

Haneesh Kesari

Associate Professor, School of Engineering
184 Hope Street
Providence, RI 02912
Telephone: 347-753-1573
Email: Haneesh kesari@brown.edu
Research Website: <https://appliedmechanicslab.github.io/>

I Professional Appointment

July 2022 – present	Associate Professor, School of Engineering, Solid Mechanics Group Brown University, RI, USA
Jan 2013 – June 2022	Assistant Professor, School of Engineering, Solid Mechanics Group Brown University, RI, USA
May 2011– Dec 2012	Postdoctoral Research Associate, Advisor: Prof. Huajian Gao Brown University, RI, USA

II Education

March 2011	Ph.D. in Mechanical Engineering Stanford University, CA, USA Thesis title: <i>Mechanics of Hysteretic Adhesive Elastic Mechanical Contact Between Rough Surfaces</i> Advisors: Prof. Adrian Lew and Prof. Wei Cai
2007	M.S. in Mechanical Engineering Stanford University, CA, USA GPA: 4.0/4.0
2005	Bachelor of Technology in Mechanical Engineering Indian Institute of Technology (IIT), Guwahati, India GPA: 9.03/10.00; GPA (major): 9.61/10.00

III Selected Awards and Honors

2019	Richard B. Salomon Faculty Research Award, “Understanding the potential of architecture in enhancing material toughness through mechanical testing of robot-assembled, bio-inspired, composite materials,” <i>Awarded by Brown University</i>
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- 2016 Haythornthwaite Foundation Research Initiation Grant, “Bio-inspired interfacial engineering for the development of novel structural materials,” *Awarded by the Applied Mechanics Division of the American Society of Mechanical Engineers*
- 2011 Juan Simo Memorial Prize
A best thesis award given by Stanford University to a graduating doctoral candidate on selective years based on faculty nominations
- 2011 First authored research article given the distinction of “Highly Commended” as part of the James Clerk Maxwell Young Writers Prize 2010, *Awarded by Philosophical Magazine & Philosophical Magazine Letters*
- 2007–2010 Herbert Kunzel Stanford Graduate Fellowship
Awarded by Stanford University considering faculty nominations
- 2005 Nominated for the Shankar Dayal Sharma Gold Medal by the faculty at IIT Guwahati
Medal awarded to the “best student” of the year’s graduating undergraduate cohort (129 students from various disciplines)

IV Research Area

Applied Mechanics of Solids and Structures: Contact Mechanics, Fracture Mechanics, Mechanics of Composites, Rigid Body Mechanics, Instabilities/Buckling, and 1D-Continua.

Professor Kesari and his research group use a combination of analytical, experimental, and computational tools. Notably, their analytical tools involve techniques from asymptotic analysis, homogenization, and calculus of variations. Their computational tools include techniques such as non-linear finite element methods (static and dynamic), collocation and spectral methods, regularized variational fracture techniques, contact and impact algorithms, and body-force based contact and impact modeling techniques. Their experimental techniques include small-scale bending, tensile, and fracture testing (on the order of several-hundred micrometer spans and tens of micronewton forces); scanning electron microscopy; atomic force microscopy; and custom inertial sensing.

V Publications

1. Wan, Yang, Alice Lux Fawzi, and **Haneesh Kesari***. “Determining rigid body motion from accelerometer data through the square-root of a negative semi-definite tensor, with applications in mild traumatic brain injury.” *Computer Methods in Applied Mechanics and Engineering* 390 (2022): 114271.
2. Carlsen, Rika Wright*, Alice Lux Fawzi, Yang Wan, **Haneesh Kesari**, and Christian Franck. "A quantitative relationship between rotational head kinematics and brain

