ANAMIKA PRASAD

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10555 West Flagler Street Suite EC 2678
Miami, FL 33174

EDUCATION

PhD	Massachusetts Institute of Technology (MIT) Materials Science and Mechanics	2007
MS	Massachusetts Institute of Technology (MIT) Civil and Environmental Engineering	2003
BTech	Indian Institute of Technology-Varanasi, India (IIT-V) Civil and Environmental Engineering Gold Medalist	1997

EMPLOYMENT

Associate Professor, Biomedical Engineering 2022 to present
Mechanical and Materials Engineering (joint appointment)
Diversity Mentor Professor (Advance Women, Equity, & Diversity)
Florida International University, Miami, FL

Assistant Professor, Mechanical Engineering 2016 to 2022
South Dakota State University, Brookings, SD

Assistant Professor (Visiting), Engineering and Technology 2015 to 2016
University of Washington, Tacoma, WA

Assistant Professor, Applied Mechanics 2013 to 2016
IIT Delhi, India

Postdoctoral Researcher 2009-2011
Stanford University, Stanford, CA

Engineer 2007-2008
Exponent Failure Analysis, Menlo Park, CA

Research Assistant 2004-2007
MIT, Cambridge, MA

Teaching Assistant 2002-2004
MIT, Cambridge, MA

Engineer 1997 to 2001
Engineers India Limited, New Delhi, India

HONORS AND AWARDS

SDSU Outstanding Researcher of the Year	2022
Jerome J. Lohr College of Engineering Researcher of the Year	2022
NSF CAREER Award	2021-2026

Air Force Research Lab Summer Faculty Fellowship	2020, 2021
NASA STAR Fellowship	2020
Science Communication Fellow, SD Discovery Center	2018
Gandhian Young Technological Innovation	2015
First Place, Endovascular Research Competition	2011
Simulia Award for Bioengineering Research	2010
MIT Schoettler Fellowship	2001
Gold Medal for overall excellence in undergraduate studies	1997
Gold Medal for overall excellence in undergraduate studies	1997
University Medal for department excellence in undergraduate studies	1997
University Scholarship	1994-1997

PUBLICATIONS

Patent

Choudhury, M.I., Juneja, R., Prasad, A., Roy, S. A Novel Device for Measuring Pressure Pulses based on Applanation Tonometry Patent United States Patent, No US2020173712A1, India Patent No WO/2018/033938 (2018)

Journals

Gustin, P. and Prasad, A., 2024. EnduroBone: A 3D printed bioreactor for extended bone tissue culture. HardwareX, p.e00535

Switz, A., Mishra, A., Jabech, K. and Prasad, A., 2024. Affordable lab-scale electrospinning setup with interchangeable collectors for targeted fiber formation. HardwareX, 17, p.e00501.

Prasad A, Frank GF, Nepal D, Varshney V. Bioinspired Design Rules from Highly Mineralized Natural composites for two-dimensional Composite Design. 2023, Biomimetics, 8(6), 500. https://doi.org/10.3390/biomimetics8060500

Borode T, Wang D, Prasad A. Polyaniline-based sensor for real-time plant growth monitoring. Sensors and Actuators A: Physical. 2023 Jun 1;355:114319.

Roy M, Prasad A. Raman Spectroscopy for Nutritional Stress Detection in Plant Vascular Tissue. Materialia, 2022 Aug 1:24:101474

Prasad A, Frank GF, Nepal D, Varshney V. Highly Mineralized 2D Natural Composites Structure Opens Pathways to Bioinspired MXene-Based Composites, engrxiv, 2022

Sinha R, Janaswamy S, Prasad A. Enhancing mechanical properties of Electrospun Cellulose Acetate Fiber Mat upon Potassium Chloride exposure. Materialia. 2020 Dec 1;14:100881. https://doi.org/10.1016/j.mtla.2020.100881

Roy M, Mathew FM, Prasad A. Biomechanics of vascular plant as template for engineering design. Materialia. 2020 Aug 1;12:100747.

Prasad A, Roy M. Bioimpedance analysis of vascular tissue and fluid flow in human and plant body: A review. Biosystems engineering. 2020 Sep 1;197:170-87.

Choudhury MI, Singh P, Juneja R, Tuli S, Deepak KK, Prasad A, Roy S. A novel modular tonometry-based device to measure pulse pressure waveforms in radial artery. Journal of Medical Devices. 2018 Mar 1;12(1).

Singh P, Choudhury MI, Roy S, Prasad A. Computational study to investigate effect of tonometer geometry and patient-specific variability on radial artery tonometry. J Biomech. 2017 Jun 14;58:105-113.

Chauhan S, Khan SA, Prasad A. Irradiation-Induced Compositional Effects on Human Bone After Extracorporeal Therapy for Bone Sarcoma. Calcif Tissue Int. 2018 Aug;103(2):175-188.

Chauhan S, Manoj K, Rastogi S, Khan SA, Prasad A. Biomechanical investigation of the effect of extracorporeal irradiation on resected human bone. J Mech Behav Biomed Mater. 2017 Jan;65:791-800.

Bhattacharya T, Gupta A, Singh ST, Roy S, Prasad A. Robust Motion Artefact Resistant Circuit for Calculation of Mean Arterial Pressure from Pulse Transit Time, 29th Annual Conference of the IEEE Engineering in Medicine and Biology Society, S Korea, July 2017 (pp 3353-3356)

Mathur A, Prasad A. Comparative Effectiveness of Thoracic Stent-graft design in curved Vascular System, 5th International Congress on Computational Mechanics and Simulation, Dec 2014

Prasad A, To LK, Gorrepati ML, Zarins CK, Figueroa CA. Computational analysis of stresses acting on intermodular junctions in thoracic aortic endografts. Journal of Endovascular Therapy. 2011 Aug;18(4):559-68.

Prasad A, Xiao N, Gong XY, Zarins CK, Figueroa CA. A computational framework for investigating the positional stability of aortic endografts. Biomech Model Mechanobiol. 2013 Oct;12(5):869-87.

Prasad A, Dao M, Suresh S (2009). Steady-State Frictional Sliding Contact on Surfaces of Plastically Graded Materials. Acta Materialia, Volume 57, Issue 2, Pages 511-524.

Conference Proceedings Paper

Suresh T, Landes S, Letcher T, Prasad A, Gradl P, Ellis D. Nanomechanical Characterization of Additive Manufactured GRCop-42 Alloy Developed by Directed Energy Deposition Methods. ASME IMECE 2020 Nov 16 (Vol. 84515, p. V004T04A003).

Landes S, Suresh T, Prasad A, Letcher T, Gradl P, Ellis D. Investigation of Additive Manufactured GRCop-42 Alloy Developed by Directed Energy Deposition Methods. ASME IMECE 2020 Nov 16 (Vol. 84515, p. V004T04A026).

Roy M, Prasad A, Kontz Brian, Mathew Febina. Application of Raman Spectroscopy to understand Phomopsis stem canker of sunflower caused by Diaporthe gulyae, Phytopathology 2018, Vol 108 (12), p34.

Prasad A, Dao M, Ramamurty U. Effect of Dilatation on the Elasto-Plastic Response of Bulk Metallic Glasses under Indentation. MRS Online Proceedings Library, 2009, 1224.

Journal Papers in preparation or review stage

Suresh TM, Gradl P, Ellis D; Prasad A, Nanomechanical Evaluation of Additively Manufactured GRCop-42 by Laser Powder Bed Fusion and Directed Energy Deposition (Submitted, under review)

Prasad A, Hasse J, Frank GF, Nepal D, Varshney V. L, Mechanical Behavior of MXene-Polymer Layered Nanocomposite Using Computational Finite Element Analysis (submitted, under review revisions)

Roy M & Prasad A, Microstructural Analysis of Vascular Plant Tissue for Flexible Composites Design (summer 2024)

Book Editor

Prasad A, Gupta SS, Tyagi RK, editors. Advances in Engineering Design: Select Proceedings of FLAME 2018. Springer; 2019 Apr 27.

Undergraduate Journal Papers

Mead, Martin, Jordan Von Seggern, Advisor: Prasad A (2023). Full Body Harness Design Modification and Evaluation: A Senior Design project, ," *The Journal of Undergraduate Research*: Vol. 18, Article 4. Available at: https://openprairie.sdstate.edu/jur/vol18/iss1/4

VanDerWolde, Brooklyn K. and Hillson, Katelyn (2020) Advisor: Prasad A. Design of a 3D Printed Bioreactor for Bone Cancer Research The Journal of Undergraduate Research: Vol. 17, Article 6.

Solberg, Peder (2020), Advisor: Prasad A. Design of an Affordable Rotating Drum Electrospinner for Classroom Education, *The Journal of Undergraduate Research*: Vol. 17, Article 5.

Student Presentations (Internal)

Salman Jamal, BME-MME Joint Research Symposium, poster presentation, March 2024

Fabio M Sarcos, OURS End-of-Year Showcase, poster presentation, April 20234.

Alexi Switz, FIU Heart Day Symposium, Flast Talk, March 2024 **Best Flash Talk**

Alexi Switz, MARC U*ST & TBBS Research Symposium, oral presentation, 2023, **First Place**

Katrina Jabeh, 2023 BME-MME Undergraduate Research Day, oral presentation, Nov 2023.

Alexi S, Prasad A, Development of Electrospinning Setup for Designed Nanofibers, BME Graduate Research Day Presentation, 2023

Jaramillo JNC, Prasad A. Polyaniline-based(PANI) Sensor for Real-time Plant Growth, FIU Undergraduate Research Day Presentation, April 2023

Michael Z, Prasad A, Biomimetic Cellulose-based Composite, FIU Undergraduate Research Day Presentation, April 2023

Ramos-Homs A, Cambell A, Design of Bone scaffold for Pediatric Bone Defects, MME Undergraduate Research Day Presentation, Sept 2022

Michael Z, Prasad A, Biomechanics of Termite-Based Cartion STructures, MME Undergraduate Research Day Presentation, Nov 2023

Cambell A, Ramos-Homs A, Katrina J, Prasad A, Synthesis of Bone scaffold for Pediatric Bone Defects using 3D Printing, BME Undergraduate Research Day Presentation, Nov 2022

Selected Recent Conference Presentations (Abstract)

Switz A, Prasad A, Bioinspired and Electrospun Helically Structured Nanofibers for Cardiac Patch Application, TMS, Orlando 2024

Gustin P, Prasad A, Design and Optimization of a 3D-printed Bioreactor for Long- term Ex-vivo Bone Tissue Culture, TMS Orlando 2024

Prasad A with Science & Fiction Lab Team, Plenary Session, Fi-Sci: How Fictionality Powers Science, International Conference of Three Societies on Literature and Science, Birmingham, UK, 2024

Jamal MSI, Hossen A, Prasad A, Examining Cellulose-Pectin Interactions in Plant Cell Wall and Implication in Composite Design, American Society of Composites 38th Technical Conference, Boston, 2023

Switz A, Prasad A, Development and Characterization of Designed Electrospun Nanofibers for Cardiovascular Application, ASME, International Mechanical Engineering Congress & Exposition or IMECE, NSF STUDENT Research Poster Competition, **BEST DATA ANALYSIS/PRESENTATION, NSF.**

Michael Z, Lee SB, Chouvenc T, Prasad A, Biomechanics of Biogenic Termite Structures, MRS Fall 2023

Switz A, Dickerson Darryl. and Prasad A; Bioinspired Flexible Helical Electrospun Mat for Cardiac Patch Application, MRS Fall 2023

Prasad A., Investigating Interfaces in the Cell Wall of Fast-Growing Plant for Next-Generation Composites, Materials Research Society (MRS) Spring Meeting, 2022.

Hasse J., Suresh T, Michael S, Prasad A, Multivariate Statistics Applied to Additive Manufacturing of Inconel, SDSU Data Science Symposium, Feb 2022.

Suresh T, Letcher T, Prasad A., Analysis of Additively Manufactured Material Using Thermomechanical Simulation and X-Ray Diffraction, Materials Research Society (MRS) Fall Meeting, Dec 2021. podium presentation

Roy, M, Prasad, A., Structure-Function and Compositional Investigation of Sunflower's Stem Under Normal Growth Using Microscopy and Spectroscopy, Nature Conferences, New York University, Nature, 2019

VanDerWolde, B., Hillson, K., Prasad, A., An Automated 3D Printed Bioreactor for Bone Cancer Studies, BMES, 2019

Sinha, R., Janaswamy, S., Prasad, A, Development and Viability of Cellulose-based Scaffold as a Bone Tissue Microenvironment, Biomedical Engineering Society (BMES) Annual Meeting, Philadelphia, PA, Oct 2019

Sinha Ruhit, Chakraborty A, Prasad A. Development of ex-vivo Culture set-up for Bone Tumor Reconstruction, Biomaterials Day at USD, 2018, Sioux Falls, poster presentation, 2nd place.

R. Sinha and A. Prasad, Development of Electrospinning as Rapid Prototyping Platform for Biocompatible Materials, in Biomedical Engineering Society (BMES) Annual Meeting, Atlanta, GA, Oct 2018.

Beatriz de Souza, Cheng Zhang, Mark A. Messerli, Anamika Prasad, Todd Letcher, LCD 3D Printing of Poly (Glycerol Sebacate)Acrylate, MRS Spring 2018, podium presentation.

Roy M, Prasad A. Raman spectroscopic analysis of plant health, MRS Spring 2018

Chakraborty A, Prasad A. Long-term ex-vivo survivability of bone tissue for tissue experimentation platform, Society of Biomaterials Annual Meeting 2018, Atlanta GA poster presentation

Roy M, Prasad A, Kontz Brian, Mathew Febina. Application of Raman Spectroscopy to understand Phomopsis stem canker of sunflower caused by Diaporthe gulyae, APS North Central Division meeting 2018, podium presentation

Roy M, Prasad A. Raman Spectroscopic Analysis of Plant Cell Wall in Normal and Diseased Sunflower, Society of Biomaterials Annual Meeting 2018, Atlanta GA poster presentation

Agrawal D, Jain D, Khan SH, Prasad A. Patient-specific Analysis of Neglected cases of Development Dysplasia of Hip. Structural Engineering Conference, Dec 2016

Chauhan S, Manoj K, Rastogi S, Khan SH, Prasad A. Mechanical Alteration in Resected Human Bone Under High Dose of Radiation During Cancer Treatment Therapy, BI-Term. IIT Delhi, April 2016

Chauhan S, Manoj K, Rastogi S, Khan SH, Prasad A. Raman Spectroscopic Investigation of Bone under Extracorporeal Irradiation and Re-implantation Therapy, Global Cancer Summit. IISc Banglore Nov 2015

Manoj K, Chauhan S, Rastogi S, Sharma DN, Prasad A, Khan SH. Extracorporeal Radiation Therapy in Malignant bone Tumor: Clinical Outcome. International Society of Limb Salvage (ISOLS) and the Musculoskeletal Tumor Society (MSTS) Combined Annual Meeting, Florida Oct 2015

Chauhan S, Manoj K, Khan SH, Prasad A. Nanomechanical investigation of Extracorporeal radiation therapy in malignant bone Tumours. International Society of Limb Salvage (ISOLS) and the Musculoskeletal Tumor Society (MSTS) Combined Annual Meeting, Florida Oct 2015

Choudhary MI, Sarin A, Khan SH, Prasad A. Device for Compliance Monitoring and early Relapse Detection for Clubfoot National Clubfoot Congress, April 2015

MH. Kolekar,L Raja, H Rai, A Prasad, Image-Based Arterial Wall Thickness estimation for Abdominal Aortic Aneurysm Rupture Risk Analysis, International Congress on Computational Mechanics and Simulation (ICCMS), IIT Hyderabad, December 2012

Prasad A, Gong XY, Figueroa CA, Zarins CK. A Finite Element Approach for Evaluating the Risk of Endograft Migration. ASME 6th Frontiers in Biomedical Devices Conference and Exhibition, Irvine, CA, USA, 2011 (Invited presentation).

Prasad A, Gorrepati ML, To LK, Zarins CK, Figueroa CA. Relationship between Endograft Oversizing, Radial Force and Aortic Neck Dilation: Long term Effects. FDA & NHLBI 4th Annual Workshop on Computer Methods for Medical Device Modeling, Rockville, 2011.

Prasad A, To LK, Gorreparti ML, Zarins CK, Figueroa CA. Computational Analysis of Stresses Acting on Inter-Modular Junctions in Thoracic Aortic Endografts. International Congress of Endovascular Specialists ICON, 1st Place, Endovascular Research Competition, 2011.

Figueroa CA, Prasad A, Zarins CK. A Computer Framework to evaluate Endograft Stability: Opportunities for Clinical Validation.FDA & NHLBI Fourth Annual Workshop on Computer Methods for Medical Device Modeling, Rockville, USA, 2011.

Figueroa CA, Gorrepati ML, To LK, Yeh V, Prasad A, Zarins CK. A Longitudinal Study of the Positional Stability of TEVAR Using Computational Fluid Dynamics. 35th Annual meeting of Southern Association for Vascular Surgery, Naples, Florida, USA, 2011.

Figueroa CA, Prasad A, Yeh V, Zarins CK. Computational Tools for the Analysis of Abdominal Aortic Endograft Migration. 9th World Congress on Computational Mechanics, Sydney, Australia, 2011.

Prasad A, Figueroa CA, Gong XY, Taylor, CA, Zarins CK. Patient and Device-Specific Computational Modeling of Contact Analysis of Abdominal Aortic Endograft Migration. FDA & NHLBI Third Annual Workshop on Cardiovascular device Modeling, Rockville, USA. Simulia Award for Bioengineering Research, 2011

Prasad A, Zarins CK, Figueroa CA. Modeling of Stented Aortic Aneurysm for Evaluating Endograft Migration. Stanford Bio-Mechanical Engineering Conference, Stanford, USA, 2010.

FUNDED PROJECTS

- Fl Cancer Innovation Fund, Enabling Technologies for 3D Printed Bone Reconstruction post Tumor Resection" (USD: 497,108, 2024-2025), role: PI
- NSF DMREF, "DMREF/Collaborative Research: Active Learning-Based Material Discovery for 3D Printed Solids with Locally-Tunable Electrical and Mechanical Properties" (USD: 432,418, 2023-2027), role: PI (100%)
- BME-MME Collaborative Seed Grant " Bioinspired Flexible Helical Electrospsun Mat for Cardiac Patch Application " (USD: 77,960, 2022-2023), role: PI
- NSF CAREER "CAREER: Mechanics of Next-Generation Composites using Cellulose and Bioinspired Interphases" (USD: 531,740, 2021-2026), role: PI (100%)
- DOD Air Force Office of Scientific Research (AFOSR) DURIP "Characterizing Nano mechanics of Interfaces for Next-Generation Multifunctional Aerospace Composite" (USD: 376,513, 2022-2023), role: PI (100%).
- NSF 2DBEST EPSCoR center grant for "Raman spectroscopic analysis for Investigating Microbial Resilience in Soyabean" (USD: approx. 50,000), role: collaborative proposal as subgrant from subgrant from SD NSF EPSCOR 2DBEST
- Internal grant for purchase of 3D Biopinter (USD: 15,000, FY21)
- SDSU Research Challenge Fund "MXene Based 2D Materials: Bioinspired Design for Ultrathin Tough Composites" (USD 22,331, 2021-2022), Role: PI (100%)
- NASA EPSCoR "Additively Manufactured GRCop-42 Extended Investigation" (USD: 99,914, 2020-2022), Role: co-PI (50%)
- SD Space Grant "Hands-on Biomedical Engineering Experience for Undergraduates in NASA Space Challenges" (USD: 10,700, 2020-2022), Role: PI (70%)
- Air Force Research Lab Summer Faculty Fellowship "Computational Mechanics of MXene-based Composites and its interfaces using Bioinspired Materials Design" (June-Aug 2021)
- NASA EPSCoR "Characterization of GRCop-42 Additively Manufactured Material" (USD: 99,914, 2019-2021), Role: co-PI (50%)
- Air Force Research Lab Summer Faculty Fellowship "Framework for the Design of Functionally-graded bioinspired porous composites" (June-Aug 2020)
- SDSU Research Challenge Fund "Biomechanics of Plant Cell Wall in Normal Growth and Disease" (USD 6,236, 2018-2019), Role: PI (100%)

- North Central Regional Sun Grant Center "Characterization of Plant-Based Bio-Asphalt Binder and Bio-Additives as Sustainable Highway Construction Materials: A Preliminary Study" (USD 48,574, 2018-2019), Role: co-PI (25%)
- SDSU "Tissue Biomechanics and Biomaterials Lab Development" (USD 7,000, 2016-2017), Role: PI (100%)
- Biotechnology Ignition Grant, Department of Biotechnology India (USD 77,000, 2015); Role: PI (canceled after moving to the US)
- Indo-US Grand Challenge award "Affordable Blood Pressure Measurement Technologies for Low-Resource Settings in India and the U.S" (USD 66,000; 2014-2017), Role: PI
- IIT Grant for research on "Biomechanics of Cardiovascular Diseases, Diagnosis, and Treatment" (USD 18,000, 2014-2016); Role: PI

IN THE MEDIA

- Prasad first ME faculty member to receive NSF CAREER Award, News@SDSTATE, Sept 2021
- AFRL Fellowship fuels composite materials research, News@SDSTATE, Sept 2021
- Discovery center and Pierre Players radioactive, Capital Journal, May 2021
- Researchers evaluate materials for NASA rocket engines, NASA EPSCoR grant helps train students to test additively manufactured materials, Newswise, March 2021
- Prasad develops biomaterials using cellulose fibers, article in College of Engineering Annual Research Review 2020
- Engineering study examines sunflower stem growth Physics.org, July 2020, sourced from News@SDSTATE July 2020
- Integrating cellulose fibers to asphalt pavement mixtures Sun grant project finds new uses for agricultural materials, Newswise, August 2020
- Starts, Planets Align with visit from Scientist, Capital Journal, July 2018
- Microscope gives macro, Micro, and Nano View of Materials, Cover Page image and Article, College of Engineering Annual Research Review 2018
- SDSU Research CubeSat Team launches High Altitude Balloon, Pages 10-11, Impulse, 2018

PROFESSIONAL DEVELOPMENT

ACS Fall Meeting	2023
STRIDE (Strategies and Tactics for Recruitment to Increase Diversity and Excellence) Training, FIU	2022
Diversity Advocate Training, FIU	2022
Bystander Workshop, FIU	2022
Mentorship Workshop, MRS Fall Meeting	2022
MRS Fall Meeting	2022
BMES Annual Meeting	2022
LAMMPS Molecular Dynamics Workshop, Virtual	2021
CETL Teaching Coach Program, SDSU Center of Teaching and Learning (CETL)	2020
CETL Certification, SDSU CETL	2020

Certification in Assessment Academy, SDSU	2020
NSF Engineering CAREER Workshop, Bethesda, MD	2019
ASEE National Effective Teaching Institute Workshop, San Diego, CA	2019
NASA@MY Library Science Communication Training	2019
NASA-NIH Workshop on Collaborative Biomedical Research in Earth and Space Benefits, Bethesda, MD	2018
Advisor Workshop, SDSU	2018
NASA EPSCoR Technical Interchange Meeting, Goddard Space Flight Center, Greenbelt, MD	2018
Science Communication Fellowship Workshop, SD Discovery Center	2018
CETL Certification Workshop, Getting More out of IDEA-SRI Reports	2018
Cardiovascular Innovation and Translation Workshop, Univ of Michigan	2017
SD CAREER proposal Workshops	2017
Communicating Science, Tools for Scientist and Engineers, AAAS	2016

PROFESSIONAL AFFILIATION

Member, The Mineral, Metals and Materials Society (TMS)
Member, Materials Research Society (MRS)
Member, American Society of Composites (ASC)
Member, American Chemical Engineering Society (ASC)
Member, Chapter Advisor (2017-2022), Biomedical Engineering Society (BMES)
Member, American Society of Engineering Education (ASEE)
Member, American Society of Mechanical Engineering (ASME)
Member, American Association for Advancement of Science (AAAS)

PROFESSIONAL SERVICE (NATIONAL)

Profession Societies & Meeting

- The Mineral, Metals and Materials Society (TMS) Biomaterials Committee (2023-present)
- Materials Research Society (MRS) Women in MS&E Group Lead (2022-present)
    - Organized Women's Breakfast Keynote, Spring 2023 Meeting
    - Organized and hosted Women's Breakfast Keynote, MRS Fall 2022 100+participants
    - Organized and hosted workshop "Rethinking Imposter Syndrome Workshop" MRS Fall 2022, 50+participant
    - Organized and hosted "Walking the Walk: Intersection of under-representation" with 100+ participant
- Biomedical Engineering Society
    - Session Chair, Biomechanics Trac, 2022
- MRS Career Advancement Committee Member (2021-present)
- Organizing Chair, Midwest Applied Materials Symposium (MAMS), SDSU, Nov 2021
- Organizing Chair, 1st Cardiovascular Bioengineering Symposium, IIT Delhi 2013

Proposal Reviewer

- NSF Panel 2019, 2021, 2023)
- NSF Graduate Reviewer (2020, 2021, 2022)
- UK Heart Research

Journal Reviewer

- The Journal of The Minerals, Metals & Materials Society (JOM), Springer

- Frontiers in Bioengineering and Biotechnology
- International Journal for Numerical Methods in Biomedical Engineering.
- PLOS One
- Acta Materialia
- IEEE Transactions on Biomedical Engineering

Others

- Mentored and hosted undergraduate student researcher under NSF REU or Research Experience for Undergraduates, 2018, 2019.
- ASGSR Undergrad/Grad Student Poster Competition Judge (2018)
- SDSU Sigma Xi Undergraduate Research, Scholarship and Creative Activity Day (URSCAD) Judge (2017)

SERVICE: DEPARTMENT AND UNIVERSITY

Florida International University, Brookings, SD 2022-current

- Undergraduate Committee, Member
  - Revamped BME 4211 course
  - Created a plan for integration between BME and MME courses
  - Collaborated with MME faculty for combined curriculum modifications
- Graduate Ph.D. Qualifying Exam Committee, Member
  - Reviewed 9 Ph.D. Qualifying Exam proposals and presentations
- BME Seminar Series
  - Invited and hosted two seminar speakers
- BME DEI Report
  - Streamlines data collection for DEI reports
  - Prepared input for departmental DEI reports for 2021-2022 and 2022-2023 cycle
- Advance Women, Equity, & Diversity (AWED) Mentor
  - Presented for multiple workshops for STRIDE (Strategies and Tactics for Recruitment to Increase Diversity and Excellence)
  - Presented for multiple workshops for DA (Diversity Advocate)
  - Facilitating team for multiple Bystander workshops

South Dakota State University, Brookings, SD 2016-2022

- Faculty Senator, representing College of Engineering
- Search Committee Member
  - Department Chair Search, 2020-2021
  - College of Engineering Grant Specialist Search, 2020, 2021.
  - Faculty Search for Assistant Professor in Mechanical Engineering, 2017-2018
- Departmental Committee Members
  - Lab Revision Committee, 2017-2020
  - Graduate Studies Committee, 2018-2020
  - ABET Accreditation Committee, 2020-2021
- Graduate Committee Members on multiple student thesis

IIT, Delhi 2013-2016

- Member of Multi-Institutional team for *Establishment of Inter-Institutional Bio-design Centre* (initiated by Department of Biotechnology, Govt of India with IIT-Delhi, All India Institute of Medical Sciences-Delhi, Translational Health Science and Technology Institute-Delhi)

- Member, Departmental Policy Committee (department representative for Institute-level meetings on academic policy and planning).
- Lead, Departmental Library Development (Jan 2014-present)
- Member of IIT-Delhi team for a joint meeting with US State Dept Delegates on women in IT and Communications Technology (May 2013).

SERVICE: COMMUNITY AND OUTREACH

- Children Discovery Center and Wokini Challenge Grant
  - Materials science-based education curriculum and kit development for Native American communities
- Student Organization Mentorship
  - Biomedical Engineering Society (BMES), Founding Advisor since 2018
  - Founding co-advisor to CubeSat Team (2017-2019).
  - Advisor to Indian Student Association, 2016-2019
- Broadening Participation: Multiple science Communication & community outreach through SD Discovery Center, South Dakota Education Portal, and SDSU's College of Engineering
  - Hands-on workshops during "Meet a Scientist" event (2019, 2021)
  - Lunch and Learn: Bones in Space with Dr Anamika Prasad, Discovery Center, Online event April 2021
  - Remote Learning Hacks: NASA 3D printing, Facebook Live Event for SD Discovery Center
  - SDSU GEMS (Girls Engineering Math and Science) Workshop for 8th Grader
  - SDSU RSG (Ready Set Go) Workshop for High School Girls
- Regular judge at high school science fair events (Eastern South Dakota Science and Engineering Fair, Best Robotics team)

INVITED TALKS

- MSE Distinguished Seminar Series, Dept. of Mechanical and Materials Engineering, Oklahoma State University -Tulsa, April 2023
- Invited Speaker, Steminism: Advocating for Mentorship in STEM, 11th annual Women in Science Seminar, FIU, Feb 2023
- Keynote Speaker, RUSA Sponsored International Conference in Emerging Trends in Multidisciplinary Research, Patna Women's College, India, March 2023.
- Florida International University, Dept. of Mechanical and Materials Engineering, 2022
- IEE Young Professsional Engagement Series (YES), IEEE Sensors Council, 2021
- Seminar Series, Electrical Engineering, South Dakota School of Mines, 2021
- Symposium, Department of Physics, South Dakota State University, 2021
- Webinar/Conversation by Communeeti Organization, "Thinking local, going global," 2021
- Webinar series, New Govt Polytechnic, India, "Affordable Science and Tech. for Societal Impact", 2021
- Seminar Series, Civil and Env. Engineering, North Dakota State University, "Biomechanics of Irradiation in Bone Cancer Treatment and Bone Scaffold Development," 2020

- Webinar and Facebook Live event, Jawahar Lal Nehru University, New Delhi, India, “Gender Bias and Stereotyping, Gender Equality and Women's Right," 2020
- International webinar organized by Patna Women's College, India, “Effective Tools for research and Scientific Presentation," 2020
- Mini-Symposium Biobased Materials and Biocomposites, North Dakota State Univ., 2016
- University of South Dakota, Seminar Series, 2016

TEACHING EXPERIENCE

Florida International University, Brookings, SD 2022-current

- BME 4211 Orthopedic Biomechanics
  - revamped course for MME and BME with catalog modification
- BME 5400 Orthopedic Biomechanics (graduate)
- EML 4911 Undergraduate Research Experiences
- BME 6990 Finite Element Analysis in Biomedical Design. Developed
  - new BME core graduate coursed developed
  - Course to be offered as BME Core, starting in Fall 2023

South Dakota State University, Brookings, SD 2016-2022

- ME 741 Advanced Stress Analysis (graduate)
- ME 739 Advanced Metallurgy. Revived and revamped an existing graduate course.
- ME 448/548 Mechanical Behavior of Biomaterials: Developed a new course for graduate and senior undergraduates.
- ME 241 Engineering Materials: undergraduate core course, multiple semesters
- ME 433/533 Non-Destructive Testing: Reviving and revamping an existing course to align with Aerospace Engineering specialization. It will be offered in 2022.

University of Washington, Tacoma, WA 2016

- Biomedical System and Devices

IIT, Delhi 2013-2016

- Applied Elasticity, graduate course
- Solid Mechanics, graduate course
- Experimental Methods in Solids and Fluids (Lecture and Lab), graduate course
- Labs and Tutorial Sections of multiple undergraduate courses
  - Mechanics
  - Materials Science Labs
  - Fluids and Solids Lab
- Course Development Activities
  - Biomechanics (UG course, part of Minor Area in Computational Mechanics)
  - Mechanical Behavior of Biomaterials (UG/PG course)
  - Biodesign at UG and PG level (Intra-Institutional Bio design Centre)

STUDENTS ADVISED

PhD Students (current and past)

- Alexi Switz, Biomedical Engineering, Florida International University, 2023-

- Salman Jamal, Biomedical Engineering, Florida International University, 2023-
- Ariadna Herrera, Biomedical Engineering, Florida International University, 2024
- BasilUsma Ahmad, Biomedical Engineering, Florida International University, 2024
- Rachelle Gomez-Guevara, Biomedical Engineering, Florida International University, 2024
- Hilda Noworku, Mechanical and Material Engineering, Florida International University, 2024
- Kiyana Saedian, Mechanical and Material Engineering, Florida International University, 2024
- Mukesh Roy Biomedical Investigation of Plant Vascular Tissue for Bio-Inspired Design and Flexible Composites, Thesis, South Dakota State University Thesis, 2021
- Sakshi Chauhan, Biomechanical Investigation of the effect of extracorporeal Irradiation on Resected Human Bone, Thesis, IIT Delhi, 2019

PhD Committee Member at FIU

- Ivan Oyega (Advisor: Maruthi Sridhar Balalji Bhaskar), Earth and Environment Sciences
- Kazue Orikasa (Advisor: Arvind Agarwal), Mechanical Engineering
- Reshmi Banerjee (Advisor: Markondeyaraj Pulugurtha), Biomedical Engineering

Masters at FIU

- Daniel Gallego Lopez, Biomedical Engineering, Florida International University, 2023-2024
- Paula Gustin, Biomedical Engineering, Florida International University, 2022-2023
- Alexi Switz, Biomedical Engineering, Florida International University, 2022-2023 (transitioned to PhD from summer of 2023)

Senior Design Team Advisor at FIU

- Pressure and Weight Bearing Casting Device, 2022-2023 (member: Misbah Rafiq Team Lead, Angelica Garcio del Rio, Javier Rodriguez, maria Andere)
- Bone Marrow Aspiration Needle, 2023 onwards (member: Jalaica Jaramillo, George Gonzalez, Laura Angulo. Amanda Sanchez, Samuel ELijah)

Undergraduates at FIU

- Acaydia Campbell (BME, 2022-2023), Coulter Undergraduate Research Experience (CURE) & McNair Fellow, 2022-2023
- Katrina Jabeh (BME, 2022-current), CURE Trainee 2022, CURE Researcher 2023
- Jalaica Ann Jaramillo (2022-current), Opportunities for Undergraduate Research and Scholarship (OURS) 2023
- Fabio Macias Sarcos (BME 2022-current), OURS 2023, CURE Researcher 2022
- Braulio D Jesus Solorzano (BME, 2023)
- Adam Navarrete (MME, 2023)
- Zion Michael, MME, 2022-current)
- Amy Ramos-Homs, (MME 2022-2023)

Masters (previous institutes)

- Swastika Bera. Graduated Spring 2023.
- Jason Hasse. Statistical Tools in Material Science Simulation. Co-advised with Dr. Semhar Michael from Math and Statistics, South Dakota State University, Thesis expected: 2022, Air Force Research Lab, Internship, Spring 2022.

- Temitope Borode, Electrospun Tough MXene-based Composite nanofibers for Sensor Applications, South Dakota State University, Thesis expected: 2022.
- Trupti Mali Suresh. