

**Shelby Keye, Ph.D.**  
**Assistant Professor**

Kinesiology and Community Health | University of Illinois at Urbana-Champaign  
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**Education**

- Expected  
May 2023 **Ph.D., Kinesiology and Community Health**  
University of Illinois at Urbana-Champaign  
*Advisor:* Dr. Naiman Khan, Ph. D., R.D.
- May 2019 **M.S., Exercise Science**  
University of Massachusetts Boston  
*Advisor:* Dr. Sarah Camhi, Ph.D.  
**Thesis:** The Relationship Between Enjoyment and Physical Activity During a Community Based Youth Physical Activity Program
- June 2017 **B.S., Human Nutrition, Foods, and Exercise**  
Virginia Polytechnic Institute and State University

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**Academic Positions**

- 2019- **Graduate Research Assistant**  
University of Illinois at Urbana-Champaign, Urbana, IL  
Neurocognitive Health Behavior Laboratory- PI: Naiman Khan, Ph.D., R.D.
- 2018-2019 **Graduate Research Assistant**  
UMass Boston, Boston, MA  
Project Exercise Prescription Research Study- PI: Dr. Sarah Camhi, Ph.D.
- 2016 **Multicultural Academics Opportunities Program Summer Research Intern**  
Virginia Tech, Blacksburg, VA  
Physical Activity Research and Community Implementation Lab- PI: Samantha Harden, Ph.D.
- 2015 **Undergraduate Research Assistant**  
Carillion Clinic, Roanoke, VA  
DieBEAT-IT Study Team- Co-PIs: Fabio Almeida, Ph.D. and Paul Estabrooks

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**Publications**

*Peer Reviewed Journal Articles*

- 2023 Cannavale, C. N., Edwards, C. G., Liu, R., **Keye, S. A.**, Iwinski, S. J., Holscher, H. D., Renzi-Hammond, L., Khan, N. A., & Khan, N. A. (2023). Macular pigment is inversely related to circulating C-reactive protein concentrations in school-aged children. *Nutrition Research, 114*, 13–19. <https://doi.org/10.1016/j.nutres.2023.03.003>
- Keye, S. A.**, Morales, D., Walk, A. M., Cannavale, C. N., & Khan, N. A. (2023). Neuroelectric indices of attention are related to academic skills in preschool-aged children. *Trends in Neuroscience and Education, 32*, 100205. <https://doi.org/10.1016/j.tine.2023.100205>
- Keye, S. A.**, Kinder, C. J., Ragab, S., Ouzidane, M., Rich, A., Richards, K. A., & Khan, N. A. (2023). Effects of a Summer Physical Activity Program on Fitness and Cognitive Function among

Children from Low Socioeconomic Households. *Journal of Cognitive Enhancement*.  
<https://doi.org/10.1007/s41465-023-00266-x>

Cannavale, C. N., **Keye, S. A.**, Rosok, L. M., Martell, S. G., Holthaus, T. A., Raine, L. R., Mullen, S. P., Holscher, H. D., Hillman, C. H., Kramer, A. F., Cohen, N. J., Hammond, B. R., Renzi-Hammond, L., & Khan, N. A. (2023). Macular Pigment Optical Density and Skin Carotenoids in a Childhood Sample. *The Journal of Nutrition*. <https://doi.org/10.1016/j.tjn.2023.06.006>

Walk, A. M., Cannavale, C. N., **Keye, S. A.**, Rosok, L., Edwards, C., & Khan, N. (2023). Weight status impacts children's incidental statistical learning. *International Journal of Psychophysiology*, 187, 34–42. <https://doi.org/10.1016/j.ijpsycho.2023.02.003>

2022 **Keye, S. A.**, Kim, J., Cannavale, C. N., Walk, A. M., Burd, N. A., Pindus, D., & Khan, N. A. (2022). Neuroelectric indices of motor response preparation are selectively associated with physical activity among adults with obesity. *International Journal of Psychophysiology*, 182, 200–210. <https://doi.org/10.1016/j.ijpsycho.2022.10.013>

Cannavale, C. N., **Keye, S. A.**, Rosok, L., Martell, S., Holthaus, T. A., Reeser, G., Raine, L. B., Mullen, S. P., Cohen, N. J., Hillman, C. H., Hammond, B. R., Renzi-Hammond, L., & Khan, N. A. (2022). Enhancing children's cognitive function and achievement through carotenoid consumption: The Integrated Childhood Ocular Nutrition Study (iCONS) protocol. *Contemporary Clinical Trials*, 122. <https://doi.org/10.1016/j.cct.2022.106964>

2021 **Keye, S. A.**, Walk, A. M., Cannavale, C. N., Iwinski, S., McLoughlin, G. M., Steinberg, L. G., & Khan, N. A. (2021). Six-minute walking test performance relates to neurocognitive abilities in preschoolers. *Journal of clinical medicine*, 10(4), 584. <https://doi.org/10.3390/jcm10040584>

#### *Manuscripts Under Review*

2023 **Keye, S. A.**, Kinder, C. J., Rosok, L. M., Cannavale, C. N., Walk, A., & Khan, N. A. (2023). Neuroelectric Indices of Pre-Motor Planning and Adiposity are Selectively Related to Balance in Children (Under review). *Human Movement Science*.

