

Jamie Pigman, PhD

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Professional Links

Monmouth University <https://www.monmouth.edu/directory/profiles/jamie-pigman/>
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EDUCATION/TRAINING

<u>Degree</u>	<u>Institution</u>	<u>Date</u>	<u>Major</u>
Ph.D.	University of Delaware Newark, Delaware	May 2019	Biomechanics & Movement Science
M.A.	Montclair State University Montclair, New Jersey	December 2015	Exercise Science
B.S. (Hons)	Montclair State University Montclair, New Jersey	August 2012	Exercise Science
	Field Medical Service School Camp Pendleton, California	April 2004	Fleet Marine Force Corpsman
	Hospital Corps School Naval Station Great Lakes, Illinois	July 2003	Hospital Corpsman

PROFESSIONAL EXPERIENCE

August 2023 – Present

Assistant Professor

Department of Health and Physical Education,
Monmouth University

- My strengths include my positive and enthusiastic attitude, diverse and unconventional background, academic achievements, clinical experience, research experience and ultimately, my genuine desire for my students to succeed at their goals.
- I am a firm believer that research is what should guide our teaching strategies, as well as our teaching material. Integrating research into my classes provides a tangible example for students to appreciate the importance of how the concepts learned in class transfer to the application of evidence-based practices.
- I am currently interested in the extent to which performing *resistance training* and *balance training* affects older adults' muscle strength, muscle power, balance ability and balance confidence.

September 2022 – July 2024

Department Advising Coordinator (DAC)

Department of Health and Physical Education,
Monmouth University

- Work with department chair and School Dean to coordinate and monitor advising activities. Understand and stay current of general education and major-specific requirements.
- Work with department chairs to assist with advising overload, advising transfer students during the summer periods when faculty are not available, and during peak advising periods.
- Work with the Director of Academic Advising to enhance student transition from freshman/sophomore advising to the academic department. Assist with promoting best advising practices.
- Participate in special initiatives such as call projects or open house events to foster enrollment and retention.

August 2020 – July 2023

First Year Advisor

First Year Advising and Support, Monmouth University

- Work in cooperation with various University divisions to ensure that first year students experience the challenges, opportunities, and support needed to succeed at Monmouth.

August 2019 – August 2023

Lecturer and Advisor

Department of Health and Physical Education,
Monmouth University

- Teach 24 credits of exercise science classes each year.
- Advising and mentoring students.
- Internship supervision.
- Honors School thesis/capstone reader.
- My goal and responsibilities are to effectively transfer knowledge to those I am teaching as well as to provide mentoring that ensures students finish their education with the skills, experience, and confidence that they will need to be successful professionals.

August 2015 – May 2019

Research Assistant

Department of Kinesiology and Applied Physiology,
University of Delaware

- Manage exercise intervention research studies aimed to reduce falls, enable mobility and enhance the quality of life of survivors of stroke, children with cerebral palsy, as well as older adults.
- Perform the collection, analysis and interpretation of kinematic, kinetic, and neuromuscular data.
- Laboratory Technician/Manager
 - Lab training and scheduling
 - Equipment maintenance and calibration
 - Aerobic and anaerobic testing
 - Biomechanical data collection and analysis
 - Electromyography data collection and analysis

August 2015 – July 2018

Adjunct Professor

Department of Kinesiology and Applied Physiology,
& the School of Nursing, University of Delaware

- Teach 6 credits of classes each year.
- Mentor students.

December 2014 – July 2015

Adjunct Professor

Department of Exercise Science and Physical Education,
Montclair State University

- Teach 9 credits of classes each year.
- Mentor students.

January 2013 – December 2014

Graduate Assistant

Department of Exercise Science and Physical Education,
Montclair State University

- Laboratory Technician/Manager
 - Lab training and scheduling
 - Equipment maintenance and calibration
 - Aerobic and anaerobic testing
 - Biomechanical data collection and analysis
 - Electromyography data collection and analysis

January 2013 – May 2015

Instructor

Essex County College, World Instructor Training Schools
(Nationally Accredited Personal Trainer Certification)

- Lecture and practical instruction on personal training

January 2011 – May 2013

Director of Exercise

Advanced Spine Care Physical Therapy, Union, NJ

- Work directly with physical therapists and spine surgeons developing exercise programs for rehabilitation
- Instruct exercise to patients from youth to elderly recovering from various musculoskeletal injuries
- Sports performance training
- Educate patients on effective healthy lifestyle practices

