

Kyle J. Hackney, PhD, CSCS, CCD
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 (60 total)

1. 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>
2. 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>
3. 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.
4. 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>
5. 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>.
6. 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>
7. 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>
8. 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>
9. 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>

10. 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>
11. 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>.
12. 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>.
13. 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>.
14. 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.0000000000000269>.
15. 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>.
16. 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>
17. 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>.
18. 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>
19. 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.

20. 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>.
21. 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>.
22. 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.
23. 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>
24. 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>.
25. 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>.
26. 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>.
27. 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>.
28. **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>.
29. 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>.
30. 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>

31. 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/.
32. 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>.
33. 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>.
34. 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>.
35. 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>.
36. 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>.
37. 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>.
38. 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>
39. 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>
40. 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.
41. **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>.

42. 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/.
43. 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>
44. **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.
45. **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>
46. **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>
47. 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>.
48. **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>
49. 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>
50. 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>
51. 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>.
52. **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>.

53. 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>.
54. **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>.
55. **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>.
56. **Hackney, K. J.**, & Ploutz-Snyder, L. L. (2012). Unilateral lower limb suspension: Integrative physiological knowledge from the past 20 years (1991-2011). *European Journal of Applied Physiology*, 112(1), 9–22. <https://doi.org/10.1007/s00421-011-1971-7>.
57. **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>.
58. 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>.
59. **Hackney, K. J.**, Bruenger, A. J., & Lemmer, J. T. (2010). Timing protein intake increases energy expenditure 24 h after resistance training. *Medicine and Science in Sports and Exercise*, 42(5), 998–1003. <https://doi.org/10.1249/MSS.0b013e3181c12976>.
60. **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. 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 Academy of Nutrition and Dietetics*, 121(9), A26. <https://doi.org/10.1016/j.jand.2021.06.065>
9. 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>
10. 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>
11. 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.
12. 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.
13. 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>.

14. 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>.
15. 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
16. 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>.
17. 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.
18. 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(S5), 415.
19. 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..>
20. 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.
21. **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.
22. 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.
23. 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.
24. 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.

25. **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.
26. 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.
27. 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.
28. 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>
29. 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.
30. 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(S5), 304. [Abstract].
31. 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.
32. 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.
33. 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].
34. 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.
35. 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>].
36. 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*.

37. 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*.
38. 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.
39. 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 (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 - 08/15/2022: \$28,339. [Funded].
2. 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.
3. **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].
4. 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].
5. 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].
6. **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].

7. **Hackney, K. J.** & Trautman, K. (2019). Muscle, Metabolism, and Ergogenics lab undergraduate research assistant support, ND ESCoR, \$5000. [Funded].
8. **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.
9. **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].
10. **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].
11. **Hackney, K.J.** (2018). Measurement of muscle oxygen for exercise science teaching and research. The centennial endowment, \$2996.92. [Funded].
12. **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].
13. 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].
14. 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].
15. 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].
16. 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].
17. **Hackney, K. J.,** Fazel-Rezai, R., Ewert, D., Braaten, B., Noghanian, 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].
18. Fazel-Rezai, R., **Hackney, K.J.,** Ewert, D., Braaten, B., Noghanian, 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.

b. Grants and contract proposals submitted but pending decision

1. 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. Status: Council review completed.
2. McGrath R, **Hackney K (Co-I)**, Christensen B, Tomkinson G, Jurivich D, Orr M, Rhee Y. Examining Additional Aspects of Muscle Function with Digital Handgrip Dynamometry and Accelerometry. National Institute of Aging: R15AG078766-01. Submitted October 2021. \$416,481. Status: Pending IRG Review.

