

**Isaac J. Wedig Ph.D., CSCS**  
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## EDUCATION

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<b>Ph.D., Integrative Physiology</b> <i>Michigan Technological University, Houghton, MI</i>	<b>2019- 2023</b>
<b>M.S., Exercise Science</b> <i>Northern Michigan University, Marquette, MI</i>	<b>2014-2016</b>
<b>B.S., Biology/Physiology</b> <i>Northern Michigan University, Marquette, MI</i>	<b>2010-2014</b>

## PROFESSIONAL POSITIONS

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<b>Assistant Professor</b> <i>School of Health and Human Performance, Northern Michigan University</i>	<b>2023-Present</b>
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Courses taught:

- Exercise & Fitness for Special Populations (ES/HL476)
- Theory of Strength & Conditioning (ES 475)
- Health & Fitness Leadership (HL472)
- Physiology of Training & Sport (ES 421)
- Fitness Leadership (HL 230)
- Lifespan Health (HL 111)

<b>Instructor</b> <i>Department of Kinesiology and Integrative Physiology, Michigan Technological University</i>	<b>2019-2023</b>
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Courses taught:

- Foundations in Kinesiology (KIP1500)
- Lifetime Fitness (KIP 3700)

<b>Graduate Teaching Assistant</b> <i>Department of Kinesiology and Integrative Physiology, Michigan Technological University</i>	<b>2019-2023</b>
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Courses taught:

- Exercise Physiology Lab (KIP4110)
- Exercise Assessment and Prescription Lab (KIP3100)

## TEACHING DEVELOPMENT

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<b>Professional Development Day</b> <i>NMU Center for Teaching and Learning</i>	<b>Fall 2023</b>
<b>Graduate Teaching Training (1 credit, ED 0510)</b> <i>Michigan Tech Center for Teaching and Learning</i>	<b>Fall 2020</b>
<b>College Teaching (1 credit, ED 0520)</b> <i>Michigan Tech Center for Teaching and Learning</i>	<b>Spring 2020</b>
<b>UP Teaching and Learning Conference</b> <i>Michigan Tech Center for Teaching and Learning</i>	<b>Summer 2019</b>

## PEER REVIEWED PUBLICATIONS

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### Research

Cockfield, B., **Wedig, I.**, Vinckier, A., McDaniel J., & Elmer, S. (2023) Physiological and perceptual responses to acute arm cranking with blood flow restriction. *European Journal of Applied Physiology*. Online ahead of print. DOI: [10.1007/s00421-023-05384-0](https://doi.org/10.1007/s00421-023-05384-0)

**Wedig, I.**, Lennox, I., Petushek, E., McDaniel, J., Durocher, J., & Elmer, S. (2023) Development of a prediction equation to estimate lower-limb arterial occlusion pressure with a thigh sphygmomanometer. *European Journal of Applied Physiology*. Online ahead of print. DOI: [10.1007/s00421-023-05352-8](https://doi.org/10.1007/s00421-023-05352-8)

**Wedig, I.**, Durocher, J., McDaniel, J., & Elmer, S. (2023) Blood Flow Restriction as a Potential Therapy to Restore Physical Function in COVID-19 Survivors. *Frontiers in Physiology*, 14, 1235172. DOI: [10.3389/fphys.2023.1235172](https://doi.org/10.3389/fphys.2023.1235172)

Wehmanen, K., Cottet-Puinel, F., Hampton, T., Hamlin, G., **Wedig, I.**, Kamm, K., & Elmer, S. (2023) The Impact of Health Behaviors on Community Wellbeing and Resilience: Teaching K-12 Students Using Jenga! *Advances in Physiology Education*, 47(2), 361-365. DOI: [10.1152/advan.00005.2023](https://doi.org/10.1152/advan.00005.2023)

Franklin, B., **Wedig, I.**, Sallis, R., Lavie, C., & Elmer, S. (2023) Physical Activity and Cardiorespiratory Fitness as Modulators of Health Outcomes: A compelling Research-based Case Presented to the Medical Community. *Mayo Clinic Proceedings*, 98(2), 316–331. DOI: [10.1016/j.mayocp.2022.09.011](https://doi.org/10.1016/j.mayocp.2022.09.011)

