

CURRICULUM VITAE

Derek C. Monroe
Assistant Professor
Department of Kinesiology
University of North Carolina at Greensboro

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EDUCATION

Ph.D. in Kinesiology, University of Georgia *Athens, GA* **2015**

Area of Concentration: Exercise Psychology

Dissertation Title: "Influence of Exercise on Frontal Cortex Hemodynamic State, Affect, and Mood in Smokers Following a Cigarette and Overnight Abstinence"

Committee: Rod K. Dishman, Ph.D. (Major Professor)

Patrick J. O'Connor, Ph.D.

Kevin McCully, Ph.D.

M.S. in Kinesiology, University of Georgia *Athens, GA* **2011**

Area of Concentration: Behavioral Neuroscience

Thesis Title: "Expression of mRNA for Brain Dopamine Receptors and Enkephalin Before and After Wheel Running in Rats Selectively Bred for High- and Low-Aerobic Capacity,"

Committee: Rod K. Dishman, Ph.D. (Major Professor)

Patrick J. O'Connor, Ph.D.

Kevin McCully, Ph.D.

Philip V. Holmes, Ph.D.

B.A. in Psychobiology, Occidental College *Los Angeles, CA* **2009**

PROFESSIONAL EXPERIENCE

University of California – Irvine *Irvine, CA* **2017-2020**

Postdoctoral Fellow – School of Medicine

- Primary Mentors: Steven L. Small, M.D., Ph.D. (Neurology) & James W. Hicks (Biological Sciences)
- Areas of Focus: Network Neuroscience & Sport-Related Concussion

California State University – Long Beach *Long Beach, CA* **2019-2020**

Faculty – Instructor of Kinesiology

- Courses Taught: Advanced Exercise Physiology (Graduate)

Georgia College & State University *Milledgeville, GA* **2015-2017**

Faculty – Lecturer of Exercise Science

- Courses Taught: Exercise Physiology, Principles of Exercise Testing, Research Methods (Online & Classroom), Research Methods (Graduate), Applied Research in Exercise Science

University of Georgia *Athens, GA*

Graduate Assistant – Department of Kinesiology **2009-2015**

Teaching

- Designed and facilitated experiments and weekly student assessment
- Initiated inclusion of Microsoft Excel skill development