c. Grants and contract proposals submitted but not funded

1. Hackney, K., Jarajapu, Y., Gange, K., Nawarathna, D., McGrath, R., Mahoney, S., & Ploutz-Snyder, L. (2020). Implementing blood flow restriction technology as a low energy cost and minimal CO2 producing adjunct countermeasure to stimulate skeletal muscle metabolism, cardioprotection, and healing in “off watch” crewmembers. Translations Research Institute for Space Health (TRISH), Biomedical Research Advances for Space Health (BRASH 2101). Step 1 Proposal. No budget. Did not make step 2.
2. Hackney, K. (2021). Temporal changes in Astronauts’ muscle and cardiovascular physiology pre, in, and post spaceflight. Subaward for 14 year commitment to MRI analysis at request of NASA- Human Research Program. \$394,666. [Not funded].
3. McGrath R(PI), **Hackney K**, Rhee Y. GRip Assessment for Protocol Enhancements (GRAPE) in Older Adults. NIH-NIA. \$412,423. Submitted June 2020. [Not funded]. (Revised Resubmission Requested).
4. **Hackney, K. J.** (2019). Mobile technology to evaluate skeletal muscle health: Musclesound, ND EPSCoR, \$30,000. [Not Funded].
5. Douglas, M.M. & **Hackney, K.** (2020) Safe and professional flooring for exercise science students. *NDSU Impact Fund Grant Program*. \$75,000. Outcome: From funder “the total dollar

amount of the applications received far exceeded the NDSU Impact funding available for distribution making it impossible to fund all applications.” No other feedback provided. [Not Funded].

6. **Hackney, K.**, Jarajapu, Y., Gange, K., Nawarathna, D., McGrath, R., Mahoney, S., & Ploutz-Snyder, L. (2020). Implementing blood flow restriction technology as a low energy cost and minimal CO2 producing adjunct countermeasure to stimulate skeletal muscle metabolism, cardioprotection, and healing in “off watch” crewmembers. Translations Research Institute for Space Health (TRISH), Biomedical Research Advances for Space Health (BRASH 2101). Step 1 Proposal (2 years, \$1,000,000 total). [Not Funded] No invite to step 2 given high competition].
7. McGrath R., **Hackney K**, Tomkinson G, Christensen B, Rhee Y. Additional Handgrip Measurements for Fall Risk Assessments in Older Adults. NIH-NIA. \$421,942 (submitted October 2020 and withdrawn by funder). [Not Funded].
8. **Hackney K**, Pitts L, Rhee Y, McGrath R., Fairchild T. Resistance and aerobic training frequently in adults with multiple risk factors for type 2 diabetes. National Strength and Conditioning Young Investigator Grant Proposal. \$15,416. [Not Funded].
9. **Hackney K**, Jarajapu Y., Mahoney S., McGrath R. LIFT vs. SPRINT: Identifying efficient and effective exercise countermeasures. NASA- Hero Omnibus. \$144,996. [Not Funded]
10. **Hackney K**, Jarajapu Y, McGrath R. Modulation of CD34+ cells by exercise with blood flow restriction. NASA- Hero Omnibus. \$149,952. [Not Funded].
11. **Hackney, K.** Bradley, A., Newby, N. English, K. (2020). Mitigating disuse induced atrophy and strength loss of the plantar flexors through guided electrical stimulation. North Dakota NASA EPSCoR. \$40,000. [Not Funded].
12. **Hackney K**, Downs M, Ploutz-Snyder L, Scott J, Mahoney S. Intramuscular Adipose Tissue and Functional Muscle Cross Sectional Area Following Disuse with Exercise Countermeasures. NASA EPSCoR. January 1, 2021-July 31, 2021: \$39,999. [Not Funded].
13. **Hackney, K.J.**, Stastny, S., McGrath, R., Trautman, K., Nathaniel Johnson, Casperson, S. (2019). Effect of animal protein distribution and concurrent aerobic and resistance exercise on muscle function and cardiometabolic health in middle age. National Cattelman’s Beef Association, Human Nutrition Research, \$235,250. [Not Funded, Made it to Step 2].
14. McGrath, R., **Hackney, K.**, Lou, J.-S., Thomas, L., Diane, E., "Enhancing handgrip strength measurements for detecting reduced cognitive functioning in aging adults," Sponsored by NIH Great Plains IDeA-CTR Pilot, \$72,500, [Not Funded].
15. **Hackney, K. J.**, Pitts, L., Rhee, Y., Fairchild, T. (2018). Manipulating the Frequency of Concurrent Exercise training in Individuals with Type 2 Diabetes Mellitus: A short-term randomized controlled trial. National Strength and Conditioning Association-International Grant, \$49,464. [Not Funded].
16. **Hackney, K. J.**, Stone, K., Stastny, S., Mitchell, S., McFadden, L. (2018). Blood flow restricted exercise and blended protein supplementation to attenuate sarcopenic effects on muscle function. Sanford-NDSU Seed, \$89,093. [Not Funded].

17. Nawarathna, K., Dorsam, G., Stastny, S., **Hackney, K. J.**, Mitchell, S. (2018). Nucleic-acid biosensor for identification of individualized option for weight management based on epigenetic biomarkers in body fluids. Sanford-NDSU Seed, \$88,540. [Not Funded].
18. **Hackney, K. J.**, Jarajapu, Y. (2017). Blood flow restricted exercise modulation of endothelial progenitor cells," Sponsored by National Strength and Conditioning Association - Young Investigator Grant, \$19,836.00. Role- Principal Investigator. No information on number of proposals submitted or funded. [Not Funded].
19. **Hackney, K. J.** & Jarajapu, Y., (2017). Modulation of bone marrow-derived CD34+ cells by blood flow restricted exercise," Sponsored by American College of Sports Medicine Foundation, Other, \$10,000.00. Role- Principal Investigator. 33 proposals submitted, 3 were funded. [Not Funded].
20. **Hackney, K. J.**, Stone, K., Stastny, S., Mitchell, S., (2017). Kaatsu exercise and muscular health with aging: effect of blended protein supplementation," \$88,766.00. Sponsored by Sanford Health-North Dakota State University Collaborative Research Seed Grant Program, North Dakota State University. Role- Principal Investigator. Seven proposals submitted, three were funded but none from HDE or HNES. [Not Funded].
21. MacFadden, L., Bond, C., Noonan, B., Piatt, B., & **Hackney, K. J.** (2017). Blood flow restriction resistance exercise as an adjunct therapy for rehabilitation following knee arthroscopy (Not Awarded, Top 27 of 51 applications), Great Plains IDeA CRT Pilot Training Program. \$126,000.00. Role- Co- Investigator for BFR exercise expertise and DXA. Made the top 25 proposals out of 51 submitted. No information on how many were ultimately funded. [Not Funded].
22. Stastny, S, **Hackney, K. J.**, Byun, W., David, S. (2017). Dietary pork and meat protein intake, physical activity, and muscle quality in older adults," Sponsored by Letter of Intent (LOI) to National Pork Board – Nutrition Research, \$88,220.00. Role- Co-investigator for muscle measures. No information on number of proposals submitted or funded. [Not Funded].
23. **Hackney, K. J.**, Brooks, A., Ewert, D. (2016). Discovery based learning in multi- disciplinary teams (DBL-T).Sponsored by NSF EAGER Grant Program, \$144,913.00.[Not Funded].
24. **Hackney, K. J.**, Lyman (2016). Kinesiotaping as a Rehabilitation Strategy Following Prolonged Inactivity, Sponsored by the National Aeronautics and Space Administration, \$100,000.00. [Not Funded].
25. **Hackney, K. J.** (2016). Potential health application of a KAATSU exercise Device, Sponsored by The Centennial Endowment Fund, \$2,074.00. [Not Funded] Sanders, G. (2015). Aging Center Grand Challenge Proposal. *NDSU Research and Discovery Grand Challenge Initiative*. \$935,500. Role- **Hackney, K. J** was one of thirty three faculty contributors to the proposal. Emphasis on sarcopenia mitigation (No score provided, PI asked to resubmit and merge science with other proposal submitters, cancelled due to budget cuts). [Not Funded].
26. Ewert, D., Braaten, B., Vonnahme, K., Nawarathna, D., Brooks, A., Pruess, B., & **Hackney, K. J.** & Vonnahme, K. (2015). Discovery based learning in multi- disciplinary teams (DBL-T):Pilot Funding. NDSU Learning and Student Success Grant Program. \$77,000 (Asked for minor revisions and merger with other proposal submitted, Re-submitted and are awaiting decision, cancelled due to budget cuts). [Not Funded].