- tissue strain from a 2-D parametric finite element analysis." *Brain Multiphysics* 2 (2021): 100024.
3. Deng, Weilin, and **Haneesh Kesari***. "Angle-independent optimal adhesion in plane peeling of thin elastic films at large surface roughnesses." *Journal of the Mechanics and Physics of Solids* 148 (2021): 104270.
 4. Fang, Wenqiang, Sayaka Kochiyama, and **Haneesh Kesari***. "Sawtooth patterns in flexural force curves of structural biological materials are not signatures of toughness enhancement: Part II." *Journal of the Mechanical Behavior of Biomedical Materials* 124 (2021): 104787.
 5. Gutierrez, Robert A., Wenqiang Fang, **Haneesh Kesari***, and Eric M. Darling*. "Force sensors for measuring microenvironmental forces during mesenchymal condensation." *Biomaterials* 270 (2021): 120684.
 6. Kochiyama, Sayaka, Wenqiang Fang, Michael A. Monn, and **Haneesh Kesari***. "Sawtooth patterns in flexural force curves of structural biological materials are not signatures of toughness enhancement: Part I." *Journal of the Mechanical Behavior of Biomedical Materials* 119 (2021): 104362.
 7. Monn, Michael A., Kaushik Vijaykumar, Sayaka Kochiyama, and **Haneesh Kesari***. "Lamellar architectures in stiff biomaterials may not always be templates for enhancing toughness in composites." *Nature Communications* 11, no. 373 (2020): 1–12.
 8. Rahaman, Mohammad Masiur, Wenqiang Fang, Alice Lux Fawzi, Yang Wan, and **Haneesh Kesari***. "An accelerometer-only algorithm for determining the acceleration field of a rigid body, with application in studying the mechanics of mild traumatic brain injury." *Journal of the Mechanics and Physics of Solids* 143 (2020): 104014.
 9. Deng, Weilin, and **Haneesh Kesari***. "Depth-dependent hysteresis in adhesive elastic contacts at large surface roughness." *Scientific Reports* 9, no. 1639 (2019): 1–12.
 10. Deng, Weilin, and **Haneesh Kesari***. "Effect of machine stiffness on interpreting contact force–indentation depth curves in adhesive elastic contact experiments." *Journal of the Mechanics and Physics of Solids* 131 (2019): 404–423.
 11. Fang, Wenqiang, Joyce Mok, and **Haneesh Kesari***. "Effects of geometric nonlinearity in an adhered microbeam for measuring the work of adhesion." *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences* 474, no. 2211 (2018): 20170594.
 12. Deng, Weilin, and **Haneesh Kesari***. "Molecular statics study of depth-dependent hysteresis in nano-scale adhesive elastic contacts." *Modelling and Simulation in Materials Science and Engineering* 25, no. 5 (2017): 055002.

13. Monn, Michael A., Jarod Ferreira, Jianzhe Yang, and **Haneesh Kesari***. "A millimeter scale flexural testing system for measuring the mechanical properties of marine sponge spicules." *Journal of Visualized Experiments: JoVE* 128 (2017): 56571.
14. Monn, Michael A., and **Haneesh Kesari***. "A new structure-property connection in the skeletal elements of the marine sponge *Tethya aurantia* that guards against buckling instability." *Scientific Reports* 7, no. 39547 (2017): 1–10.
15. Monn, Michael A., and **Haneesh Kesari***. "Enhanced bending failure strain in biological glass fibers due to internal lamellar architecture." *Journal of the Mechanical Behavior of Biomedical Materials* 76 (2017): 69–75.
16. Stout, David A., Eyal Bar-Kochba, Jonathan B. Estrada, Jennet Toyjanova, **Haneesh Kesari**, Jonathan S. Reichner, and Christian Franck*. "Mean deformation metrics for quantifying 3D cell–matrix interactions without requiring information about matrix material properties." *Proceedings of the National Academy of Sciences* 113, no. 11 (2016): 2898–2903.
17. Monn, Michael A., James C. Weaver, Tianyang Zhang, Joanna Aizenberg, and **Haneesh Kesari***. "New functional insights into the internal architecture of the laminated anchor spicules of *Euplectella aspergillum*." *Proceedings of the National Academy of Sciences* 112, no. 16 (2015): 4976–4981.
18. Chason, Eric, Fei Pei*, Clyde L. Briant, **Haneesh Kesari**, and Allan F. Bower. "Significance of nucleation kinetics in Sn whisker formation." *Journal of Electronic Materials* 43, no. 12 (2014): 4435–4441.
19. Pei, Fei*, Clyde L. Briant, **Haneesh Kesari**, Allan F. Bower, and Eric Chason. "Kinetics of Sn whisker nucleation using thermally induced stress." *Scripta Materialia* 93 (2014): 16–19.
20. Dharmaraja, Sohan, **Haneesh Kesari**, Eric Darve, and Adrian J. Lew*. "Time integrators based on approximate discontinuous Hamiltonians." *International Journal for Numerical Methods in Engineering* 89, no. 1 (2012): 71–104.
21. **Kesari, Haneesh**, and Adrian J. Lew*. "Adhesive frictionless contact between an elastic isotropic half-space and a rigid axi-symmetric punch." *Journal of Elasticity* 106, no. 2 (2012): 203–224.
22. **Kesari, Haneesh**, and Adrian J. Lew*. "Effective macroscopic adhesive contact behavior induced by small surface roughness." *Journal of the Mechanics and Physics of Solids* 59, no. 12 (2011): 2488–2510.
23. **Kesari, Haneesh**, Joseph C. Doll, Beth L. Pruitt, Wei Cai, and Adrian J. Lew*. "Role of surface roughness in hysteresis during adhesive elastic contact." *Philosophical Magazine & Philosophical Magazine Letters* 90, no. 12 (2010): 891–902.

