

# Kyle A. Smith, PhD, RD



[PubMed](#)



[ResearchGate](#)



[Google Scholar](#)

1104 Spirit Way, Tallahassee, FL 32306-1493

[k.smith@fsu.edu](mailto:k.smith@fsu.edu)

## EDUCATION

---

- 08/2018 – 05/2023      **Doctor of Philosophy, Physiological Sciences**; Minor in Molecular Medicine
- *University of Arizona, Tucson, AZ*
  - *Mentor: Dr. Richard Simpson*
- 08/2016 – 07/2018      **Master of Science, Exercise Physiology**; Minor in Sports Nutrition
- *Florida State University, Tallahassee, FL*
  - *Mentor: Dr. Michael Ormsbee*
- 08/2014 – 05/2016      **Bachelor of Science, Dietetics**
- *University of Georgia, Athens, GA*
  - *Mentor: Dr. Robert Pazdro*

## EXPERIENCE

---

- 08/2023 – Present      **Assistant Professor**  
*Department of Nutrition and Integrative Physiology  
College of Health and Human Sciences  
Florida State University, Tallahassee, FL*
- 07/2018 – 05/2023      **Research Assistant in Immunology**  
*Department of Nutritional Sciences  
University of Arizona, Tucson, AZ*
- 05/2017 – 07/2018      **Dietetic Internships**  
*Florida State University, Tallahassee, FL*
- San Francisco 49ers, Santa Clara, CA – Human Performance
  - Wellstar Kennestone Hospital, Marietta, GA – Clinical Nutrition
  - Tallahassee Community Outreach, Tallahassee, FL – Pediatric Diabetic Care
- 08/2016 – 04/2018      **Research Specialist in Human Performance**  
*Institute of Sports Sciences and Medicine  
Florida State University, Tallahassee, FL*
- 08/2014 – 05/2015      **Undergraduate Researcher in Oxidative Stress**  
*Nutritional Genetics and Free Radical Laboratory  
University of Georgia, Athens, GA*

## CERTIFICATION

---

- 09/2018 – Present      **Registered Dietitian (RD)/Registered Dietitian Nutritionist (RDN)**  
Commission on Dietetic Registration  
Academy of Nutrition and Dietetics  
ID: 86087060

## RESEARCH INTERESTS

---

- Effects of Nutrition and Exercise on the Anti-Cancer/Anti-Viral Function of Immune Cells
- Cytotoxic Lymphocyte Biology and the Improvement of Immunotherapies
- Acute and Chronic Stress Effects and Regulation of Lymphocyte Adrenergic Signaling Pathways
- Functional Foods and Identifying Novel Plant-Based Compounds that Impact Immune Cell Function
- Impacts of Spaceflight on Human Health and Maintenance of Immune Function During Long-Duration Missions

## TEACHING

---

- 01/2019 – 05/2019      **Graduate Teaching Assistant**  
PSIO 202, Human Anatomy and Physiology II  
University of Arizona, Tucson, AZ
- 08/2017 – 05/2018      **Graduate Teaching Assistant**  
PET 3361, Nutrition and Exercise Performance  
Florida State University, Tallahassee, FL

## SCIENCE COMMUNICATION AND SERVICE

---

- 01/2020 – 05/2022      **Science Writer**  
Immunobites: Bite-Sized Immunology  
Science Communication Blog
- 06/2019 – 06/2020      **Activities Committee Member**  
Department of Physiological Sciences  
University of Arizona, Tucson, AZ