Research

- Lead data collection on 4 human-subject and 2 rodent-based research projects

SCHOLARSHIP

Refereed Published Manuscripts

1. McDowell CP, Wilson KE, **Monroe DC**, McCrory C, Briggs R, Kenny RA, Herring MP. (2020) Physical Activity Mediates Associations Between Personality and Incident Generalised Anxiety Disorder: Findings from The Irish Longitudinal Study on Ageing. *Journal of Affective Disorders*
2. **Monroe DC**, Cecchi NJ, Gerges P, Phreaner J, Hicks JW, Small SL. (2020) A Dose Relationship between Brain Functional Connectivity and Cumulative Head Impact Exposure in Collegiate Water Polo Players. *Frontiers in Neurology*, 11, 218.
3. Cecchi NJ, **Monroe DC**, Phreaner J, Small SL, Hicks JW. (2020) Patterns of Head Impact Exposure in Men's and Women's Collegiate Club Water Polo. *Journal of Science and Medicine in Sport*.
4. Cecchi, NJ, **Monroe, DC**, Oros, TJ, Small, SL, & Hicks, JW. (2020) Laboratory evaluation of a wearable head impact sensor for use in water polo and land sports. *Proceedings of the Institution of Mechanical Engineers, Part P: Journal of Sports Engineering and Technology*, 234(2), 162-169.
5. **Monroe DC**, Patel N, McCully KK, Dishman RK. (2020) The Effects of Exercise on Mood and Prefrontal Brain Responses to Emotional Scenes in Smokers. *Physiology & Behavior*, 213, 112721.
6. Dishman RK, **Monroe DC**, Yin JC. (2019) Anxiety Reduction and Emotional Responding After a Session of Yoga. *World Journal of Yoga, Physical Therapy and Rehabilitation*.
7. Dunn CE, **Monroe DC**, Crouzet C, Hicks JW, Choi B. (2019) Speckleplethysmographic (SPG) Estimation of Heart Rate Variability During an Orthostatic Challenge. *Scientific Reports*, 9(1), 1-9.
8. Cecchi NJ, Oros TJ, **Monroe DC**, Fote GM, Hicks JW, Reinkensmeyer D. (2019) The Effectiveness of Padded Headgear in Attenuating Ball-Head Impact Forces in Water Polo. *Frontiers in Sports Active Living*, 1.
9. Cecchi NJ, Oros TJ, Ringhofer JJ, **Monroe DC**. (2019) Comparison of head impact attenuation capabilities between a standard American football helmet and novel protective equipment that couples a helmet and shoulder pads. *Sports Engineering*, 22(3-4).
10. Cecchi NJ, **Monroe DC**, Fote GM, Small SL, Hicks JW. (2019) Head Impacts Sustained by Male Collegiate Water Polo Athletes. *PLOS One*, 14(5).
11. Herring MP, **Monroe DC**, Gordon BR, Hallgren M, Campbell MJ (2019) Acute Exercise Effects Among Young Adults with Analogue Generalized Anxiety Disorder. *Medicine and Science in Sports and Exercise*, 51(5), 962-969.
12. Herring MP, **Monroe DC**, Kline C, O'Connor, PJ, MacDonncha, C. (2018) Sleep Quality Moderates the Association Between Physical Activity Frequency and Feelings of Energy and Fatigue in Adolescents. *European Journal of Child and Adolescent Psychiatry*.
13. **Monroe DC**, Yin JC, McCully KK, Dishman RK. (2018) Yoga practice aids blood pressure recovery after forehead cold exposure. *Alternative Therapies in Health & Medicine*, 24(5). PMID: 29477138.

14. **Monroe DC**, Gist N, Freese EC O'Connor PJ, McCully KK, Dishman RK. (2016). Acute effects of sprint interval cycling on subjective fatigue and cerebral oxygenation. *Medicine and Science in Sports and Exercise*, 48(4), 615-624.
15. **Monroe DC**, Holmes PV, Britton SL, Koch LG, & Dishman RK. (2014) Striatal enkephalinergic differences in rats selectively bred for running capacity. *Brain Research*, 1572, 11-17.
16. Dess NK, Chapman CD, Cousins LA, **Monroe DC**, Nguyen, P. (2013). Refeeding after acute food restriction: Differential reduction in preference for ethanol and ethanol-paired flavors in selectively bred rats. *Physiology & Behavior*, 109, 80-87.
17. Groves-Chapman JL, Murray PS, Stevens KL, **Monroe DC**, Koch LG, Britton SL, Dishman RK. (2011). Changes in mRNA levels for brain-derived neurotrophic factor after wheel running in rats selectively bred for high-and low-aerobic capacity. *Brain Research*, 1425, 90-97.
18. Dess NK, Chapman CD, & **Monroe DC**. (2009). Consumption of SC45647 and sucralose by rats selectively bred for high and low saccharin intake. *Chemical Senses*, 34(3), 211-220.

Manuscripts Under Review

1. **Monroe DC**, Blumenfeld RS, Keator DB, Solodkin A, Small SL. (In Review). One Season of Head-to-Ball Impact Exposure Alters Functional Connectivity in a Central Autonomic Network.
2. **Monroe DC**, Thomas EA, Cecchi NJ, Granger DA, Hicks JW, Small SL (In Review). Salivary Protein Biomarkers of Brain Injury in Collegiate Water Polo Players after Acute Exposure to Repeated Head Impacts
3. McDowell CP, Newman L, **Monroe DC**, O'Connor JD, Knight SP, Gordon BG, Kenny RA, Herring MP. (In Review). The association between generalized anxiety disorder and resting-state anterior brain oxygenation is modified by physical activity: results from The Irish Longitudinal Study on Ageing.

