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North Dakota State University
Health, Nutrition, & Exercise Sciences
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Education

PhD, Syracuse University (2013)
Concentration: Science Education & Exercise Science (dual dissertations).

MEd, Wayne State University (2005)
Concentration: Exercise Physiology

BA, Hope College (2003)
Majors: Exercise Science and Psychology

Professional Positions

Associate Professor (2019-Present)
North Dakota State University, Department of Health, Nutrition, and Exercise Sciences, Fargo, ND

Graduate Coordinator (2018-Present) North Dakota State University, Department of Health, Nutrition, and Exercise Sciences
Fargo, ND

Assistant Professor (2013 - 2019)
North Dakota State University, Department of Health, Nutrition, and Exercise Sciences, Fargo, ND

Exercise Physiologist (2011 - 2013)
Wyle Science, Technology and Engineering Group, Exercise Physiology & Countermeasures Project, Contractor for National Aeronautics & Space Administration (NASA) Lyndon B. Johnson Space Center, Houston, TX

Graduate Research and Teaching Assistant (2008-2011)
Syracuse University/NASA Johnson Space Center
Syracuse, NY/Houston, TX

Graduate Teaching Assistant (2005 - 2007)
Michigan State University
East Lansing, MI

Graduate Teaching Assistant (2003 - 2005)
Wayne State University
Detroit,

RESEARCH AND CREATIVE ACTIVITIES

Peer Reviewed Journal Articles (76 total)

1. Klawitter, L.A, **Hackney, K.J.**, Christensen, B.K., Hamm, J., Hanson, M., & McGrath, R. (2023). Using Electronic Handgrip Dynamometry and Accelerometry to Examine Multiple Aspects of Handgrip Function in Master Endurance Athletes: A Pilot Study. *Journal of Strength and Conditioning Research*, 37(9), 1777-1782.
2. McGrath, R., Jurivich, D.A., Christensen, B.K.; Bong-Ji, C., Langford, M., Rhee, Y., Tomkinson, G., **Hackney, K.J** (2023). Examining the Role of Different Weakness Categories for Mobility and Future Falls in Older Americans. *Aging Clin Exp Res*.<https://doi.org/10.1007/s40520-023-02516-6>
3. Bradley, A. P., Klawitter, L., Carver, E., Johnson, Z., McGrath, R., Stastny, S., Christensen, B., & **Hackney, K. J.** (2023). Reliability of a Novel Automated Ultrasound Technology for Body Composition Assessment and Comparisons with Dual Energy X-Ray Absorptiometry. *International Journal of Exercise Science*, 16(4), 393–401.
4. Dicks, N. D., Mahoney, S. J., Barry, A. M., Lyman, K. J., & **Hackney, K. J.** (2023). Comparable Acute Metabolic Responses when Walking with Blood Flow Restriction and Walking with Load Carriage: Implication for Tactical Professionals. *International Journal of Exercise Science*, 16(2), 304–314.
5. Dicks, N. D., Shoemaker, M. E., DeShaw, K. J., Carper, M. J., **Hackney, K. J.**, & Barry, A. M. (2023). Contributions from incumbent police officer’s physical activity and body composition to occupational assessment performance. *Frontiers in Public Health*, 11(June), 1–7. <https://doi.org/10.3389/fpubh.2023.1217187>
6. McGrath, R., Tomkinson, G. R., Kieser, J., Kisner, K., & **Hackney, K. J.** (2023). Subjective Hand Squeeze: A Practical Solution to Assessing Handgrip Strength Without Equipment? *Journal of Frailty and Aging*. <https://doi.org/10.14283/JFA.2023.9>
7. Lillquist, T., Mahoney, S. J., Kotarsky, C., McGrath, R., Jarajapu, Y., Scholten, S. D., & **Hackney, K. J.** (2023). The Effect of Direct and Remote Postexercise Ischemic Conditioning on Muscle Soreness and Strength 24 Hours After Eccentric Drop Jumps. *Journal of Strength and Conditioning Research*,(24), 1–7. <https://doi.org/10.1519/jsc.0000000000004492>
8. Jayasooriya, V., Johnson, N., Bradley, A., Kotarsky, C., Jeping’etich, L., Friesner, D., Stastny, S., **Hackney, K. J.**, & Nawarathna, D. (2022). A Miniaturized MicroRNA Sensor Identifies Targets Associated with Weight Loss in a Diet and Exercise Intervention among Healthy Overweight Individuals. *Sensors*, 22(18). <https://doi.org/10.3390/S22186758/S1>
9. McGrath, R., Robinson-Lane, S. G., Klawitter, L., Rhee, Y., Hamm, J. M., McCourt, M. E., Parker, K., & **Hackney, K. J.** (2022). Undiagnosed Dementia Is Associated with Poor Physical Function in Older Adults. *Journal of Alzheimer’s Disease*, 89(2), 473–482. <https://doi.org/10.3233/JAD-220257>
10. **Hackney, K. J.**, Bradley, A. P., Roehl, A. S., McGrath, R., & Smith, J. (2022). Energy Expenditure and Substrate Utilization with Hands-Free Crutches Compared to Conventional Lower-Extremity Injury Mobility Devices. *Foot and Ankle Orthopaedics*, 7(4). <https://doi.org/10.1177/24730114221139800>

11. Bradley, A. P., Roehl, A. S., McGrath, R., Smith, J., & **Hackney, K. J.** (2022). Popliteal Blood Flow With Lower-Extremity Injury Mobility Devices. *Foot and Ankle Orthopaedics*, 7(4), 247301142211427. <https://doi.org/10.1177/24730114221142784>
12. Stone, K. A., Mahoney, S. J., Paryzek, R. A., Pitts, L., Stastny, S. N., Mitchell, S. L., Downs, M. E., English, K. L., & **Hackney, K. J.** (2022). Intermittent Blood flow restriction exercise rapidly improves muscular and cardiovascular health in adults with beyond adequate protein intakes. *Acta Astronautica*, 199, 224–231. <https://doi.org/10.1016/J.ACTAASTRO.2022.07.050>
13. Johnson, N. R., Kotarsky, C. J., Mahoney, S. J., Sawyer, B. C., Stone, K. A., Byun, W., **Hackney, K. J.**, Mitchell, S., & Stastny, S. N. (2022). Evenness of Dietary Protein Intake Is Positively Associated with Lean Mass and Strength in Healthy Women: *https://doi.org/10.1177/11786388221101829*, 15, 117863882211018. <https://doi.org/10.1177/11786388221101829>
14. Stone, K. A., Barry, A. M., Kotarsky, C. J., Dicks, N. D., Stastny, S. N., Byun, W., Mitchell, S., McGrath, R., & Hackney, K. J. (2022). Moderate to vigorous physical activity, leucine, and protein intake contributions to muscle health in middle age. *Journal of Frailty, Sarcopenia and Falls*, 07(03), 123–132. <https://doi.org/10.22540/JFSF-07-123>
15. Sawyer, B., Hilliard, E., **Hackney, K. J.**, & Stastny, S. (2022). Barriers and Strategies for Type 1 Diabetes Management Among Emerging Adults: A Qualitative Study: *https://doi.org/10.1177/11795514221098389*, 15, 117955142210983. <https://doi.org/10.1177/11795514221098389>
16. Hughes, L., **Hackney, K. J.**, & Patterson, S. D. (2022). Optimization of Exercise Countermeasures to Spaceflight Using Blood Flow Restriction. *Aerospace Medicine and Human Performance*, 93(1), 32–45. <https://doi.org/10.3357/AMHP.5855.2021>
17. Klawitter, L., Bradley, A., **Hackney, K. J.**, Tomkinson, G. R., Christensen, B. K., Kraemer, W. J., & McGrath, R. (2021). The Associations between Asymmetric Handgrip Strength and Chronic Disease Status in American Adults: Results from the National Health and Nutrition Examination Survey. *Journal of Functional Morphology and Kinesiology*, 6(4), 79. <https://www.mdpi.com/2411-5142/6/4/79>
18. Johnson, N., Bradley, A., Klawitter, L., Johnson, J., Johnson, L., Tomkinson, G. R., **Hackney, K. J.**, Stastny, S., Ehlers, D. K., & McGrath, R. (2021). The Impact of a Telehealth Intervention on Activity Profiles in Older Adults during the COVID-19 Pandemic: A Pilot Study. *Geriatrics*, 6(3), 68. <https://doi.org/10.3390/geriatrics6030068>
19. Johnson, N.R., Stone, K., Stastny, S.N., McGrath, R., & **Hackney, K. J.** (2021). Beef consumption and functional performance in middle-aged and older adults: A narrative review. *Journal of Food and Nutritional Sciences*, 3(1), 18-31.
20. McGrath, R., Tomkinson, G. R., Clark, B. C., Cawthon, P. M., Cesari, M., Al Snih, S., Jurivich, D. A., & **Hackney, K. J.** (2021). Assessing Additional Characteristics of Muscle Function With Digital Handgrip Dynamometry and Accelerometry: Framework for a Novel Handgrip Strength Protocol. *Journal of the American Medical Directors Association*. <https://doi.org/10.1016/j.jamda.2021.05.033>