24. Kourtis, Lampros C., **Haneesh Kesari**, Dennis R. Carter, and Gary S. Beaupré. "Transverse and torsional shear stresses in prismatic bodies having inhomogeneous material properties using a new 2D stress function." *Journal of Mechanics of Materials and Structures* 4, no. 4 (2009): 659–674.
25. Kourtis, Lampros C.*, Dennis R. Carter, **Haneesh Kesari**, and Gary S. Beaupré. "A new software tool (VA-BATTS) to calculate bending, axial, torsional and transverse shear stresses within bone cross sections having inhomogeneous material properties." *Computer Methods in Biomechanics and Biomedical Engineering* 11, no. 5 (2008): 463–476.
26. Mohite, Suhas S., **Haneesh Kesari**, Venkata R. Sonti, and Rudra Pratap*. "Analytical solutions for the stiffness and damping coefficients of squeeze films in MEMS devices with perforated back plates." *Journal of Micromechanics and Microengineering* 15, no. 11 (2005): 2083.

VI Presentations

VI.A. *Invited Talks*

1. "Architecture in Biological Materials: A Template for Toughness Enhancement, or a Siren Song?" Department of Mechanical Engineering, Tufts University, Boston, MA. April 2023.
2. "An Investigation into the Strength and Toughness Properties in Marine Glass Fibers." Civil and Environmental Engineering, University of Massachusetts Amherst, Amherst, MA. September 2019.
3. "Architecture in Biological Materials: A Template for Toughness Enhancement, or a Siren Song?" Department of Mechanical Engineering, Stanford University, Palo Alto, CA. February 2019.
4. "Micromechanics of Surfaces." Mechanical Engineering and Applied Mechanics (MEAM), University of Pennsylvania, Philadelphia, PA. October 2019.
5. "Architecture in Biological Materials: A Template for Toughness Enhancement, or a Siren Song?" Department of Civil and Environmental Engineering, Princeton University, Princeton, NJ. April 2018.
6. "Architecture in Biological Materials: A Template for Toughness Enhancement, or a Siren Song?" Department of Civil and Environmental Engineering, Cornell University, Ithaca, NY. October 2018.
7. "Architecture in Biological Materials: A Template for Toughness Enhancement, or a Siren Song?" Drucker Medal Symposium, International Mechanical Engineering Congress and Exposition, Pittsburgh, PA. November 2018.

8. "New Mechanics from Structural Biomaterials." Department of Mechanical Engineering & Mechanics, Drexel University, Philadelphia, PA. March 2018.
9. "New Mechanics from Structural Biomaterials." Department of Civil and Environmental Engineering, Massachusetts Institute of Technology, Cambridge, MA. April 2018.
10. "The Future of Engineering Materials." CEEN 0923, Introduction to Engineering and Design, Brown University, Providence, RI. July 2018.
11. "Composite Materials in Biology and Engineering." Biology 0400, Biological Design: Structural Architecture of Organisms, Brown University, Providence, RI. October 2017.
12. "New Mechanics Insights from Marine Glass Fibers." Engineering 1380, Design of Civil Engineering Structures, Providence, RI. October 2017.
13. "Investigation of Structure-Function Connections in *Tethya aurantia* (Ta.) Spicules." Worcester Polytechnic Institute, Worcester, MA. November 2016.
14. "Investigation of Structure-Function Connections in *Tethya aurantia* (Ta.) Spicules." International Mechanical Engineering Congress and Exposition, Phoenix, AZ. November 2016.
15. "New Mechanics Insights from Marine Glass Fibers." Department of Mechanical Engineering, University of Massachusetts Dartmouth, Dartmouth, MA. November 2015.
16. "Mechanics of Biological and Bio-inspired Structural Materials." 2015 Society of Engineering Sciences Annual Technical Conference, Prager Medal Symposium, College Station, TX. October 2015.
17. "Mechanics of Biological and Bio-inspired Structural Materials." Brown University Summer School: Material Science and Engineering: Where Would the World be Without it? Providence. July 2015.
18. "Micromechanics of Surfaces: Role of Surface Roughness in Hysteresis During Adhesive Elastic Contact." Department of Materials Science and Engineering, University of Tennessee, Knoxville, TN. March 2015.
19. "Structure-Mechanical Property Connections in Sponge Skeletons." Institute for Molecular and Nanoscale Innovation, Brown University, Providence, RI. February 2015.
20. "Micromechanics of Surfaces." Department of Mechanical Engineering, University of Rhode Island, Kingston, RI. October 2013.

21. “Mechanics of Contact and Fracture.” General Motors Research Center, Warren, MI. July 2013.
22. “Nanomechanics of Thin Film Structures in Battery Electrodes and Biological Materials.” Gordon Research Conference: Thin Film & Small-Scale Mechanical Behavior, Waterville, ME. July 2012.
23. “Why Do Surfaces Stick Better When Pressed Together Harder?” Department of Mechanical Engineering, Indian Institute of Science, Bangalore, India. October 2009.
24. “Principles of the Atomic Force Microscope: Seeing the Nano-world Through the Sense of Touch.” NSF-IBM CPN Summer Institute for Middle School Teachers, Stanford, CA. June 2008.

VI.B. Conference Abstracts

1. Kesari, Haneesh. “Lamellar architectures in stiff biomaterials may not always be templates for enhancing fracture toughness in composites.” The 25th International Congress on Theoretical and Applied Mechanics (ICTAM), Milan, Italy. August 22–27, 2021.
2. Kesari, Haneesh. “The Internal lamellar architecture in spicules helps to provide the marine sponge a better anchorage to the sea floor.” 2018 Society of Engineering Sciences Annual Technical Conference, Madrid, Spain. October 10–12, 2018.
3. Kesari, Haneesh. “New mechanics from structural biological materials.” 2018 Society of Engineering Sciences Annual Technical Conference, Madrid, Spain. October 10–12, 2018.
4. Kesari, Haneesh. “Role of surface roughness in hysteresis during adhesive elastic contact.” 2012 Society of Engineering Sciences Annual Technical Conference, Erlingen Medal Symposium, Atlanta, GA, USA. October 2012.
5. Kesari, Haneesh and Adrian Lew. “Surface-roughness-induced hysteresis in adhesive elastic contacts.” Proceedings of the 2010 M&M International Symposium for Young Researchers. Pasadena, CA, USA. March 2010.
6. Kesari, Haneesh, Joseph Doll, Wei Cai, Beth Pruitt, and Adrian Lew. “Mechanical contact between rough adhesive surfaces: Theory, simulations and experiments.” Seoul National University-Stanford University Student Joint Workshop, Stanford, CA, USA. June 2009.
7. Kesari, Haneesh and Suhas S Mohite. “Vibration analysis of a collapsed MEMS microbeam for measuring the work of adhesion.” Paper presented at the Workshop Digest of the 15th Micromechanics Europe Workshop (MME '04), pp. 88–91, 2004. (Peer reviewed.)

VII Research Grants

VII.A. Current grants

1. "Undersea vehicle science and technologies: multifunctional structural batteries, materials for extreme environments and multi-metal additive manufacturing." Funding Agency: The Office of Naval Research. Budget: total amount \$3,751,412.00; total of \$3,751,412.00 to Brown; total of \$3,751,412.00 to School of Engineering; total of \$288,938 to Kesari Lab. Grant duration: 8/20/2022–8/19/2026. Role: co-PI.
2. "Tunable capacitive pressure sensors enabled by printed microstructures and designed using continuum mechanics modeling." Funding Agency: The Office of Naval Research. Budget: total amount \$775,000; total of \$399,214 to Brown; total of \$399,214 to School of Engineering; total of \$399,214 to Kesari Lab. Grant duration: 9/1/2021–8/31/2024. Role: co-PI.
3. "Multiscale, physics-based approach for traumatic brain injury prediction and prevention." Funding Agency: The Office of Naval Research. Subcontract to Brown via University of Wisconsin–Madison. Budget: total amount \$3,552,001; total of \$774,998 to Brown; total of \$774,998 to School of Engineering; total of \$394,961 to Kesari Lab. Grant duration: 9/1/2021–8/31/2024. Role: Lead PI at Brown University.
4. "TIGER: Towards injury prediction using g-sensor-based strain estimation and motion reproduction." Funding Agency: The Office of Naval Research. Budget: total amount \$599,024; total of \$428,899 to Brown; total of \$428,899 to School of Engineering; total of \$428,899 to Kesari Lab. Grant duration: 1/28/2021–9/30/2023. Role: PI.
5. "Development of a Predictive Multiscale Model for Blast and Blunt Traumatic Brain Injury." Funding Agency: The Office of Naval Research. Budget: total amount \$9,995,503; total of \$2,625,923.00 to Brown; total of \$1,536,098 to School of Engineering; total of \$1,094,328 to Kesari Lab. Grant duration: 12/2/2020–12/1/2023. Role: Lead PI at Brown University.
6. "Digital Manufacturing System for the Creation of Artificially Intelligent Active Protective Materials." Funding Agency: The Department of Defense (DoD), Office of Naval Research. Program: Defense University Research Instrumentation Program (DURIP). Budget: \$407,582, with support for one Ph.D. student for one year to Kesari Lab. Grant duration: 4/1/2020–3/31/2023. Role: PI.

VII.B. Completed grants

1. "Understanding the potential of architecture in enhancing material toughness through mechanical testing of robot-assembled, bio-inspired, composite materials." Funding Agency: Office of the Vice President for Research (OVPR), Brown University. Budget: \$14,796 to Kesari Lab. Grant duration: 2/1/2019–6/30/2020. Role: PI.