## AWARDS AND FUNDING

---

- 10/2022 – 10/2022      **International Society of Exercise and Immunology – Early Career Investigator Award**  
ISEI Board of Directors  
Greven, Denmark
- 08/2022 – 05/2023      **ARCS Doctoral Fellowship - \$26,664**  
Achievement Rewards for College Scientists  
LaGrange, GA
- 02/2022 – 02/2023      **University of Arizona Core Facilities Pilot Grant - \$11,620**  
**Author**  
*“Utilizing Systemic Knockout of the Beta-2 Adrenergic Receptor to Elucidate Mechanisms of Tumor Control”*  
University of Arizona  
Tucson, AZ
- 09/2020 – 09/2021      **Foundation Doctoral Research Scholarship - \$10,000**  
Academy of Nutrition and Dietetics  
Chicago, IL
- 06/2020 – 06/2022      **NASA Human Research Program Omnibus Grant - \$149,931**  
**Author**  
*“Exercise Training as Countermeasure for Anti-Tumor Immune Dysregulation Due to Isolation and Confinement Stress”*  
National Aeronautics and Space Administration  
Washington, DC
- 04/2020 – 04/2021      **NASA Space Physiology Doctoral Research Grant - \$5,306**  
American College of Sports Medicine  
Indianapolis, IN
- 03/2018 – 03/2018      **First Place Poster Presentation - \$100**  
College of Human Sciences Research Showcase  
Florida State University, Tallahassee, FL

## PROFESSIONAL SOCIETIES

---

10/2020 – Present	<b>Arizona Physiological Society</b>
02/2017 – Present	<b>International Society of Exercise and Immunology</b>
12/2016 – Present	<b>American College of Sports Medicine</b>
12/2015 – Present	<b>Academy of Nutrition and Dietetics</b>

## AD HOC MANUSCRIPT REVIEW

---

*Journal of Science and Medicine in Sport*

## PUBLICATIONS

---

\* indicates manuscript is nearly complete and will be submitted soon

1. \*Baker FL, **Smith KA**, Mylabathula PL, Zuniga TM, Diak DM, Batatinha H, Niemi GM, Pedlar CR, O'Connor DP, Colombo J, Seckeler M, Katsanis E, and Simpson RJ. Exercise-induced  $\beta_2$ -adrenergic Receptor Activation Enhances the Anti-Leukemic Activity of Expanded  $\gamma\delta$  T-cells via DNAM-1 Upregulation and PVR/Nectin-2 Recognition. *Journal of Clinical Investigation* (in preparation)
2. **Smith KA**, Zuniga TM, Baker FL, Batatinha H, Pedlar CR, Burgess SC, Gustafson MP, Katsanis E, and Simpson RJ. COVID-19 Vaccination Induces Exercise-responsive SARS-CoV-2 T-cells Regardless of Infection History. *Journal of Sport and Health Science* (2023) DOI: [10.1016/j.jshs.2023.06.006](https://doi.org/10.1016/j.jshs.2023.06.006)
3. Zuniga TM, Baker FL, **Smith KA**, Batatinha H, Burgess SC, Gustafson MP, Katsanis E, and Simpson RJ. Clonal Kinetics and Single-Cell Transcriptome Profiles of T-Cells Mobilized to Blood by Acute Exercise. *Medicine and Science in Sports and Exercise* (2023) DOI: [10.1249/MSS.0000000000003130](https://doi.org/10.1249/MSS.0000000000003130)
4. Batatinha H, Diak DM, Niemi GM, Baker FL, **Smith KA**, Zuniga TM, Mylabathula PL, LaVoy EC, Gustafson M, Katsanis E, and Simpson RJ. Human Lymphocytes Mobilized with Exercise have an Anti-Tumor Transcriptomic Profile and Exert Enhanced Graft-Versus-Leukemia Effects in Xenogeneic Mice. *Frontiers in Immunology* (2023) DOI: [10.3389/fimmu.2023.1067369](https://doi.org/10.3389/fimmu.2023.1067369)
5. Baker FL, Zuniga TM, **Smith KA**, Batatinha H, Kulangara TS, Seckeler MD, Burgess SC, Katsanis E, and Simpson RJ. Exercise Mobilizes Diverse Antigen Specific T-Cells and Elevates Neutralizing Antibodies in Humans with Natural Immunity to SARS-CoV-2. *Brain, Behavior, and Immunity – Health* (2023) DOI: [10.1016/j.bbih.2023.100600](https://doi.org/10.1016/j.bbih.2023.100600)
6. Zuniga TM, Baker FL, **Smith KA**, Batatinha H, Lau BM, Gustafson MP, Katsanis E, and Simpson RJ. Acute Exercise Mobilizes NKT-like Cells With a Cytotoxic Transcriptomic Profile but Does Not Augment the Potency of Cytokine-induced Killer (CIK) Cells. *Frontiers in Immunology* (2022) DOI: [10.3389/fimmu.2022.938106](https://doi.org/10.3389/fimmu.2022.938106)
7. Batatinha H, Baker FL, **Smith KA**, Zuniga TM, Pedlar CR, Burgess SC, Katsanis E, and Simpson RJ. Recent COVID-19 Vaccination has Minimal Effects on the Physiological Responses to Graded Exercise in Physically Active Healthy People. *Journal of Applied Physiology (APS – Select; APS Paper of the Year 2022)*. DOI: [10.1152/jappphysiol.00629.2021](https://doi.org/10.1152/jappphysiol.00629.2021)
8. Kisiolek JN, **Smith KA**, Baur D, Willingham B, Morrissey M, Leyh S, Saracino P, Mah C, and Ormsbee MJ. Sleep Duration Correlates with Performance in Ultra-Endurance Triathlon. *International Journal of Sports Physiology and Performance* (2021) DOI: [10.1123/ijsp.2021-0111](https://doi.org/10.1123/ijsp.2021-0111)
9. Baker FL, **Smith KA**, Zuniga TM, Batatinha H, Niemi GM, Pedlar CR, Burgess SC, Katsanis E, and Simpson RJ. Acute Exercise Increases Immune Responses to SARS CoV-2 in a Previously Infected Man. *Brain, Behavior, and Immunity – Health* (2021) DOI: [10.1016/j.bbih.2021.100343](https://doi.org/10.1016/j.bbih.2021.100343)