21. Johnson, N. R., Kotarsky, C. J., **Hackney, K. J.**, Trautman, K. A., Dicks, N. D., Byun, W., Keith, J. F., David, S. L., & Stastny, S. N. (2021). Measures Derived from Panoramic Ultrasonography and Animal-Based Protein Intake Are Related to Muscular Performance in Middle-Aged Adults. *Journal of Clinical Medicine*, 10(5), 988. <https://doi.org/10.3390/jcm10050988>.
22. McGrath, R., Vincent, B. M., Jurivich, D. A., **Hackney, K. J.**, Tomkinson, G. R., Dahl, L. J., & Clark, B. C. (2021). Handgrip Strength Asymmetry and Weakness Together Are Associated With Functional Disability in Aging Americans. *The Journals of Gerontology: Series A*, 76(2), 291–296. <https://doi.org/10.1093/GERONA/GLAA100>
23. Kotarsky, C. J., Johnson, N. R., Mahoney, S. J., Mitchell, S. L., Schimek, R. L., Stastny, S. N., & **Hackney, K. J.** (2021). Time-restricted eating and concurrent exercise training reduces fat mass and increases lean mass in overweight and obese adults. *Physiological Reports*, 9(10), 1–17. <https://doi.org/10.14814/phy2.14868>
24. McGrath, R., Vincent, B. M., **Hackney, K. J.**, Robinson-Lane, S. G., Downer, B., & Clark, B. C. (2020). The Longitudinal Associations of Handgrip Strength and Cognitive Function in Aging Americans. *Journal of the American Medical Directors Association*, 21(5), 634-639.e1. <https://doi.org/10.1016/j.jamda.2019.08.032>
25. McGrath, R., Vincent, B. M., Peterson, M. D., Jurivich, D. A., Dahl, L. J., **Hackney, K. J.**, & Clark, B. C. (2020). Weakness May Have a Causal Association With Early Mortality in Older Americans: A Matched Cohort Analysis. *Journal of the American Medical Directors Association*, 21(5), 621-626.e2. <https://doi.org/10.1016/j.jamda.2019.10.016>
26. Klawitter, L., Mahoney, S. J., Dahl, L., **Hackney, K. J.**, Herrmann, S. D., Edwards, B., & McGrath, R. (2020). Evaluating Additional Aspects of Muscle Function with a Digital Handgrip Dynamometer and Accelerometer for Cognitive Functioning in Older Adults: A Pilot Study. *Journal of Alzheimer's Disease Reports*, 4(1), 495–499. <https://doi.org/10.3233/adr-200225>
27. Thielen, S. P., Christensen, B. K., Bond, C. W., **Hackney, K. J.**, & Moen, J. T. (2021). A comparison of the effects of a six-week traditional squat and suspended load squat program in collegiate baseball players on measures of athletic performance. *International Journal of Kinesiology and Sports Science*, 8(4), 51–58. <https://doi.org/10.7575/AIAC.IJKSS.V.8N.4P51>.
28. Mahoney, S. J., **Hackney, K. J.**, Jurivich, D. A., Dahl, L. J., Johnson, C., & McGrath, R. (2020). Handgrip Strength Asymmetry Is Associated With Limitations in Individual Basic Self-Care Tasks. *Journal of Applied Gerontology*, 073346482098240. <https://doi.org/10.1177/0733464820982409>.
29. Dicks, N. D., Mahoney, S. J., Kramer, M., Lyman, K. J., Christensen, B. K., Pettitt, R. W., & **Hackney, K. J.** (2020). Increased velocity at VO₂max and load carriage performance in army ROTC cadets: prescription using the critical velocity concept. *Ergonomics*, 64(6), 733–743. <https://doi.org/10.1080/00140139.2020.1858186>.
30. Scott, J. M., Downs, M., Buxton, R., Goetchius, E., Crowell, B., Ploutz-Snyder, R., **Hackney, K. J.**, Ryder, J., English, K., & Ploutz-Snyder, L. L. (2020). Disuse-Induced Muscle Loss and Rehabilitation: The National Aeronautics and Space Administration Bed Rest Study. *Critical Care Explorations*, 2(12), e0269. <https://doi.org/10.1097/cce.000000000000269>.

31. Mahoney, S., Klawitter, L., **Hackney, K. J.**, Dahl, L., Herrmann, S. D., Edwards, B., & McGrath, R. (2020). Examining additional aspects of muscle function with a digital handgrip dynamometer and accelerometer in older adults: A pilot study. *Geriatrics (Switzerland)*, 5(4), 1–10. <https://doi.org/10.3390/geriatrics5040086>.
32. McGrath, R., Tomkinson, G. R., LaRoche, D. P., Vincent, B. M., Bond, C. W., & **Hackney, K. J.** (2020). Handgrip Strength Asymmetry and Weakness May Accelerate Time to Mortality in Aging Americans. *Journal of the American Medical Directors Association*, 21(12), 2003–2007.e1. <https://doi.org/10.1016/j.jamda.2020.04.030>
33. Joshi, S., Mahoney, S., Jahan, J., Pitts, L., **Hackney, K. J.**, & Jarajapu, Y. P. R. (2020). Blood flow restriction exercise stimulates mobilization of hematopoietic stem/progenitor cells and increases the circulating ACE2 levels in healthy adults. *Journal of Applied Physiology*, 128(5), 1423–1431. <https://doi.org/10.1152/JAPPLPHYSIOL.00109.2020>.
34. McGrath, R., Johnson, N., Klawitter, L., Mahoney, S., Trautman, K., Carlson, C., Rockstad, E., & **Hackney, K. J.** (2020). What are the association patterns between handgrip strength and adverse health conditions? A topical review. *SAGE Open Medicine*, 8, 205031212091035. <https://doi.org/10.1177/2050312120910358>
35. Christensen, B., Bond, C. W., Napoli, R., Lopez, K., Miller, J., & **Hackney, K. J.** (2020). The effect of static stretching, mini-band warm-ups, medicine-ball warm-ups, and a light jogging warm-up on common athletic ability tests. *International Journal of Exercise Science*, 13(4), 298–311.
36. Shaughnessy, K. A., **Hackney, K. J.**, Clark, B. C., Kraemer, W. J., Terbizan, D. J., Bailey, R. R., & McGrath, R. (2020). A Narrative Review of Handgrip Strength and Cognitive Functioning: Bringing a New Characteristic to Muscle Memory. In *Journal of Alzheimer's Disease* (Vol. 73, Issue 4, pp. 1265–1278). IOS Press. <https://doi.org/10.3233/JAD-190856>.
37. McGrath, R., **Hackney, K. J.**, Ratamess, N. A., Vincent, B. M., Clark, B. C., & Kraemer, W. J. (2019). Absolute and Body Mass Index Normalized Handgrip Strength Percentiles by Gender, Ethnicity, and Hand Dominance in Americans. *Advances in Geriatric Medicine and Research*, 2(1). <https://doi.org/10.20900/agmr20200005>.
38. Blake, M. S., Johnson, N. R., Trautman, K. A., Grier, J. W., Stastny, S. N., & **Hackney, K. J.** (2020). Neither a multi-ingredient pre-workout supplement nor caffeine were effective at improving markers of blood flow or upper-body resistance exercise performance. *International Journal of Exercise Science*, 13(2), 167–182.
39. McGrath, R., Vincent, B. M., **Hackney, K. J.**, Al Snih, S., Graham, J., Thomas, L., Ehlers, D. K., & Clark, B. C. (2020). Weakness and cognitive impairment are independently and jointly associated with functional decline in aging Americans. *Aging Clinical and Experimental Research*, 32(9), 1723–1730. <https://doi.org/10.1007/s40520-019-01351-y>
40. McGrath, R., Stastny, S., Casperson, S., Jahns, L., Roemmich, J., & **Hackney, K. J.** (2019). Daily Protein Intake and Distribution of Daily Protein Consumed Decreases Odds for Functional Disability in Older Americans. *Journal of Aging and Health*, 089826431988186. <https://doi.org/10.1177/0898264319881864>.
41. Dicks, N. D., Kotarsky, C. J., Trautman, K. A., Barry, A. M., Keith, J. F., Mitchell, S., Byun, W., Stastny, S. N., & **Hackney, K. J.** (2020). Contribution of Protein Intake and Concurrent

Exercise to Skeletal Muscle Quality with Aging. *The Journal of Frailty & Aging*, 9(1), 51–56. <https://doi.org/10.14283/jfa.2019.40>.

42. McGrath, R., Vincent, B. M., **Hackney, K. J.**, Al Snih, S., Graham, J., Thomas, L., Ehlers, D. K., & Clark, B. C. (2020). Weakness and cognitive impairment are independently and jointly associated with functional decline in aging Americans. *Aging Clinical and Experimental Research*, 32(9), 1723–1730. <https://doi.org/10.1007/s40520-019-01351-y>.
43. McGrath, R., Robinson-Lane, S. G., Cook, S., Clark, B. C., Herrmann, S., O'Connor, M. L., & **Hackney, K. J.** (2019). Handgrip Strength Is Associated with Poorer Cognitive Functioning in Aging Americans. *Journal of Alzheimer's Disease*, 70(4), 1187–1196. <https://doi.org/10.3233/JAD-190042>.
44. **Hackney, K. J.**, Trautman, K., Johnson, N., Mcgrath, R., & Stastny, S. (2019). Protein and muscle health during aging: benefits and concerns related to animal-based protein. *Animal Frontiers*, 9(4), 12–17. <https://doi.org/10.1093/af/vfz030>.
45. Mahoney, S. J., Dicks, N. D., Lyman, K. J., Christensen, B. K., & **Hackney, K. J.** (2019). Acute cardiovascular, metabolic, and muscular responses to blood flow restricted rowing exercise. *Aerospace Medicine and Human Performance*, 90(5), 440–446. <https://doi.org/10.3357/AMHP.5258.2019>.
46. Poser, W. M., Trautman, K. A., Dicks, N. D., Christensen, B. K., Lyman, K. J., & **Hackney, K. J.** (2019). Simulated Casualty Evacuation Performance Is Augmented by Deadlift Peak Force. *Military Medicine*, 184(9–10), e406–e411. <https://doi.org/10.1093/milmed/usz050>
47. Streeter, D. M., Trautman, K. A., Bennett, T. W., McIntosh, L. E., Grier, J. W., Stastny, S. N., & **Hackney, K. J.** (2019). Endothelial, Cardiovascular, and Performance Responses to L-Arginine Intake and Resistance Exercise. *International Journal of Exercise Science*, 12(2), 701. /pmc/articles/PMC6533108/.
48. McGrath, R., Erlandson, K. M., Vincent, B. M., **Hackney, K. J.**, Herrmann, S. D., & Clark, B. C. (2019). Decreased Handgrip Strength is Associated With Impairments in Each Autonomous Living Task for Aging Adults in the United States. *The Journal of Frailty & Aging*, 8(3), 141–145. <https://doi.org/10.14283/jfa.2018.47>.
49. Barry, A. M., Lyman, K. J., Dicks, N. D., Landin, K. D., McGeorge, C. R., **Hackney, K. J.**, & Walch, T. J. (2019). Firefighters' Physical Activity and Waist Circumference as Predictors of VO₂max. *Journal of Occupational & Environmental Medicine*, 61(10), 849–853. <https://doi.org/10.1097/JOM.0000000000001690>.
50. Dicks, N. D., Lyman, K. J., **Hackney, K. J.**, Walch, T. J., & Barry, A. M. (2019). An Occupational-Specific O₂max Protocol for Structural Firefighters. *Journal of Occupational and Environmental Medicine*, 61(5), 405–409. <https://doi.org/10.1097/jom.0000000000001570>.
51. McGrath, R., Al Snih, S., Markides, K., **Hackney, K. J.**, Bailey, R., & Peterson, M. (2019). The Burden of Functional Disabilities for Middle-Aged and Older Adults in the United States. *Journal of Nutrition, Health and Aging*, 23(2), 172–174. <https://doi.org/10.1007/s12603-018-1133-2>.
52. McGrath, R. P., Clark, B. C., Erlandson, K. M., Herrmann, S. D., Vincent, B. M., Hall, O. T., & **Hackney, K. J.** (2018). Impairments in Individual Autonomous Living Tasks and Time to Self-

Care Disability in Middle-Aged and Older Adults. *Journal of the American Medical Directors Association*, 20(6), 730-735.e3. <https://doi.org/10.1016/j.jamda.2018.10.014>.

53. Bond, C. W., **Hackney, K. J.**, Brown, S. L., & Noonan, B. C. (2018). Blood Flow Restriction Resistance Exercise as a Rehabilitation Modality Following Orthopaedic Surgery: A Review of Venous Thromboembolism Risk. *https://Doi.Org/10.2519/Jospt.2019.8375*, 49(1), 17–27. <https://doi.org/10.2519/JOSPT.2019.8375>.
54. Kotarsky, C. J., Christensen, B. K., Miller, J. S., & **Hackney, K. J.** (2018). Effect of progressive calisthenic push-up training on muscle strength and thickness. *Journal of Strength and Conditioning Research*, 32(3), 651–659. <https://doi.org/10.1519/JSC.0000000000002345>
55. Taylor, A. J. D., Kotarsky, C. J., Bond, C. W., & **Hackney, K. J.** (2018). Occupational-specific strength predicts astronaut-related task performance in a weighted suit. *Aerospace Medicine and Human Performance*, 89(1), 58–62. <https://doi.org/10.3357/AMHP.4961.2018>
56. Terbizan, D. J., Barry, A. M., Stone, K. A., Talaski, J. L., Bennett, T., & **Hackney, K. J.** (2018). Compression garments do not improve recovery from plyometric exercise. *Missouri Journal of Health, Physical Education, Recreation & Dance*, 28, 1–11.
57. **Hackney, K. J.**, Brown, L. T. C. W. J., Stone, K. A., & Tennent, D. J. (2018). The role of blood flow restriction training to mitigate sarcopenia, dynapenia, and enhance clinical recovery. *Techniques in Orthopaedics*, 33(2), 98–105. <https://doi.org/10.1097/BTO.0000000000000271>.
58. Dicks, N. D., Joe, T. V., **Hackney, K. J.**, & Pettitt, R. W. (2018). Validity of Critical Velocity Concept for Weighted Sprinting Performance. *International Journal of Exercise Science*, 11(4), 900. /pmc/articles/PMC6102197/.
59. Scott, J. M., Martin, D. S., Ploutz-Snyder, R., Matz, T., Caine, T., Downs, M., **Hackney, K. J.**, Buxton, R., Ryder, J. W., & Ploutz-Snyder, L. (2017). Panoramic ultrasound: a novel and valid tool for monitoring change in muscle mass. *Journal of Cachexia, Sarcopenia and Muscle*, 8(3), 475–481. <https://doi.org/10.1002/JCSM.12172>
60. **Hackney, K. J.**, Downs, M. E., & Ploutz-Snyder, L. (2016). Blood Flow Restricted Exercise Compared to High Load Resistance Exercise During Unloading. *Aerospace Medicine and Human Performance*, 87(8), 688–696. <https://doi.org/10.3357/AMHP.4566.2016> Co-investigator.
61. **Hackney, K. J.**, Olson, B. M., Schmidt, A. J., Nelson, A. H., & Zacharias, E. L. (2016). Acute Muscular, Metabolic, Cardiovascular, and Perceptual Responses to Low Cuff Pressure-small Cuff Width Blood Flow Restricted Exercise Prescription. *Article in Journal of Novel Physiotherapies*, 5(4). <https://doi.org/10.4172/2165-7025.1000299>
62. **Hackney, K. J.**, Scott, J. M., Hanson, A. M., English, K. L., Downs, M. E., & Ploutz-Snyder, L. L. (2015). The Astronaut-Athlete: Optimizing Human Performance in Space. *Journal of Strength and Conditioning Research*, 29(12), 3531–3545. <https://doi.org/10.1519/JSC.0000000000001191>
63. Ploutz-Snyder, L. ., Downs, M. E., Ryder, J. W., **Hackney, K. J.**, Scott, J. M., Buxton, R. E., Goetchius, E. L., & Crowell, B. (2014). Integrated resistance and aerobic exercise protects fitness during bed rest. *Medicine and Science in Sports and Exercise*, 46(2), 358–368. <https://doi.org/10.1249/MSS.0B013E3182A62F85>.

64. **Hackney, K. J.**, & English, K. (2014). Protein and Essential Amino Acids to Protect Musculoskeletal Health during Spaceflight: Evidence of a Paradox? *Life*, 4(3), 295–317. <https://doi.org/10.3390/life4030295>
65. Scott, J. M., **Hackney, K. J.**, Downs, M., Guined, J., Ploutz-Snyder, R., Fiedler, J., Cunningham, D., & Ploutz-Snyder, L. (2014). The metabolic cost of an integrated exercise program performed during 14 days of bed rest. *Aviation Space and Environmental Medicine*, 85(6), 612–617. <https://doi.org/10.3357/ASEM.3772.2014>
66. Downs, M. E., **Hackney, K. J.**, Martin, D., Caine, T. L., Cunningham, D., O'Connor, D. P., & Ploutz-Snyder, L. L. (2014). Acute vascular and cardiovascular responses to blood flow-restricted exercise. *Medicine and Science in Sports and Exercise*, 46(8), 1489–1497. <https://doi.org/10.1249/MSS.0000000000000253>
67. English, K. L., **Hackney, K. J.**, De Witt, J. K., Ploutz-Snyder, R. J., Goetchius, E. L., & Ploutz-Snyder, L. L. (2013). A ground-based comparison of the Muscle Atrophy Research and Exercise System (MARES) and a commercially available isokinetic dynamometer. *Acta Astronautica*, 92(1), 3–9. <https://doi.org/10.1016/J.ACTAASTRO.2012.06.015>
68. **Hackney, K. J.**, Kelleher, A. R., & Ploutz-Snyder, L. L. (2013). Amino Acid-carbohydrate intake combined with multiple bouts of resistance exercise increases resting energy expenditure. *ISRN Nutrition*, 2013, 948695. <https://doi.org/10.5402/2013/948695>
69. Ryder, J. W., Buxton, R. E., Goetchius, E., Scott-Pandorf, M., **Hackney, K. J.**, Fiedler, J., Ploutz-Snyder, R. J., Bloomberg, J. J., & Ploutz-Snyder, L. L. (2012). Influence of muscle strength to weight ratio on functional task performance. *European Journal of Applied Physiology* 2012 113:4, 113(4), 911–921. <https://doi.org/10.1007/S00421-012-2500-Z>
70. **Hackney, K. J.**, Everett, M., Scott, J. M., & Ploutz-Snyder, L. (2012). Blood flow-restricted exercise in space. *Extreme Physiology & Medicine*, 1(1), 12. <https://doi.org/10.1186/2046-7648-1-12>
71. **Hackney, K. J.**, Cook, S. B., Fairchild, T. J., & Ploutz-Snyder, L. L. (2012). Skeletal muscle volume following dehydration induced by exercise in heat. *Extreme Physiology & Medicine* 2012 1:1, 1(1), 1–9. <https://doi.org/10.1186/2046-7648-1-3>
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73. **Hackney, K. J.**, Cook, S. B., & Ploutz-Snyder, L. L. (2011). Nutrition and resistance exercise during reconditioning from unloading. *Aviation Space and Environmental Medicine*, 82(8), 805–809. <https://doi.org/10.3357/ASEM.2892.2011>
74. Kelleher, A. R., **Hackney, K. J.**, Fairchild, T. J., Keslacy, S., & Ploutz-Snyder, L. L. (2010). The metabolic costs of reciprocal supersets vs. traditional resistance exercise in young recreationally active adults. *Journal of Strength and Conditioning Research*. <https://doi.org/10.1519/JSC.0b013e3181d3e993>
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Exercise, 42(5), 998–1003. <https://doi.org/10.1249/MSS.0b013e3181c12976>.

76. **Hackney, K. J.**, Engels, H. J., & Gretebeck, R. J. (2008). Resting energy expenditure and delayed-onset muscle soreness after full-body resistance training with an eccentric concentration. *Journal of Strength and Conditioning Research*, 22(5), 1602–1609. <https://doi.org/10.1519/JSC.0b013e31818222c5>

Abstracts

International

1. Johnson, N.R., Kotarsky, C.J., Stone, K.A., Paryzek, R., **Hackney, K.J.**, Byun, W., Stastny, S.N. (2021). Protein intake distribution is linked to healthy bones in women. [Abstract]. *Journal of Frailty and Aging*, 10(S2), P51, S58.
2. Johnson, T., Trautman, K.A., Kotarsky, C.J., Dicks, N., **Hackney, K.J.**, & Stastny, S. (2019). Differences in amino acid composition between various types of protein supplements. [Abstract]. *Journal of Frailty and Aging*, 8(S1), C7, S8.
3. Trautman, K.A., Kotarsky, C.J., Dicks, N., Sawyer, B., Mitchell, S., Stastny, S. & **Hackney, K.J.** (2019). The role of biological sex on nutritional habits and muscular health among middle-aged, healthy adults. [Abstract]. *Journal of Frailty and Aging*, 8(S1), P99, S38.
4. **Hackney, K.J.**, Kotarsky, C.J., Stone, K.A., & Stastny, S. (2018). Panoramic ultrasound muscle cross-sectional area normalized to echo intensity as a marker for the loss of muscle quality with aging. [Abstract]. *Journal of Frailty and Aging*, 7(1), 172.
5. Stastny, S., Kotarsky, C.J., **Hackney, K.J.**, & Iverson Dewey, R. (2017). Influence of beef protein intake and hand grip strength on muscle strength and cross-sectional area in middle-aged women. [Abstract]. *Journal of Frailty and Aging*, 6(S1), OC55, 38. Role: Co- investigator.
6. Kotarsky, C.J., Stone, K.A., Iverson, R., Byun, W., **Hackney, K.J.**, and Stastny, S. (2018). Influence of grip strength, physical activity, and dietary protein intake on muscle strength and cross-sectional area in middle aged women [Abstract]. *Journal of Frailty and Aging*, 7(1), 155. Role: Co- investigator.
7. Christensen, B., Napoli, R., **Hackney, K.J.**, Miller, J., Murata, H. (2016). The effects of two different types of dynamic warm-up and static stretching on power and speed. *Proceedings of the 34th International Conference of Biomechanics in Sports, ISBS- Conference Proceedings Archive* 247-250. [Conference Proceeding]. Role- Research design and scientific writing.

National

8. Kotarsky, C. J., Johnson, N. R., Mahoney, S. J., Mitchell, S. L., Schimek, R. L., Stastny, S. N., & **Hackney, K. J.** (2022). Moderate-to-Vigorous Physical Activity and Time-Restricted Eating are Predictors of Fat Mass Loss in Overweight and Obese Females Following an Eight-Week Exercise and Dietary Intervention. *The FASEB Journal*, 36. <https://doi.org/10.1096/FASEBJ.2022.36.S1.R4273>
9. Sawyer, B., Stastny, S., Hilliard, E., & **Hackney, K.J.**,(2021a). Management of Type 1 Diabetes Management Among Emerging Adults Using Qualitative Methods. *Journal of the*