#### *Abstracts*

2023 Sarma, R., Fifield, L., Rosok, L., **Keye, S.**, Walk, A., Khan, N., Schulze, K., Hampel, D., Wu, L., Baker, S., Stephenson, K., Shaikh, S., Ali, H., Shehab-Ferdows, S., Allen, L., West, K., & Christian, P. (2023). Maternal Physical Activity During Pregnancy Linked With Better Receptive and Expressive Communications in Toddlers. *Current Developments in Nutrition*, 7(1), 101107.

Rosok, L., Fifield, L., Sarma, R., **Keye, S.**, Walk, A., Khan, N., Verma, S., Kinder, C., Sethi, S., Kim, J., Barnett, M., Abreu, M., Moran, N., Wade, J., Stroh, R., Stoll, B., Hair, A., & Burrin, D. (2023). Increase in Skin Carotenoids is Related to Greater Improvements in Cognition Among Toddlers Across Six Months. *Current Developments in Nutrition*, 7(1), 100204.

**Keye, S.**, Holthaus, T., Cannavale, C., Rosok, L., Lamblin, E., Renzi-Hammond, L., Holscher, H., & Khan, N. (2023). MIND Diet Pattern Is Selectively Associated With Attentional Control in Preadolescent Children. *Current Developments in Nutrition*, 7(1), 100656.

Cannavale, C., **Keye, S.**, Rosok, L., Martell, S., Holthaus, T., Raine, L., Mullen, S., Holscher, H., Hillman, C., Kramer, A., Cohen, N., Hammond, B., Renzi-Hammond, L., & Khan, N. (2023). Macular Pigment Optical Density and Skin Carotenoids in a Midwestern Childhood Sample. *Current Developments in Nutrition*, 7(1), 100203.

Holthaus, T., **Keye, S.**, Verma, S., Cannavale, C., Holscher, H., Khan, N., Hudson, E., Steinhardt, M., Davis, J., & Burgermaster, M. (2023). P14-033-23 Dietary Patterns and Carotenoid Intake: Comparisons of MIND, Mediterranean, DASH, and Healthy Eating Index. *Current Developments in Nutrition*, 7(1).

**Keye, S. A.**, Kinder, C. J., Ragab, S., Ouzidane, M., Rich, A., Richards, K. A., & Khan, N. A. (2023) Effects of a Summer Physical Activity Program on Fitness and Cognitive Function among At-risk Children: 520. *Medicine & Science in Sports & Exercise* 55(9S): p168

Kinder, C. J., **Keye, S. A.**, Cannavale, C. N., Walk, A. M., Khan, N.A. Beyond Measures Of Central Tendency: Aerobic Fitness And Childhood Cognitive Control: 1510. *Medicine & Science in Sports & Exercise* 55(9S): p 507

Kim, J., Paulussen, K.J.M., Keye, S.A., Mehta, T.D., Lamblin, E.N., Pascual-Abreu, M., Burd, N.A., Khan, N.A., Increased P3 Variability Following An Acute Bout Of Cycling: 1511. *Medicine & Science in Sports & Exercise* 55(9S): p 507

2022 **Keye, S.A.**, Walk, A.M., Cannavale, C.N., Khan, N.A. (2022) Neuroelectric indices of attention are related to academic skills in preschool aged children. Society for Neuroscience Conference. *Society for Neuroscience Conference, San Diego, CA*.

Rosok, L., Fifield, L., Sarma, R., **Keye, S.**, Walk, A., Khan, N. (2022). Interrelationships between mismatch negativity and visual evoked potentials and cognitive, language, and motor development among toddlers. *Society for Neuroscience Conference, San Diego, CA*

**Keye, S. A.**, Pindus, D. M., Walk, A. M., Burd, N. A., Holscher, H. D., & Khan, N. A. (2022). Moderate-to-vigorous Physical Activity Is Related To Pre-motor Planning In Persons With Obesity: 783. *Medicine & Science in Sports & Exercise*, 54(9S), 187-188.