Refereed Published Abstracts

1. **Monroe DC**, Herring MP, Hicks, JW, Thayer JF, Small SL (2020). Brain-Heart Dynamics Are Associated With Cardiorespiratory Fitness & Cognitive Control. *Medicine & Science in Sports & Exercise*, 52(7S), 835.
2. Cecchi NJ, **Monroe DC**, Fote GM, Small SL, Hicks JW. (2020). Head Impacts In Women's Collegiate Club Lacrosse: 3837 Board# 154 May 30 9: 00 AM-10: 30 AM. *Medicine & Science in Sports & Exercise*, 52(7S), 1053.
3. Alshakah SA, Macaulay JR, Gerges P, Crall S, McCue MD, **Monroe DC**. (2020). Measuring Energy Expenditure Independent Of The Respiratory Quotient During Rest And Exercise: 204 Board# 20 May 27 9: 30 AM-11: 00 AM. *Medicine & Science in Sports & Exercise*, 52(7S), 35.

4. **Monroe DC**, Cecchi NC, Hicks JW, Small SL. (2019). Head Impact Exposure Alters Neural Synchrony and Complexity in Collegiate Athletes: 2718: Board# 1 May 31 1: 00 PM-3: 00 PM. *Medicine & Science in Sports & Exercise*, 51(6), 757.
5. Cecchi NJ, **Monroe DC**, Oros TJ, Small SL, Hicks JW. (2019). Laboratory Validation Of A Head Impact Sensor For Use In Water Polo And Non-helmeted Land Sports: 1781: Board# 7 May 30 3: 45 PM-5: 45 PM. *Medicine & Science in Sports & Exercise*, 51(6), 472.
6. Phreaner JJ, **Monroe DC**, Cecchi NJ, Small SL, Hicks JW. (2019). Frequency, Magnitude, And Location of Head Impacts In Collegiate Water Polo: 2556: Board# 220 May 31 11: 00 AM-12: 30 PM. *Medicine & Science in Sports & Exercise*, 51(6), 711.
7. **Monroe DC**, Rader Z, Herring MP, Golden J. (2018). Resting Heart Rate Variability Moderates a Relationship Between Attentional Bias and Stress Response: 500 Board# 6 May 30 100 PM-300 PM. *Medicine & Science in Sports & Exercise*, 50(5S), 111.
8. Herring MP, **Monroe DC**, Gordon BR, Campbell MJ. (2018). Acute Exercise Effects Among Young Adults with Subclinical Generalized Anxiety Disorder: Replication and Expansion 1078 Board# 1 May 31 800 AM-1000 AM. *Medicine & Science in Sports & Exercise*, 50(5S), 249-50.
9. **Monroe DC**, Patel NR, McCully KK, Dishman RK. (2016). The Effects Of Exercise On Affective And Prefrontal Brain Responses To Emotional Scenes In Smokers: 1154 June 1, 315 PM-330 PM. *Medicine & Science in Sports & Exercise*, 48(5S), 315.
10. **Monroe DC**, Freese EC, Gist NH, O'Connor PJ, McCully KK, & Dishman RK (2014). The Effect Of A Single Bout Of Sprint Interval Cycling On Subjective Fatigue And Cerebral Oxygenation: 2265 May 30, 1015 AM-1030 AM. *Medicine & Science in Sports & Exercise*, 46(5S), 600.
11. **Monroe DC**, Holmes PV, Koch LG, Britton SL, Dishman RK. (2013). Striatal Enkephalinergic Differences in Rats Selectively Bred for Running Capacity. *Medicine & Science in Sports & Exercise*, 45(5), 428.

