

# Turner Jennings

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## Education

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- 2022-Present    **PhD in Mechanical Engineering**    **Northeastern University, Boston, MA, USA**  
Project: *Development of Advanced Energy Absorption Mechanism for TBI reduction in Combat Helmets*  
Advisors: Dr. Sinan Müftü and Dr. Rouzbeh Amini
- 2017-2022    **B.S./M.S. in Mechanical Engineering**    **Northeastern University, Boston, MA, USA**  
Concentration in Mechanics and Design, minor in Mathematics

## Research Experience

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- 2022-Present    **Graduate Research Assistant**    **Northeastern University, Boston, MA, USA**  
Conducting experimental testing of granular materials and developing R and Python data analysis workflows for numerical models of behind helmet blunt trauma.

## Publications

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4. **Jennings, T.**, Amini, R., Müftü, S., Modal Analysis of the Head: In-Silico Characterization of the Structural Vibration Vulnerability of the Brain, *Manuscript in preparation*
3. **Jennings, T.**, Amini, R., Müftü, S., In-Silico Analysis of Helmet Performance: The Effects of the Mesh Size and Impact Location in High-Velocity Impacts, *Manuscript in preparation*
2. Vargas, A., Tarraf, S., **Jennings, T.**, Bellini, C., Amini, R., Vascular Remodeling During Late-gestation Pregnancy: An In-vitro Assessment of the Murine Ascending Thoracic Aorta, *Manuscript in review*
1. Clarin, J., Vargas, I., **Jennings, T.**, Salinas, S., Amini, R., Tjiptowidjojo, Y., Yelle, B., Jacobsen, M., Eide, T., Udberg-Helle, C., Olsen, T., Crossen, J., Prot, V., Skallerud, B., Amini, R., An Experiential Learning Opportunity in Norway: Computation for Bioengineering and Mechanical Engineering Students, *Manuscript in review*

## Mentorship and Volunteering

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### Undergraduates directly mentored:

- 2023    *Aidan T.*: Statistical modelling of helmet ergonomics data in MATLAB and R
- 2023    *Diego A.*: Finite element mesh quality optimization in MATLAB
- 2023    *Lily B.*: Test sample manufacturing process development

### Other Mentorship and Volunteering:

- 2023    **Letters to Pre-Scientists**  
Paired with a middle school student pen pal sending regular letters to help them learn more about careers in STEM.
- 2023    **Northeastern University Young Scholars Program**  
Mentored two high school students during a six-week program mentoring them about the research process and critical skills for higher education.
- 2018-2021    **FIRST LEGO League team coach**  
Coached a team of 8-12 middle school students participating in robotics and design competition.

## Awards

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- 2022-2023    Sami Alsaif Doctoral Fellowship

## Conference Presentations

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|------|---|-------------------------|
| 2024 | Winter Conference for Brain Research                                    | <b>Breckenridge, CO</b> |
| 2023 | Summer Biomechanics, Bioengineering, and Biotransport Conference (SB3C) | <b>Vail, CO</b>         |
| 2023 | ARL Physics of Soldier Protection SP2 Meeting                           | <b>Pittsburgh, PA</b>   |
| 2023 | Winter Conference for Brain Research                                    | <b>Snowbird, UT</b>     |

## Industry Experience

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2020	<b>Manufacturing Quality Intern</b>	<b>Bosch Automotive Technologies, Amata City, Thailand</b>
	Supervised the “Firewall” team, a cross functional group of 12-15 specialists from engineering, production, supply chain, and quality. Coordinated proactive and reactive quality control efforts to ensure more quality issues closed than opened every month.	
2019	<b>R&amp;D Engineering Co-op</b>	<b>DOTS Technology Corp., Natick, MA, USA</b>
	Developed an improved protein extraction system from concept to production, coordinating with contract manufacturers and consultants to create a functional and manufacturable design. The optimized system developed performed comparably to laboratory-grade benchtop equipment while costing less than \$1 to manufacture.	

## Skills

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- **Finite Element Analysis:** LS-DYNA, Altair Hypermesh, Paraview, ANSYS, ABAQUS
- **Programming Languages:** MATLAB, R, Python, C++, HTML/CSS, Julia
- **Software:** SolidWorks (CSWP – Mechanical Design), Simulink, Confluence, Jira, JMP Statistical Analysis
- **Tools:** Split-Hopkinson Pressure Bar, 3D printing, laser cutting, soldering and PCB assembly, shop tools, hand tools

## Affiliations/Memberships

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American Society of Mechanical Engineers (ASME)

Northeastern University Mechanical and Industrial Engineering Graduate Student Council (MIE GSC)