10. Molina MS, Hoffman EA, Stokes J, Kummert N, **Smith KA**, Baker F, Zuniga TM, Simpson RJ, and Katsanis E. Regulatory Dendritic Cells Induced by Bendamustine are Associated with Enhanced Flt3 Expression and Alloreactive T-Cell Death. *Frontiers in Immunology* (2021) DOI: [10.3389/fimmu.2021.699128](https://doi.org/10.3389/fimmu.2021.699128)
11. Simpson RJ, BoBlau TK, Weyh C, Niemi GM, Batatinha H, **Smith KA**, and Kruger K. Exercise and Adrenergic Regulation of Immunity. *Brain, Behavior, and Immunity* (2021) DOI: [10.1016/j.bbi.2021.07.010](https://doi.org/10.1016/j.bbi.2021.07.010)
12. **Smith KA**, Pugh JN, Duca FA, Close GL, and Ormsbee MJ. Gastrointestinal Pathophysiology During Endurance Exercise: Endocrine, Microbiome, and Nutritional Influences. *European Journal of Applied Physiology* (2021) DOI: [10.1007/s00421-021-04737-x](https://doi.org/10.1007/s00421-021-04737-x)
13. Alfano C, Bower J, Connaboy C, Agha N, Baker F, **Smith KA**, So C, and Simpson R. Mental Health, Physical Symptoms, and Biomarkers of Stress During Prolonged Exposure to Antarctica's Extreme Environment. *Acta Astronautica* (2021) DOI: [10.1016/j.actaastro.2021.01.051](https://doi.org/10.1016/j.actaastro.2021.01.051)
14. Kunz H, Agha N, Hussain M, LaVoy E, **Smith KA**, Mylabathula L, Diak D, Baker F, O'Connor D, Bond R, Katsanis E, Bollard C, Simpson R. The Effects of  $\beta_1$  and  $\beta_{1+2}$  Adrenergic Receptor Blockade on the Exercise-induced Mobilization and Ex Vivo Expansion of Virus-specific T-cells: Implications for Cellular Therapy and the Anti-viral Immune Effects of Exercise. *Cell Stress and Chaperones* (2020) DOI: [10.1007/s12192-020-01136-7](https://doi.org/10.1007/s12192-020-01136-7)
15. **Smith KA**, Kisiolek J, Willingham B, Morrissey M, Leyh S, Saracino P, Baur D, Cook M, and Ormsbee M. Ultra-endurance Triathlon Performance and Markers of Whole-body and Gut-specific Inflammation. *European Journal of Applied Physiology* (2020) DOI: [10.1007/s00421-019-04279-3](https://doi.org/10.1007/s00421-019-04279-3)
16. Baur D, Willingham B, **Smith KA**, Kisiolek J, Morrissey M, Saracino P, Ragland T, and Ormsbee M. Adipose Lipolysis Unchanged by Preexercise Carbohydrate Regardless of Glycemic Index. *Medicine and Science in Sports and Exercise* (2018) DOI: [10.1249/MSS.0000000000001498](https://doi.org/10.1249/MSS.0000000000001498)