McMath, A., **Keye, S.**, Iwinski, S., Cannavale, C., Khan, N., & Donovan, S. (2022). Associations Between Dietary Patterns and Fiber Intake and Cognitive Performance in Early Childhood. *Journal of the Academy of Nutrition and Dietetics*, 122(10), A91.

Fifield, L., Khan, N., Walk, A., **Keye, S.**, Rosok, L., & Sarma, R. (2022). Skin Carotenoids Are Related to Cognitive and Motor Skills Among Toddlers. *Current Developments in Nutrition*, 6(Supplement\_1), 59-59.

Yen, T., McMath, A., **Keye, S.**, Iwinski, S., Cannavale, C., Walk, A., & Khan, N. (2022). Skin Carotenoids and Diet Quality Are Associated With Intellectual Ability Among Preschool-Aged Children. *Current Developments in Nutrition*, 6(Supplement\_1), 68-68.

Rosok, L., Cannavale, C., **Keye, S.**, Edwards, C., & Khan, N. (2022). Skin Carotenoids and Relations to Intellectual Abilities and Academic Achievement Among School-Aged Children. *Current Developments in Nutrition*, 6(Supplement\_1), 66-66.

2020 **Keye, S. A.**, Edwards, C. G., Cannavale, C. N., Iwinski, S. J., Reeser, G. E., Walk, A. D., Mazzoli, E., Barnett, Lisa M., & Khan, N. A. (2020). Relationships Between Adiposity and Parent's Perceptions of Their Children's Fundamental Movement Skills and Coordination. *North American Society for the Psychology of Sport and Physical Activity Conference*

**Keye, S.**, Edwards, C. G., Cannavale, C. N., Iwinski, S. J., Reeser, G. E., Walk, A. D., Mazzoli, E., Barnett, Lisa M., & Khan, N. A. (2020). Parent-report Of Children's Motor Skills Are Selectively Related To Interference Control Among School-aged Children. *Medicine & Science in Sports & Exercise*, 52(7S), 614.

2018 **Keye, S.**, Trudeau, G.C., Hayman, L.L., Troped, P.J., Lindsay, A.C., Wright, J.A., Camhi, S.M (2018). Associations of Self-Efficacy, Social Support, and Stage of Change with Exercise Prescription Adherence. *American College of Sports Medicine: New England Chapter Conference, Providence, RI*

### **Conference and Symposia Presentations**

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2022 Corinne N. Cannavale, **Shelby A. Keye**, Laura Rosok, Shelby Martell, Tori Holthaus, & Naiman A. Khan (2022). Macular and skin carotenoids are negatively associated with body mass index in school-aged children. *Personalized Nutrition Initiative Innovation Day, University of Illinois Urbana-Champaign*.

Neuroelectric indices of attention are related to academic skills in preschool aged children. Society for Neuroscience Conference. *Poster Presentation Society for Neuroscience Conference (11/2022) San Diego, CA*

Moderate-to-vigorous Physical Activity Is Related To Pre-motor Planning In Persons With Obesity. *Oral presentation at ACSM Annual Meeting (6/2022) San Diego, CA.*

2020 Relationships between adiposity and Parent's Perceptions of their Children's Fundamental Movement Skills and Coordination. *Virtual Oral Presentation Virtual at NASPSA Conference (6/2020)*

Parent-report of Children's Motor Skills are Selectively Related to Interference Control among School-aged Children. *Virtual Poster Presentation at ACSM Annual Meeting (6/2020)*

Parent-report of Children's Motor Skills are Selectively Related to Interference Control among School-aged Children. *Invited: Oral Presentation at University of Illinois Urbana Champaign Community of Scholars Seminar (3/2020) Urbana, IL*

2018 Associations of Self-Efficacy, Social Support, and Stage of Change with Exercise Prescription Adherence. *Poster presented at New England ACSM Conference (11/2018) Providence, RI*

### **Grants**

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#### **National Institutes of Health F32 Award**

Principal Investigator: "Physical Activity vs. Nutrition: Effects on Childhood Neuroelectric Indices of Motor Preparation and Action", \$54,835 (under review)

#### **USDA National Institute of Food and Agriculture Predoctoral Fellowship**

Principal Investigator: "Effects of Lutein Supplementation on the Summer Slide", \$102,520 (under review)

#### **Illinois Association for Health, Physical Education, Recreation, and Dance Research Grant**

Principal Investigator: "Relationships between Physical Activity and Behavioral and Neuroelectric Indices of Motor Coordination in Children from Underserved Communities", \$4,500 (Funded 5/2022)

**ACSM Foundation Doctoral Student Research Grant**

Principal Investigator: “iPALS Movement: Effects of a Physical Activity Program on Neural Measures of Motor Function in Children”, \$5000 (Funded 4/2022)