January 2009 – May 2013

Motion Analysis Lab Technician

Biokinetics LLC, Middletown, NJ

- Conduct functional capacity evaluations (FCEs)
 - Gait analysis
 - Assessments of balance
 - Isometric strength testing
- Industrial on-site workplace ergonomic consulting
 - Solutions to reduce injuries
 - Custom job descriptions
- Developed annual fitness test for local fire department
 - Anaerobic testing
 - Aerobic testing

January 2003 – January 2008

Hospital Corpsman

United States Navy

- Fleet Marine Force Corpsman

TEACHING EXPERIENCE

2019 – Present

Monmouth University

PE 340: Motor Development and Learning
PE 320: Exercise Physiology
PE 330: Biomechanics and Kinesiology
HO 396 & 496: Honors Thesis Development & Thesis Research
HE 389: Internship in Health and Physical Education
HE 290: Health Research Methods
PE 215: Fitness Concepts and Measurement
PE 163: Weight Training
PE 161: Self Defense
PE 156: High Intensity Interval Training
PE 103: Surfing

2015 – 2019

University of Delaware

KAAP 220: Fundamentals of Anatomy and Physiology,
NURS 101: Human Anatomy
Governor's School for Excellence Day (Community Program)

- Biomechanics demonstrations

ASB National Biomechanics Day (Community Program)

- Fall prevention training and balance demonstrations

KAAP 441: Biomechanics and Motor Control

- Guest lecture: Journal Club on the mechanisms of human balance

KAAP 105: Freshman Seminar in Exercise Science

- Guest lecture: Applied Biomechanics

2013 – 2015

Essex County College

W.I.T.S NCCA Accredited Personal Trainer Certification (6 weeks)
Lecture Instruction

- Functional anatomy and biomechanics
- Client risk factor assessment
- Principles in exercise prescription

Lab Instruction

- Strength, endurance, flexibility, & cardiorespiratory assessments

2011 – 2015

Montclair State University

PEMJ 231: Fitness Assessment and Prescription
PEMJ 234: Leadership in Anaerobic Exercise
PEMJ 320: Physiology of Exercise
PEMJ 321: Kinesiology
PEMJ 324: Basic Motor Learning
PEMJ 480: Internship in Exercise Science

2003 – 2008

United States Navy

Tactical combat casualty care (TCCC)

PUBLICATIONS

1. **Pigman, J.**, Reisman, D. S., Pohlig, R. T., Jeka, J. J., Wright, T. R., Conner, B. C., ... Crenshaw, J. R. (2021). Posterior fall-recovery training applied to individuals with chronic stroke: A single-group intervention study. *Clinical Biomechanics*, 82(December 2020), 105249. <https://doi.org/10.1016/j.clinbiomech.2020.105249>
2. Crenshaw, J. R., Petersen, D. A., Conner, B. C., Tracy, J. B., **Pigman, J.**, Wright, H. G., ... Modlesky, C. M. (2020). Anteroposterior balance reactions in children with spastic cerebral palsy. *Developmental Medicine and Child Neurology*, 62. <https://doi.org/10.1111/dmcn.14500>
3. Maritz, C. A., **Pigman, J.**, Silbernagel, K. G., Crenshaw, J. R., (2020) Effects of Backward Walking Training on Balance, Mobility, and Gait in Community-Dwelling Older Adults, *Activities, Adaptation & Aging*, DOI: [10.1080/01924788.2020.1757329](https://doi.org/10.1080/01924788.2020.1757329)
4. **Pigman, J.**, Reisman, D. S., Pohlig, R. T., Jeka, J. J., Wright, T. R., Conner, B. C., Crenshaw, J. R. (2019). Anterior fall-recovery training applied to individuals with chronic stroke. *Clinical Biomechanics*, 69(January), 205–214. <https://doi.org/10.1016/j.clinbiomech.2019.07.031>
5. Tracy, J. B., Petersen, D. A., **Pigman, J.**, Conner, B. C., Wright, H. G., Modlesky, C. M., Crenshaw, J. R. (2019). Dynamic stability during walking in children with and without cerebral palsy. *Gait & Posture*, 72, 182–187. <https://doi.org/10.1016/J.GAITPOST.2019.06.008>
6. Conner, B. C., Petersen, D. A., **Pigman, J.**, Tracy, J. B., Johnson, C. L., Manal, K., Crenshaw, J. R. (2019). The cross-sectional relationships between age, standing static balance, and standing dynamic balance reactions in typically developing children. *Gait & Posture*, 73, 20–25. <https://doi.org/10.1016/J.GAITPOST.2019.07.128>
7. **Pigman, J.**, Reisman, D. S., Pohlig, R. T., Wright, T. R., & Crenshaw, J. R. (2019). The development and feasibility of treadmill-induced fall recovery training applied to individuals with chronic stroke. *BMC neurology*, 19(1), 102. doi:10.1186/s12883-019-1320-8
8. Rapp van Roden, E. A., Petersen, D. A., **Pigman, J.**, Conner, B. C., Tyler Richardson, R., & Crenshaw, J. R. (2018). The Contribution of Counter-Rotation Movements during Fall Recovery: A Validation Study. *Journal of Biomechanics*. <https://doi.org/10.1016/j.jbiomech.2018.07.025>
9. **Pigman, J.**, Sullivan, W., Leigh, S., & Hosick, P. A. (2017). The Effect of a Backpack Hip Strap on Energy Expenditure While Walking. *Human Factors*, 59(8), 1214–1221. <https://doi.org/10.1177/0018720817730179>

