

## **Kurosh Darvish, Ph.D.**

Department of Mechanical Engineering

Temple University

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URL: [Webpage in the College of Engineering Website](#)

### **EDUCATION**

Ph.D. in Mechanical and Aerospace Engineering, Biomechanics (2000)

University of Virginia, Charlottesville, VA

M.S. in Biomedical Engineering, Biomechanics (1994)

Sharif University of Technology, Tehran, Iran

B.S. in Mechanical Engineering, Solids Design (1991)

Sharif University of Technology, Tehran, Iran

### **LEADERSHIP AND ADMINISTRATIVE POSITIONS**

- |              |   |
|--------------|---|
| 2018-present | Chair, Department of Mechanical Engineering, Temple University, Philadelphia, PA  |
| 2014-2018    | Coordinator of Labs, Department of Mechanical Engineering, Temple University, Philadelphia, PA                                    |
| 2005-present | Director, Biomechanics Lab, College of Engineering, Temple University, Philadelphia, PA   |
| 2000-2005    | Director, Computational Biomechanics Research Group, Center for Applied Biomechanics, University of Virginia, Charlottesville, VA |

### **ACADEMIC APPOINTMENTS**

- |              |   |
|--------------|---|
| 2019-present | Professor, Department of Mechanical Engineering, College of Engineering, Temple University, Philadelphia, PA    |
| 2013-2014    | Visiting Associate Professor, Department of Mechanical Engineering, University of Virginia, Charlottesville, VA |

2011–2019	Associate Professor with tenure, Department of Mechanical Engineering, College of Engineering, Temple University, Philadelphia, PA
2005–2011	Assistant Professor, Department of Mechanical Engineering, College of Engineering, Temple University, Philadelphia, PA
2000–2005	Research Assistant Professor, Department of Mechanical Engineering, University of Virginia, Charlottesville, VA
2000	Research Associate, Center for Applied Biomechanics, University of Virginia, Charlottesville, VA
1996–1999	Graduate Research Assistant, Department of Mechanical Engineering, University of Virginia, Charlottesville, VA
1996	Graduate Research Assistant, Department of Materials and Civil Engineering, University of Illinois at Chicago, Chicago, IL
1995	Instructor of Statics and Strength of Materials, Sharif University of Technology, Tehran, Iran
1994–1995	Graduate Research Assistant, Sharif University of Technology, Tehran, Iran

### **OTHER APPOINTMENTS**

1995 – 1996	Chief Computer Programmer, Iran Hospital Information Systems R&D, Tehran Iran
1991 – 1993	Computer Programmer, Tehran Informatics Consultants Company, Tehran, Iran

### **TEACHING EXPERIENCE**

- **At Temple University:** Bionic Human (Gen-Ed), Continuum Mechanics (G), Dynamics (UG), Data Acquisition and Instrumentation Laboratory (UG), Engineering Statics (UG), Experimental Methods (G) cross-listed with Data Acquisition and Analysis for Engineers (UG), Finite Element Analysis (G), Machine Theory and Design (UG), Tissue Biomechanics (G), Vibrations and Controls Laboratory (UG)
- **At the University of Virginia:** Continuum Mechanics (G), Injury Biomechanics (G)
- **At Sharif Institute of Technology:** Statics (UG), Strength of Materials I (UG)

## **PATENTS**

- Wireless Synchronized Data Collection System (Share: 25%), US Provisional Patent, 2003.
- Flexible Variable Differential Transformer (Share: 30%), U.S. Provisional Patent Application No. 62/479,629, filed March 31, 2017.

## **CONSULTING EXPERIENCE**

Expert Witness: Injury Biomechanics; Saffren & Weinberg (2016), Edelstein Martin & Nelson, LLP (2016, 2017)

## **RESEARCH AND OTHER SUPPORT AS SOLE P.I.**

"Temple Undergraduate Fellows in Cardiovascular Bioengineering", American Heart Association Undergraduate Student Research Program, \$40,000 (2/2015-1/2017).

"Development of Finite Element Model of Pilots in Ejecting Seats", Air Force Research Laboratory through Oakridge Institute for Science and Education, \$80,000 (2015-2017).

"Investigation of blood-brain barrier disruption mechanisms as a result of sudden increase in cerebrovascular blood pressure", Office of the Vice President for Research Administration Bridge Funding, \$25,000 (2015).

"Finite Element Modeling of Hybrid III ATD in Horizontal and Vertical Tests", Southwestern Ohio Council for Higher Education, \$23,000 (2014).

"Modeling and Experiments Related to Injury Biomechanics", Sabbatical Support, University of Virginia Center for Applied Biomechanics, \$36,000 (2014).

"Mechanisms of Traumatic Rupture in Arteries", NIH K25 training grant, \$750,000 (7/2008-6/2013).

"Development of Experimental and Computational Models for Traumatic Aortic Rupture", NIH/NHLBI R21, \$400,000 (8/2008-7/2010).

"Determination of High-Rate Material Properties of Brain Tissue", Naval Air Systems Command, subcontract from University of Virginia, \$15,981 (2010).

"Biomechanical Efficiency of Pedicle Sizing Instrument", DePuy Spine, \$15,000 (7/2008-7/2009).

"Mechanical Testing of Pedicle Sizing Instrument", Cooper University Hospital, \$18,000 (2007).

“Investigating the Mechanisms and Mitigation of Traumatic Aortic Rupture”, The Scholler Foundation, \$20,000 (2006).

“Biomechanics of Brain Injury”, Southern Consortium for Injury Biomechanics, \$350,000 (2002-2005).

“Biomechanical Properties of Soft Tissues”, KOREC (Affiliated with the South Korean Government), \$35,000 (2003).

### **STUDENT SUPPORT AS MENTOR**

"Investigation of Blood-Brain Barrier Disruption Mechanisms due to Blast Induced Traumatic Brain Injury", American Heart Association Pre-Doctoral Fellowship for Soroush Assari, \$52,000 (7/2015-6/2017).

Travel Grant from Temple University Creative Arts, Research and Scholarship (CARAS) Program for Thomas Gillin for travel to the SB3C Summer Bioengineering Conference in Tucson, AZ, \$1000. (6/21/17-6/24/17).

"Investigating the Mechanisms of Injury in Traumatic Aortic Rupture" American Heart Association Pre-Doctoral Fellowship for Kaveh Laksari, \$46,000 (7/2011-6/2013).

Fellowship from Ronald E. McNair Post Baccalaureate Achievement Program for Christine Yoo, \$8,700 (2011-2013).

Summer Fellowship from Temple University Diamond Scholar Program for Josiah Oppong Bio, \$2000 (2006)

### **RESEARCH AND OTHER SUPPORT AS CO-PI.**

“Advanced Ballistics Technology: Material Development Characterization and Computational Modeling” (PI: M. Klein), Biomechanics Task (Co-PIs: K. Darvish and M. Wolfson), Cooperative Agreement with Department of the Army, \$9.0M (10/1/20-1/03/24), Darvish Support: \$1.1M.