2. “Probing the role of mechanical forces in tissue assembly using *in situ* force sensors.” Funding Agency: Office of the Vice President for Research (OVPR), Brown University. Budget: total amount \$85,000; total of \$85,000 to Brown; total of \$35,733 to School of Engineering; total of \$35,733 to Kesari Lab. Grant duration: 1/1/2019–6/30/2020. Role: co-PI (PI: Prof. Eric Darling).
3. “Development of a Predictive Multiscale Traumatic Brain Injury Model.” Funding Agency: Office of Naval Research. Subcontract to Brown via University of Wisconsin–Madison. Budget: total amount \$2,738,678; total of \$1,021,079 to Brown; total of \$441,070 to School of Engineering; total of \$428,407 to Kesari Lab. Grant duration: 7/1/2018–6/30/2021. Role: Lead PI at Brown University.
4. “Development of Materials with Designed Meso-scale Architectures for Dynamic Loading.” Funding Agency: Office of the Vice President for Research (OVPR), Brown University. Budget: total amount \$41,595; total of \$41,595 to Brown; total of \$41,595 to School of Engineering; total of \$20,797 to Kesari Lab. Grant duration: 07/01/2018–6/30/2019. Role: co-PI (PI: Prof. Pradeep Guduru).
5. “Development of a Predictive Multiscale Traumatic Brain Injury Model.” Funding Agency: Office of Naval Research. Budget: total amount \$2,395,000; total of \$2,395,000 to Brown; total of \$311,684 to School of Engineering; total of \$158,975 to Kesari Lab. Grant duration: 7/1/2017–6/30/2020. Role: co-PI (PI: Prof. Christian Franck).
6. “Emergence of new properties at the large-scale on elastic surfaces due to small-scale adhesion and waviness.” Funding Agency: National Science Foundation, The Division of Civil, Mechanical and Manufacturing Innovation (CMMI). Budget: \$375,000 to Kesari Lab. Grant duration: 3/1/2016–2/28/2021. Role: PI.
7. “Bio-inspired interfacial engineering for the development of novel structural materials.” Funding Agency: Haythornthwaite Foundation and the Applied Mechanics Division of American Society of Mechanical Engineers. Budget: \$20,000 to Kesari Lab. Grant duration: 1/1/2016–12/31/2016. Role: PI.
8. “Phase field models for crack path prediction.” Funding agency: General Motors-Brown University Collaborative Research Laboratory. Budget: Financial support for one Brown Ph.D. student and 1.25 months’ summer salary for the PI. Grant duration: 2014–17. Role: PI.
9. “Non-invasive measurement of mechanical properties of biological materials.” Funding agency: Brown University Research Seed Award. Budget: total amount \$80,000; total of \$80,000 to Brown; total of \$42,553 to School of Engineering; total of \$42,553 to Kesari Lab. Grant duration: 5/13/2014–6/30/2016. Role: equal co-PI with Kristie J. Koski, Brown University.

VIII Teaching

Undergraduate Courses

ENGN1370: Advanced Engineering Mechanics

ENGN1950: Advanced Engineering Optimization

Graduate Courses

ENGN2210: Continuum Mechanics

ENGN2220: Mechanics of Solids

ENGN2380: Fracture Mechanics

IX Mentoring

Since joining Brown University, Prof. Kesari has mentored four postdoctoral researchers, seven Ph.D. students, four M.S. students, and two undergraduate honors thesis students. He has also mentored several undergraduate students through independent studies, research assistantships, and Undergraduate Teaching and Research Awards (UTRA).

IX.A. *PhD, masters, and undergraduate theses advised*

A.(i) Current Ph.D. students:

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|---------------------|--------------------------------|
| 1. Yang Wan | Summer 2019–Summer 2024 (est.) |
| 2. Sayaka Kochiyama | Fall 2019–Fall 2023 (est.) |
| 3. Zhiren Zhu | Fall 2022–Spring 2027 (est.) |

A.(ii) Former Ph.D. students:

- | | |
|---|-------------------------|
| 1. Wenqiang Fang
<i>Thesis title:</i> “Mechanics of 1D continua with applications in bio-inspired engineering” | Fall 2016–Spring 2022 |
| 2. Weilin Deng
<i>Thesis title:</i> “Mechanics of elastic contact and adhesion of rough surfaces” | Spring 2014–Summer 2019 |
| 3. Kaushik Vijaykumar | Fall 2013–Summer 2019 |

Thesis title: “A variational mechanics theory for modeling the evolution of crack networks in composite materials with brittle interfaces”

4. Michael A. Monn Fall 2013–Spring 2018
Thesis title: “Insights into the mechanical functions of glass sponge spicules through a characterization of their strength and toughness properties”

A.(iii) Former M.S. students:

1. Wenbo Sun Fall 2018–Spring 2020
Thesis title: “A flexible robotic system for complex structure assembly”
2. Jianzhe Yang Fall 2015–Spring 2017
Thesis title: “Deep indentation contact experiments”
3. Jarod Ferreira Fall 2014–Spring 2016
Thesis title: “Adhesive contact experiments with non-linear model fitting”
4. Tianyang Zhang Fall 2012–Spring 2014
Thesis title: “Numerical investigation of structure-function connections in the spicules of *Euplectella sp.*”

A.(iv) Former undergraduate honor’s thesis students:

1. Eli Silvert Graduated, Fall 2020
Thesis title: “BuzzButton: a low-cost, handheld electricity generator inspired by the mechanics of the classic button spinner”
2. Christopher Owen-Elia Graduated, Spring 2018
Thesis title: “Adhesive micromechanics of soft polymers”

IX.B. *Postdoctoral scholars mentored*

B.(i) Current postdoctoral researchers:

1. Benjamin Grossman-Ponemon (PhD Stanford) Fall 2021–Fall 2024 (est.)

B.(ii) Former postdoctoral researchers:

- | | |
|---|-------------------------|
| 1. Weilin Deng (PhD Brown) | Fall 2019–Spring 2020 |
| 2. Mohammad Masiur Rahaman (PhD. Indian Institute of Science, Bangalore, India) | Summer 2018–Summer 2019 |
| 3. Michael A. Monn (PhD Brown) | Spring 2018–Spring 2019 |

IX.C. *Undergraduate mentoring*

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|---|-----------------------------|
| C.(i) Undergraduate Teaching and Research Awards (UTRA) | 2013, 2014, 2016 |
| C.(ii) Undergraduate independent study | 2013–2015, 2020–2022 |
| C.(iii) Undergraduate research assistants | 2013, 2017, 2018, 2021–2023 |

X Service

X.A. *Service to the University**AY = Academic Year*

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|---|------------------------|
| 1) Committee for Graduate Studies, <i>Mechanics of Solids and Structures</i> | AY 2022 |
| 2) Undergraduate admissions folders reader | AY 2012 |
| 3) Graduate admissions folders reader | AY 2012–2022 |
| 4) Undergraduate faculty advisor | AY 2013–15, 2017–21 |
| 5) Mechanical Engineering Sc.B. Concentration Advisor | AY 2015–18; 2020, 2021 |
| 6) Honors Program Advisor | AY 2019–20, 2022 |
| 7) Organizer of the Material Science/Solid Mechanics Joint Seminar Series | AY 2013–14, 2017–18 |
| 8) Ph.D. thesis committee member of the Brown graduate student Xin Yi | AY 2013 |
| 9) Faculty observer for the Reginald D. Archambault Award for Teaching Excellence, Brown University | Summer 2014 |
| 10) Faculty contributor to SPIRA | 2015–2018 |

A four-week summer camp hosted by Brown University to teach and encourage high school-age girls from diverse economic and educational backgrounds to explore engineering

X.B. Service to the Community

1. Journal article reviewer: 2013–2022
 - Journal of the Mechanics and Physics of Solids (9)
 - Journal of Applied Mechanics (1)
 - Thin Solid Films (1)
 - Journal of Biomechanics (1)
 - ACS Applied Materials & Interfaces (1)
 - Mechanics Research Communications (1)
 - Meccanica (1)
 - Acta Mechanica (1)
 - Acta Materialia (1)
 - Mechanics of Materials (1)
 - Scientific Reports (3)
 - Proceedings of the Royal Society A (1)
 - Scripta Materialia (1)
 - Journal of Physics D: Applied Physics (2)
 - Journal of Tribology (1)
 - Experimental Mechanics (3)
 - Journal of the Mechanical Behavior of Biomedical Materials (1)
 - Computer Methods in Applied Mechanics and Engineering (1)
 - Nature Physics (2)

2. Judge in student paper competition, Structures/Solids track, SES Annual Technical Meeting 2013

3. Member of local organizing committee, SES Annual Technical Meeting 2013

4. Book proposal review, “Analysis of engineering structures and material behavior” by Josip Brnic, John Wiley & Sons Ltd. 2015

5. Proposal reviewer for the Mechanics of Materials and Structures program, National Science Foundation 2015, 2016