## PRESENTATIONS

---

1. **Smith KA**. Adrenergic Mobilization of the Immune System and the Anti-Cancer Effects of Exercise. Dissertation Defense for Physiological Sciences Graduate Interdisciplinary Program, University of Arizona. (2023)
2. **Smith KA**. Nutrition, Exercise, and Immunity – Integrating Fields to Optimize Human Health and Performance. Invited Campus Visit at Florida State University. (2022)
3. **Smith KA**, Batatinha H, Katsanis E, Simpson RJ. Anti-Tumor Effects of Exercise in Murine Lymphoma are Dependent Upon Both NK-Cells and  $\beta_2$ - Adrenergic Receptor Signaling. Poster presentation at the International Society of Exercise Immunology Biannual Meeting. (October 2022)
4. **Smith KA**, Baker FL, Zuniga TM, Batatinha H, Niemi GM, Mylabathula PL, Seckeler M, Katsanis E, Simpson RJ. Manipulation of the Catecholamine-  $\beta_2$ -Adrenergic Receptor Signaling Axis Alters the Mobilization of Effector Lymphocytes at Varying Intensities of Exercise. Poster presentation at the International Society of Exercise Immunology Biannual Meeting. (October 2022)
5. **Smith KA**, Batatinha H, Hoffman E, Baker F, Katsanis E, Simpson R. Exercise Attenuates Tumor Growth Via Beta-2-Adrenergic Receptor Signaling in Murine Lymphoma. Poster presentation at American College of Sports Medicine national meeting (2022).
6. **Smith KA**. Adrenergic Mobilization of the Immune System and the Anti-Cancer Effects of Exercise. *Seminar* for the University of Arizona Physiological Sciences (2022). Tucson, AZ.
7. **Smith KA**, Gordon J, Germain A, Hussain M, Downs M, Crucian B, Lagoy A, Connaboy C, and Simpson R. Promoting Behavioral Health, Cognitive, Sensorimotor, and Immune Function Using Guided Imagery to Augment

Exercise Training in an Isolated and Confined Spaceflight Analog Environment. Virtual presentation at NASA Human Research Program Investigators Workshop (2022).