PRESENTATIONS

1. J. B. Tracy, M. S. Christensen, D. A. Petersen, **J. Pigman**, B. C. Conner, H. G. Wright, C. M. Modlesky, F. Miller, C. L. Johnson, R. Crenshaw (2021, August). *Between-group differences in gait stability of children with and without cerebral palsy persist when evaluated relative to the pelvic orientation*. Presentation at the American Society of Biomechanics 45th National Meeting, Virtual Meeting.
2. J. B. Tracy, D. A. Petersen, E. A. Rapp van Roden, **J. Pigman**, B. C. Conner, T. Richardson, D. S. Reisman, K. Manal, J. R. Crenshaw (2020, August). *Stroke survivors exhibit little arm contribution to standing, posterior balance reactions*. Presentation at the American Society of Biomechanics 44th National Meeting, Virtual Meeting.
3. M. S. Christensen, J. B. Tracy, **J. Pigman**, J. R. Crenshaw (2019, April). *A validation of margin of stability calculations relative to the pelvic coordinate system during gait*. Poster at the American Society of Biomechanics Regional Meeting, Reading, PA.
4. J. B. Tracy, D. A. Petersen, **J. Pigman**, B. C. Conner, C. M. Modlesky, F. Miller, C. L. Johnson, J. R. Crenshaw (2019, February). *Dynamic stability during walking in children with and without cerebral palsy*. Poster at the College of Health Sciences Research Day, Newark, DE.
5. **J. Pigman**, D. S. Reisman, R. T. Pohlig, T. R. Wright, and J. R. Crenshaw (2019, February). *The Feasibility of Fall-Recovery Training Applied to Individuals with Chronic Stroke*. Poster at the College of Health Sciences Research Day, Newark, DE.
6. J. B. Tracy, D. A. Petersen, **J. Pigman**, B. C. Conner, C. Modlesky, F. Miller, C. Johnson, J.R. Crenshaw (2018, August). *Dynamic stability during walking in children with and without cerebral palsy: A pilot study*. Poster at the 42nd American Society of Biomechanics Annual Meeting, Rochester, MN.
7. **J. Pigman**, D. S. Reisman, R. T. Pohlig, J. R. Crenshaw (2018, August). *The effects of fall-recovery training of single- and multiple-stepping thresholds in individuals with chronic stroke*. Thematic Poster at the 42nd American Society of Biomechanics Annual Meeting, Rochester, MN.
8. D. A. Petersen, B. C. Conner **J. Pigman**, J. B. Tracy, C. M. Modlesky, F. Miller, C. L. Johnson, J. R. Crenshaw (2018, July). *Anteroposterior stepping thresholds in children with and without cerebral palsy*. Poster at the World Congress of Biomechanics Meeting, Dublin, Ireland.
9. J. Matteson, D. A. Petersen, J. B. Tracy, **J. Pigman**, B. C. Conner, C. M. Modlesky, F. Miller, C. L. Johnson, J. R. Crenshaw (2018, April). *Anteroposterior fall-recovery kinematics in children with and without cerebral palsy: A pilot study*. Poster at the American Society of Biomechanics Regional Meeting, Reading, PA.
10. **J. Pigman**, D. S. Reisman, R. T. Pohlig, J. R. Crenshaw (2018, April). *The effects of fall-recovery training of single- and multiple-stepping thresholds in individuals with chronic*