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10. Sawyer, B., Stastny, S., Hilliard, E., & **Hackney, K.J.** (2021b). Screening for Type 1 Diabetes (T1D) Successes and Challenges Among Emerging Adults Diagnosed with T1D With a New Survey. *Journal of the Academy of Nutrition and Dietetics*, 121(9), A31. <https://doi.org/10.1016/j.jand.2021.06.085>
11. Sawyer, B., Trautman, K., Kotarsky, C., Johnson, N., Bradley, A., Scheffert, R., **Hackney, K.J.**, Byun, W., & Stastny, S. (2021). Dietary Protein Intake, Physical Activity, And Metabolic Syndrome Risk Among Young and Middle-Aged Women. *Journal of the Academy of Nutrition and Dietetics*, 121(9), A22. <https://doi.org/10.1016/j.jand.2021.06.048>
12. McGrath, R., Klawitter, L., Jurivich, D., Vincent, B., Tomkinson, G., Clark, B., ... & **Hackney, K.J.** (2021). Handgrip Strength Asymmetry Is Associated With Functional Disability In Older Americans. *Medicine & Science in Sports & Exercise*, 53(S8), 221.
13. McGrath, R., Clark, B., **Hackney, K.**, Jurivich, D., Vincent, B., Dahl, L., & Peterson, M. (2020). Weakness May Cause Mortality In Older Americans: A Matched Cohort Analysis. *Medicine & Science in Sports & Exercise*, 52(S7), 158–159.
14. Jayasooriya, V., Velmanickam, L., Kotarsky, C., Johnson, N., Mahoney, S., Stastny, S., **Hackney, K.J.**, & Nawarathna, D. (2020). MiRNA Testing to Identify Candidates for Individualized Weight Loss. *IEEE Research and Applications of Photonics in Defense Conference, RAPID 2020 - Proceedings*, 1–2. <https://doi.org/10.1109/RAPID49481.2020.9195688>.
15. Sawyer, B., Trautman, K., Kotarsky, C., Scheffert, R., Rockstad, E., Weber, J., Johnson, L., **Hackney, K.J.**, Byun, W., & Stastny, S. (2019). Is total Animal- or Plant-Based Protein Intake Correlated with Strength and Endurance in Middle-Aged Men and Women? *Journal of the Academy of Nutrition and Dietetics*, 119(10), A129. <https://doi.org/10.1016/J.JAND.2019.08.099>.
16. Joshi, S., Mahoney, S., Pitts, L., McCullough, S., **Hackney, K.J.**, & Jarajapu, Y. P. (2019). Blood Flow Restriction Exercise Increases the ACE2/ACE Ratio and ACE2 Shedding in CD34+ Cells in Healthy Individuals. *The FASEB Journal*, 33(S1), 695.6-695.6. https://doi.org/10.1096/FASEBJ.2019.33.1_SUPPLEMENT.695.6
17. Sherrard, A., Stone, K., Kotarsky, C., Dicks, N., Stastny, S., & **Hackney, K.J.** (2018). Comparison of Subcutaneous Adipose Tissue in Sedentary and Active Adults. *Journal of the Academy of Nutrition and Dietetics*, 118(9), A85. <https://doi.org/10.1016/J.JAND.2018.06.095>.
18. Barry, A. M., Dicks, N. D., Landin, K. D., Walch, T. J., **Hackney, K.J.**, & Lyman, K. J. (2018). The Relationship Between Firefighters' Physical Activity Levels and Cardiorespiratory Fitness. *Medicine & Science in Sports & Exercise*, 50(S5), 499–500.
19. Christensen, B. K., Thielen, S. P., **Hackney, K.J.**, & Moen, J. T. (2018). Suspended Weight Training During Squats: Does It Improve Balance More Than Traditional Squats? *Medicine & Science in Sports & Exercise*, 50(5S), 415.
20. Christensen, B., Thielen, S., **Hackney, K.J.**, & Moen, J. (2018). The Effects of Suspended Weight Resistance Training on Agility in Collegiate Athletes. *Conference of the International Society of Biomechanics in Sports, Auckland, New Zealand*, 10–14.

<https://doi.org/10.1139/h05-103>.

21. Dicks, N. D., Joe, T. V., **Hackney, K. J.**, & Pettitt, R. W. (2018). Validity of Critical Velocity Regression Equation to Estimate Weighted Sprint Performance. *Medicine & Science in Sports & Exercise*, 50(S5), 736–737.
22. **Hackney, K. J.**, Dicks, N. D., Stone, K. A., Kotarsky, C. J., Barry, A. M., Keith, J., ... & Stastny, S. N. (2018). Contribution Of Exercise, Physical Activity, And Protein To Functional Cross-sectional Area And Intramuscular Adipose Tissue. *Medicine & Science in Sports & Exercise*, 50(S5), 805.
23. Stone, K. A., Kotarsky, C. J., Dicks, N. D., Streeter, D. M., Barry, A. M., Keith, J., ... & **Hackney, K. J.** (2018). Dietary Protein Intake and Muscular Health with Aging: Countermeasures for Sarcopenia and Dynapenia. *Medicine & Science in Sports & Exercise*, 50(S5), 809.
24. Terbizan, D. J., David, S., **Hackney, K. J.**, Stastny, S., Hilliard, E., Christensen, B., ... & Mitchell, S. (2018). Body Fat Differences Between Skinfold, Impedance, And Dexa Measurements. *Medicine & Science in Sports & Exercise*, 50(S5), 162.
25. Bennett, T., Talaski, J., Stone, K. A., Barry, A. M., **Hackney, K. J.**, & Terbizan, D. J. (2017). Use Of Compression Garments For Recovery From Plyometric Exercise. *Medicine & Science in Sports & Exercise*, 49(S5), 1075.
26. **Hackney, K. J.**, Taylor, A., Kotarsky, C. J., Bond, C. W., & Ewert, D. L. (2017). Occupational Specific Strength Testing Enhances the Prediction of Astronaut Related Task Performance. *Medicine & Science in Sports & Exercise*, 49(S5), 287.
27. Kotarsky, C. J., Taylor, A., & **Hackney, K.J.**(2017). Metabolic and Cardiovascular Indicators of Intensity and Performance during Astronaut Related Test Battery. *Medicine & Science in Sports & Exercise*, 49(S5), 290.
28. Stone, K. A., Lyman, K., Christensen, B., Brodersen, J., & **Hackney, K.J.**. (2017). Facilitation of Paraspinal Muscles with Kinesio® Tape During Exercise Countermeasures. *Medicine & Science in Sports & Exercise*, 49(S5), 290.
29. Christensen, B., Napolil, R., **Hackney, K.J.**, Millep, J., & Karu Murata², H. (2016). The Effects of Two Different Types of Dynamic Warm-up and Static Stretching on Power and Speed. *ISBS - Conference Proceedings Archive*. <https://ojs.ub.uni-konstanz.de/cpa/article/view/6850>
30. Erickson, J. E., Wyatt, Z. E., Mahoney, S. J., **Hackney, K. J.**, & Terbizan, D. J. (2016). High-Intensity Interval Training vs. Superset Training: A Comparison of Resistance Exercise Energy Expenditure. *Medicine & Science in Sports & Exercise*, 48(S5), 162.
31. Carlson, A., David, S., **Hackney K.J.**, Reed, B. (2016). Relationships between motivation and performance on the Army Physical Fitness Test. *Medicine & Science in Sports & Exercise*, 48(5S), 304. [Abstract].
32. Olson, B. M., Schmidt, A., Zacharias, E., & Hackney, K. J. (2015). Compression at 140mmHg Does Not Alter the Metabolic or Perceptual Response to Resistance Exercise Title. *Medicine*

& *Science in Sports & Exercise*, 47(S5), 940–941.

33. Schmidt, A. J., Olson, B. M., Zacharias, E., & Hackney, K. J. (2015). Low-Intensity Exercise With and Without Blood Flow Restriction Increases Muscle Swelling and Indicators of Fatigue. *Medicine & Science in Sports & Exercise*, 47(S5), 442–443.
34. English K. L., Newby, N. J., **Hackney, K. J.**, De Witt, J. K., Beck, C., Rovenkamp, R., Rea, R., Ploutz-Snyder, L. L. (2014). Comparison of knee and ankle dynamometry between the X1 exoskeleton and biodex System 4. *Medicine & Science in Sports & Exercise*, (46). [Abstract].
35. Beck, C., Rovekamp, R., Rea, R., English, K., Newby, N., Hackney, K., De Witt, J., & Ploutz-Snyder, L. (2014). Comparison of knee and ankle dynamometry between NASA's X1 exoskeleton and Biodex System 4. *NASA Human Research Program Investigator's Workshop*, 3058.
36. Hackney, K. J., Everett, M. E., & Ploutz-Snyder, L. L. (2012). Nutrition coupled with high-load or low-load blood flow restricted exercise during human limb suspension. *Journal of the International Society of Sports Nutrition* 2012 9:1, 9(1), 1–2. <https://doi.org/10.1186/1550-2783-9-S1-P8>].
37. Hackney, K., Everett, M., Guined, J., & Cunningham, D. (2012). The Metabolic Cost of a High Intensity Exercise Program During Bed Rest. *NASA Human Research Program Investigator's Workshop*.
38. Ploutz-Snyder, L., Goetchius, E., Crowell, B., Hackney, K., Wickwire, J., Ploutz-Snyder, R., & Snyder, S. (2012). Integrated Resistance and Aerobic Training Maintains Cardiovascular and Skeletal Muscle Fitness During 14 Days of Bed Rest. *NASA Human Research Program Investigator's Workshop*.
39. Ploutz-Snyder, L., Ryder, J., Buxton, R., Redd, E., Scott-Pandorf, M., Hackney, K., ... & Bloomberg, J. (2011). Novel analog for muscle deconditioning. *The FASEB Journal*, 25, 668.
40. Hackney, K. J., Cook, S. B., & Ploutz-Snyder, L. L. (2010). Resistance Exercise and Nutrition in Muscle Hypertrophy Following Disuse Muscle Atrophy: A Pilot Study. *Medicine & Science in Sports & Exercise*, 42(S5), 514.