“Advanced Ballistics Technology: Material Development Characterization and Computational Modeling” (PI: M. Masucci), Biomechanics Task (Co-PIs: K. Darvish and M. Wolfson), Cooperative Agreement with Department of the Army, \$1.4M (10/1/18-9/30/19), Darvish Support: \$186,249.

“Mechanisms and Treatment Strategies to Counter Addiction Susceptibility Post TBI” Collaborative Research on Traumatic Brain Injury (PI: Ramirez, Temple LKSM), PA Cure, The

Pennsylvania Department of Health, \$3.2 M (01/01/2017-10/1/2021). Role: Co-PI, Support: \$469,352.

"Temple University Brain Initiative" (PI: Langford, Temple LKSM), Army Research Laboratory-DoD, \$2.0 M (10/2016-9/2018). Role: Co-PI, Support: \$525,561.

"Development of a Smart Needling Device for Image-Guided Percutaneous Intervention and Delivery of Therapeutic Agents in Prostate" (PI: Podder, T. Jefferson U. and Hutapean, Temple COE), DoD CDMRP, \$1.2 M (2011-2014). Role: Co-PI, Support: \$50,000.

"Neural Effects of Acute Traumatic Brain Injury" (PI: Obeid, Temple COE), Temple University Seed Grant, \$50,000 (2010). Role: Co-PI, Support: \$25,000.

"A biomechanical comparison of retrograde nailing with spiral blade locking versus periarticular locked plating" (PI: Rehman, Temple LKSM), Temple Department of Orthopedic Surgery, \$4000 (2010). Role: Co-Investigator, Support: \$2000.

"Virtual environment head-mounted display for research in sensorimotor adaptation of postural coordination during linear acceleration" (PI: Wright, Temple CPH), Temple Faculty Senate Seed Grant, \$7000 (2009). Role: Co-PI, Support: \$4000.

"Development of a Laboratory to Explore Multimodal Control of Orientation in Space" (PI: Keshner, Temple CPH), Temple Provost Office Seed Grant, \$50,000 (2008). Role, Co-PI, Support: \$25,000

"Full Body Finite Element Model for Pedestrian Impact" (PI: Crandall, UVA), General Motors, \$757,000 (2002-2005). Role: Co-PI, Support: \$400,000.

"Experimental and Numerical Evaluation of Cervical Spine Corpectomy and Strut Graft" (PI: Anderson, UVA), DePuy Spine, \$100,000 (2002). Role: Co-PI, Support: \$30,000.

"Biomechanical Response of Human Surrogates" (PI: Crandall, UVA), National Highway Traffic Safety Administration-DOT, \$4.0 M (2001-2004). Role: Co-Investigator, Support: \$400,000.

## **AWARDS AND HONORS**

### **Awards**

2015: Summer Fellowship at the Wright-Patterson Air Force Base Biomechanics Branch, Oak Ridge Institute for Science and Education.

2014: Summer Internship at the Wright-Patterson Air Force Base Biomechanics Branch, Southwestern Ohio Council for Higher Education.

2007: Summer Faculty Award at the Wright-Patterson Air Force Base AFRL/HE, American Society for Engineering Education.

1997-1998: Dean's Fellowship, University of Virginia.

### **Honors**

1994: MS degree with honors, ranked second in the class of '91. Sharif University of Technology, Tehran, Iran.

1991: Ranked third for graduate admission in biomechanical engineering. Iranian Nationwide Entrance Exam.

1986: Ranked among top 1% of students admitted for undergraduate studies in science and engineering. Iranian Nationwide Entrance Exam.

### **INVITED PRESENTATIONS**

1. "The nonlinear effects in brain tissue are important in predicting traumatic injury", 43<sup>rd</sup> Northeast Bioengineering Conference, 2017, New Jersey Institute of Technology, Newark, NJ
2. "Recent Advances in the Biomechanics of Injury", University of South Carolina Department of Biomedical Engineering, 2016, Columbia, SC.
3. "Summary of Orthopedic Biomechanics Research at the Temple Biomechanics Laboratory", Thomas Jefferson University, 2013, Philadelphia, PA.
4. "Summary of Brain Biomechanics Research at the Temple Biomechanics Laboratory", University of Virginia, 2012, Charlottesville, VA (National).
5. "Summary of Aorta Biomechanics Research at the Temple Biomechanics Laboratory", Nottingham University, 2009, Nottingham, United Kingdom (International).
6. "Biomechanics of Brain Injury", Sharif University of Technology Biomechanics and Rehabilitation Division, 2008, Tehran, Iran.
7. "Overview of Biomechanics Research at Temple", General Dynamics, 2007, WPAFB, OH.
8. "Seminar on the Biomechanics of Traumatic Aortic Rupture (TAR)", Drexel University, 2006, Philadelphia, PA.
9. "Nonlinear Viscoelasticity of Brain Tissue", University of Waterloo Department of Applied Mathematics and Computer Science, 2004, Waterloo, Canada.

10. "An Overview of Brain Biomechanics Research at UVA", Virginia Tech Department of Bioengineering, 2004, Blacksburg, Virginia.
11. "Recent advances in Brain Biomechanics", Northeastern University Department of Mechanical Engineering, 2004, Boston, Massachusetts.
12. "An Overview of Biomechanics of Head Injury", UVA Department of Physical Medicine and Rehabilitation, 2003, Charlottesville, Virginia.
13. "Recent Advances in Biomechanics of Soft Tissues", Azad University Department of Bioengineering, 2003, Tehran, Iran
14. "Biomechanics of Brain Tissue", Sharif University of Technology Department of Mechanical Engineering, 2003, Tehran, Iran.
15. "Biomechanics of Brain Trauma", University of Virginia Department of Neurosurgery, 2000, Charlottesville, Virginia.

## **INTERNATIONAL AND NATIONAL SERVICE**

### **Associate Editor**

2022-present: Frontiers in Medical Technology

### **Organizer: Symposium/Conference**

2012: Northeast Bioengineering Conference, Temple University, Philadelphia, PA.

2009: Mini-Symposium on Aorta Biomechanics, Temple University, Philadelphia, PA.

### **Chair: Conference / Track / Program**

2010: 26th Southern Biomedical Engineering Conference, College Park, MD., College Park, Maryland.

2006: ASME Bioengineering Conference, Organized and Chaired the Brain Biomechanics Session, Amelia Island, Florida.

### **Reviewer: Grant Proposal Related to Expertise**

2016: American Heart Association, Clinical Projects Related to Cardiovascular Mechanics.

2015: American Heart Association, Clinical Projects Related to Cardiovascular Mechanics.

2013: American Heart Association, Clinical Projects Related to Cardiovascular Mechanics.

2012: NIH, Division of Translational and Clinical Sciences, DTSC Special Emphasis Panel.

2010: Temple Sponsored Research Programs, NFL Charities Medical Research candidates' selection.

2010: The City University of New York internal grants.

2010: American Heart Association Bioengineering Study Section.

2009: Temple Sponsored Research Programs, Pew Scholar Program candidates' selection.

2007: American Heart Association Bioengineering Study Section.

2006: American Heart Association Bioengineering Study Section, Dallas, Texas.

2006: The City University of New York internal grants.

2004: National Center for Injury Prevention and Control Grant Program.

2002: National Center for Injury Prevention and Control Grant Program.

**Reviewer: Articles/Manuscripts**

Acta Biomateriala

Annals of Biomedical Engineering

Biomechanics and Modeling in Mechanobiology

Biorheology

Computer Methods in Biomechanics and Biomedical Engineering

Frontiers in Bioengineering

Interface

International Journal for Numerical Methods in Biomedical Engineering.

Journal of Applied Biomechanics.

Journal of Biomechanical Engineering

Journal of Biomechanics

Journal of Engineering in Medicine.

Journal of Neurotrauma

Journal of Shock and Vibration.

Journal of the Mechanical Behavior of Biomedical Materials

Journal of Traffic Injury Prevention.

Medical Engineering and Physics.

Traffic Injury Prevention

Transactions on Neural Systems and Rehabilitation Engineering

**Reviewer: Conference Papers**

American Society of Engineering Educators Annual Conference and Exposition.

ASME International Mechanical Engineering Congress and Exposition (IMECE)

ASME Summer Biomechanics, Bioengineering, and Biotransport Conference (SB3C)

International Research Council on Biomechanics of Injury Annual Conference.

Northeast Bioengineering Conference (NEBEC)

Society of Automotive Engineers Annual Conference.

Southern Biomedical Engineering Conference.



## **UNIVERSITY SERVICE**

Faculty Senate Steering Committee (2012-2013; 2015-2018)

Graduate Board (2012-2013)

Research Programs and Policies Committee (2012)

Research Advisory Committee for Temple Sponsored Research Programs (2009-2010)

University Tenure and Promotion Committee B (2020, 2021)

## **COLLEGE AND DEPARTMENT SERVICE**

Member of Merit Committee (2018)

Chair of Merit Committee (2016)

Faculty Council, Secretary of the Collegial Assembly (2010-2013)

Faculty Council, Vice Chairman of the Collegial Assembly (2009-2010)

Faculty Senate Representative (2012-2013; 2016-2018)

Chair of the department chair search committee (2016-2017)

Faculty Search Committee (2014-2015)

Coordinator of Faculty Search Committee (2012)

Graduate Studies Committee (2010-2011)

Promotion and Tenure Committee (2013)

Ridenour Prize Committee (2009-2010)

Curriculum Evaluation Committee: Dynamics and Vibration Track (2011-2013)

Undergraduate Curriculum Revision: Statics and Vibrations Track (2009-2010)

Doctoral Exam Committee (2009-present)

Master's Thesis Committee Member: Robert Walsh (2022)

Master's Thesis Committee Member: Line Francine (2013)

Master's Thesis Committee Member: Lois Lanaria (2012)

Master's Thesis Committee Member: Mugdha Padalkar (2010)

Master's Thesis Committee Member: Danielle M Holland (2009)

Master's Thesis Committee Member: Naomi D'Souza (2007)

Master's Thesis Committee Member: Sahand Hariri (2009)

Master's Thesis Committee Member: Salam Elbastawisy (2006)

Master's Thesis Committee Member: Yuehao Luo (2007)

PhD Dissertation Committee Member: Samer Al Safadi (present)

PhD Dissertation Committee Member: Subhrodeep Ray (present)

PhD Dissertation Committee Member: Mohsen Derakhshan (present)

PhD Dissertation Committee Member: Mohammad Keshavarzi (2023)

PhD Dissertation Committee Member: Kavi Patel (2022)

PhD Dissertation Committee Member: Xiaolei Song (2022)

PhD Dissertation Committee Member: Qiuting Zhang (2019)

PhD Dissertation Committee Member: Mohammad Sahlabadi (2018)

PhD Dissertation Committee Member: Arash Hanifi (2012)

PhD Dissertation Committee Member: Georgiy Diloyan (2012)

PhD Dissertation Committee Member: Jay Horan (2011)

PhD Dissertation Committee Member: Jong-Ha Lee (2011)

PhD Dissertation Committee Member: Wei Zhang (2011)

PhD Dissertation Committee Member (at UVA): Richard Kent (2002)

## **FORMER GRADUATE STUDENTS AND POST-DOCTORAL FELLOWS**

<b>Name, degree (date) received</b>	<b>Current Affiliation</b>
<b>AT UVA (2000-2005)</b>	
David McDaniel, MS (2004)	COO at BrightSpec, Inc., Charlottesville, VA
Peman Montazemi, MS (2003)	Director of Software Engineering, UCLA School of Management
Costin Untaroui, PhD (2004)	Associate Professor of Biomedical Engineering, Virginia Polytechnic Institute and State University
Majid Minary, MS (2004)	Associate Professor of Mechanical Engineering, University of Texas at Dallas
<b>AT TEMPLE (2005-2017)</b>	
Alan Kaufmann, MS (2013)	Mechanical Engineer at Progressive Technologies Management, Inc., Glenmoore, PA

Ali Hemmasizadeh, PhD (2013)	Analytical Engineer at Panasonic Avionics Corporation, Lake Forest, CA
Cristina Parenti, MS (2010)	Energy Engineer, LEED AP, Rome Italy
Declan Patton, Postdoc (2013)	Post-Doctoral Research Fellow - SIPRC, University of Calgary
Golriz Kermani, PhD (2016)	Part-time Lecturer, Mechanical Engineering, Tufts University, Medford, MA
Hosein Ghodsi, PhD (2015)	Senior Design Engineer - Mechatronics Senior Design Engineer – Mechatronics, ASML, Wilton, CT
Ji Chen, MS (2010)	Visiting Assistant Professor, University of the District of Columbia, Washington D.C.
Jing Bao, MS (2011)	Mechanical Engineer, China
Julie Miller, MS (2012)	Project Engineer at ECRI Institute Headquarters, Plymouth Meeting, PA
Kaveh Laksari, MS (2009), PhD (2013)	Assistant Professor of Biomedical Engineering, University of Arizona
Mehdi Shafieian, MS (2007), PhD (2011)	Associate Professor of Biomedical Engineering, Amirkabir University of Technology, Tehran, Iran
Mobin Rastgar Agah, PhD (2015)	Professor and Engineering Program Coordinator, Norwalk Community College, Norwalk, CT
Pooyan Abbasi, MS (2015)	Biomechanical Engineer at MedStar Union Memorial Hospital, Baltimore, MD
Soroush Assari, MS (2011), PhD (2017), Post-doc (2017-2022)	Exponent, Inc., Philadelphia, PA
Vasily Romanov, MS (2010)	Mechanical Engineer at Tri-Power Design, LLC, Denville, NJ

### **CURRENT GRADUATE STUDENTS AND POST-DOCTORAL FELLOWS**

Fawzi Belguet, MS, Part-time PhD Student Since 2017, Research Topic: Analytical and Computational Modeling of Soft Tissues with Fiber.

Sheida Vafadar, MS, PhD student since Spring 2019, Research Topic: Behavioral Investigation of Rats after Mild Blast Trauma.

Mehrdad Swizi, MS, PhD student since Spring 2023, Research Topic: Machine Learning in Injury Prediction of Soft Tissues.

Suman Jaiswal, PhD (2023, NJIT), Post-doctoral fellow since Fall 202, Research Topic: Behind-armor Thoracic Blunt Trauma

### **SUMMER AND OTHER RESEARCH STUDENTS SUPERVISED**

Seena Amin, Conestoga High School (2023)

Quang Hoang, UG, Temple University (2023)

Jacob Erdlen, UG, Temple University, full-time (2020-2022)

Aditya Kothari, Conestoga High School (2022)

Cyrus Darvish, UG, Penn State (2019)

Harleen Suri, UG, Cornell University (2019)

Deborah Wang, UG, Temple University (2019)

Ola Mahmoud Sharaf, BS, Temple University, full-time (2017-8/2018)

Ian Hendricks, BS, Temple University (2017-10/2018)

Julia Marcantoni, UG, Temple University (2018)

Ilia Goodstein, BS, Temple University (2016)

Thomas Gillin, UG, Temple University (2016)

Jean Theodore, BS, Temple University (2015, 2016)

Paul Romanov, UG, Temple University (2015)

Matthew Humbert, UG, Temple University (2015)

Charles Mitchell, UG, Temple University (2015)

Keina A. Thorpe, UG, Temple University (2015)

Alex Reiff, UG, Temple University (2015)

Raffael Longo, UG, Temple University (2014)

Ahmed Mahmoud, MS, Temple University, MS thesis adviser (2013)

Kevin R. Boland, UG, Temple University (2013)

Meghan Kelly, UG, Temple University (2012)

Mohammad Shahidul Islam, Grad, Temple University (2010)

Farnoush Farid, Grad, George Washington University (2010)

Karl Lewis, UG, Temple University (2010)

Nana Boateng, UG, Temple University (2010)

Lizeth Hernandez, UG, University of Florida (2009)

Caitlin O'Connell, UG, University of Rochester (2009)

Karolina Galler, Grad, Temple University (2009)

Mojtaba Safabakhsh, Temple University, MS project adviser (2008)

David Clements Jr, Grad, Drexel University (2007)

Banafsheh Barabadi, Grad, Villanova (2007)

Stefan Reddi, UG, Temple University (2007)

Shane Horan, UG, Temple University (2007)

Danielle C Savage, UG, Temple University (2007)

Vasily Romanov, UG, Temple University (2006, 2007)

Tommy Pang, UG, Temple University (2006)

Josiah Oppong Bio, UG, Temple University (2006), Received Diamond Scholar Award

Mawran El-Mogarbel, Grad, Temple University (2006)

## **SUPERVISED UNDERGRADUATE SENIOR DESIGN PROJECTS**

2022-2023:

Kyle Ross Kealey, Jarred Kline, Quang Hoang, "Fatigue Testing Device" continuation.

2021-2022:

1. Isabella Abbamondi, Eric Pataki, Steven Bryan, "Fatigue Test Device".
2. Madison McGovern, Cole Everett Sminkey, David W Vaughn, "Tabletop Hydroelectric Power Generator".
3. Matthew John Skilton, Brian Christopher Hagopian, Jonny Sileo "Rock Crusher to Tire Recycling", Sponsored by GRSI, Inc.

2019-2020

1. Will Nardone, Albert Wolf, Leah McLaughlin, Dom Callovini, Daren Bolton, Christian Wanamaker, "Hydroelectric Generator".
2. Michael McGillen, Joseph Ebert, Saad Albaqawi, "Particle Velocimetry Lab"

2018-2019:

1. Sijie He, Shaokuan Yu, Jeffrey Lenherr, Thuyen Huynh, "Tire Recycling System".
2. Taj Valentine, Deondre Robinson, Dasia Newton, "Lambda Chair".

2017-2018:

1. Liqaa Alotair, Scott Alvarez, Mable Bakali, Emma Veloso, "Design and Fabrication of a Rotarod Machine for Rats".
2. Nawaf Murad, Karan Puri, Reem Alarbeed, Sodiq Bakare, "A Device to Induce Head Rotational Acceleration during Linear Acceleration in Rats".

2016-2017:

1. Mostafa Elkohil, Michael Cowan, "Flexible Variable Differential Transformer: Sensor for Aortic Deformation in vivo". (Filed for Provisional Patent)
2. Andres Arrubla, David Antonacci, Lee Roach, Moustafa Barakat, "Theoretical Design for Piezoelectric Internal Energy Harvesting".

2015-2016:

1. Iliia Goldstein, Matthew Humbert, Charles Mitchell, Paul Romanov, "Sensor to Measure Direct Wall Shear Stress in Blood Vessels".
2. Samir P. da Silva, Alex Reiff, Jean Theodore, Axel Zamora, "Pneumatic High Rate Tissue Shear and Compression Testing Device".
3. Cassandra Benner, Jesse Swarbrick, Colin Thatcher, "Design and Fabrication of a Powered Femoral Broach Handle".
4. Abdullah I. Abdullah, Masoud M. Salloum, Zihao Zhou, "Wrist guard: Design and fabrication of a forearm model to test wrist guards"

2014-2015:

1. An Chang, Dave Rowe, Adam King, Kyle Febert, Design and Analysis of Wrist Guard Under Impact”.
2. Kevin Boland, Jessica Breiner, Ed Gunn, “Developing a High Strain-Rate Material Testing set-up”.

2013-2014:

Christine Yoo (BS/MS), “Measurement of the Bulk Modulus of Brain Tissue”.

2012-2013:

1. Rohan Greenfield, Drew Kraus, James Love, “Testing of Brain Injury with Shocktube”.
2. Binu Mathew, Kenneth Mosely, “Mechanical Handchime Player for the Disabled”.
3. Mark Eckert, Mathew Galicia, Scott Tillman, Liam Shea, “Handicap Accessible Playground”.

2011-2012:

Frank Bolger, Ben Sauers, Ray Cornely, “Design and Fabrication of a Shock Tube for Conducting Brain Injury Experiments in Rats”.

2010-2011:

Yasutatsu Sugai, Larry Williams, Julio Vazquez, and Gaurang Makadia, “Perineum Replication for Steerable Needle Research”.

2007-2008:

Chris Bushek, Daniel Meloche, Steve Miller, and Marc Antoliol, “Design and Fabrication of Below-Knee Athletic Prosthesis”. (This Project won the 2008 Ridenour Prize)

## **EXTRACURRICULAR ACTIVITIES**

2009: Piano Solo Recital at Shabahang Persian Cultural Society, Lawrence Hall, Rosemont College, Rosemont, PA.

2009: Piano Solo Recital at University of Pennsylvania Iran Day Celebration, Philadelphia, PA.

2006, 2007, 2008: Music Performances (Piano and Voice) at Shabahang Persian Cultural Society, Lawrence Hall, Rosemont College, Rosemont, PA.

2004-2005: Director of the Persian Ensemble of Charlottesville (4 members). Music Performances in Charlottesville: Wesley Memorial Church (2004), Thomas Jefferson Unitarian Church (2004), and Prism (2004) aired on WTJU.

1993-1995: Solo Classical Piano Performances in Tehran, Iran: Austrian Cultural Society (1993, 1995), School of Radio and Television (1993).



## PUBLICATIONS

[Google Scholar Page](#)

### PEER-REVIEWED PUBLICATIONS

Student-trainee co-authors underlined

1. Jones, C.M., Morway, G.R., Gutowski, C.J. and **Darvish, K.** (2023) Radiographic Comparison of Forearm Symmetry in Healthy Individuals and its Importance in the Diagnosis of Longitudinal Radioulnar Dissociation. *The Journal of Hand Surgery*. In press.
2. Chen, J., Wright, W.G., Keshner, E. and **Darvish, K.** (2022) Design and usability of a system for the study of head orientation. *Frontiers in Rehabilitation Sciences*, 3, p.978882.
3. Wolfson, M.R., Pleshko, N., **Darvish, K.**, Marcinkiewicz, M., Wu, J., Rakymzhan, A., Kyada, R., Enkhbaatar, P., Fukuda, S., Nelson, C. and Williams, R.O. (2019) Understanding Airway Casts Secondary to Inhalational Smoke-Induced Acute Lung Injury (ISALI): Independent Assessment Tools of Composition and Fibrinolysin Impact. In A25. *CRITICAL CARE: THE WIND IN THE WILLOWS-ARDS: OF SWINE AND MEN* (pp. A1153-A1153). American Thoracic Society.
4. Karchner J.P., Yousefi F., Bitman S.R., **Darvish K.**, and Pleshko N. (2019) Non-Destructive Spectroscopic Assessment of High and Low Weight Bearing Articular Cartilage Correlates with Mechanical Properties, *Cartilage*, 10(4), 480-490.
5. Reilly, M., **Darvish, K.**, Assari, S., Cole, J., & Gokcen, E. (2018). Plantar Plate Reconstruction for Stage IV Plantar Plate Tear Using Flexor Tendon Tenodesis. *Foot & Ankle Orthopaedics*, 3(3), 2473011418S00399.
6. Reilly, M., **Darvish, K.**, Assari, S., Cole, J., Wilps, T., & Gokcen, E. (2018). Evaluating the Subtalar Joint in Tibiotalocalcaneal Nail. *Foot & Ankle Orthopaedics*, 3(3), 2473011418S00400.
7. Greenhill, D. A., Abbasi, P., **Darvish, K.**, and Star, A. M. (2017). Broach Handle Design Changes Force Distribution in the Femur During Total Hip Arthroplasty. *The Journal of arthroplasty*, 32(6), 2017-2022.
8. Kermani, G., Hemmasizadeh, A., Assari, S., Autieri, M., and **Darvish, K.** (2017). Investigation of inhomogeneous and anisotropic material behavior of porcine thoracic aorta using nano-indentation tests. *Journal of the Mechanical Behavior of Biomedical Materials*, 69, 50-56.

9. Wolfson, M. R., Pleshko, N., **Darvish, K. K.**, Baker, S. T., Wu, J., Kyada, R., Nelson, C., Fukuda, S., Enkhbaatar, P., Florova, G. and Komissarov, A. A. (2017). Differential Impact of Fibrinolysins on Airway Cast Composition and Mechanical Properties Assessed by a Novel Infrared Imaging and Microindentation Approach. In *B105. CRITICAL CARE: MECHANISTIC AND TRANSLATIONAL INSIGHTS INTO ARDS* (pp. A4789-A4789). American Journal of Respiratory and Critical Care Medicine, Volume 195.
10. Rastgar Agah, M., Laksari, K., Assari, S., and **Darvish, K.** (2017). Mechanical behavior of porcine thoracic aorta in physiological and supra-physiological intraluminal pressures. *Proceedings of the Institution of Mechanical Engineers, Part H: Journal of Engineering in Medicine*, 231(4), 326-336.
11. Gutowski, C. J., **Darvish, K.**, Ilyas, A. M., and Jones, C. M. (2017). Interosseous Ligament and Transverse Forearm Stability: A Biomechanical Cadaver Study. *The Journal of hand surgery*, 42(2), 87-95.
12. Tyburski, A. L., Cheng, L., Assari, S., **Darvish, K.**, and Elliott, M. B. (2017). Frequent mild head injury promotes trigeminal sensitivity concomitant with microglial proliferation, astrocytosis, and increased neuropeptide levels in the trigeminal pain system. *The journal of headache and pain*, 18(16), 1-12.
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## **PRESENTATIONS, CONFERENCE PAPERS AND ABSTRACTS**

1. Vafadar, S., Li, H., Assari, S., Ward, S.J, Tuma, R.F., **Darvish, K.** (2023) "Behavioral Impairments in Repetitive Mild Traumatic Brain Injury", *SB3C Summer Biomechanics, Bioengineering and Biotransport Conference*, June 4-8, Vail, CO
2. Vafadar, S., Li, H., Ward, S.J, Tuma, R.F., **Darvish, K.** (2023) "The effect of repetition pattern on sub-acute behavioral deficits following repetitive mild Traumatic Brain Injury", Northeast Bioengineering Conference, Philadelphia, PA.
3. **Darvish, K.**, Assari, S., Erdlen, J., Lynch, J., Bobrove, J., Kehare, H., Marcinkiewicz, M., Rafaels, K., Matheis, E., Kleinberger, M., and Wolfson, M. R. (2022) "In Vivo Model of Behind-Armor Blunt Trauma to Study the Effects of Impact Velocity and Chest Deformation on Lung Injury", IMECE2022-96577, International Mechanical Engineering Congress and Exposition, Columbus, OH.
4. Vafadar, S., Li, H., Assari, A., Langford, D., Ward, S. J., Tuma, R. F., **Darvish, K.** (2022) "Repeated Mild Brain Injury Induced by Blast and Acceleration: A Comparative Study", IMECE2022-99829, International Mechanical Engineering Congress and Exposition, Columbus, OH.
5. Assari, S., Erdlen, J., Lynch, J., Bobrove, J., Marcinkiewicz, M., Rafaels, K., Matheis, E., Kleinberger, M., **Darvish, K.**, and Wolfson, M. R. (2022) "Effects of Impact Velocity and Chest Deformation on Lung Injury: In Vivo Model to Elucidate Behind-Armor Blunt Trauma", MHSRS\_22-05411, Military Health System Research Symposium, Orlando, FL.
6. Vafadar, S., Assari, A., Langford, D., Li, H., Ward, S. J., Tuma, R. F., **Darvish, K.** (2022) "Comparison of blast-induced and acceleration-induced mild brain injury: new insights into the mechanisms of brain tissue damage", Northeast Bioengineering Conference, New York, NY.
7. Vafadar, S., Assari, S., **Darvish, K.**, Li, H., Langford, D., Ward, S., Tuma, R. (2020) "Effects of Cannabinoid CB2 receptor activation in a rat model of blast brain injury", Online Presentation at the Philadelphia Chapter of the Society for Neuroscience.
8. Alturkestani, B., Assari, S., Sharaf, O.M, Hendricks, I., Ward, S.J., Tuma, R.F., and **Darvish, K.** (2019) "The Effect of a Cannabinoid Receptor 2 Agonist on Motor Function after Blast-Induced Neurotrauma" *SB3C2019 Summer Biomechanics, Bioengineering and*

*Biotransport Conference*. June 25 -28, Seven Springs, PA, USA, Finalist for Best Undergraduate Poster Award.