27. Ewert, D., Brooks, A., Vonnahme, K., Bratten, B., Nawaratha, K., & **Hackney, K. J.** (2015). Discovery-based learning to achieve healthy populations and vital communities. Role- co-investigator with specialization in science education and skeletal muscle physiology. *NDSU Research and Discovery Grand Challenge Initiative*. \$1,000,000 (No score provided). [Not Funded].
28. **Hackney, K. J.** (2015). Health Assessment by Advanced Imaging. NDSU Impact Fund. Role- Principal Investigator for equipment (DEXA scanner), \$62500, (made it to top 6, No feedback provided). [Not Funded].
29. Ewert, D., Braaten, B., Nawarathna, D., **Hackney, K. J.**, & Vonnahme, K (2015). Discovery Based Learning in Multi-Disciplinary Teams. *National Science Foundation Research Traineeship (NRT) Program*. Role- co-investigator with specialization in science education and skeletal muscle physiology. \$495,419, (1 excellent, 3 very goods, and 2 goods, Scored "Competitive"). [Not Funded].
30. **Hackney, K. J.** (2014). Muscle Mass and Function Benefits From Leucine Distribution and Walking Exercise in Older Adults. Role Principal Investigator. *Ajinomoto Innovation Alliance Program*, \$200,000 (Not funded, 250 applications received, did not make the top 72). [Not Funded].
31. **Hackney, K. J.**, Fazel-Razai, R, & Ewert, D. Fitness For Duty Requirements For Astronauts Using the ZeroG Body Mass Unloading System (2015). NASA ND RFP CAN. Role- Principal Investigator, \$818,681 (Not funded, no score provided). [Not Funded].
32. Fazel-Rezai, R., Noghanian, S., Tavakolian, K., De Leon, P., Bratten, B., Ewert, D., Marinov, V., & **Hackney, K. J.** (2015). Smart Health Monitoring Based on Wearable Antennas. National Aeronautics and Space Administration ND EPSCoR Cooperative Agreement Notice. Role- Co-investigator with emphasis on human performance and technology testing. \$1,243,240 (Not funded, no score provided). [Not Funded].
33. **Hackney, K. J.**, Stastny, S. & Byun W. (2014). Beef Protein Intake, Physical Activity, and Muscle Quality With Aging. The Minnesota Beef Council. Role- principal investigator, \$39,939 (Not funded, 12 proposals submitted, no score provided).[Not Funded]. Jorgenson, D.; Sand, M.; Ewert, D.; Braaten. (2014). Non-invasive self-calibrating ambulatory multi-modality blood pressure device. Role-
34. **Hackney, K. J.** was a collaborator with Krisara Engineering. Would have had subcontract for human testing to NDSU on funded proposal. SMARTCAP- Space Medical and Related Technologies Commercialization Assistance Program; National Space Biomedical Research Institution, \$unknown amount (Step 1, Not Funded, No score provided, No details provided regarding number of proposals/funded). [Not Funded].
35. **Hackney, K. J.** (2014). Muscle Mass and Function Benefits From Leucine Distribution and Walking Exercise in Older Adults. Role Principal Investigator. Ajinomoto Innovation Alliance Program, \$200,000 (Step 1, Not Funded, No score provided, 155 proposals submitted, did not make the cut to 40). [Not Funded].
36. **Hackney, K. J.** (2014). Ergogenics, Muscle Perfusion, and Energy Metabolism From Resistance Exercise and L-Arginine Nitrate Supplementation. Role- Principal investigator. National Strength and Conditioning Association, Young Investigator Award, \$10,380. Scored 29/40 by grant review committee. [Not Funded].