International

1. Ploutz-Snyder, L., Downs, M., **Hackney, K.J.** (2018). The effects of blood flow-restricted exercise as a countermeasure against disuse atrophy. *European College of Sports Science* [Oral Presentation]. July 4th-7th 2018. Dublin, Ireland.

National

2. Brooks, A., Grier, J., **Hackney K.J.**, Ewert, D. (2016). Discovery-based learning: A microcosm of the emerging professional research environment [Abstract]. Council on Undergraduate Research. University of South Florida, Tampa, Florida. June 26-28, 2016.

3. Scott, J.M., **Hackney, K.J.**, Downs, M.E., Martin, D., Caine, T., Matz, T., Babcock, L., Goetchius, E. Buxton, R., Ryder, J & Ploutz-Snyder, L.L (2015). Panoramic Ultrasound Imaging for Quantification of Disuse-Induced Muscle Atrophy. *[Abstract]*. Human Research Program Investigators' Workshop: Integrative Pathways to Mars. Jan 13- 15th. Galveston, Texas.

Regional

4. **Hackney, K.J.**, Kotarsky, C.J., Stastny, S., David, S.L., & Mitchell, S.L. (2019, October). Effects of eight weeks of concurrent exercise training and time-restricted feeding (16/8 hr) on body composition, muscle endurance, metabolism, cardiovascular risk factors, and dietary intake in overweight, males and females. Updated data: *[Poster]*. Presented at the Great Plains IDeA Annual Scientific Meeting, Omaha, NE.
5. **Hackney, K.J.**, Kotarsky, C.J., Stastny, S., David, S.L., & Mitchell, S.L. (2018, October). Effects of eight weeks of concurrent exercise training and time-restricted feeding (16/8 hr) on body composition, muscle endurance, metabolism, cardiovascular risk factors, and dietary intake in overweight, males and females. *[Poster]* presented at the Great Plains IDeA Annual Scientific Meeting, Omaha, NE.
6. **Hackney, K.J.** (2015). Occlusion Training: Risk vs. Reward. Sanford Power Strength & Conditioning Clinic. April 17th. Ramada, Fargo, North Dakota. *[Oral Presentation]*.
7. **Hackney, K.J.** (2014). What is an Acceptable Level of Microgravity Induced Deconditioning in the Astronaut? North Dakota NASA EPSCoR Annual Meeting, April 28th, R1, NDSU. *[Oral Presentation]*.

Non-refereed Presentations

Regional

8. Hackney, K. J (2021). Blood flow Restriction Exercise Mechanisms and Adaptations: Where do we go from here? Northland American College of Sports Medicine, St. Catherine University, *[Oral Presentation]*. Virtual Conference, Live Q & A, March 26th, 2022.
9. Dicks, N., Mahoney S., Anderson, V., Lyman, K., Christensen, B., Hackney, K. (2019). Increased performance markers and load carriage in Army ROTC cadets using the critical velocity model. Northland American College of Sports Medicine, St. Catherine University, April *[Poster]*, April 5th 2019.
10. Lyman, K.J., Christensen, B., **Hackney, K.J.**, Burkart, J., Joe, T., Stone, K. & Brodersen, J. (2017). Biomechanical analysis of hip angles during a back squat with and without Kinesio@Tape. *[Poster]*. Northland American College of Sports Medicine. St. Paul, Minnesota, April 7th, 2017.
11. McIntosh, L., Bennett, T.W., Streeter, D. Stone, K., Grier, J.W., & **Hackney, K.J.** (2017). Reliability of measuring heart rate variability using a Polar Bluetooth monitor and Kubios analysis software. *[Poster]*. Northland American College of Sports Medicine. St. Paul, Minnesota, April 7th, 2017.

12. Kotarsky, C.J., Stone, K.A., Streeter, D.M., Keith, J.F., Stastny, S.N., David, S., Mitchell, S., & **Hackney, K.J.** (2017). Influence of protein intake at three different time periods on leg muscle strength and area. *[Poster]*. Northland American College of Sports Medicine. St. Paul, Minnesota, April 7th, 2017.
13. Stone, K.A., Kotarsky, C.J., Streeter, D.M., Dicks, N.D., David, S, Mitchell, S., & **Hackney, K.J.** (2017). Muscular health with aging: differences in quadriceps size, strength, and quality between sedentary and active adults. *[Poster]*. Northland American College of Sports Medicine. St. Paul, Minnesota, April 7th, 2017.
14. Streeter, D. M., Bennett, T.W., McIntosh, L.E., Stastny, S., Ewert, D. L., & **Hackney, K.J** (2017). The acute effects of L-arginine supplementation on flow-mediated dilation after resistance training to fatigue. *[Poster]*. Northland American College of Sports Medicine. St. Paul, Minnesota, April 7th, 2017.
15. Hartze, G., Kotarsky, C.J., Schimek, R., **Hackney, K.J.**, & Stastny, S.N. (2017). Intra-reliability of image J processing of ultrasound derived cross-sectional area: upper leg subcutaneous fat. *[Poster]*. NDSU HDE 11th Annual Research Symposium.
16. Bennett, T.B., Talaski, J., Stone, K., Barry, A., **Hackney, K.J.**, Terbizan, D. (2017). Use of compression garments for recovery from plyometric exercise. *[Poster]*. Northland American College of Sports Medicine. St. Paul, Minnesota, April 7th, 2017.
17. Stone, K. A., Streeter, D. M., Kotarsky, C. J., Mitchell, S.L, David, S.L., & **Hackney, K.J.**, (2016). Intra-Reliability of ImageJ processing of MRI-derived cross-sectional area: Upper Leg. *[Poster]*. Northland American College of Sports Medicine Sprint tutorial. April, 01, 2016. St. Catherine University, St. Paul, MN.
18. Kotarsky, C.J., & **Hackney, K.J.**, (2016). Reliability of Measuring Muscle Thickness Using B-mode Ultrasound: Pectoralis Major. *[Poster]*. Northland American College of Sports Medicine Sprint tutorial. April, 01, 2016. St. Catherine University, St. Paul, MN.
19. Streeter, D. M., Stone, K. A., Kotarsky, C. J., Mitchell, S.L., David, S. L & **Hackney, K.J.** (2016). Intra-Reliability of ImageJ processing of MRI-derived cross-sectional area: Lower Leg. *[Poster]*. Northland American College of Sports Medicine Sprint tutorial. April, 01, 2016. St. Catherine University, St. Paul, MN.
20. Nelson, A., Olson, B., Schmidt, A., **Hackney, K.J.**, Zacharias, E. (2015). Blood flow restriction Exercise Induced Muscle Swelling is Not Enhanced With Low Cuff Pressure-Small Cuff Width Prescription. *[Poster]* NDSU explore. November 3rd, in the NDSU Memorial Union.
21. Lyman, K. J., **Hackney, K.J.**, Christensen, B., Sletten, S. & Hanson, T. (2015, November). Kinesio taping® as a low-cost intervention to assist with quadriceps muscle recruitment during exercise countermeasures. Oral presentation at the 2015 Kinesio Taping Association International Research Symposium, Tokyo, Japan..
22. Lyman, K. J., **Hackney, K.J.**, Christensen, B., Sletten, S. & Hanson, T. (2015). Kinesio taping® as a low-cost intervention to assist with quadriceps muscle recruitment during exercise countermeasures. *[Poster]*. American Society for Gravitational and Space Research Conference, Alexandria, VA.

