

## EDUCATION

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**Ph.D. Candidate, Human Bioenergetics**

2023 - present

Human Performance Laboratory, Ball State University, Muncie, IN, United States

Advisor: Dr. Todd Trappe

**M.S., Exercise Physiology**

2020 - 2021

Loughborough University, Loughborough, United Kingdom

Advisor: Dr. Richard Ferguson

Thesis: The Effect of Different Durations of Low-intensity Exercise on AMPK Phosphorylation within skeletal muscle

**B.S., Physical Education**

2012 - 2016

Seoul National University, Seoul, Republic of Korea

Advisor: Dr. Wook Song

## RESEARCH INTERESTS

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- Healthy aging with exercise training  
Investigating how different modes of exercise (endurance, resistance, concurrent, and various sports) over several months or years contribute to preserving human physiological function
- Skeletal muscle health  
Focusing on skeletal muscle health parameters, including muscle size, strength, composition (adipose infiltration and collagen aggregation), enzyme activity, capillary profile, protein remodeling
- Molecular adaptations of skeletal muscles  
Exploring the connection between above-mentioned parameters and the underlying molecular responses

## Publication

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**Journal article**

Rogers KR, **Yoon G**, Vincenty CS, Trappe SW, Trappe TA. Muscle-specific atrophy of the lower limb musculature in response to simulated microgravity exposure in women. *J Appl Physiol* (1985). 2025 Sep 1;139(3):759-765. doi: 10.1152/jappphysiol.00483.2025. Epub 2025 Aug 19. PMID: 40828606.

Vincenty CS, **Yoon G**, Rogers K, Naruse M, Trappe S, Trappe TA. Human skeletal muscle-specific hypertrophy with exercise training and aging: a comprehensive review. *J Appl Physiol* (1985). 2025 Jul 1;139(1):58-69. doi: 10.1152/jappphysiol.00892.2024. Epub 2025 May 22. PMID: 40402994; PMCID: PMC12188863.

**Manuscript preparation**

**Yoon G**, Vincenty CS, Rogers KR, Raue U, Trappe SW, Trappe TA. Muscle-specific atrophy and adipose infiltration in 17 lower limb muscles in men: 70 years of aging with or without lifelong aerobic exercise. *Manuscript in preparation*.

**Book Chapter**

NSCA Korea's Sports Nutrition (2024). Chapter 9: Obesity and Weight management

## Presentation & Abstract

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### Oral presentation

**Yoon G.** Energy balance: Crosstalk between brain and peripheral tissues, *National Strength and Conditioning Association-Korea Conference 2024*

### Abstract presentation

**Yoon G**, Vincenty CS, Rogers KR, Naruse M, Trappe SW, Trappe TA. (2024). A comprehensive review of the skeletal muscle hypertrophic response to exercise training in older adults: III. Influence of training duration and volume. *Integrative physiology of Exercise*.

Vincenty CS, **Yoon G**, Rogers KR, Naruse M, Trappe SW, Trappe TA. (2024). A comprehensive review of the skeletal muscle hypertrophic response to exercise training in older adults: I. Insights into muscle specific responses. *Integrative physiology of Exercise*. \* **Oral presentation accepted**

Rogers KR, Vincenty CS, **Yoon G**, Naruse M, Trappe SW, Trappe TA. (2024). A comprehensive review of the skeletal muscle hypertrophic response to exercise training in older adults: II. Age- and sex-specific responses. *Integrative physiology of Exercise*.

Jung SH, Cho H, **Yoon G**. (2023). Moderate-to-high intensity exercise improves function of stroke survivors. *Neurology*.

Jung SH, **Gilhyeon Yoon**, Cho H, Lee E. (2022). Moderate-to-high intensity exercise changes physical activity behavior of stroke survivors. *Annual meeting and Intenational Conference of Korean Academy of Rehabilitation Medicine*.

Kim S, Lee Y, Cho H, **Yoon G**, Lee E, Jung SH. (2022). Effect of moderate to high intensity exercise in dialysis patients: a randomized controlled trial. *Conference of Korean Sports Science Exercise Medicine* \* **Merit Research Award**

## LABORATORY SKILLS

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### Wet Lab

- SDS-PAGE and Western blotting
- Fluorometer and Spectrophotometer
- Blood processing (Plasma, Serum, Mononuclear cell preparation, PAXgene)

### Dri Lab

- MRI image analysis: Fiji and Medical Image Processing Analysis Visualization
- Indirect calorimetry
- Muscle strength test: Isometric and Isokinetic test
- Data visualization: Prism

## RESEARCH EXPERIENCE

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### Doctoral Research Fellow