37. Fazel-Rezai, R., Noghanian, S., Tavakolian, K., De Leon, P., Bratten, B., Ewert, D., Marinov, V., & **Hackney, K. J.** (2014). Smart Health Monitoring Based on Wearable Antennas. National Aeronautics and Space Administration ND EPSCoR Cooperative Agreement Notice. Role- Co-investigator with emphasis on human performance and technology testing. \$1,243,240 (9 proposals submitted from ND, only 1 selected to be submitted to NASA, none funded). No score or review provided). [Not Funded].
38. Paddon-Jones, D., Ploutz-Snyder, L., Downs, M., English, K. Inniss, A., Pattarinin, J., Ploutz-Snyder, R., Scott, J. & **Hackney, K. J.** Optimal Distribution of Nutrition to Potentiate Exercise Training During Hypocaloric Bed Rest. National Space Biomedical Research Institute (NSBR-NNJ13ZSA002N). Role- Consultant with emphasis on magnetic resonance imaging analysis (Step 2, 63/100, score of 70 substantiates potential funding, no projects funded from the entire call). [Not Funded].
39. **Hackney, K. J.**, Stastny, S. & Douglas, M. (2013). Beef protein and markers of sarcopenia and health in elderly women. The Minnesota Beef Council. Role- principal investigator. \$34,670 (6 proposals submitted for funding, no comments or score provided from review). [Not Funded].
40. **Hackney, K. J.**, Stastny, S. & Douglas, M. (2013). Soy protein and resistance exercise training: Muscle, health, and quality of life in women with low habitual protein intake. North Dakota Soybean Council. Role- principal investigator. \$29,540 (55 proposals submitted to sponsor totaling 2 million dollars. No comments or score provided from review). [Not Funded].
41. **Hackney, K. J.**, Stastny, S. & Christenson, B. (2013). Resistance exercise and ION-3 nitrate technology: Muscle size, metabolism, and power. International Society of Sports Nutrition-MusclePharm. Role- Principal Investigator. \$10,000 (24 proposals were submitted to sponsor at 3 times the available funding, no score provided). [Not Funded].

Graduate student grants not funded.

1. Bradley, A & **Hackney, K.** (202). Inducing hypertrophy in the plantarflexors through electrical muscle stimulation. Graduate Student Research Grant. National Strength & Conditioning Association.\$5100. Overall score, 56%/100. [Not Funded]].
2. Mahoney, S & **Hackney** (2020). LIFT vs. Sprint: an optimal exercise for spaceflight. ACSM Foundation, \$5070. Role- Institutional Grant Principal Investigator and advisor of student submitter [Not Funded]].
3. **Hackney, K. J.**, Schmidt, A., Stastny, S., Lyman, K. (2017). Comparing blood serum values of vitamin D and calcium in division I female athletes, Sponsored by American College of Sports Medicine, \$1,120.00. (2018 - 2019). Role- In collaboration with B. Christensen (student advisor). I was the institutional grant principal investigator given my ACSM membership and will serve as the liaison for DXA for the student project. [Not Funded].
4. Stone, K & **Hackney, K. J.**, (2017). Blood flow restricted exercise and muscular health with aging: effect of blended protein supplementation," Sponsored by American College of Sports Medicine, \$4,616.00. Role- Institutional Grant Principal Investigator and advisor of student submitter. [Not Funded].

5. **Hackney, K. J.**, & Dicks, N. (2017). Blood flow restriction as a training method for load carriage in tactical athletes" Sponsored by National Strength and Conditioning Association, \$6,114.00. Role- Institutional Grant Principal Investigator and advisor of student submitter. No information on number of proposals submitted or funded. [Not Funded].
6. Kotarsky, C & **Hackney, K. J.** (2015). Effect of a progressive callisthenic push-up routine on muscular strength. National Strength & Conditioning Association: masters research grant, \$5425 (scored 27/40). Role- Institutional Grant Principal Investigator and advisor of student submitter. [Not Funded].

SERVICE & OUTREACH

Professional Service

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

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

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

Public Service

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

Professional Organizations

International Society for Clinical Densitometry (2018 Present)
 International Society for Sports Nutrition (2012 - Present)
 American Physiological Society (2009 - Present)
 American College of Sports Medicine (2004 - Present)
 National Strength and Conditioning Association (2003 - Present)

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

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

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)