9. Keum, D., Assari, S., and **Darvish, K.** (2019) "Shock Wave Propagation in Brain Tissue" *SB3C2019 Summer Biomechanics, Bioengineering and Biotransport Conference* June 25 -28, Seven Springs, PA, USA
10. Assari, S., and **Darvish, K.**, (2018) "Brain tissue material and damage properties for blast trauma", Proceedings of the ASME 2018 International Mechanical Engineering Congress and Exposition, IMECE2018-88419, November 9-15, Pittsburgh, PA.
11. **Darvish, K.**, Hemmasizadeh, A., and Assari, S., (2018) "Changes in the material properties of aorta due to trauma", 8th World Congress of Biomechanics 2018, July 8 – 12, The Convention Centre, Dublin, Ireland.
12. Assari, S., and **Darvish, K.**, (2018) "Material behavior of brain tissue at loading rates simulating blast trauma", 8th World Congress of Biomechanics 2018, July 8 – 12, The Convention Centre, Dublin, Ireland.
13. Gillin, T., Hemmasizadeh, A., Gligorijevic, B., and **Darvish, K.**, (2017) "Quantification of Porcine Aorta Proteins Orientation Using Multiphoton Fluorescent Microscopy and Image Processing", 43<sup>rd</sup> Northeast Bioengineering Conference, 2017, New Jersey Institute of Technology, Newark, NJ.
14. Elkohil, M., Cowan, M., and **Darvish, K.**, (2017) "Sensor for Aortic Deformation in Situ", 43<sup>rd</sup> Northeast Bioengineering Conference, 2017, New Jersey Institute of Technology, Newark, NJ.
15. Assari, S., and **Darvish, K.** (2017) "Scaling of Mild Blast Brain Injury from Rat to Human", 43<sup>rd</sup> Northeast Bioengineering Conference, 2017, New Jersey Institute of Technology, Newark, NJ. (second place for best presentation).
16. Gillin, T., Hemmasizadeh, A., Gligorijevic, B., and **Darvish, K.**, (2017) "Characterization of Transmural Morphological Properties in Porcine Thoracic Descending Aorta using Multiphoton Fluorescent Microscopy and Image Processing", SB3C2017, Summer Biomechanics, Bioengineering and Biotransport Conference, June 21 – 24, Tucson, AZ, USA
17. Assari, S., and **Darvish, K.** (2017) "Characterization of Brain Tissue under High Rate Shear Loading: a novel test method with low noise", 13th Annual Injury Biomechanics Symposium, Ohio State University, Columbus, Ohio.
18. Assari, S., Kermani, G., Hemmasizadeh, A., Barbe, M., and **Darvish, K.**, (2016) "Heterogeneity of Viscoelastic Behavior of Rat Brain", SB3C2016, Summer

Biomechanics, Bioengineering and Biotransport Conference, June 29 –July 2, National Harbor, MD, USA

19. Reiff, A., M., Assari, S., Elliot, M., and **Darvish, K.** (2016) “Characterization of Head Kinematics in a Rodent Closed Head Injury Model”, 12th Annual Injury Biomechanics Symposium, Ohio State University, Columbus, Ohio.
20. Greenhill, D.A., **Darvish K.**, and Star, A.M. (2015) “Minimally Invasive Total Hip Arthroplasty: Can We Reduce the Likelihood of Intraoperative Fracture?”, 2015 Annual Meeting of American Academy of Orthopedic Surgeons. Las Vegas, NV.
21. Abbasi, P., **Darvish, K.**, Gutowski, C., Jones, C.M., and Ilyas, A.M. (2015) *Investigation of Distal Radius Fracture due to Fall on Out-stretched Hand and Evaluation of Protection with Wrist Guards*, 11th Annual Injury Biomechanics Symposium, Ohio State University, Columbus, OH.
22. Ghodsi, H., and **Darvish K.** (2014) “A Quasilinear Viscoelastic Model for Collagen Molecule Based on in Silico Creep Tests”, 7th World Congress of Biomechanics, Boston, MA.
23. Laksari, K., and **Darvish, K.** (2014) “Material Properties of Brain Tissue for Blast Rate Loadings and their Implication in Formation of Shock Waves”, 7th World Congress of Biomechanics, Boston, MA.
24. Rastgar Agah, M., Assari, S., Rachev, A., and **Darvish, K.** (2014) “High Rate Failure Properties of Aortic Tissue”, 10th Annual Injury Biomechanics Symposium, Ohio State University, Columbus, Ohio.
25. Assari, S., Hemmasizadeh, A., and **Darvish, K.** (2014) *Mechanical Heterogeneity of Rat Brain Measured Using a Micro-Indentation Technique*, 10th Annual Injury Biomechanics Symposium, Ohio State University, Columbus, OH.
26. Rastgar-Agah, M., Assari, S., Longo, R., Rachev, A., and **Darvish, K.** (2014) “Constitutive Modeling of Aorta for Traumatic Rupture from High Rate Uniaxial Extension Tests”, 7th World Congress of Biomechanics, Boston, MA.
27. Assari, S., Laksari, K., Barbe, M., Choi, E., and **Darvish, K.** (2013) “Effect of Blast Wave on Cerebral Blood Pressure during Blast Exposure in a Rat Injury Model”, 2013 BMES Annual Meeting, Seattle, WA.
28. Assari, S., Laksari, K., and **Darvish, K.** (2013) “Cerebral Blood Pressure Rise during Blast Exposure in a Rat Model of Blast-Induced Traumatic Brain Injury”, 39th annual Northeast Bioengineering Conference, Syracuse, NY.



29. Rastgar Agah, M., Laksari, K., and **Darvish K.** (2013) “Material Characterization of Porcine Aortic Segments from Sinusoidal and Impulsive Pressurization”, 2013 Materials Research Society Spring Meeting and Exhibit, San Francisco, CA.
30. Rastgar-Agah, M., and **Darvish, K.** (2013) “Theoretical Study of Dynamic Viscoelastic Behavior of Aorta under Impulsive Internal Pressure”, 39th annual Northeast Bioengineering Conference, Syracuse, NY.
31. Laksari, K., Assari, S., and **Darvish, K.** (2013) “Computational Simulation of Shock Tube and the Effect of Shock Thickness on Strain-Rates”, 39th annual Northeast Bioengineering Conference, Syracuse, NY.
32. Kermani, G., Laksari, K., and **Darvish, K.** (2013) “Biomechanical Properties of Human Aorta from Dynamic Biaxial Loading”, 39th annual Northeast Bioengineering Conference, Syracuse, NY.
33. Hemmasizadeh, A., Cheheltani, R., Assari, S., Pleshko, N., and **Darvish, K.** (2013) “Spatial Variation in Aorta Composition and Correlation with Mechanical Properties”, 39th annual Northeast Bioengineering Conference, Syracuse, NY.
34. Hemmasizadeh, A., Assari, S., Autieri, M., and **Darvish, K.** (2013) “Determination of Correlations between Mechanical and Microstructural Properties of Aorta by Nanoindentation Technique”, 50<sup>th</sup> Annual Technical Meeting, Society of Engineering Science, Brown University, RI.
35. Cheheltani, R., Hemmasizadeh, A., Assari, S., Pleshko, N, Kiani, M.F., and **Darvish, K.** (2013) Spatial variation of protein and elastic lamellae along aortic media. Proc. Fall BMES Mtg.
36. Assari, S., Laksari, K., Barbe, M. and **Darvish, K.** (2013) “Cerebral Blood Pressure Rise during Blast Exposure in a Rat Model of Blast-Induced Traumatic Brain Injury”, *IMECE2013-64992, Proceedings of ASME International Mechanical Engineering Congress and Exposition IMECE 2013, San Diego, CA.*
37. Laksari, K., Assari, S., and **Darvish, K.** (2013) “Computational Comparison of Shock Wave Propagation in Explosive Blast and Shock Tube Experiments”, *IMECE2013-65073, Proceedings of ASME International Mechanical Engineering Congress and Exposition IMECE 2013, San Diego, CA.*
38. Hemmasizadeh, A., Assari, S., Rastgar Agah, M., Autieri, M., and **Darvish, K.** (2013) *Effect of Mild Blunt Trauma on Mechanical Properties of Aorta*, 9th Annual Injury Biomechanics Symposium, Ohio State University, Columbus, OH.

39. Laksari, K., Rastgar Agah, M., Rachev, A., and **Darvish, K.** (2012) “Investigating the Effects of Dynamic and Static Loading on the Stability of Porcine Aorta”, 38th annual Northeast Bioengineering Conference, Philadelphia, PA.
40. Rastgar Agah, M., Laksari, K., and **Darvish, K.** (2012) “Investigating the Hyperelasticity of Porcine Aorta under Sub-failure Loading”, 38th annual Northeast Bioengineering Conference, Philadelphia, PA.
41. Hemmasizadeh, A., **Darvish K.**, and Autieri M. (2012) “Material Properties of Different Layers of Aorta”, 38th annual Northeast Bioengineering Conference, Philadelphia, PA.
42. Kermani, G., and **Darvish K.** (2012) “Local Material Properties of Human Aorta under Dynamic Biaxial Loading”, 38th annual Northeast Bioengineering Conference, Philadelphia, PA.
43. Rastgar Agah, M., Laksari, K., **Darvish, K.**, and Rachev, A. (2012) “Buckling of Porcine Aorta under Static and Dynamic Loading”, SBC2012-80931, Proceedings of the ASME 2012 Summer Bioengineering Conference, Fajardo, Puerto Rico.
44. Laksari, K., Rastgar Agah, M., and **Darvish, K.** (2012) “Hyperelastic Behavior of Porcine Aorta in Sub-Injury Pressures”, SBC2012-80871, Proceedings of the ASME 2012 Summer Bioengineering Conference, Fajardo, Puerto Rico.
45. Hemmasizadeh A., **Darvish K.**, and Autieri M. (2012) “Characterization of Multilayer Material Properties of Descending Aorta”, SBC2012-80868, Proceedings of the ASME 2012 Summer Bioengineering Conference, Fajardo, Puerto Rico.
46. Dalta, N.V., Honarvar, M., Hguyen, T.M., Konh, B, **Darvish, K.**, Yu, Y., Dicker, A., Podder, T., and Hutapea, P. (2012) “Towards a Nitinol Actuator for an Active Surgical Needle”, ASME 2012 Conference on Smart Materials, Adaptive Structures and Intelligent Systems, Volume 2: Mechanics and Behavior of Active Materials; Integrated System Design and Implementation; Bio-Inspired Materials and Systems; Energy Harvesting, Stone Mountain, Georgia, USA, September 19–21.
47. Rastgar Agah, M., Laksari, K., and **Darvish, K.** (2012) “Hyperelastic Behavior of Porcine Aorta under Sub-Failure Inflation Loading”, *8th Annual Injury Biomechanics Symposium*, Ohio State University, Columbus, OH.
48. Hemmasizadeh A., S. Assari, **Darvish K.**, and Autieri M. (2012) “Multilayer Quasi-Linear Viscoelastic Characterization of Porcine Aorta Using Nanoindentation”, *8th Annual Injury Biomechanics Symposium*, Ohio State University, Columbus, OH. (Received Honorable Mention)

49. Napoli, A., Barbe, M., **Darvish, K.**, and Obeid, I. (2012) "Assessing Traumatic Brain Injuries using EEG Power Spectral Analysis and Instantaneous Phase", Engineering in Medicine and Biology Society (EMBC), 2012 Annual International Conference of the IEEE, 4692-4695.
50. Shafieian, M., Bao, J., and **Darvish, K.** (2011) "Mechanical Properties of Brain Tissue in Strain Rates of Blast Injury", Proceedings of the Northeast Bioengineering Conference, NEBEC2011, RPI, NY. Won First Place Student Award.
51. Hutapea, P., **Darvish, K.**, and Podder, T. (2011) "Smart Needling System for Fully Conformal Radiation Dose Delivery in Treating Prostate Cancer", Proceedings of the ASME 2011 Summer Bioengineering Conference, SBC2011-53942, Famington, PA.
52. Assari, S., **Darvish, K.**, and Ilyas, A. M. (2011) "A Biomechanical Study of Scaphoid Headless Screws", Proceedings of the ASME 2011 Summer Bioengineering Conference, SBC2011-53854, Famington, PA.
53. Romanov, V., Rastgar Agah, M., and **Darvish, K.** (2011) "Viscoelastic Properties of Aorta from Oscillatory Pressure Tests", Proceedings of the ASME 2011 Summer Bioengineering Conference, SBC2011-53771, Famington, PA.
54. Laksari, K., **Darvish, K.**, and Sadeghipour, K. (2011) "Shock Wave as a Mechanism of Injury in Soft Tissues", Proceedings of the ASME 2011 Summer Bioengineering Conference, SBC2011-53823, Famington, PA.
55. Hemmasizadeh, A., Parenti, C., and **Darvish, K.** (2011) "Material Properties of Aorta from Nanoindentation Tests", Proceedings of the ASME 2011 Summer Bioengineering Conference, SBC2011-53920, Famington, PA.
56. Assari, S., **Darvish, K.**, and Ilyas, A. M. (2011) "Comparison of Five Headless Screws for Fixation of Small Bones", American Society of Biomechanics, ASB 2011, Long Beach, CA.
57. Rastgar Agah, M., **Darvish, K.**, Wright, W. G., and Keshner, E. (2011) "Dependency of Spatiotemporal Characteristics of Head Stabilization on Visual and Inertial Stimulation", American Society of Biomechanics, ASB 2011, Long Beach, CA.
58. Shafieian, M., Bao, J., and **Darvish, K.** (2011) "Material Properties of Brain Tissue under Blast-Rate Deformations", *7th Injury Biomechanics Symposium, Ohio State University, Columbus, OH.*
59. Laksari, K., Shafieian, M., **Darvish, K.**, and Sadeghipour, K. (2011) "Shock Wave Propagation as a Mechanism of Injury In Nonlinear Viscoelastic Soft Tissues",

