doi: 10.1002/mds.27434](#)
9. [S Moon](#), M Ranchet, M Tant, A Akinwuntan, H Devos. (2017) "Comparative analysis of unsafe driving risk in medical conditions". American Congress of Rehabilitation Medicine, Atlanta, GA.
[doi: 10.1016/j.apmr.2017.08.141](#)
10. [S Moon](#), M Schmidt, W Liu. (2016) "A meditative exercise for Parkinson's disease". Student Research Forum at University of Kansas Medical Center, Kansas City, KS.
11. [S Moon](#), S Son, T Hong, N Lee. (2013) "Mathematical models for fatigue muscle fiber mechanism". National Conference of Undergraduate Research at University of Wisconsin, La Crosse, WI.
12. [S Moon](#), S Son, T Hong, N Lee. (2013) "Mathematical models for fatigue muscle fiber mechanism". Undergraduate Research Symposium at Minnesota State University, Mankato, MN.

WORK EXPERIENCE

- Republic of Korea Armed Forces Hospital, Gangneung, South Korea Feb 2008–Jan 2010
Sergeant Army Medic at Department of Internal Medicine and Surgery
- Namsan Rehabilitation Hospital, Daegu, South Korea Jun–Aug 2007
Internship at Department of Musculoskeletal Physical Therapy

TEACHING EXPERIENCE

GRADUATE TEACHING ASSISTANT

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|---|-------------|
| PTRS 703 - Applied Anatomy | Summer 2019 |
| PTRS 750 - Research in Evidence-Based Physical Therapy Practice | Spring 2019 |
| PTRS 711 - Applied Kinesiology and Biomechanics | Fall 2018 |
| PTRS 703 - Applied Anatomy | Summer 2018 |
| PTRS 750 - Research in Evidence-Based Physical Therapy Practice | Spring 2018 |
| PTRS 711 - Applied Kinesiology and Biomechanics | Fall 2017 |
| PTRS 704 - Physical Therapy Intervention I | Fall 2017 |
| PTRS 817 - Ethics in Health Care | Summer 2017 |
| PTRS 703 - Applied Anatomy | Summer 2017 |

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| PTRS 853 - Neurologic Physical Therapy and Rehabilitation II | Spring 2017 |
| PTRS 703 - Applied Anatomy | Summer 2016 |
| PTRS 817 - Ethics in Health Care | Summer 2016 |
| PTRS 785 - Orthopedic Physical Therapy | Spring 2016 |
| REHS 962 - Advanced Studies in Rehabilitation Science | Fall 2015 |
| PTRS 855 - Pharmacology for Physical Therapists | Fall 2015 |
| PTRS 855 - Pharmacology for Physical Therapists | Summer 2015 |
| PTRS 817 - Ethics in Health Care | Summer 2015 |
| PTRS 846 - Musculoskeletal Physical Therapy III | Spring 2015 |
| PTRS 855 - Pharmacology for Physical Therapists | Fall 2014 |
| PTRS 845 - Musculoskeletal Physical Therapy II | Fall 2014 |
| PTRS 828 - Medical Imaging for Physical Therapists | Summer 2014 |
| PTRS 745 - Musculoskeletal Physical Therapy I | Spring 2014 |
| PTRS 711 - Applied Kinesiology and Biomechanics | Fall 2013 |

INVITED LECTURER

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|---|----------|
| Pathophysiology of Parkinson's disease University of Saint Mary, Leavenworth, KS | Sep 2018 |
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LEADERSHIP & VOLUNTEERING

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| <ul style="list-style-type: none"> University of Kansas Medical Center, Kansas City, KS Vice president of Mindfulness in Medicine - Student Interest Group | Aug 2018–Present |
| <ul style="list-style-type: none"> University of Kansas Medical Center, Kansas City, KS Social network manager of the PhD program in Rehabilitation Science | Aug 2013–Present |
| <ul style="list-style-type: none"> Greater Kansas City Science & Engineering Fair, Kansas City, MO Judge at the event held by Science City Kansas City | Apr 2019 |
| <ul style="list-style-type: none"> Student Research Forum, Kansas City, KS Volunteer at the event held by University of Kansas Medical Center | Apr 2019 |
| <ul style="list-style-type: none"> Helen Gold 5K/10K 2017, Overland Park, KS Volunteer at the event held by KU Parkinson's Disease Center | Sep 2018 |
| <ul style="list-style-type: none"> Head for the Cure Run/Walk 2018, Overland Park, KS Volunteer at the event held by Head for the Cure Foundation | Aug 2018 |
| <ul style="list-style-type: none"> Student Research Forum, Kansas City, KS Volunteer at the event held by University of Kansas Medical Center | Apr 2018 |
| <ul style="list-style-type: none"> Greater Kansas City Race for the Cure, Overland Park, KS Volunteer at the event held by Susan G. Komen Greater Kansas City | Oct 2017 |
| <ul style="list-style-type: none"> Walk to End Lupus Now, Shawnee, KS Volunteer at the event held by Lupus Foundation of America | Sep 2017 |
| <ul style="list-style-type: none"> Helen Gold 5K/10K 2017, Overland Park, KS Volunteer at the event held by KU Parkinson's Disease Center | Sep 2017 |
| <ul style="list-style-type: none"> Stroke Walk 2017, Kansas City, MO Volunteer at the event held by American Stroke Foundation | Sep 2017 |
| <ul style="list-style-type: none"> Student Research Forum, Kansas City, KS Volunteer at the event held by University of Kansas Medical Center | Apr 2017 |
| <ul style="list-style-type: none"> Stroke Walk 2016, Kansas City, MO Volunteer at the event held by American Stroke Foundation | Sep 2016 |
| <ul style="list-style-type: none"> Minnesota State University, Mankato, MN Vice president of Korean Student Association | Aug 2011–Aug 2012 |