**Wedig, I.,** Phillips, J., Kamm, K., & Elmer, S. (2023) Promoting Physical Activity in Rural Communities During COVID-19 with Exercise is Medicine® on Campus. *ACSM's Health & Fitness Journal*, 27(2), 33-40. DOI: [10.1249/FIT.0000000000000849](https://doi.org/10.1249/FIT.0000000000000849)

## Commentary

Elmer, S., **Wedig, I.,** Lennox, I., & Kamm, K. (2022) Promoting Physical Activity During the COVID-19 Pandemic in a Rural and Medically Underserved Region. *British Journal of Sports Medicine*, bjsports-2022-106589. Advance online publication. DOI: [10.1136/bjsports-2022-106589](https://doi.org/10.1136/bjsports-2022-106589)

**Wedig, I.,** Elmer, S., & Kamm, K. (2022) Commentaries on viewpoint: COVID-19 controls causing a kerfuffle. *Journal of Applied Physiology*, 133(5):1222-1225. DOI: [10.1152/jappphysiol.00536.2022](https://doi.org/10.1152/jappphysiol.00536.2022)

Hawke, A, Chen, X., Lennox, I., Scarfone, C., **Wedig, I.,** Phillips, J., Kamm, K., & Elmer, S. (2022). Building a healthier information environment during COVID-19. *Advances in Physiology Education*, 46(1), 96-97. DOI: [10.1152/advan.00177.2021](https://doi.org/10.1152/advan.00177.2021)

**Wedig, I.** & Elmer, S. (2021) Commentaries on viewpoint: A (Baker's) dozen tips for enhancing early-stage academic career development in biomedical research. *Journal of Applied Physiology*, 131(5), 1516-1519. DOI: [10.1152/jappphysiol.00713.2021](https://doi.org/10.1152/jappphysiol.00713.2021)

Elmer, S., **Wedig, I.,** Hawke, A., Scarfone, C., & Lennox, I. (2021) Commentaries on viewpoint: The academic biomedical research laboratory as a "small business". *Journal of Applied Physiology*, 131(2), 744-745. DOI: [10.1152/jappphysiol.00510.2021](https://doi.org/10.1152/jappphysiol.00510.2021)

**Wedig, I.,** Duelge, T., & Elmer, S. (2020) Infographic. Stay physically active during COVID-19 with exercise as medicine. *British Journal of Sports Medicine*, 55, 346-347. DOI: [10.1136/bjsports-2020-103282](https://doi.org/10.1136/bjsports-2020-103282)

## ABSTRACT PUBLICATIONS

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**Wedig, I.,** Myer, G., Petushek, E., & Elmer, S. (Accepted) Usability of a Web-Based Application for the Clinical Implementation of Blood Flow Restriction Exercise. *Medicine & Science in Sport & Exercise*

**Wedig, I.,** Lennox, I., Petushek, E., Durocher, J., McDaniel, J., & Elmer, S. (2023) Development and Validation Of a Prediction Equation for Practical Implementation of Blood Flow Restriction Exercise. *Medicine & Science in Sport & Exercise*, 55(9S), 157. DOI: [10.1249/01.mss.0000883428.60487.14](https://doi.org/10.1249/01.mss.0000883428.60487.14)

Lennox, I., **Wedig, I.**, Kelly, K., Denay, K., & Elmer, S (2023) Exercise Is Medicine® On Campus: A National Analysis And Community Impact. *Medicine & Science in Sport & Exercise*, 55(9S), 150-151. DOI: [10.1249/01.mss.0000981108.68172.fe](https://doi.org/10.1249/01.mss.0000981108.68172.fe)

**Wedig, I.**, Lennox, I., McDaniel, J., Durocher, J., Petushek, E., and Elmer, S. (2023) Predictors of Arterial Occlusion Pressure in the Lower-Body Across Commonly Used Cuff Widths. *Physiology*, 38(S1), 5732390. DOI: [doi.org/10.1152/physiol.2023.38.S1.5732390](https://doi.org/10.1152/physiol.2023.38.S1.5732390)

Wehmanen, K., Elmer, S., & **Wedig, I.** (2023) Historical Performance Trends In Winter Ultra-Endurance Events: 967. *Medicine & Science in Sport & Exercise*, 55(9S), 324-325. DOI: [10.1249/01.mss.0000982780.93208.ba](https://doi.org/10.1249/01.mss.0000982780.93208.ba)