**NASPSPA Graduate Student Research Grant**

Principal Investigator: “Motor Function Assessment Tools and Their Relationship With Executive Function Tasks”, \$2000 (Unfunded 5/2020)

**Awards and Honors**

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- 2022 Trainee Professional Development Award, *Society for Neuroscience*
- Department of Kinesiology and Community Health Robert L. Sprague Graduate Student Award, *University of Illinois Urbana Champaign*
- 2020-2022 Leadership and Diversity Training Program Protégé, *American College of Sports Medicine*
- 2020 Student Scholarship Award, *North American Society for the Psychology of Sport and Physical Activity*
- 2019 Graduate College Fellowship, *University of Illinois Urbana Champaign*

**Teaching**

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*Invited Guest Lectures*

- Spring 2023 KIN 140, Social Sciences of Human Movement, University of Illinois Urbana Champaign  
Topic: Implementation of the IPALS Wellness Program
- Spring 2021 KIN 201, Physical Activity Research Methods, University of Illinois Urbana Champaign  
Topic: Research Methods in the BCNN Lab
- Fall 2021 KIN 201, Physical Activity Research Methods, University of Illinois Urbana Champaign  
Topic: Physical Activity Assessments with Practical Applications in the IPALS Wellness Program
- KIN140, Social Sciences of Human Movement, University of Illinois Urbana Champaign  
Topic: Physical Activity Assessments
- KIN 444, Physical Activity and Chronic Disease, University of Illinois Urbana Champaign  
Lecture 1 Topic: Physical Activity and Obesity  
Lecture 2 Topic: Physical Activity and Depression
- Fall 2018 EHS 230, Strength and Conditioning, University of Massachusetts Boston  
Topic: ACL Injuries and Rehabilitation
- Teaching Assistant, University of Massachusetts Boston*
- 2017-2019 EHS 490, Exercise and Health Sciences Internship  
EHS 230, Strength and Conditioning  
Pediatric Exercise Development (Course Development)

*Community Seminar Series*

- Spring 2022 The Impact of Cutting Physical Activity Opportunities in Schools
- Spring 2021 Stand Up Against Sitting Down: The Benefits of Sitting Less
- Fall 2020 Active Aging: Using Exercise to Maintain Health Across the Lifespan

## **Mentorship**

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### *Undergraduate Research Symposium Presentations*

- 2022 Mariam Ouzidane & Kenley Grimmer, **Shelby Keye**, Christopher Kinder, Kevin A. Richards, Naiman A. Khan  
Effectiveness of a Youth Summer Physical Activity Program for Children from Low-Income Households in Champaign County. Oral presentation at Undergraduate Research Symposium. University of Illinois Urbana-Champaign. 2022. April 28. Urbana-Champaign, IL
- Diana Morales & Sarah Kravitz, **Shelby Keye**, Arden McMath, Corinne Cannavale, Naiman A. Khan  
Diet, Physical Activity, and Aerobic Fitness Relationships with Academic Performance in Preschool Aged Children. Poster presented at Undergraduate Research Symposium. University of Illinois Urbana-Champaign. 2022. April 28. Urbana-Champaign, IL.
- 2021 Alyssa Martin, **Shelby Keye**, Naiman A. Khan  
Relationship Between Early Life Developmental Milestones and Coordination Skills in Later Childhood. Poster presented at Undergraduate Research Symposium. University of Illinois at Urbana-Champaign. 2021. Virtual
- Abigail Rich & Carolyn Francart, **Shelby Keye**, Arden McMath, & Naiman A. Khan  
Exploring Weight Gain and Diet Quality in Women During Late Pregnancy. Poster presented at Undergraduate Research Symposium. University of Illinois at Urbana-Champaign. 2021. Virtual
- Meghan Vanasco, **Shelby Keye**, Nate Willis, Kevin Richards, Naiman Khan  
The impact of Covid-19 on lifestyle behaviors among children living in Champaign County. Poster presented at Undergraduate Research Symposium. University of Illinois at Urbana-Champaign. 2021. Virtual
- 2020 Maria Derrig & Alyssa Martin, **Shelby Keye**, Arden McMath, Naiman A. Khan  
An Investigation of the Impact of Breastfeeding on Childhood Adiposity. 2020. Virtual

## **Service**

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- 2022- Graduate Program Advisory Committee  
2020- Students Advising on Graduate Education (SAGE)  
2020-2022 Lifestyle Medicine Ambassador

## **Training and Certifications**

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- 2022 University of Illinois Certificate in Foundations of Teaching  
2018 ACSM Exercise is Medicine Ambassador

## **Society Memberships**

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- 2018-current American College of Sports Medicine  
2022-current Society for Neuroscience  
2019-2020 North American Society for the Psychology of Sport and Physical Activity