23. Asif, S., Iftikhar, A., Taylor, D., Wandler, J., Braaten, B., Ewert, D., & **Hackney, K.J.**, (2015). A Mobile Health System (mHealth) for Planetary Space Suit Application. *[Poster]*. April 22, 2015, ND EPSCoR, Holiday Inn, Fargo, North Dakota.
24. Taylor, D., Talaski, J., **Hackney, K.J.**, Asif, S., Iftikhar, A., Wandler, J., Braaten, B., Ewert, D., & Hackney, K. (2015). Occupational Related Fitness Testing For Future Space Missions. *[Poster]*. April 22, 2015, ND EPSCoR, Holiday Inn, Fargo, North Dakota.
25. Olson, B., Schmidt, A., Zacharias, E., & **Hackney, K.J.** (2014). Compression at 140mmHg Does Not Alter the Metabolic or Perceptual Response to Resistance Exercise, *[Poster]*. *NDSU Explore*, November 4, 2014, Memorial Union Ballroom, NDSU.
26. Schmidt, A., Olson, B., Zacharias, E., & **Hackney, K.J.** (2014). Low-Intensity Exercise With and Without Blood Flow Restriction Increases Muscle Swelling and Indicators of Fatigue, *[Poster]*. *NDSU Explore*, November 4, 2014, Memorial Union Ballroom, NDSU.
27. Taylor, D., Gagnon, B., Ewert, D., & **Hackney, K.J.** (2014). Human Forearm Blood Flow and Skin Thermal Conductivity due to Emotional Response during Acute Exercise, *[Poster]*. North Dakota ND EPSCoR/IDEA state conference: Innovations and Expressions. April, 29. Alerus Center, Grand Forks, North Dakota.
28. Schmidt, A., Olson, B., Zacharias, E., & Hackney, K.J. (2014). Change in Contraction Velocity and Skeletal Muscle Swelling during Compression Resistance Exercise, *[Poster]*. HDE Showcase. April 16th, 2014, Memorial Union, NDSU.
29. Olson, B., Schmidt, A., Zacharias, E., & Hackney, K.J. (2014). Association between whole blood lactate and the perceptual responses to compression exercise, *[Poster]*. HDE Showcase. April 16th, 2014, Memorial Union, NDSU.
30. **Hackney, K.J.** (2014). Monitoring and Enhancing Occupational Task Performance in Astronauts During Planetary Exploration *[Oral Presentation]*. *HNES Research Colloquium*, Bentson Bunker Fieldhouse, January 24.
31. **Hackney, K.J.** (2014). Blood Flow Restricted Exercise: Fact or Fiction? (2014). *[Oral Presentation]*. *HNES Research Colloquium*, Bentson Bunker Fieldhouse, October 3. Role- P.I- Data interpretation, Scientific Writing, and Editing.

Local

32. **Hackney, K.J.** (2019). The brain or skeletal muscle: Who is to blame for the aging-related loss of physical function? Psychology Department Colloquium, October 18th, 2019. Minard Hall. *[Oral Presentation]*.
1. Grants, contracts and awards
 - a. Funded grants and contract support

Faculty Grants

External Grants

1. **Hackney, K.** (2023). Novel Application of Exercise Technology in Aging and Disease. Centennial Endowment Grant Program. NDSU Foundation. \$1700. [Funded]. Role- PI.
2. McGrath R, **Hackney K (Co-I)**, Christensen B, Tomkinson G, Jurivich D, Orr M, Rhee Y. GRip Assessment for Protocol Enhancements (GRAPE) in Older Adults. National Institute of Aging: R15AG072348-01A1. Submitted February 2021. \$416,481. [Funded].
3. **Hackney (2021)**. A Comparison of Blood Flow, Muscle Oxygen Saturation, and Energy Metabolism with Hands-Free Crutches Compared to Traditional Crutches, Medical Knee Scooters, and Normal Ambulation . iWALKFree, Inc. 08/16/2021 - 05/15/2023: \$28,339. [Funded].
4. McGrath R, **Hackney K (Co-I)**, Stastny S, Ehlers D, Tomkinson G. The Great Plains Internet Wellness for Aging Study: The GP I-WAS Project. Great Plains IDeA-CTR. No Cost Extension: July 1, 2020-June 30, 2023. NIH-NIGMS (1U54GM115458): \$8,036.
5. **Hackney K**, Downs M, Ploutz-Snyder L, Scott J, Mahoney S, McGrath R. Intramuscular Adipose Tissue and Functional Muscle Cross Sectional Area Following Disuse with Exercise Countermeasures. ND NASA EPSCoR. January 1, 2021-July 31, 2021: \$19,646. [Funded].
6. McGrath R., **Hackney K**, Stastny S, Ehlers D, Tomkinson G. The Great Plains Internet Wellness for Aging Study: The GP I-WAS Project. Great Plains IDeA-CTR. July 1, 2020-June 30, 2021. NIH-NIGMS (1U54GM115458): \$72,500. [Funded].
7. McGrath R., **Hackney K**, Dahl L, Edwards B. Herrmann S. The Grip Strength, Internet Activity, and Nutrition Trial: The GIANT Study. Sanford Health-NDSU Collaborative Seed Grant. July 1, 2020-December 31, 2020: \$10,290. [Funded].
8. **Hackney, K.**, McGrath, R. (2019). Aging and Balance: Interactions between neuromuscular function and the lower visual field," (2019). Sponsored by NDSU Center Visual and Cognitive Neuroscience (CVCN) Pilot Program, NIH Cobre, Federal, \$80,000 [Funded].
9. **Hackney, K. J.** & Trautman, K. (2019). Muscle, Metabolism, and Ergogenics lab undergraduate research assistant support, ND ESCoR, \$5000. [Funded].
10. **Hackney K**, McGrath R, Stastny S, Johnson, N (2019). The Impact of Beef Consumption on Functional Performance in Middle-Aged and Older Adults. National Cattleman's Beef Association.: \$26,106.
11. **Hackney, K. J.**, Trautman, K., Stastny, S. (2018). Low intensity exercise and blended protein supplementation as a strategy for rapid muscle growth and strength gain in astronaut aged-participants. ND NASA EPSCoR, \$27,150. [Funded].
12. **Hackney, K.J.** (2018). Acquisition of the Biodex Balance SD System to Facilitate Clinical/Translational Research Opportunities at North Dakota State University. Sponsored by Great Plains IDeA-CTR UNMC and the National Institutes of Health, \$13,795. [Funded].
13. **Hackney, K.J.** (2018). Measurement of muscle oxygen for exercise science teaching and research. The centennial endowment, \$2996.92. [Funded].

14. **Hackney, K.J.** Stastny, S. Kotarsky, C. David, S., Mitchell, S. (2017). Effects of eight weeks of concurrent exercise training and time-restricted feeding (16/8) on body composition, muscle endurance, metabolism, cardiovascular risk factors, and dietary intake in overweight, sedentary males and females. Great Plains IDEa-CTR Pilot Grant Program-National Institutes of Health, \$72,469.00. [Funded].
15. Stastny, S., **Hackney, K.J.**, Byun, W., (2017). The influence of animal-based protein and beef consumption on ability to perform functional activities, muscle quality and bone mineral density among adolescent to older females. Sponsored by North Dakota Beef Commission, State, \$208,421 [Funded].
16. Stastny, S., **Hackney, K.J.**, Byun, W., David, S, (2016). Beef protein intake, physical activity, and muscle quality in middle aged men. Sponsored by Minnesota Beef Council. Association, \$38,827. [Funded].
17. Stastny, S., **Hackney, K.J.**, Byun, W., David, S, (2016). Beef protein intake, physical activity, and muscle quality in middle aged women. Sponsored by National Cattlemen's Beef Association, \$38,610 [Funded].
18. Lyman, K., **Hackney, K.J.**, Christensen, B, & Sletten, S. (2014). Kinesio Taping as a Low-Cost Intervention to Assist Muscle Recruitment during Exercise Countermeasures. NASA Space Grant Consortium, \$12,450 [Funded].
19. **Hackney, K. J.**, Fazel-Rezai, R., Ewert, D., Braaten, B., Noghianian, S., Wayne, J., & De Leon, P. (2013) Collaborative research between UND and NDSU: A mobile health system (mHealth) for monitoring the physiological response of an Astronaut performing tasks in the NDX-2 planetary space suit. NASA EPSCoR, \$20,580 to NDSU [Funded].
20. Fazel-Rezai, R., **Hackney, K.J.**, Ewert, D., Braaten, B., Noghianian, S., Wayne, J., & De Leon, P. (2013) Collaborative research between UND and NDSU: A mobile health system (mHealth) for monitoring the physiological response of an Astronaut performing tasks in the NDX-2 planetary space suit. NASA EPSCoR. \$20,787 to UND [Funded].