**Wedig, I.**, Lennox, I., Scarfone, C., Durocher, J., McDaniel, J., and Elmer, S. (2022) A Prediction Equation for Blood Flow Restriction Exercise that Accounts for Cuff Width. *Medicine & Science in Sport & Exercise*, 54(9S), 669. DOI: [10.1249/01.mss.0000883428.60487.14](https://doi.org/10.1249/01.mss.0000883428.60487.14)

**Wedig, I.**, Lennox, I., Scarfone, C., and Elmer, S. (2022) A Practical Application of Blood Flow Restriction Exercise. *The FASEB Journal*, 36. DOI: <https://doi.org/10.1096/fasebj.2022.36.S1.R3420>

**Wedig, I.** and Elmer, S. (2021) Collaborative Group Testing Implemented Online using Zoom. *The FASEB Journal*, 35. DOI: <https://doi.org/10.1096/fasebj.2021.35.S1.03150>

Cockfield, B. **Wedig, I.**, Hendrickson, J., and Elmer, S. (2020) Acute Responses to Arm Cycling Exercise with Blood Flow Restriction. *Medicine & Science in Sports & Exercise*, 52(7S), 844. DOI: [10.1249/01.mss.0000687948.68262.5d](https://doi.org/10.1249/01.mss.0000687948.68262.5d)

Kuck, A., Cockfield, B., DenHerder, A., Lytle, L., Wedig, I., and Elmer, S. (2020) Exercise With Blood Flow Restriction To Improve Muscular And Physical Function After Total Knee Arthroplasty. *Medicine & Science in Sport & Exercise*, 52(7S), 842-843. DOI: [10.1249/01.mss.0000687924.51767.79](https://doi.org/10.1249/01.mss.0000687924.51767.79)

## NON-PEER REVIEWED PUBLICATIONS

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**Wedig, I.**, and Elmer, S. (2021) Update: Stay Active to Reduce COVID-19 Severity. *I Spy Physiology Blog*, American Physiological Society, June 16.

**Wedig, I.**, and Elmer, S. (2020) Exercise is Medicine: Staying Active the COVID-19 Pandemic. *I Spy Physiology Blog*, American Physiological Society, August 12.

**Wedig, I.**, Phillips, J., Laiho, A., Kamm, K., Elmer, S. (2021). Staying physically active amid the COVID-19 pandemic. *Mining Journal*, April 13.

## PRESENTATIONS

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### Symposia

**Wedig, I.**, and Kilgas, M. (2023) Exercise with Blood Flow Restriction: Practical Considerations and Application. Northern Michigan University Summer Sports Medicine Symposium. [*Conference proceeding. Marquette, MI. July 27<sup>th</sup>, 2023*]

**Wedig, I.** Isaac, L., and Elmer, S. (2022) Role of Physical Activity During the COVID-19 Pandemic: Lessons Learned and Future Considerations. Annual meeting of the Midwest Chapter of American College of Sports Medicine. [*Conference proceeding. Indianapolis, IL. Oct 20<sup>th</sup>, 2022*]

**Wedig, I.** Jamie, J., and Elmer, S. (2021) Blood Flow Restriction Exercise: Moving Evidence into Practice. Annual meeting of the Midwest Chapter of American College of Sports Medicine. [*Conference proceeding. (Virtual) Nov 5<sup>th</sup>, 2021*]

### Oral Presentations

**Wedig, I.**, Lennox, I., Petushek, E., Durocher, J., McDaniel, J., and Elmer, S. (2023) Development and Validation Of a Prediction Equation for Practical Implementation of Blood Flow Restriction Exercise. Annual meeting of American College of Sports Medicine. [*Conference proceeding. Denver, CO. May 31<sup>st</sup>, 2023*]

**Wedig, I.**, Lennox, I., Scarfone, C., and Elmer, S. (2022) A Practical Application of Blood Flow Restriction Exercise. Michigan Tech Graduate Research Colloquium. [*Conference proceeding. Houghton, MI. March 27<sup>th</sup>, 2022*]

**Wedig, I.** (2021) Exercise is Medicine On Campus at Michigan Tech: Promoting Physical Activity during the COVID-19 Pandemic. Annual meeting of Michigan Physiological Society. [*Conference proceeding. (Virtual) June 24<sup>th</sup>, 2021*]

**Wedig, I.** (2021) Exercise is Medicine: Staying Active During the COVID-19 Pandemic. Heart Research Institute of Michigan Technological University Journal Club. [*Meeting proceeding. (Virtual) Jan 21<sup>th</sup>, 2021*]

**Wedig, I.** (2020) Arm Cranking with Blood Flow Restriction: A Potential Exercise for use in Space? Michigan Space Grant Consortium Fall Conference. [*Conference proceeding. (Virtual) Oct 17<sup>th</sup>, 2020*]

**Wedig, I.** (2020) Collaborative Group Testing Implemented Online using Zoom. Upper Peninsula Teaching and Learning Conference. [*Conference proceeding. (Virtual) Oct 13<sup>th</sup>, 2020*]

**Wedig, I.** and Duelle, T. (2020) Exercise Is Medicine: Staying Active during the COVID-19 Pandemic. Michigan Physiological Society annual meeting. *[Conference proceeding. (Virtual) June 27<sup>th</sup>, 2020]*

**Wedig, I.**, Gonzalez, J., Bruning, J., Pitts, J., Serrano, A., Cockfield, B., and Hendrickson, J. (2019) Setting foot on Mars: A Big Step and Even Greater Leap for Undergraduate and Graduate Students. Michigan Space Grand Consortium Fall Conference. *[Conference proceedings. Ann Arbor, MI. Oct 25<sup>th</sup>, 2019]*

## Poster Presentations

**Wedig, I.**, Lennox, I., McDaniel, J., Durocher, J., Petushek, E., and Elmer, S. (2023) Predictors of Arterial Occlusion Pressure in the Lower-Body Across Commonly Used Cuff Widths. American Physiology Summit. *[Conference proceeding. Long Beach, CA. April 22<sup>nd</sup>, 2023]*

**Wedig, I.**, Lennox, I., Scarfone, C., Durocher, J., McDaniel, J., and Elmer, S. (2022) A Prediction Equation for Blood Flow Restriction Exercise that Accounts for Cuff Width. Annual meeting of the American College of Sports Medicine. *[Conference proceeding. San Diego, CA. June 4<sup>th</sup>, 2022]*

**Wedig, I.**, Lennox, I., Scarfone, C., & Elmer, S. (2022) A Practical Application of Blood Flow Restriction Exercise. Experimental Biology. *[Conference proceeding. Philadelphia, PA. April 4<sup>th</sup>, 2022]*

**Wedig, I.**, Lennox, I., Scarfone, C., & Elmer, S. (2021) Exercise Is Medicine on Campus: A Regional Analysis and Midwest ACSM Action Call. Annual meeting of the Midwest Chapter of American College of Sports Medicine. *[Conference proceeding. (Virtual) Nov 5<sup>th</sup>, 2021]*

**Wedig, I.** & Elmer, S. (2021) Collaborative Group Testing Implemented Online using Zoom. Experimental Biology. *[Conference proceeding. (Virtual) April 5<sup>th</sup>, 2021]*

Kuck, A., Cockfield, B., DenHerder, A., Lytle, L., **Wedig, I.**, & Elmer, S. (2019) Improving Recovery After Total Knee Arthroplasty with Blood Flow Restriction Exercise. Annual meeting of the Midwest Chapter of American College of Sports Medicine. *[Conference proceeding. Chicago, IL. Nov 8<sup>th</sup> -9<sup>th</sup>, 2019]*

## Invited Presentations

**Wedig, I.**, Lennox, I., & Elmer (2024) Exercise Is Medicine® On Campus: A National Analysis And Assessment of Impact. Exercise Is Medicine On Campus Webinar Series. *[Webinar proceedings. (Virtual) March 19<sup>th</sup>, 2024]*

**Wedig, I.** (2023) Keynote Speaker. Sports Medicine Student Research Symposium. *[Symposium proceedings. Marquette, MI. Dec 22<sup>nd</sup>, 2023]*

## FELLOWSHIPS/GRANTS

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Kilgas, M., & **Wedig, I. (CoPI)** (2024) The Effects of BFR Cycling on Mitochondrial and Vascular Function in Individuals with Type 2 Diabetes. National Institutes of Health Research Enhancement Award (R15). \$300,000.

