

John S. Fitzgerald, PhD

University of North Dakota
Education, Health and Behavior Studies
Ralph Engelstad Arena Room 61
One Ralph Engelstad Arena Dr.
Grand Forks, ND 58203
Phone: 701.777.2988
Email: john.s.fitzgerald@und.edu

Education

- 2013 University of Minnesota, Minneapolis, MN
Ph.D. Kinesiology, Exercise Physiology
Dissertation: "Vitamin D Deficiency and Physical Performance in Athletes"
- 2007 University of Minnesota, Minneapolis, MN
B.S. Kinesiology, Exercise Science

Professional Positions

- 2019 – 2025 University of North Dakota, Grand Forks, ND
Associate Professor, Exercise Physiology
Kinesiology and Public Health Education
- 2022 – 2025 **Sports Scientist**, University of North Dakota Men's Hockey
Implement athlete readiness monitoring system, carryout exercise performance testing, perform and direct data evaluation and management duties, research sport training, technology and ergogenic aids, assist with exercise programing and strength and conditioning coaching
- 2013 – 2019 University of North Dakota, Grand Forks, ND
Assistant Professor, Exercise Physiology
Kinesiology and Public Health Education
- 2008 – 2013 University of Minnesota, Minneapolis, MN
Graduate Assistant
School of Kinesiology

Teaching Experience

- 2023 – 2024 **Instructor**, KIN 326, Fundamentals of Physical Conditioning, University of North Dakota, Grand Forks, ND.

2020 – 2022	Instructor , KIN 536, Bioenergetics and Muscle Function (graduate level course), University of North Dakota, Grand Forks, ND.
2019 – 2021	Instructor , KIN 560, Seminar in Kinesiology (graduate level course), University of North Dakota, Grand Forks, ND.
2020	Instructor , KIN 240, Introduction to Wellness, University of North Dakota, Grand Forks, ND.
2016 – 2022	Instructor , KIN 541, Adult Fitness Programming, University of North Dakota (graduate level course), Grand Forks, ND.
2023 – 2025	Instructor , KIN 541, Exercise Program Design, University of North Dakota (graduate level course), Grand Forks, ND.
2016	Instructor , KIN 501, Introduction to Research in Kinesiology, University of North Dakota (graduate level course), Grand Forks, ND.
2015 – 2025	Instructor , KIN 491, Senior Capstone, University of North Dakota, Grand Forks, ND.
2015	Instructor , KIN 539, Theory and Practice of Exercise Testing (graduate level course), University of North Dakota, Grand Forks, ND.
2014 – 2018	Instructor , KIN 532, Exercise Physiology Lab Techniques (graduate level course), University of North Dakota, Grand Forks, ND.
2014	Instructor , KIN 535, Advanced Exercise Physiology I (graduate level course), University of North Dakota, Grand Forks, ND.
2013 – 2017	Instructor , KIN 536, Advanced Exercise Physiology II (graduate level course), University of North Dakota, Grand Forks, ND.
2013 – 2025	Instructor , KIN 402, Exercise Physiology, University of North Dakota, Grand Forks, ND.
2013 – 2025	Instructor , KIN 592, Directed Readings in Kinesiology, University of North Dakota, Grand Forks, ND.
2012 – 2013	Instructor , KIN 5641, Scientific Theory and Application of Training and Conditioning in Sport (graduate level course), University of Minnesota, Minneapolis, MN
2009 – 2013	Instructor , KIN 4741, Strength and Power Development and Program Design, University of Minnesota, Minneapolis, MN

2009 – 2012	Instructor , KIN 4941, Applied Sport Science, University of Minnesota, Minneapolis, MN
2010 – 2011	Instructor , KIN 4641, Training and Conditioning for Sport, University of Minnesota, Minneapolis, MN
2008 – 2012	Instructor , PE 1015, Weight Training, University of Minnesota, Minneapolis, MN
2008 – 2011	Instructor , PE 1075, Ice Hockey, University of Minnesota, Minneapolis, MN
2019	Invited Class Lecturer , KIN 560, Seminar in Kinesiology, (graduate level course), University of North Dakota, Grand Forks, ND. (topic: Study Design)
2017	Invited Class Lecturer , KIN 560, Seminar in Kinesiology, (graduate level course), University of North Dakota, Grand Forks, ND. (topic: Research interests)
2014	Invited Class Lecturer , KIN 501, Introduction to Research in Kinesiology, (graduate level course), University of North Dakota, Grand Forks, ND. (topic: Cross-sectional study design considerations)
2012	Invited Class Lecturer , KIN 3001, Lifetime Fitness and Health, University of Minnesota, Minneapolis, MN (topic: basic features of adaption and implications for exercise programming)
2012	Invited Class Lecturer , KIN 4641, Training and Conditioning for Sport, University of Minnesota, Minneapolis, MN (topic: power development for sport)
2011	Invited Class Lecturer , KIN 5981, Research Methods, University of Minnesota, Minneapolis, MN (topic: research proposal design)

Advising

2024 – 2025	N. H. Dissertation Committee Chair, “Phase Angle for Assessment of Athlete Preparedness.”
2024 – 2025	L. J. Thesis Committee, “Validation of The Food Frequency and Sun Exposure Questionnaire for Assessing Vitamin D Status in Active Population.” Graduated May, 2025.

- 2024 – 2025 K. M. Dissertation Committee, “Assessing Astronauts with Disabilities using the Space Health Model.”
- 2024 – 2025 J. M. Dissertation Committee, Thriving Within Online and Hybrid Courses: Examining the Influence of Interactions in Kinesiology Undergraduate Students.”
- 2022 – 2024 W. B. Thesis Committee Chair, “The effects of Live low-train high on exercise performance in athletes: a systematic review.”
- 2022 – 2023 J. M. Thesis Committee, “Kinesio tape effect on vertical jump.” Graduated May, 2023.
- 2021 – 2022 E. S. Thesis Committee, “Principal Component Analysis on the Effects of Locomotion Methods Under Simulated Reduced Gravity Conditions.” Graduated May, 2022.
- 2019 – 2021 N. S. PhD Thesis Committee, “Hockey goalies’ motivation for performance.” Graduated May, 2022.
- 2019 – 2020 B. B. Thesis Committee, “association between physical activity and mental health in mothers with a special health care need.” Graduated May, 2020.
- 2019 – 2020 T. D. Thesis Committee, “Global trends for handgrip strength for adults.” Graduated May, 2020.
- 2019 – 2021 W. W. Thesis Committee, “Criterion referenced cut-points for handgrip strength to detect metabolic syndrome in U.S. adults.” Graduated December, 2021.
- 2019 – 2021 B. P. Thesis Committee, “The relationship between digit ratio (2D:4D) and muscular fitness: A systematic review and meta-analysis.” Graduated August, 2021.
- 2019 – 2021 N. K. Thesis Committee, “Criterion-referenced cut-points in cardiorespiratory fitness associated with metabolic syndrome in United States adults.” Graduated August, 2021.
- 2019 – 2020 T. N. Thesis Committee, “Performance predictors in softball.”
- 2019 – 2020 W. R. Thesis Committee, “Relationships among a Football Specific Test, Wonderlic Personnel Test and decision-making in NCAA football players.” Graduated May, 2020.

- 2018 – 2020 N. P. Thesis Committee Chair, “Effects of exercise training on basal testosterone concentrations in men: A systematic review and Meta-Analysis.” Graduated May, 2020.
- 2018 – 2019 B. P. Thesis Committee Co-Chair, “Temporal trends in the standing broad jump test performance of united states children and adolescents.” Graduated May, 2019.
- 2018 – 2019 F. D. Thesis Committee, “Temporal trends in the grip strength of children and adolescents.” Graduated May, 2019.
- 2018 – 2019 T. K. Thesis Committee, “Temporal trends in the abdominal endurance of children and adolescents.” Graduated May, 2019.
- 2018 – 2019 B. S. Thesis Committee, “The reliability of indirect assessments of standing forward head posture in asymptomatic adults.” Graduated May, 2019.
- 2017 – 2019 C. R. PhD Thesis Committee, “Using DXA and exercise performance assessment to evaluate relative functionality of lower-body muscles after ACL injury.” University of Minnesota. Graduated May, 2019.
- 2017 – 2018 N. L. Thesis Committee, “Temporal trends in the cardiorespiratory fitness of adults.” Graduated May, 2018.
- 2017 – 2018 J. D. Thesis Committee Chair, “Reliability of 3-dimensional body scanning using a Styku MyBodee System.” Graduated May, 2018.
- 2017 – 2018 J. D. Thesis Committee Co-Chair, “The relationship between the digit ratio (2D:4D) and muscular strength in male college athletes.” Graduated May, 2018.
- 2017 – 2018 K. K. Thesis Committee, “Relationships between the digit ratio (2D:4D) and game- related statistics in professional and semi-professional male basketball players.” Graduated May, 2018.
- 2017 – 2018 J. U. Thesis Committee Chair, “Test-retest reliability of TRIMP and training effect during on-ice practice in collegiate hockey players.” Graduated May, 2018.
- 2017 – 2018 Z. R. PhD Thesis Committee, “Health economics: Is there a true economic benefit to exercising?” University of Minnesota. Graduated May, 2018

- 2016 – 2018 K. C. Thesis Committee, “Cross country fitness comparisons of European children and adolescents.” Graduated May, 2018.
- 2016 – 2017 L. C. Thesis Committee, “Concurrent plyometric and endurance training effects on aerobic fitness-performance in adult endurance athletes: a systematic review with meta-analysis.” Graduated December, 2017.
- 2015 – 2016 Z. R. Thesis Committee, “The Relationship between Core Stability and Sport Performance in Elite vs. Non-Elite Hockey Athletes.” University of Minnesota. Graduated December, 2016.
- 2015 – 2016 R. J. Independent Study Advisor, “A Helpful Tool for Designing an Exercise Program for Cardiovascular Diseased Populations.” Graduated May, 2016.
- 2015 – 2016 A. H. Independent Study Advisor, “Cardiovascular Disease: Controllable Risks and Management.” Graduated May, 2016.
- 2015 – 2017 J. W. Thesis Committee, “Keiser Power Output Relationship to On-ice Slap Shot Puck Velocity: A Correlational Study.”
- 2015 – 2016 K. Z. Thesis Committee, “The Effects of Resistance Training Programs on Physical Self Perception in College Females.” Graduated December, 2016.
- 2015 – 2018 N. L. Thesis Committee, “A comparison of visual and digital assessment methods of standing lumbar lordosis in asymptomatic adults.” Graduated May, 2018.
- 2015 – 2016 M. L. Thesis Committee Chair, “Lactate threshold and repeated shift performance in hockey.” Graduated May, 2016.
- 2015 – 2016 B. L. Thesis Committee Chair, “Awareness of vitamin D for health and physical performance in collegiate athletes.” Graduated May, 2016.
- 2015 – 2016 Z. M. Thesis Committee, “Relationship of pre-season functional movement screening on injury in Division I collegiate athletes.” Graduated May, 2016.
- 2015 – 2016 T. P. Thesis Committee, “Effect of rituals on task performance.” Graduated May, 2016.
- 2014 – 2015 M. L. Thesis Committee, “Does Sleep Affect Delayed Onset Muscle Soreness in Olympic Hockey Players?” Graduated August, 2015.

2014 – 2017	J. S. Thesis Committee Chair, “Effect of a plyometric training intervention during marathon training on jumping mechanography variables.”
2014 – 2017	M. S. Thesis Committee, “Effect of Wii Fit on balance.”
2014 – 2017	R. R. Thesis Committee, “Effect of sports bra on metabolic expenditure”
2014 – 2015	L. B. Thesis Committee Chair, “Acute impact of caffeine supplementation on vertical jump performance.” Graduated August, 2015.
2014 – 2017	M. H. Thesis Committee Chair, “Carbohydrate intake during a 24-hour period between competitions in collegiate hockey players.”
2014 – 2015	K. L. Thesis Committee, “Women’s adherence to an exercise program: barriers and benefits.” Graduated May, 2015.
2014 – 2017	M. M. Thesis Committee Chair, “Effect of active recovery on repeated sprint performance.” Graduated May, 2017.
2014 – 2015	J. M. Thesis Committee Chair, “Observing range of motion in baseball players during an off-season resistance program and practice.” Graduated May, 2015.
2013 – 2015	L. W. Independent Study Advisor, “High Intensity interval training in comparison to steady state cardiovascular exercise.” Graduated December, 2015.
2013 – 2014	S. R. Thesis Committee, “Exercise enjoyment in 18-25 year old college male students when performing cycle ergometry while playing a console video game.” Graduated May, 2014.
2013 – 2018	B. S. Thesis Committee Chair, “Effect of warm-up protocols on vertical jump performance.” Graduated May, 2018.

Service

2023 – 2025	Meet with Sports Medicine residents from UND and South Dakota to discuss sport science and training methods and technology
2023 – 2025	Frequent meeting with prospective student athletes to discuss Kinesiology Program

2023 – 2025	Meet with strength and conditioning professionals and coaches from other hockey organizations to discuss our training and monitoring methods
2025	Volunteer Coach, Hockey Shoot Clinic for Squirts and Peewees, Crookston, MN
2024 – 2025	Meetings with Crookston Hockey Coaches to discuss programming warm-ups and resistance training for youth.
2023 – 2024	Meetings with strength and conditioning staff at Crookston High School to discuss training methods for youth sport
2023 – 2024	Reviewer, Journal of Sports Sciences
2022 – 2025	UND Men’s Hockey Sports Scientist
2022	Reviewer, Strength and Conditioning Journal
2021 – 2023	EHD Research and Faculty Development Committee
2021	Reviewer, Nutrition and Food Science
2020	Reviewer, Research Quarterly for Exercise and Sport
2020	Reviewer, The Physician and Sportsmedicine
2019 – 2023	Volunteer Coach, Mini Mite Hockey, Crookston, MN
2019 – 2022	University Senate Intercollegiate Athletics Committee
2019 – 2023	EHD Undergraduate Curriculum Committee (Chair during 2020 – 2022)
2019	Associate Dean for Student Services & Assessment Search Committee
2019 – 2023	Kinesiology T&P Review Committee
2019	Reviewer, Nutrients
2019	Reviewer, The Journal of Strength and Conditioning Research
2019 – 2021	Reviewer, Measurement in Physical Education and Exercise Science
2018	Reviewer, European Journal of Sports Science
2018	Assisted Public Health Education Faculty Search Committee
2018 – 2023	Faculty Judge, Graduate Research Achievement Day

2018	Reviewer, Biology of Sport
2018	Reviewer, International Research in Sports Medicine
2017	Reviewer, Research in Sports Medicine
2017– 2020	Reviewer, Journal of Exercise Science and Fitness
2017	KPHE Faculty Search Committee
2016 – 2017	Assisting KPHE with undergraduate and graduate curriculum revision
2015 – 2025	Full Graduate Faculty Member, University of North Dakota
2016	Honors Program Director Search Committee
2015	KPHE Faculty Search Committee
2015	Reviewer, British Journal of Nutrition
2015 – 2025	KPHE Scholarship Awards Committee
2015	KPHE Department Representative, AKA Annual Meeting
2014 – 2017	EHD Technology Committee Member
2014 – 2022	Reviewer, Medicine and Science in Sports and Exercise
2014 – 2017	North Dakota Representative to the National Strength and Conditioning Association
2014	Interview with Kittson Central 9th grade Lego League team regarding the connection between “muscle memory” and sports
2014	Panel Member, T &L 548 Professoriate class
2014	EHD Awards Committee Member (Interim)
2014	Assisting the Chair with the KPHE Tenure and Promotion Guidelines revision
2013 – 2016	Advisor, Kinesiology Student Association
2013 – 2015	Associate Graduate Faculty Member, University of North Dakota
2013 – 2016	Healthy UND Coalition Member

- 2011 – 2013 Undergraduate Mentor: University of Minnesota Sports Performance Research Group. Oversee group projects, direct group discussions and expose students to sports performance research.
- 2010 – 2013 Undergraduate Directed Study Supervisor: University of Minnesota Kinesiology Department. Work with several students and their advisors to develop a custom project to meet directed study credit requirements and address the students' learning objectives.

Publications

1. Heesch, A. J., Otremba, J. R., Morgan, R. M., Montgomery, B. M., Poolman, M. A., Schindler, G. D., **Fitzgerald, J. S.** (2025). Bioelectrical impedance spectroscopy measuring the magnitude of body water compartment changes pregame and postgame in collegiate ice hockey players. *Journal of Strength and Conditioning Research*, 39(6), e769-e773. doi: 10.1519/JSC.0000000000005101.
2. Black, B. J., Walch, T. J., Dodds, R. L., **Fitzgerald, J. S.** (2025). Physical activity and depression in mothers of a child with a special health care need: informing future interventions. *Public Health Challenges*, 4, e70029. <https://doi.org/10.1002/puh2.70029>
3. Otremba, J. R., Heesch, A. J., Morgan, R. M., Poolman, M. A., Schindler, G. D., **Fitzgerald, J. S.** (2025). Bioelectrical impedance spectroscopy measures of whole and segmental skeletal muscle quantity associated with strength and power in collegiate ice hockey players. *Journal of Strength and Conditioning Research*, 39(2), 242-248. DOI: 10.1519/JSC.0000000000004965
4. Morgan, R., Wheeler, T., Poolman, M., Haugen, E., LeMire, S., **Fitzgerald, J. S.** (2024). Effects of photobiomodulation on pain and return to play of injured athletes: a systematic review and Meta-Analysis. *Journal of Strength and Conditioning Research*, 38(6), 310-316. DOI: 10.1519/JSC.0000000000004752
5. **Fitzgerald, J. S.**, Swanson, B. J., Larson-Meyer, D. E. (2023). Vitamin D knowledge, awareness, and attitudes of adolescents and adults: A Systematic Review. *Journal of Nutrition Education and Behavior*, 55(8), 585-595, <https://doi.org/10.1016/j.jneb.2023.04.010>
6. Smith, E., **Fitzgerald, J. S.**, Tomkinson, G. R., Orr, S., De Leon, P. (2023). Reduced gravity effect on coordinative gate structures. *Life Science in Space Research*, 38, 59-66. DOI:10.1016/j.lssr.2023.05.004
7. Schwenzfeier, A., Rhoades, J. L., **Fitzgerald, J. S.**, Whitehead, J., Short, M. (2022). Increased sprint performance with false step in collegiate athletes trained to forward step. *Sport Biomechanics*, 21(8), 958–965. DOI: 10.1080/14763141.2020.1713205

8. Disterhaupt, J. W., **Fitzgerald, J. S.**, Rhoades, J. L., Tomkinson, G. R. (2022). The relationship between the digit ratio (2D:4D) and vertical jump performance in young athletes. *American Journal of Human Biology*, 34(3), e23657. DOI.org/10.1002/ajhb.23657.
9. Pasanen, B., Tomkinson, G. R., Dufner, T. J., Park, C., **Fitzgerald, J. S.**, Tomkinson, G. R. (2022). The relationship between digit ratio (2D:4D) and muscular fitness: A systematic review. *American Journal of Human Biology*, 34(3), e23657. DOI: 10.1002/ajhb.23657
10. Potter, N. J., Tomkinson, G. R., Dufner, T. J., Walch, T. J., Roemmich, J. N., Wilson, P. B., **Fitzgerald, J. S.** (2021). Effects of Exercise Training on Resting Testosterone Concentrations in Insufficiently Active Men: A Systematic Review and Meta-Analysis. *The Journal of Strength and Conditioning Research*, 35(12), 3521–3528. DOI: 10.1519/JSC.0000000000004146
11. Orysiak, J., **Fitzgerald, J. S.**, Malczewska-Lenczowska, J., Witek, K., Gajewski, J., Zembron-Lacny, A., Morawin, B., Sitkowski, D. (2021). Vitamin D and upper respiratory tract infections in young active males exposed to cold environments. *Annals of Agricultural and Environmental Medicine*, 28(3), 446–451. DOI:10.26444/aaem/127530.
12. Leitch, B. A., Wilson, P. B., Ufholz, K., Roemmich, J. N., Walch, T. J., Short, S., **Fitzgerald, J. S.** (2021). Vitamin D Awareness and Intake in Collegiate Athletes. *The Journal of Strength and Conditioning Research*, 35(10), 2742–2748, DOI: 10.1519/JSC.0000000000003240
13. Pinoniemi, B, K., Tomkinson, G. R., Walch, T. J., Roemmich, J. N., **Fitzgerald, J. S.** (2021). Temporal trends in standing broad jump performance of united states children and adolescents. *Research Quarterly for Exercise and Sport*, 92(1), 71–81. DOI:10.1080/02701367.2019.1710446
14. Raymond-Pope, C. J., Dengel, D. R., **Fitzgerald, J. S.**, Nelson, B. J., Bosch, T. A. (2021). Anterior cruciate ligament reconstructed female athletes exhibit relative muscle dysfunction after return to sport. *International Journal of Sports Medicine*, 42(4), 336-343
15. Tomkinson, G. R., Kaster, T., Dooley, F. L., **Fitzgerald, J. S.**, Annandale, M., Ferrar, K., Lang, J. J., Smith, J. J. (2021). Temporal trends in the standing broad jump performance of 10,940,801 children and adolescents between 1960 and 2017. *Sports Medicine*, 51(3), 531–548. DOI:10.1007/s40279-020-01394-6
16. Tomkinson, G. R., Kidokoro, T., Dufner, T., Noi, S., **Fitzgerald, J. S.**, Brown-Borg, H. M. (2021). Temporal trends in 6-minute walking distance for older Japanese adults between 1998 and 2017. *Journal of Sport and Health Science*, 10(4), 462-469. <https://doi.org/10.1016/j.jshs.2020.06.007>

17. Dufner, T. J., **Fitzgerald, J. S.**, Lang, J. J., Tomkinson, G. R. (2020). Temporal trends in the handgrip strength of 2,592,714 adults from 14 countries between 1960 and 2017: A systematic Analysis. *Sports Medicine*, 50(12), 2175-2191. DOI:10.1007/s40279-020-01339-z
18. Derouchey, J. D., Tomkinson, G. R., Rhoades, J. L., **Fitzgerald, J. S.** (2020). Reliability of the Styku 3D Whole Body Scanner for the Assessment of Body Size in Athletes. *Measurement in Physical Education and Exercise Science*, 24(3), 228–234.
DOI:10.1080/1091367X.2020.1791124
19. Crewther, B., Cook, C., **Fitzgerald, J. S.**, Starczewski, M., Gorski, M. Orysiak, J. (2020). Vitamin D and Cortisol as Moderators of the Relationship Between Testosterone and Exercise Performance in Adolescent Male Athletes. *Pediatric Exercise Science*, 32(4), 204–209.
20. Kaster, T., Dooley, F. L., **Fitzgerald, J. S.**, Walch, T. J., Annandale, M., Ferrar, K., Lang, J. J., Smith, J. J., Tomkinson, G. R. (2020). Temporal trends in the sit-ups performance of 9,939,289 children and adolescents between 1964 and 2017, *Journal of Sports Sciences*, 38(16), DOI: 10.1080/02640414.2020.1763764
21. Tomkinson, G. R., Kidokoro, T., Dufner, T. J., Noi, S., **Fitzgerald, J. S.**, McGrath, R. P. (2020). Temporal trends in handgrip strength for older Japanese adults between 1998 and 2017. *Age and Ageing*, 49(4), 634–639.
22. Raymond-Pope, C. J., Dengel, D. R., **Fitzgerald, J. S.**, Bosch, T. A. (2020). Association of Compartmental Leg Lean Mass Measured by DXA with Force Production. *The Journal of Strength and Conditioning Research*, 34(6), 1690-1699.
23. Dooley, F. L., Kaster, T., **Fitzgerald, J. S.**, Walch, T. J., Annandale, M., Ferrar, K., Lang, J. J., Smith, J. J., Tomkinson, G. R. (2020). A systematic analysis of temporal trends in the handgrip strength of 2,216,320 children and adolescents between 1967 and 2017. *Sports Medicine*, 50, 1129–1144. DOI:10.1007/s40279-020-01265-0.
24. Ulmer, J. G., Tomkinson, G. R., Short, M., Short, S., **Fitzgerald, J. S.** (2019). Test-retest reliability of TRIMP and Training Effect in Collegiate Ice Hockey Players. *Biology of Sport*, 36(2), 191-194.
25. Rhoades, J. L., Woods, A. M., **Fitzgerald, J. S.**, Trendowski, T. N., Ellison, D. (2019). US voluntary advancement teacher certification: towards the Dakar notion of EFA. *Teacher Development*, 23(5), 549-565.
26. Lamoureux, N. R., **Fitzgerald, J. S.**, Norton, K. I., Sabato, T., Tremblay, M. S., & Tomkinson, G. R. (2019). Temporal Trends in the Cardiorespiratory Fitness of 2,525,827 Adults Between 1967 and 2016: A Systematic Review. *Sports Medicine*, 49(1), 41–55.

27. Klapprodt, K., **Fitzgerald, J. S.**, Short, S., Tomkinson, G. R. (2018). Relationships between the digit ratio (2D:4D) and game- related statistics in professional and semi-professional male basketball players. *American Journal of Human Biology*, 30(6), e23182.
28. Flack, K. D., Ufholz, K., Johnson, L., **Fitzgerald, J. S.** Roemmich, J. N. (2018). Energy Compensation in Response to Aerobic Exercise Training in Overweight Adults. *American Journal of physiology- regulatory integrative and comparative physiology*, <https://doi-org.ezproxy.library.und.edu/10.1152/ajpregu.00071.2018>.
29. Orysiak, J., Mazur-Rozycka, J., **Fitzgerald, J. S.**, Starczewski, M., Busko, K., Malczewska-Lenczowska, J. (2018). Vitamin D status and its relation to exercise performance and iron status in young ice hockey players. *PLoS ONE*, 13(4), e 0195284.
30. Lowery, M. R., Tomkinson, G. R., Peterson, B. J., **Fitzgerald, J. S.** (2018). The Relationship between Ventilatory Threshold and Repeated-Sprint Ability in Competitive Male Ice Hockey Players. *Journal of Exercise Science and Fitness*, 16(1), 32-36.
31. Lamoureux, N. R., Tomkinson, G. R., Peterson, B. J., **Fitzgerald, J. S.** (2018). Relationship Between Skating Economy and Performance During a Repeated-Shift Test in Elite and Subelite Ice Hockey Players. *The Journal of Strength and Conditioning Research*, 32(4), 1109-1113.
32. **Fitzgerald, J. S.**, Orysiak, J., Wilson, P. B., Mazur-Rozycka, J., Obminski, Z. (2018). Association Between Vitamin D Status and Testosterone and Cortisol in Ice Hockey Players. *Biology of Sport*, 35(2), 207-213.
33. Tomkinson, G. R., Carver, K., Atkinson, F., Daniell, L. L., **Fitzgerald, J. S.**, Lang, J. J., Ortega, F. B. (2018). European normative values for physical fitness in 9- to 17-year-olds: Results from 2,779,165 Eurofit performances representing 30 countries. *British Journal of Sports Medicine*, 52(22), 1445-14563 doi:10.1136/bjsports-2017-098253.
34. **Fitzgerald, J. S.**, Johnson, L., Tomkinson, G., Stein, J., Roemmich, J. N. (2018). Test-retest Reliability of Jump Execution Variables using Mechanography: A Comparison of Jump Protocols. *Journal of Sports Sciences*, 36(9), 963-969.
35. Barry, A. M., Rhoades, J. L., Caine, D. J., **Fitzgerald, J. S.**, Dalin, D. L., & Walch, T. J. (2017). Effect of Sedentary and Physical Activities on Children's Food Choice. *International Journal of Exercise Science*, 10(5), 702-712.
36. Van Iterson, E. H., **Fitzgerald, J. S.**, Dietz, C. C., Snyder, E. M., & Peterson, B. J. (2017). Reliability of Triaxial Accelerometry for Measuring Load in Men's Collegiate Ice-Hockey. *The Journal of Strength & Conditioning Research*, 31(5), 1305-1312.

37. Peterson, B. J., **Fitzgerald, J. S.**, Dietz, C. C., Ziegler, K. S., Baker, S. E., & Snyder, E. M. (2016). Off-Ice Anaerobic Power is Not a Predictor of On-Ice Repeated Shift Performance in Hockey Players. *The Journal of Strength & Conditioning Research*, 30(9), 2375-2381.
38. Lucas, B. P., **Fitzgerald, J. S.**, Short, M. W., Whitehead, J. R. (2016). The Effects of Caffeine on Vertical Jump Height and Execution in Collegiate Athletes. *The Journal of Strength & Conditioning Research*, 30(7), 1855-1861.
39. Wilson, P. B., **Fitzgerald, J. S.**, Rhodes, G. S., Lundstrom, C. J., & Ingraham, S. J. (2015). Effectiveness of ginger (*Zingiber officinale*) on running-induced muscle soreness, and dysfunction: a pilot study. *International Journal of Athletic Therapy & Training*, 20(6), 44-50.
40. Peterson, B. J., **Fitzgerald, J. S.**, Dietz, C. C., Ziegler, K. S., Ingraham, S. J., Baker, S. E., & Snyder, E. M. (2015). Aerobic Capacity is Associated with Improved Repeated Shift Performance in Hockey. *The Journal of Strength & Conditioning Research*, 29(6), 1465-1472.
41. **Fitzgerald, J. S.**, Peterson, B. J., Warpeha, J. M., Johnson, S. C., & Ingraham, S. J. (2015). Association Between Vitamin D Status and Maximal-Intensity Exercise Performance in Junior and Collegiate Hockey Players. *The Journal of Strength & Conditioning Research*, 29(9), 2513-2521.
42. Peterson, B. J., **Fitzgerald, J. S.**, Dietz, C. C., Ziegler, K. S., Ingraham, S. J., Baker, S. E., & Snyder, E. M. (2015). Division I hockey players generate more power than Division III players during on-and off-ice performance tests. *The Journal of Strength & Conditioning Research*, 29(5), 1191-1196.
43. **Fitzgerald, J. S.**, Peterson, B. J., Wilson, P. B., Rhodes, G. S., & Ingraham, S. J. (2015). Vitamin D Status is Associated with Body Adiposity in Male Ice Hockey Players. *Medicine and Science in Sports and Exercise*, 47(3), 655-661.
44. **Fitzgerald, J. S.**, Peterson, B. J., Warpeha, J. M., Wilson, P. B., Rhodes, G. S., & Ingraham, S. J. (2014). Vitamin D Status and $\dot{V}O_{2\text{peak}}$ During a Skate Treadmill Graded Exercise Test in Competitive Ice Hockey Players. *The Journal of Strength & Conditioning Research*, 28(11), 3200-3205.
45. Wilson, P. B., **Fitzgerald, J. S.**, & Ingraham, S. J. (2014). Relationship between serum 25-hydroxyvitamin D status and cardiorespiratory fitness: finding from the National Health and Nutrition Examination Survey. *International Journal of Cardiology*, 168(3), 3112-13.

Refereed Conference Presentations (abstracts published)

1. Schindler, G., **Fitzgerald, J.S.**, Poolman, M., Shock, T., Carroll, P., Heinert, C., Kludt, I., Simon, L., Holkup, N. (2026, February). Dynamic Blood Flow Restriction Effects on Intracellular and Extracellular Fluid: An Investigative Study. Poster presentation at the American Physical Therapy Association Combined Sections Meeting in Anaheim, CA.
2. Morgan, R., Schindler, G., T., Poolman, M., **Fitzgerald, J.S.** (2025, February). Weekly Changes in Body Water Compartments and Peak Power Are Not Associated in Collegiate Hockey. Poster presentation at the American Physical Therapy Association Combined Sections Meeting in Houston, TX.
3. Schindler, G., **Fitzgerald, J. S.**, Halcrow, S., Romanick, M., Rhoades, J. L. (2023, February). Reliability of Novel Technique for Dynamic Navicular Drop Measurement. Presented at the American Physical Therapy Association Combined Sections Meeting.
4. Schindler, G., **Fitzgerald, J. S.**, Halcrow, S., Romanick, M., Rhoades, J. L. (2022, March). Reliability of Subtalar Neutral Placement as Baseline for Dynamic Navicular Drop Measurement. Presented at the American Physical Therapy Association annual meeting in San Antonio, TX.
5. Walch, T., Black, B., **Fitzgerald, J. S.**, Sabato, T., Dodds, R. (2021, June). Physical activity and depression in mothers of a child with a special health care need: informing future interventions. Presentation at the International Society for Behavioral Nutrition & Physical Activity annual meeting in Vancouver, B.C.
6. Dufner, T., **Fitzgerald, J. S.**, Lang, J. J., Tomkinson, G. R. (2020, May). Temporal trends in handgrip strength for adults. Poster accepted for presentation at the American College of Sports Medicine Annual Meeting in San Francisco, CA. (Conference canceled due to COVID-19; Abstract published in *Medicine and Science in Sports and Exercise*, 52, S7, 51)
7. Dufner, T., **Fitzgerald, J. S.**, Roemmich, J. N., Wilson, P. B. (2019, May). Obesity, physical activity, and sedentary behavior, not diet, predict low testosterone status in men. Poster presented at the American College of Sports Medicine Annual Meeting in Orlando, FL. (Abstract published in *Medicine and Science in Sports and Exercise*, 51, S5, 141)
8. Lamoureux, N. R., **Fitzgerald, J. S.**, Sabato, T., Kim, D., Noi, S., Suzuki, K., Kidokoro, T., Liu, Y., Tomkinson, G. R. (2018, June). Temporal trends in the cardiorespiratory fitness of Asian adults since 1967. Poster presented at the International Society of Behavioral Nutrition and Physical Activity Annual Meeting in Hong Kong.
9. Raymond-Pope, C. J., Dengel, D. R., **Fitzgerald, J. S.**, Nelson, B. J., Bosch, T. A. (2018, June). Differences in Lean Mass and Strength in Adolescent ACLR Female Athletes: A Case-Control Study. Poster presented at the American College of Sports Medicine Annual Meeting in

Minneapolis, MN. (Abstract published in *Medicine and Science in Sports and Exercise*, 50, S5, 510)

10. Rourk, Z. T., Chen, M., Biltz, G., Snyder, E. M., **Fitzgerald, J. S.** (2017, July). Core Muscles Behave Differently in Elite vs. Novice Hockey Players. Poster presentation at the National Strength and Conditioning Annual Meeting, Las Vegas, NV.
11. Rourk, Z. T., Chen, M., Biltz, G., Snyder, E. M., **Fitzgerald, J. S.** (2017, July). Validity of Measures of Core Stability Related to Sport Performance. Poster presentation at the National Strength and Conditioning Annual Meeting, Las Vegas, NV.
12. Lamoureux, N. R., **Fitzgerald, J. S.**, Tomkinson, G. R. (2017, May). The Importance of Skating Economy to Performance on a Repeated Shift Test in Ice Hockey. Poster presentation at the American College of Sports Medicine Annual Meeting in Denver, CO. (Abstract published in *Medicine and Science in Sports and Exercise*, 49, S5)
13. **Fitzgerald, J. S.**, Leitch, B. A., Wilson, P. B., Walch, T. J., Short, S. E., Ufholz, K., & Roemmich, J. N. (2017, May). Vitamin D Awareness and Intake in Collegiate Athletes. Poster presentation at the American College of Sports Medicine Annual Meeting in Denver, CO. (Abstract published in *Medicine and Science in Sports and Exercise*, 49, S5)
14. Kelsey, Z., **Fitzgerald, J. S.**, Rhoades, J., Whitehead, J. R. (2017, May). The Effects of Resistance Training Programs on the Physical Self-Perceptions of College Females. Poster presentation at the American College of Sports Medicine Annual Meeting in Denver, CO. (Abstract published in *Medicine and Science in Sports and Exercise*, 49, S5)
15. Reich, S. R, Whitehead, J. R., **Fitzgerald, J. S.**, Walch, T. J. (2017, June). Adding Video Games or Music Videos to Stationary Cycling: Effects on Exercise Enjoyment. Poster presentation at the American College of Sports Medicine Annual Meeting in Denver, CO. (Abstract published in *Medicine and Science in Sports and Exercise*, 49, S5)
16. Rourk, Z. T., Peterson, B. J., **Fitzgerald, J. S.**, Dietz, C., Warnke, D., Snyder, E. M. (2016, July). On-Ice Performance Characteristics According to Position in Elite, College-Level, Male Hockey Players. Poster presentation at the National Strength and Conditioning Annual Meeting, New Orleans, LA.
17. Stein, J., Johnson, L., Roemmich, J. N., Tomkinson, G., Bloms, L. P., Johnson, S. C., **Fitzgerald, J. S.** (2016, May). Test-retest Reliability of Jump Execution Variables using Mechanography: A Comparison of Jump Protocols. Poster presentation at the American College of Sports Medicine Annual Meeting in Boston, MA. (Abstract published in *Medicine and Science in Sports and Exercise*, 48, S5)
18. **Fitzgerald, J. S.**, Lucas, B. P., Short, M. W., Whitehead, J. R. (2016, May). The Effects of Caffeine on Vertical Jump Height and Execution in Collegiate Athletes. Poster presentation

at the American College of Sports Medicine Annual Meeting in Boston, MA. (Abstract published in *Medicine and Science in Sports and Exercise*, 48, S5)

19. Lundberg, K. E., Walch, T. J., **Fitzgerald, J. S.**, Whitehead, J. R. (2016, May). Influence of a Physical Activity Intervention on Perceived Barriers and Benefits in Women. Poster presentation at the American College of Sports Medicine Annual Meeting in Boston, MA. (Abstract published in *Medicine and Science in Sports and Exercise*, 48, S5)
20. Stein, J., Lundstrom, C. J., Betker, M. R., **Fitzgerald J. S.** (2015, May). Effects of Plyometric Training on Lower-Body Muscle Function in Novice Marathon Runners. Poster presentation at the American College of Sports Medicine Annual Meeting in San Diego, CA. (Abstract published in *Medicine and Science in Sports and Exercise*, 47, S5)
21. Barry, A. M., Rhoades, J. L., Caine, D. J., **Fitzgerald, J. S.**, Dalin, D. L., Walch, T. J. (2015, May). Effect of Sedentary and Physical Activities on Children's Food Choice. Poster presentation at the American College of Sports Medicine Annual Meeting in San Diego, CA. (Abstract published in *Medicine and Science in Sports and Exercise*, 47, S5)
22. **Fitzgerald, J. S.**, Wilson, P. B., Rhodes, G. S., Lundstrom, C. J. (2014, May). Effect of a High-Volume Training Run on Jumping Mechanography Variables. Oral presentation at the American College of Sports Medicine Annual Meeting, Orlando, FL. (Abstract published in *Medicine and Science in Sports and Exercise*, 46, S5.)
23. Barry, A. M., Dalonda, D. L., Peterson, B. J., **Fitzgerald, J. S.** (2014, May). Association Between Body Fatness and Skating Performance in Competitive Ice Hockey Players. Poster presentation at the American College of Sports Medicine Annual Meeting, Orlando, FL. (Abstract published in *Medicine and Science in Sports and Exercise*, 46, S5.)
24. **Fitzgerald, J. S.**, Ingraham, S. J., Peterson, B. J., Rhodes, G. S. (2013, May). Association between Vitamin D Status and Percent Body Fat in Junior and Collegiate Ice Hockey Players. Poster presented at the American College of Sports Medicine Annual Meeting, Indianapolis, IN. (Abstract published in *Medicine and Science in Sports and Exercise*, 45, S460.)
25. Wilson, P. B., **Fitzgerald, J. S.**, Ingraham, S. J. (2013, May). Association between 25-hydroxyvitamin D and Cardiorespiratory Fitness in the National Health and Nutrition Examination Surveys. Poster presented at the American College of Sports Medicine Annual Meeting, Indianapolis, IN. (Abstract published in *Medicine and Science in Sports and Exercise*, 45, S329.)
26. Peterson, B. J., **Fitzgerald, J. S.**, Ingraham, S. J. (2013, May). The Relationship Between Aerobic Capacity (VO₂peak) and Repeated Shift Performance in Competitive Hockey Players. Poster presented at the American College of Sports Medicine Annual Meeting, Indianapolis, IN. (Abstract published in *Medicine and Science in Sports and Exercise*, 45, S460.)

27. Johnson, S. C., **Fitzgerald, J. S.**, Ingraham, S. J. (2013, May). Jumping Mechanography and On-Ice Skating Performance in Competitive Hockey Players. Poster presented at the American College of Sports Medicine Annual Meeting, Indianapolis, IN. (Abstract published in *Medicine and Science in Sports and Exercise*, 45, S461.)
28. Statt, E. H., **Fitzgerald, J. S.**, Ingraham, S. J. (2013, May). Validation of the Vertec Jump and Reach System Specific to Jump Mechanography in Collegiate-Aged Competitive Hockey Players. Poster presented at the American College of Sports Medicine Annual Meeting, Indianapolis, IN. (Abstract published in *Medicine and Science in Sports and Exercise*, 45, S463.)

Professional Presentations

1. Poolman, M., **Fitzgerald J.S.** (2025, September). Athlete Monitoring. Presentation at the UND Sports Medicine Lecture Series.
2. Dufner T.J., **Fitzgerald J.S.**, Roemmich J.N., Wilson P.B. (2019, May). Dietary Predictors of Total Testosterone in Men: Findings from the National Health and Nutrition Examination Survey. Poster presented at the UND Graduate Student Academic Achievement Day.
3. **Fitzgerald, J. S.** (2018, March). Fitness Isn't Just for Athletes, It's for Your Health. Invited speaker at the 2017-2018 Faculty Lecture Series, University of North Dakota, Grand Forks, ND.
4. **Fitzgerald, J. S.** & Wilson, P. B. (2017, April). Dietary Predictors of Testosterone Levels in Men. Presentation at the College Research Council Research Fair, University of North Dakota, Grand Forks, ND.
5. **Fitzgerald, J. S.** (2016, December). Vitamin D: Overlooked with Athletic Performance. Invited speaker at the National Strength and Conditioning South and North Dakota State Clinic, Sioux Falls, SD.
6. **Fitzgerald, J. S.** (2016, April). Vitamin D and Exercise Performance: Evaluating the evidence in athletes. Invited speaker at the Sanford Power Strength and Conditioning Clinic, Fargo, ND.
7. Raymond, C. J, Bosch, T. A., **Fitzgerald, J. S.**, & Dengel, D. R. (2015, May). Dual-Energy Absorptiometry as a Novel Method to Measure Muscle-Specific Strength. Presented at the Center for Clinical Movement Science Research Day, University of Minnesota, Minneapolis, MN.

8. **Fitzgerald, J. S.** (2015, February). Vitamin D and Exercise Performance in Athletes: Current State of the Science. Invited speaker at the Leading Training and Fitness Central Minnesota Training Conference, Alexandria, MN.
9. **Fitzgerald, J. S.** (2013, May). Vitamin D and Physical Performance: Should Athletes be Concerned? Invited speaker at the Minnesota Sports Performance Clinic, Exercise Science Track, Minneapolis, MN.
10. **Fitzgerald, J. S.** (2012, November). Vitamin D and Physical Performance in Junior Elite and Collegiate Ice Hockey Players. University of Minnesota Sports Performance Seminar, Minneapolis, MN.
11. **Fitzgerald, J. S.** (2012, October). Cardiorespiratory Fitness and 25(OH)D. University of Minnesota Sports Performance Seminar, Minneapolis, MN.
12. **Fitzgerald, J. S.** (2011, November). Potential for Dietary Influence on Lactate Production during a Graded Exercise Test. University of Minnesota Sports Performance Seminar, Minneapolis, MN.
13. **Fitzgerald, J. S.** (2010, September). Vitamin D and Muscle Function: A Review of the Literature. University of Minnesota Sports Performance Seminar, Minneapolis, MN.
14. **Fitzgerald, J. S.** (2009, March). The Impact of Task Velocity on Peak Force Development. University of Minnesota Sports Performance Seminar, Minneapolis, MN.

Internal/External Grant Funding

1. Westereng, S., Haugen, E., **Fitzgerald, J. S.**, Jackson, D. May 2025: \$48,800 (Submitted)
Developing Fearless Teams: Psychological Safety in Collegiate Sport
NCAA Innovations in Research and Practice Grant Program
Role: Co-PI
2. Liu, H., Fitzgerald, J. S., Moritz, S., Walch, T., Short, M., Rerick, M., Knutson, M., Rhoades, J., De Leon. September 2023: \$1,400,000 (Not Funded)
Acquiring a World-class Research Infrastructure in Kinesiology and Human Performance to Address the University of North Dakota's Grand Challenges
NSF Major Research Instrumentation Program internal competition
Role: Co-PI
3. Rhoades, J. L., Berg, J. A., **Fitzgerald, J. S.** July 2021: \$385,698 (Not Funded)
Tailoring learning environments for optimized motor learning across the developmental spectrum
National Science Foundation

Role: Co-PI

4. **Fitzgerald, J. S.** April 2016: \$3,500 (Funded)
Relationship between Vitamin D intake and Total Testosterone: Findings from the National Health and Nutrition Examination Survey
2016 Summer Research Professorship
Role: PI
5. **Fitzgerald, J. S.** & Tomkinson, G. April 2016: \$5,500 (Funded)
Using 3-Dimensional Body Scanning to Update Teaching in Exercise Physiology
EHD Annual Technology Allocation Funds FY 2015-2016
Role: PI
6. **Fitzgerald, J. S.** April 2016: \$720 (Not Funded)
CRC Travel Mini-Grant
Role: PI
7. **Fitzgerald, J. S.** April 2016: \$701 (\$548 Funded)
SSAC Travel Grant
Role: PI
8. **Fitzgerald, J. S.** November 2015: \$385 (\$30 Funded)
Senate Scholarly Activities Page Charges Grant
Role: PI
9. Stein, J. (student), **Fitzgerald, J. S.** April 2015: \$500 (Funded)
CRC Student Travel Award
Role: Faculty Mentor
10. Stein, J. (student), Katie, S. (student), Katy, L. (student), **Fitzgerald, J. S.**
April 2015: \$480 (Funded)
SOFA Student Travel Award
Role: Faculty Mentor
11. Wilson, P. B., Burnfield, J. M., Calvi, J., **Fitzgerald J. S.**, Remmers, L. February 2015: \$9,922 (Funded). Vitamin D status as a predictor of hormonal responses to acute repeated sprint exercise. University of Nebraska Athletics
Role: Co-Investigator
12. Short, S., Hastmann, T., **Fitzgerald, J. S.**, Hoffman, S. December 2014: \$10,000 (Not Funded).
Student-athletes transition out of sport and the implications on energy balance and mental health: development and evaluation of a pilot program.
NCAA Innovations in Research and Practice Grant
Role: Co-PI

13. Short, M., Rhoades, J., & **Fitzgerald, J. S.** April 2014: \$24,410 (Funded)
EHD Annual Flexible Technology Allocation Funds FY 2013-2014: Motion Capture System
Role: Co-Investigator

14. **Fitzgerald, J. S.** March 2014: \$11,000 (Funded)
Investigating the Reliability of Novel Jump Execution Variables Using Mechanography.
2014 Summer Research Professorship, University of North Dakota
Role: PI

15. **Fitzgerald, J. S.** March 2014: \$4,000 (Funded)
2014 Summer Instructional Development Project, University of North Dakota
Role: PI

16. **Fitzgerald, J. S.** April 2014: \$465 (Funded)
2014 Senate Scholarly Activities Faculty Travel Grant
Role: PI

17. Barry, A. (student), **Fitzgerald, J. S.** April 2014: \$250 (Funded)
CRC Student Travel Award
Role: Faculty Mentor

18. Dalonda, D. (student), **Fitzgerald, J. S.** April 2014: \$250 (Funded)
CRC Student Travel Award
Role: Faculty Mentor

Relevant Work Experience

2006 – 2007	Trainer , Acceleration East, Oakdale, MN Implemented training programs with hockey and football athletes and customized the training programs to suit individual requirements
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Training and Professional Development

2022	Faculty Success Program, National Center for Faculty Development and Diversity
2020	UND TTaDA Online Course Development

2013 Alice Clark Mentor Program (Mentor: Jim Roemmich)

Affiliations/Memberships

2011 – 2022 American College of Sports Medicine
2008 – 2025 National Strength and Conditioning Association

Certifications

2023 – 2025 Certified Strength and Conditioning Specialist
2008 – 2025 American Red Cross First Aid/CPR/AED certified
2007 – 2009 Minnesota EMSRB Certified First Responder

Honors/Awards

2023 CEHD Excellence in Graduate Teaching Award
2017 Selected to speak at the 2017-2018 Faculty Lecture Series on Wednesday, March 28
2015 Nominated by the School of Kinesiology at the University of Minnesota, Twin Cities for the campus-wide "Best Dissertation Award" (not selected at the University level)