Internal Grants & Awards

1. McGrath R, **Hackney K (Co-I)**, Christensen B, Smith J. Examining Additional Aspects of Muscle Function with Digital Handgrip Dynamometry and Accelerometry in a Younger and Active Adult Cohort: A Pilot Study. HNES Pilot Grant Program. October 2021-June 2022: \$5,000.
2. Nawarathna, K., **Hackney, K.**, Stastny, S., (2019). Efficacy of micro RNA testing for identification of personalized weight management strategy in obese and overweight individuals. Sanford Health - North Dakota State University Collaborative Research Seed Grant Program. \$91,742. [Funded].
3. McGrath R, **Hackney K**, Dahl L, Edwards B. Herrmann S. The Grip Strength, Internet Activity, and Nutrition Trial: The GIANT Study. Sanford Health-NDSU Collaborative Seed Grant. July 1, 2019-June 30, 2020: \$89,739. [Funded].
4. **Hackney, K.J.** HNES Graduate Recruitment Proposal. (2019). PhD Exercise and Nutrition. NDSU Graduate School, \$2845. [Funded].

5. **Hackney, K.J.** HNES Graduate Recruitment Proposal. MS Exercise/Nutrition Science and Masters of Athletic Training (2019. NDSU Graduate School, \$1252 [Funded]).
6. **Hackney, K.J.**, Nawarathna, K., Stastny, S., Dorsam, G., & McGrath, R. (2018). Optimizing Detection of Circulating MicroRNAs for Weight Management. HDE Seed Grant, \$3,350.
7. **Hackney, K. J.**, HNES Graduate Recruitment Proposal (\$4000 from Graduate School, \$5000 Department). [Funded].
8. **Hackney, K.J.**, Stastny, S, David, S. Byun, W. Mitchell, S. (2016). Protein and muscular health with aging: effect of increased physical activity. Sponsored by Sanford Health-North Dakota State University Collaborative Research Seed Grant Program, North Dakota State University, \$76,000. [Funded].
9. **Hackney, K.J.**, Mitchell, S., Stastny, S., David, S. (2015). Protein Intake and Muscular Health with Aging. Sponsored by Sanford Health-North Dakota State University Collaborative Research Seed Grant Program, North Dakota State University \$77,277. [Funded].
10. **Hackney, K. J.** (2014). Ergogenic Potential of ION-3 Nitrate Technology. NDSU internal funding from HDE to support undergraduate research, \$1000.
11. **Hackney, K. J.**, Christensen, B., Fitzgerald, M., (2014). HNES Graduate Recruitment Proposal (\$4000 from Graduate School, \$5000 Department) [Funded].
12. **Hackney, K. J. & Scott, J.** (2013). Novel magnetic resonance imaging techniques to assess skeletal muscle health. NDSU internal funding from HDE to build research capability. Role-principal investigator. Co-investigator J. Scott from University Space Research Association, \$2000. [Funded].
13. **Hackney, K. J.** (2013). Metabolic and perceptual responses to blood flow restricted exercise Prescription. NDSU internal funding from HDE to support undergraduate research, \$1000. [Funded].
14. **Hackney, K. & Ploutz-Snyder, L.** (2008). Essential amino acid-carbohydrate intake prior to low load resistance training with blood flow restriction as a countermeasure to unweighting (Funded), Graduate Student Research Program-National Aeronautics and Space Administration, \$90,000.00.
15. **Hackney, K. & Ploutz-Snyder, L.** (2008). The effect of amino acid-carbohydrate supplementation prior to sequential bouts of resistance training on resting metabolic rate (Funded), Research and Creative Grant, Syracuse University, College of Education, \$1,000.00.
16. **Hackney, K.** (2007). The effect of amino acid-carbohydrate versus carbohydrate supplementation prior to sequential bouts of resistance training on resting metabolism. (Funded), General Nutrition Center Nutritional Research Grant Sponsored, \$2,500.00.

SERVICE & OUTREACH

Professional Service

Ad Hoc *Journal Reviewer for Frontiers in Physiology*.
Ad Hoc Reviewer, *Medicine & Science in Sports & Exercise*
Ad Hoc Exercise Reviewer, *Aerospace Medicine and Human Performance*
Ad Hoc Performance Reviewer, *Journal of Strength and Conditioning Research*
Ad Hoc Reviewer, *Experimental Gerontology*

Professional Member in International Society of Clinical Densitometry (2017-Present).
Professional Member in American Physiological Society (2013-Present).
Professional Member in National Strength and Conditioning Association (2013-Present).
Professional member in International Society of Sports Nutrition (2013-2018).
Professional member in American College of Sports Medicine (2013-Present).

International Society of Clinical Densitometry Committee 2018-Present.
Northland ACSM North Dakota State Representative (2018-2020).

Department Service

Graduate Coordinator, HNES (2018-Present)
Promotion, Tenure, and Evaluation Committee, HNES (2019-present)
Committee Member, Exercise Science Program Workgroup (2012 - Present) Committee
Member, HNES interim Department Chair Search Committee (2016 - 2017) Chair, Exercise
Science Tenure Track Faculty Search Committee (2017-2018).

College Service

Digital Measures Pilot program for HDE (2016)

University Service

Faculty Research Council- 2022-Present
Committee Member, Research and Consulting Committee (2022-Present)
Committee Member, Research Strategic Planning Committee (2014)
Institutional Review Board Alternate (2013 - 2017)

Public Service

Foster and Grant Writer, Service Dogs of America (SDA), Jud, ND (2014 - 2017)

TEACHING

North Dakota State University (2013 - Present)

Undergraduate

HNES 465- Physiology of Exercise
HNES 466- Exercise Physiology Lab
HNES 365- Kinesiology
HNES 374- Methods of Resistance Training and Cardiovascular Conditioning
HON 342 -Mission to Mars: Physiological and Behavioral Risks

Graduate

HNES 710: Introduction to Research Design and Methods
HNES 713: Graduate Exercise Physiology
HNES 760: Skeletal Muscle Physiology
HNES 791: Exercise Endocrinology
HNES 790: Seminar- Introduction to HNES

Syracuse University (2007 - 2008)

Undergraduate

PPE 685: System Physiology Lab

Michigan State University (2005 - 2007)

Undergraduate

KIN 490: Independent Study
KIN 411: Exercise Physiology Laboratory
KIN 310: Physiology of Physical Activity
KIN 217: Applied Human Anatomy Laboratory
KIN 121: Healthy Lifestyle
KIN 103R: Weight Training I
KIN 118A: Basketball II
KIN 108A: Basketball I
KIN 106C: Bowling I
KIN 103D: General Conditioning

Wayne State University (2003 - 2005)

Undergraduate

KIN-3570: Physiology of Exercise I- Laboratory
KIN-2010: Physiological and Psychological Foundations of Physical Activity
LFA-1530: Basketball Fundamental Skills
LFA-1540: Basketball Shooting and Strategy
LFA-1520: Weightlifting and Training

AWARDS AND HONORS

Hendrickson Faculty Development Fund Award, College of HSE. (2021)
Exceptional Contributions to Research, College of HDE (2017)
Exceptional Contributions for Collaborative Efforts, College of HDE (2016)
James Lebedeff Endowed Professorship Development Award, College of HDE (2016)
Undergraduate Research Mentor Award, NDSU College of HDE (2015)
Travel Award, NDSU College of HDE (2015)
Travel Award, NDSU College of HDE (2014)
Excellence in Innovation, Wyle Science, Technology and Engineering (2012)
ACSM Nutrition Interest Group Student Award, Syracuse University (2010)
Exercise Physiology & Countermeasures Project MVP, NASA-Johnson Space Center (2010)
Graduate School Travel Award, Syracuse University Graduate School (2009)
Graduate School Scholarship, Syracuse University (2008)
Graduate Tuition Scholarship, Syracuse University (2008)
Graduate Recruitment Fellowship, Michigan State University (2005)

Certifications

Certified Clinical Densitometry International Society of Clinical Densitometry (2018-Present)
Certified KAATSU Specialist, KAATSU Global (2016 - Present)
Bone Densitometer EnCORE Certification, GE/Alpha Source (2016 - Present)
Certified Strength and Conditioning Specialist, NSCA (2003 - Present)

License

Bone Densitometry Technologist, North Dakota Medical Imaging and Radiation Therapy Board (2019-Present)