*Proceedings of the ASME 2011 International Mechanical Engineering Congress and Exposition, IMECE 2011-64717, Denver, CO.*

60. Romanov V., Laksari, K., Assari, S. & **Darvish, K.** (2010) "Pressure Oscillation Test of Porcine Aorta", *ASME 2010 Summer Bioengineering Conference, Naples, FL.*
61. Clements, D. H., Clements, D. H., Colip, C., Betz, R. R., Shafieian, M., and **Darvish, K.** (2010). The Effect on Pedicle Screw Pullout Strength of Optimizing Pedicle Fill Using a Tool to Size the Pedicle. *17th International Meeting on Advanced Spine Techniques.*
62. Laksari, K., Assari, S., & **Darvish, K.** (2010). Evaluating Brain Strain and Stress in Linear Head Impact. *26th Southern Biomedical Engineering Conference, College Park, MD.*
63. Romanov, V., Assari, S., & **Darvish, K.** (2010). Oscillating Pressure Experiments on Porcine Aorta. *26th Southern Biomedical Engineering Conference, College Park, MD.* (Received Honorable Mention and Award)
64. Romanov, V., Assari, S., & **Darvish, K.** (2010). Oscillating Pressure Experiments on Porcine Aorta. *6th Injury Biomechanics Symposium, Ohio State University, Columbus, OH.* (Received Student Travel Award)
65. Shafieian, M. & **Darvish, K.** (2010). An Experimental and Finite Element Model for Traumatic Injury in Aorta. *6th Injury Biomechanics Symposium, Ohio State University, Ohio State University, Columbus, OH.* (Received Student Travel Award)
66. Shafieian, M. & **Darvish, K.** (2010). Modeling the Traumatic Aortic Rupture. *26th Southern Biomedical Engineering Conference, College Park, MD.*
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## DISSERTATION

**Darvish, K. K.** (2000). Characterization of nonlinear viscoelastic properties of brain tissue using forced vibrations. University of Virginia.

## LOCAL PRESENTATIONS AND POSTERS

1. Vafadar S., Assari, S., Eslden, J., Ward, S., Tuma, R., and **Darvish K.** (2022) The effect of Repetitive Mild Traumatic Brain Injury on Cognitive and Motor Functions in Rats.

Engineer's Week Graduate Student Research Poster Competition, Temple University College of Engineering, Philadelphia, PA.

2. Assari S., Laksari, K., and **Darvish, K.** (2013) *Cerebral Blood Pressure Rise during Blast Exposure in a Rat Model of Blast-Induced Traumatic Brain Injury*, Graduate Student Poster Competition, College of Engineering, Philadelphia, PA. (Ranked First).
3. Laksari, K., Bao, J., Shafieian, M., **Darvish, K.**, and Sadeghipour, K. (2011). *Brain Blast-rate Biomechanics*. Graduate Student Poster Competition, College of Engineering, Philadelphia, PA.
4. Assari, S., **Darvish, K.**, and Ilyas, A. M. (2011). *A Biomechanical Study of Scaphoid Headless Screws*. Graduate Student Poster Competition, College of Engineering, Philadelphia, PA.
5. Laksari, K., Assari, S., and **Darvish, K.** (2010). *Modeling the Head Impact and the Effect of Cerebrospinal Fluid*. Graduate Student Poster Competition, College of Engineering, Philadelphia, PA.
6. Romanov, V., Assari, S., Laksari, K., and **Darvish, K.** (2010). *Pressure Oscillation Tests of Porcine Aorta.*, Graduate Student Poster Competition, College of Engineering, Philadelphia, PA.
7. Chen, J. and **Darvish, K.** (2009). *Head-Trunk Coordination in Subjects with Two Motor Neuron Diseases during Linear Anterior-Posterior Translations*. Graduate Student Poster Competition, Temple University College of Engineering, Philadelphia, PA.
8. Laksari, K. and **Darvish, K.** (2009). *Experimental and Computational Analysis of Brain Deformations in Linear Head Impact*. AIAA/ASME 4th Annual Aerospace/Mechanical Engineering Mini-Symposium, Plymouth Meeting, PA.
9. Parenti, C. and **Darvish, K.** (2009). *Multilayer Properties of Aorta*. Graduate Student Poster Competition, Temple University College of Engineering, Philadelphia, PA. (Ranked Second).
10. Shafieian, M. and **Darvish, K.** (2009). *In Vitro and Finite Element Models for Traumatic Injury in Porcine Thoracic Aorta*. Graduate Student Poster Competition, Temple University College of Engineering, Philadelphia, PA.
11. Shafieian, M. and **Darvish, K.** (2009). *In Vitro and Finite Element Models for Traumatic Injury in Porcine Thoracic Aorta*. AIAA/ASME 4th Annual Aerospace/Mechanical Engineering Mini-Symposium, Plymouth Meeting, PA.

12. Laksari, K., Parenti, C., Shafieian, M., and **Darvish, K.** (2008). *Determination of the Poisson's Ratio of Brain Tissue*. Graduate Student Poster Competition, Temple University College of Engineering, Philadelphia, PA.
13. Shafieian, M., Laksari, K., Barabadi, B., and **Darvish, K.** (2008). *Simulation of Brain Kinematics in Linear Head Impact*. Graduate Student Poster Competition, Temple University College of Engineering, Philadelphia, PA.
14. Shafieian, M. and **Darvish, K.** (2007). *Material Properties Of Rat Brain Tissue In Vivo and In Situ*. AIAA/ASME 3rd Annual Aerospace/Mechanical Engineering Mini-Symposium, Plymouth Meeting, PA.
15. Shafieian, M. and **Darvish, K.** (2007). *Effect of TBI on Material Properties of Rat Brain Tissue*. Student Poster Competition, College of Engineering, Philadelphia, PA. (Ranked Second).
16. Shafieian, M. and **Darvish, K.** (2006). *In Vivo and In Situ Material Properties of Brain Tissue*. AIAA/ASME 2nd Annual Aerospace/Mechanical Engineering Mini-Symposium, Plymouth Meeting, PA.

## REFERENCES

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