**Wedig, I.** (2022) Physical Activity as Medicine during the COVID-19 Pandemic. Portage Health Foundation Graduate Assistantship. Portage Health Foundation. \$10,000.

**Wedig, I.** (2022) Physical Activity as Medicine during the COVID-19 Pandemic. Health Research Institute Graduate Student Fellowship, \$5,000.

**Wedig, I.** (2021) Enhancing Health and COVID-19 Resilience in the UP with Physical Activity. Blue Cross Blue Shield of Michigan Student Award, \$3,000.

**Wedig, I.** (2021) Renewal. Arm Cranking with Blood Flow Restriction; A Potential Exercise for use in Space? Michigan Space Grant Consortium Graduate Fellowship, \$5,000.

**Wedig, I.** (2019) Arm Cranking with Blood Flow Restriction; A Potential Exercise for use in Space? Michigan Space Grant Consortium Graduate Fellowship, \$5,000.

## AWARDS

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**Doctoral Scholar Award (March 31, 2023)**

Presented by American Kinesiology Association

**Outstanding Scholarship Award (February 22, 2023)**

Presented by Michigan Technological University Graduate School

**1<sup>st</sup> Place Oral Presentation- Graduate Research Colloquium (March 27, 2022)**

Presented by Michigan Technological University Graduate Student Government

**Top Presenter- Michigan Physiological Society Annual Meeting (July 1, 2021)**

Presented by Michigan Physiological Society

**Research Recognition Award- Teaching of Physiology Section (April 13, 2021)**

Presented by American Physiological Society

**3<sup>rd</sup> Place Oral Presentation- Graduate Research Colloquium (April 3, 2021)**

Presented by Michigan Technological University Graduate Student Government

**Outstanding Graduate Student Teaching Award (May 19, 2020)**

Presented by Michigan Technological University Graduate School

## SERVICE/COMMUNITY OUTREACH

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### University/Department

**School of Health and Human Performance- Bylaws Committee**  
*Northern Michigan University, Aug 2023-Current*

**School of Health and Human Performance- Faculty Review Committee**  
*Northern Michigan University, Aug 2023-Current*

### Scientific Community

**Exercise Is Medicine On Campus (EIM-OC) Committee**  
*American College of Sports Medicine, June 2022- Present*

- Serve as the committee's graduate student representative

### Community

**Virtual Community-Based Physical Activity Program (UP & Moving)**  
*Houghton, MI. Oct 2020- Present*

- Led a team of graduate students at Michigan Tech in developing a free community-based physical activity program (<https://www.upandmoving.org/>)

**Portage Health Foundation Podcast**  
*Houghton, MI. June 23<sup>rd</sup>, 2019*

- Discussed the importance of physical activity during COVID-19 pandemic

**Physiology Understanding Week (PhUn)**  
*Houghton High School, Houghton, MI. Nov 23<sup>rd</sup>, 2022*  
*Gwinn High School, Gwinn, MI. Nov 18<sup>th</sup>, 2019*  
*Lake Linden-Hubbell High School, Lake Linden, MI. Nov 13<sup>th</sup>, 2019*

- Participated in American Physiological Society national outreach events at local high schools in 2019 and 2022

**NASA Science Outreach**  
*Houghton High School, Houghton, MI. Dec 20<sup>th</sup>, 2019.*

- Traveled to a local high school to promote careers in STEM fields

## CERTIFICATIONS

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**Certified Strength and Conditioning Specialist, NSCA**  
**Precision Nutrition Level 1, Precision Nutrition**

**2013-Present**  
**2019-Present**



**AED, CPR, First Aid, American Red Cross**

**2021-Present**

**PROFESSIONAL AFFILIATIONS**

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**National Strength and Conditioning Association**

**2012-Present**

**American College of Sports Medicine**

**2019-Present**

**American College of Sports Medicine- Midwest Chapter**

**2019-Present**

**American Physiological Society**

**2020-Present**

**Michigan Physiological Society**

**2021-Present**