8. **Smith KA**, Crucian B, Connaboy C, Katsanis E, Simpson R. Exercise Training as Countermeasure for Anti-Tumor Immune Dysregulation Due to Isolation and Confinement Stress. Virtual presentation at NASA Human Research Program Investigators Workshop (2022).
9. **Smith KA**, Batatinha H, Hoffman E, Baker F, Niemi G, Katsanis E, Simpson R. Voluntary Wheel Running Slows Tumor Progression in a Murine Lymphoma Model. Poster presentation at American College of Sports Medicine national meeting (2021).
10. **Smith KA**. Adrenergic Mobilization of the Immune System and the Anti-Cancer Effects of Exercise. *Seminar* for the University of Arizona Physiological Sciences (2021). Tucson, AZ.
11. **Smith KA**, Gordon J, Germain A, Hussain M, Downs M, Crucian B, Lagoy A, Connaboy C, and Simpson R. Promoting Behavioral Health, Cognitive, Sensorimotor, and Immune Function Using Guided Imagery to Augment Exercise Training in an Isolated and Confined Spaceflight Analog Environment. Poster presentation at NASA Human Research Program Investigators Workshop (2021). Galveston, TX.
12. **Smith KA**, Agha N, Baker F, Bigley A, Kunz H, Niemi G, Colombo J, Bond R, Bollard C, Katsanis E, and Simpson R. Systemic  $\beta$ 1-Adrenergic Receptor Blockade Augments NK-Cell Mobilization in Response To Acute Exercise in Humans. *Oral presentation* at American College of Sports Medicine National Meeting (2020). San Francisco, CA. **\*cancelled due to COVID19\***
13. **Smith KA**, Agha N, Baker F, Bigley A, Kunz H, Niemi G, Colombo J, Bond R, Bollard C, Katsanis E, and Simpson R. Systemic  $\beta$ 1-Adrenergic Receptor Blockade Augments NK-Cell Mobilization in Response To Acute Exercise in Humans. Poster presentation at Frontiers in Immunobiology and Immunopathogenesis Symposium (2020). Tucson, AZ.
14. **Smith KA**. Exercise as a Countermeasure for Isolation and Confinement Stress-Induced Immune Dysregulation in a Spaceflight Analog Environment. *Seminar* for the University of Arizona Physiological Sciences (2020). Tucson, AZ.
15. **Smith KA**, Gordon J, Germain A, Hussain M, Downs M, Crucian B, Lagoy A, Connaboy C, and Simpson R. Promoting Behavioral Health, Cognitive, Sensorimotor, and Immune Function Using Guided Imagery to Augment Exercise Training in an Isolated and Confined Spaceflight Analog Environment. Poster presentation at NASA Human Research Program Investigators Workshop (2020). Galveston, TX.
16. **Smith KA**, Kisiolek J, Morrissey M, Saracino P, Willingham B, Leyh S, Baur D, Cook M, and Ormsbee M. Ultra-Endurance Triathlon Performance and Markers of Whole-Body and Gut-Specific Inflammation. *Thematic* presentation at American College of Sports Medicine national meeting (2018). Minneapolis, MN.
17. **Smith KA**, Kisiolek J, Morrissey M, Saracino P, Willingham B, Baur D, Ormsbee M. The Effect of Sleep on Systemic Inflammation During the Ultraman Triathlon. Poster presentation at FSU College of Human Sciences Research Showcase (2018). Tallahassee, FL.
18. **Smith KA**, Kisiolek J, Morrissey M, Saracino P, Willingham B, Baur D, Ormsbee M. The Effect of Sleep on Systemic Inflammation During the Ultraman Triathlon. Poster presentation at Southeast American College of Sports Medicine chapter meeting (2018). Chattanooga, TN.