Refereed Conference Presentations

1. **Monroe DC**, Cecchi NJ. Tutorial Lecture: Monitoring Head Impact Exposure and Brain Health in Athletes. *Annual Meeting, American College of Sports Medicine*, San Francisco, CA. June 2020 (Virtual)
2. **Monroe DC**, Herring MP, Hicks JW, Thayer JF, Small SL. Brain-Heart Dynamics Are Associated With Cardiorespiratory Fitness & Cognitive Control. *Annual Meeting, American College of Sports Medicine*, San Francisco, CA. June 2020 (Virtual)
3. Cecchi NJ, **Monroe DC**, Fote GM, Small SL, Hicks JW. Head Impacts in Women's Collegiate Club Lacrosse. *Annual Meeting, American College of Sports Medicine*, San Francisco, CA. June 2020 (Virtual)

4. Cecchi NJ, **Monroe DC**, Oros TJ, Small SL, Hicks JW. Laboratory Evaluation of a Wearable Head Impact Sensor for use in Water Polo and Non-Helmeted Land Sports. *Annual Meeting, American College of Sports Medicine*, Orlando, FL. May 2019.
5. **Monroe DC**, Cecchi NJ, Hicks JW, Small SL. Head Impact Exposure Alters Neural Synchrony and Complexity in Collegiate Athletes. *Annual Meeting, American College of Sports Medicine*, Orlando, FL. May 2019.
6. **Monroe DC**, Cecchi NJ, Hicks JW, Small SL. The Effects of Repetitive Head Impacts on Spontaneous Neural Rhythms and Cognitive Function. *Military Health Services Research Symposium*, Kissimmee, FL. August 2018.
7. **Monroe DC**, Keator DB, Blumenfeld R, Hicks JW, Small SL. Changes in Functional Connectivity are Associated with One Season of Head-to-Ball Impact Exposure in Male Collegiate Soccer Athletes. *Sport Concussion Meeting, American Academy of Neurology*, Indianapolis, IN. July 2018.
8. **Monroe DC**, Rader Z, Herring MP, Golden J. Resting Heart Rate Variability Moderates a Relationship Between Attentional Bias and Stress Response in Undergraduate Students. *Annual Meeting, American College of Sports Medicine*, Minneapolis, MN. May 2018.
9. Herring MP, **Monroe DC**, Gordon BR, Campbell MJ. Sleep Quality Moderates the Association Between Physical Activity Frequency and Feelings of Energy and Fatigue in Adolescents. *Annual Meeting, American College of Sports Medicine*, Minneapolis, MN. May 2018.
10. **Monroe DC**, Cecchi NJ, Hicks JW, Small SL. The Cumulative Effects of Sport Participation on Neural Complexity and Cognitive Function. *Rotman Research Institute Conference on Traumatic Brain Injury*, Toronto, CAN. March 2018.
11. **Monroe DC**, Patel NR, McCully KK, Dishman RK. The Effects of Exercise on Affect and Prefrontal Brain Responses to Emotional Scenes in Smokers. *Annual Meeting, American College of Sports Medicine*, Boston, MA. June 2016.
12. **Monroe DC**, Freese EC, Gist NH, O'Connor PJ, Dishman RK. The Effect of a Single Bout of Sprint Interval Cycling on Subjective Fatigue and Cerebral Oxygenation. *Annual Meeting, American College of Sports Medicine*, Orlando, FL. June 2014.
13. **Monroe DC**, Holmes PV, Dishman RK. Striatal Enkephalinergic Differences in Rats Selectively Bred for Running Capacity. *Annual Meeting, American College of Sports Medicine*, Indianapolis, IN. June 2013.
14. **Monroe DC**, Holmes PV, Dishman RK. Gene Expression in the Mesolimbic Reward Pathway Before and After Wheel Running in Rats Selectively Bred for High- or Low-Aerobic Capacity. *College of Education Graduate Student Research Conference*, Athens, GA. May 2011.

Invited Talks

1. *Running the Fatigue Away: Translational Evidence for Exercise as Medicine*. Department of Biology, Wheaton College, March 2017.

Refereed Conference Presentations by Undergraduate Mentees

1. Alshakah S, MacCaulay JR, Gerges P, Crall S, McCue MD, **Monroe DC**, Hicks JW. Measuring Energy Expenditure Independent of the Respiratory Quotient During Rest and Exercise. *Annual Meeting, American College of Sports Medicine*, San Francisco, CA. June 2020 (Virtual)
2. Catania S, **Monroe DC**, Hicks JW. Brain Functional Connectivity as a Link Between Cardiorespiratory Fitness and Cognitive Control. *Annual Biomedical Research Conference for Minority Students (ABRCMS)*, Anaheim, CA. November 2019.
3. Phreaner JJ, **Monroe DC**, Cecchi NJ, Small SL, Hicks JW. Frequency, Magnitude, and Location of Head Impacts in Collegiate Water Polo. *Annual Meeting, American College of Sports Medicine*, Orlando, FL. May 2019.
4. Alshak'ah SA, Crall SR, Gerges PE, Macaulay JR, **Monroe DC**, Hicks JW, Small SL. Testing a Relationship Between Heart Rate Variability and Cognitive Function in Physically Active Young Adults, *Undergraduate Research Symposium*, Irvine, CA. May 2019.
5. Gerges P, **Monroe DC**, Small SL. The Effects of Repeated Head Impacts on Brain-Heart Coupling. *Excellence in Research Symposium*, Irvine, CA. April 2019
6. Rader Z, Golden J, **Monroe DC**. The Moderating Effects of Sex and Personality on Heart Rate Variability and Blood Pressure Response to Stress. *National Council on Undergraduate Research*, Memphis, TN. April 2017.
7. Raisin N, **Monroe DC**. Energy, Memory, and Mood among Active Older Adults. *Georgia Undergraduate Research Conference*, Milledgeville, GA. November 2016.

GRANT SUPPORT

5TL1TR001415-04 (PI: Caiozzo)

National Center for Advancing Translational Sciences

March 2019 – August 2020

Project Title: Brain-Heart Dynamics as a Biomarker of Athlete Brain Health

Role: Postdoctoral Scholar

5T32AR047752-15 (PI: Caiozzo)

National Institute of Arthritis and Musculoskeletal and Skin Diseases

August 2017 – March 2019

Multidisciplinary Exercise Sciences Training Program

Role: Postdoctoral Trainee

CERTIFICATIONS

- First Aid, CPR & AED
- ‘Applying the Quality Matters Rubric’

PROFESSIONAL AFFILIATIONS

- American College of Sports Medicine (ACSM)
- Society for Neuroscience (SfN)
- American Academy of Neurology (AAN)
- National Council on Undergraduate Research (NCUR)

PROFESSIONAL SERVICE ACTIVITIES

University

- Interviewer; President’s Scholarship Competition, *Georgia College & State University, 2017*
- Guest Speaker; CampNeuro, *University of California, Irvine, 2018*
- Research Advisor; California State Summer School for Math & Science, *UCI, 2018-2019*
- Coordinator; NCAA Compliant Concussion Screening, *UCI Sports Medicine, 2018-2019*

Community

- 2019 (May) *The Science of Yoga: Brain & Heart Health*, Yoga Day 2019, UCI Campus Recreation
- 2019 (April) *Physiology & Nutrition for Optimizing Preparation, Performance, and Recovery*, Anti-Cancer Challenge, Irvine Bicycle Club

Professional Society

- Professional-in-training co-chair; Psychobiology & Behavior (Special Interest Group), *ACSM*
- Abstract Reviewer, Mental Health (Topic Area), *Society for Behavioral Medicine*

Journal Reviewer

- Journal of Neuroscience Methods
- PLOS One
- Brain Sciences
- Brain & Language
- Cerebral Cortex
- Cortex
- Annals of Behavioral Medicine
- Psychology of Sport & Exercise