2023 - present

Human Performance Laboratory, Muncie, IN, United States

- Project: MoTrPAC, Molecular Transducers of Physical Activity Consortium, National Institutes of Health (NIH)
  - Single muscle fiber analysis: SDS-PAGE
  - Blood process: Plasma, Serum, Mononuclear cell preparation, PAXgene
  - Phenotyping: Cardiopulmonary Exhaustion Test, Maximal Voluntary Contraction test, DEXA

- Acute exercise bout biospecimen collection and process: expired gas, blood, muscle
- Longitudinal exercise training: 12-week resistance and endurance training
- Subjects: Sedentary, healthy, young and old adults ( $\geq 18y$ )
- Project: Muscle-specific atrophy and adipose infiltration in 17 lower limb muscles in men: 70 years of aging with or without lifelong aerobic exercise.
  - Standard of procedure development for the laboratory
  - MRI tracing over 200 hours (17 lower limbs' muscle volume and fat infiltration)
  - Manuscript draft
- Project: Muscle-specific atrophy of the lower limb musculature in response to stimulated microgravity exposure in women
  - Edition of manuscript, data interpretation
- Project: Human Skeletal muscle-specific hypertrophy with exercise training and aging: a comprehensive review
  - Data sampling for the review paper
  - Preparation of tables and figures: Prism
  - Edition of manuscript

#### **Research assistant**

2022 - 2023

Seoul National University Borame Medical Center, Seoul, Republic of Korea

Advisor: Dr. Sehee Jung

- Project: Development of Assessment Tools and Rehabilitation Exercise Program for People with Disabilities in South Korea, National Rehabilitation Center of South Korea
  - Phenotyping: Maximal Voluntary Contraction test, DEXA, 6-min walk test, Short Physical Performance Battery, Functional Near-Infrared spectroscopy
  - Questionnaire: Quality of Life
  - Longitudinal exercise training: 8-week group-based resistance training
  - Subjects: Stroke survivors, Patients with chronic renal failure, visual impairment, spinal cord injury.

#### **M.Sc. Thesis**

2021

Loughborough University, Loughborough, United Kingdom

Advisor: Dr. Richard Ferguson

- Project: Effect of acute low-intensity exercise duration on skeletal muscle signaling responses in males
  - Enzymatic-amperometric method: blood glucose and lactate analysis
  - Micro-hematocrit analysis
  - Acute exercise bout biospecimen collection: expired gas, blood, and muscle
  - Phenotyping: Cardiopulmonary Exhaustion Test: Douglas Bag

## **PROFESSIONAL EXPERIENCE**

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- **Strength and conditioning Coach** (Voluntary experience) 2020
  - Soongsil University Soccer Team, Seoul, Republic of Korea
- **Athletic trainer** 2018 - 2019
  - Jeju United Professional Football Club (Soccer), Jeju, Republic of Korea
- **Assistant rehabilitation trainer** (Voluntary experience) 2018 - 2018
  - Inje University Sports Rehabilitation Center, Seoul, Republic of Korea

- **Assistant strength and conditioning trainer** (Voluntary experience) 2015 - 2016
  - Nexen Heroes Professional Baseball Club, Seoul, Republic of Korea

## TEACHING EXPERIENCE

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- **Track and Field** Spring 2015
  - Teaching Practicum, Seoul National University High School
- **English** Fall 2014
  - Educational Volunteer Program, Nankock Middle School
- **Pediatric Exercise Program** Spring 2014
  - Internship program, Motor Behavior Lab in the Seoul National University
- **Math** Spring 2013
  - Educational Volunteer Program, Gwanak Community Center

## AWARDS, HONORS AND SCHORLARSHIP

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- **Doctoral Fellowship**, Ball State University 2023, 2024, 2025
- **Travel Grant**, Ball State University 2023, 2024
- **Merit Research Award**, Korea Sports Science Exercise Medicine Association 2022
- **Merit Graduate**, Loughborough University 2021
- **Cum Laude Graduate**, Seoul National University 2016
- **Baekwoon Scholarship**, Baekwoon Foundation 2015
- **Kwanak Scholarship**, Kwanak Corporation 2014, 2015
- **Eminence Scholarship**, Seoul National University 2014
- **Yuyeun Scholarship**, Yuyeun Foundation 2013
- **Superior Academic Performance**, Seoul National University 2012

## ATHLETICS

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- **College Athlete**, Seoul National University Handball Team 2012 - 2015
  - Vice-captain 2014, 2015

## Military Services

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- **Leader of Parachute Platoon, Lieutenant** 2016 - 2018
  - Republic of Korea Marine Corps, Pohang, Republic of Korea
- **Reserve Officer** 2013 - 2015
  - Reserve Officer's Training Corps, Seoul National University, Republic of Korea

## Certification

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- **Certified Strength and Conditioning Specialist**, National Strength and Conditioning Association
- **Certified athletic trainer**, Republic of Korea Athletic Trainer Association
- **Certified Exercise Professionals**, Korea Sports Promotion Foundation