## ABSTRACTS

---

1. Baker FL, **Smith KA**, Mylabathula P, Zuniga TM, Diak DM, Batatinha H, Niemi GM, Pedlar CR, O'Connor DP, Lau B, Colombo J, Seckeler M, Katsanis E, Simpson RJ. Systemic  $\beta$ 2-Adrenergic Receptor Activation Enhances the Anti-Leukemia Activity of Expanded  $\gamma\delta$  T-Cells via DNAM-1 Upregulation and PVR/Nectin-2 Recognition in Humans. *International Society of Exercise Immunology Biannual Meeting*. (October 2022)
2. McKenzie GM, **Smith KA**, Katsanis E, Simpson RJ, Baker FL. TIGIT Blockade Augments the Anti-Leukemic Activity of Exercise Expanded Gamma-Delta T-cells. *International Society of Exercise Immunology Biannual Meeting*. (October 2022)
3. Batatinha H, Diak DM, Niemi GM, Baker FL, **Smith KA**, Zuniga TM, Lau B, Katsanis E, Simpson RJ. Voluntary wheel running slows human leukemia progression in immunodeficient NSG-IL15 mice independently of donor lymphocyte infusion. *International Society of Exercise Immunology Biannual Meeting*. (October 2022)
4. Beattie E, **Smith KA**, Baker FL, Zuniga TM, Batatinha H, Seckeler M, Katsanis E, Simpson RJ. Is Hydrolysis of cAMP by Phosphodiesterase-4 Required for Lymphocytes to Rapidly Egress Peripheral Blood Upon Cessation of Exercise? – Preliminary Findings. *International Society of Exercise Immunology Biannual Meeting*. (October 2022)
5. Baker FL, **Smith KA**, Zuniga TM, Batatinha H, Pedlar CR, Burgess SC, Katsanis E, Simpson RJ. Acute Exercise Mobilizes Functional SARS-CoV-2 Specific T-Cells and Elevates Neutralizing Antibodies in Previously Infected Individuals. *Medicine and Science in Sports and Exercise*. (September 2022)
6. Batatinha H, Diak D, Niemi G, Mylabathula P, Baker F, **Smith KA**, Zuniga T, Park Y, LaVoy E, Katsanis E, Simpson R. Human Lymphocytes Mobilized with Exercise Extend Survival and Lower Leukemic Burden in Xenogeneic Mice. *Medicine and Science in Sports and Exercise*. (June 2021)
7. Zuniga T, Baker F, **Smith KA**, Gustafson M, Katsanis E, Simpson R. Acute Exercise Enhances the Ex Vivo Expansion and Cytolytic Phenotype of Cytokine Induced Killer Cells. *Medicine and Science in Sports and Exercise*. (June 2021)
8. Baker F, Mylabathula P, **Smith KA**, Zuniga T, Diak D, Niemi G, Markofski M, Pedlar C, O'Connor D, Katsanis E, Simpson R. Exercise Enhances the Anti-Leukemia Activity of Expanded  $\gamma\delta$  T-cells via DNAM-1 Upregulation and PVR/Nectin-2 Recognition. *Medicine and Science in Sports and Exercise*. (June 2021)
9. **Smith KA**, Agha N, Baker F, Bigley A, Kunz H, Niemi G, Colombo J, Bond R, Bollard C, Katsanis E, and Simpson R. Systemic  $\beta$ 1-Adrenergic Receptor Blockade Augments NK-Cell Mobilization in Response to Acute Exercise in Humans. *Medicine and Science in Sports and Exercise*. (June 2020)
10. Diak D, Niemi G, Baker F, Mylabathula P, **Smith KA**, Zuniga T, Stokes J, Hoffman E, Katsanis E, and Simpson R. Developing a Xenotransplantation Mouse Model to Determine the Alloreactivity and Anti-tumor Effects of Human Lymphocytes Mobilized With Exercise: Implication for Allogeneic Hematopoietic Stem Cell Transplantation and Immunotherapy. Oral presentation at the International Society of Exercise Immunology Annual Meeting (2019). Shanghai, China.
11. Niemi G, Diak D, Mylabathula P, Baker F, Durazo G, **Smith KA**, Zuniga T, Seckeler M, Katsanis E, and Simpson R. Isoproterenol Infusion Mimics the Preferential Mobilization of Effector Lymphocytes in Response to Steady State Exercise in Healthy Humans. Poster presentation at the International Society of Exercise Immunology Annual Meeting (2019). Shanghai, China.

12. Baur D, Willingham B, **Smith KA**, Kisiolek J, Morrissey M, Ragland T, Saracino P, Ormsbee M. No Lipolytic Suppression with Pre-Exercise Carbohydrates Regardless of its Glycemic Index. Thematic presentation at American College of Sports Medicine national meeting (2018). Minneapolis, MN.
13. Kisiolek J, **Smith KA**, Baur D, Willingham B, Morrissey M, Leyh S, Saracino P, and Ormsbee M. The Effect of Total Sleep Time on Ultra-Endurance Triathlon Performance. Thematic presentation at American College of Sports Medicine national meeting (2018). Minneapolis, MN.
14. Kisiolek J, **Smith KA**, Morrissey M, Saracino P, Willingham B, Baur D, Ormsbee M. The Effects of Sleep Time on Ultra-Endurance Triathlon Performance. Poster presentation at FSU College of Human Sciences Research Showcase (2018). Tallahassee, FL.
15. Baur D, Willingham B, **Smith KA**, Kisiolek J, Morrissey M, Ragland T, Saracino P, Ormsbee M. No Lipolytic Suppression with Pre-Exercise Carbohydrates Regardless of its Glycemic Index. Poster presentation at Southeast American College of Sports Medicine chapter meeting (2018). Chattanooga, TN.
16. Kisiolek J, **Smith KA**, Morrissey M, Saracino P, Willingham B, Baur D, Ormsbee M. The Effects of Sleep Time on Ultra-Endurance Triathlon Performance. Poster presentation at Southeast American College of Sports Medicine chapter meeting (2018). Chattanooga, TN.