- stroke*. Poster at the American Society of Biomechanics Regional Meeting, Reading, PA.
11. E. A. Rapp, T. Richardson, B. C. Conner, D. A. Petersen, **J. Pigman**, J. R. Crenshaw (2017, August). *Quantifying the contribution of the counter-rotation movements during fall recovery: a validation study*. Poster at the 41st American Society of Biomechanics Annual Meeting, Boulder, CO.
 12. D. A. Petersen, **J. Pigman**, B. C. Conner, J. R. Crenshaw (2017, August). *Constraining the arms reduces posterior, but not anterior, single-stepping thresholds of fall recovery*. Poster at the 41st American Society of Biomechanics Annual Meeting, Boulder, CO.
 13. **J. Pigman**, D. A. Petersen, D. S. Reisman, J. R. Crenshaw (2017, August). *Posterior fall-recovery training of individuals with chronic stroke: preliminary results*. Poster at the 41st American Society of Biomechanics Annual Meeting, Boulder, CO.
 14. R. Delgado, **J. Pigman**, W. Sullivan, S. Leigh, P. A. Hosick, (2016, November). *The effects of a backpack hip strap on energy expenditure while walking*. Podium at the 39th MARC-American College of Sports Medicine Annual Scientific Meeting, Harrisburg, PA.
 15. **J. Pigman**, P. A. Hosick, S. Leigh, (2016, August). *The effects of wearing a backpack hip strap on trunk and knee biomechanics during overground walking and step descending*. Poster at the 40th American Society of Biomechanics Annual Meeting, Raleigh, NC.
 16. B. C. Conner, **J. Pigman**, D. S. Reisman, J. R. Crenshaw (2016, August). *Fall-recovery training of individuals with chronic stroke: a pilot study on the neuromuscular response*. Poster at the 40th American Society of Biomechanics Annual Meeting, Raleigh, NC.
 17. **J. Pigman**, B. C. Conner, D. S. Reisman, J. R. Crenshaw (2016, August). *Fall-recovery training of individuals with chronic stroke: kinematic variables*. Podium at the 40th American Society of Biomechanics Annual Meeting, Raleigh, NC.
 18. **J. Pigman**, B. C. Conner, D. S. Reisman, J. R. Crenshaw (2016, April). *Fall-recovery training of an individual with chronic stroke: a case study on kinematic variables*. Poster at the Center for Biomedical Engineering Research, Newark, DE.

HONORS SCHOOL UNDERGRADUATE THESIS/CAPSTONE SUPERVISION

- 2021 – 2022 Chiara Zambon (capstone), *Achilles tendon ruptures in athletes.*
- 2021 – 2022 Kostandinos Poniros (capstone), *Concussion Prevention in Youth Football: An evidence-based program to prevent concussions in youth football.*
- 2019 – 2022 Antonella Henson-Vendrell (thesis), *Investigating the incidence of anterior cruciate ligament injuries in collegiate women's lacrosse players during season periods and in games versus practices.*
- 2020 – 2021 William Cooke Wharton (thesis), *The occurrence of injuries within the early years of a professional soccer players career compared to the final years before retirement.*

AWARDS AND RECOGNITION

- 2022 Monmouth University Faculty of the Game
- 2018 University of Delaware Summer Doctoral Award \$3,335
- 2017 American Society of Biomechanics Student Travel Award \$250
- 2017 University of Delaware Professional Development Award \$500
- 2016 University of Delaware Professional Development Award \$500
- 2012 Dean's List Montclair State University
- 2008 United States Navy Good Conduct Medal
- 2005 Purple Heart (Operation Enduring Freedom, Afghanistan)
- 2005 United States Navy/United States Marine Corps Achievement Letter

ASSOCIATION MEMBERSHIPS AND PROFESSIONAL ACTIVITIES

2012 – Present	Member of the American Society of Biomechanics
2019 – 2023	First Year Advising Monmouth University
2019 – 2022	Faculty Athlete Mentoring Program Monmouth University
2019	Veterans Day Speech Monmouth University
2019 & 2020	The Monmouth Outlook Interviews (Meal Prepping) & (Online Fitness Classes)
2019	CETL Experiential Learning Workshop Monmouth University
2019	NIH Grant Writing Workshop at the University of Delaware
2018	Summer Institute on Teaching at the University of Delaware

HARDWARE AND SOFTWARE PROFICIENCIES

- LabView programming
- SPSS statistical analysis
- Microsoft office suite
- Learning management systems
 - Desire2 Learn (ecampus)
 - Sakai
 - Canvas
 - Blackboard
- 3D motion analysis systems
 - Qualisys
 - Motion Analysis Corporation
 - The Motion Monitor
 - Vicon
 - OptiTrack
- Visual 3D (C-Motion)
- Force plates
 - Bertec
 - Kistler
 - AMTI
- Actigraph inertial sensors
- Kinovea video/photographic analysis
- Delsys surface electromyography
- ActiveStep perturbation treadmill
- GAITRite mat
- Vmax metabolic cart
- Biodex isokinetic dynamometer
- Red Cross CPR/AED

HOBBIES

- Family Activities
- Learning
- Weightlifting
- Surfing
- Mountain biking
- Skateboarding
- Hiking
- Photography
- Bird watching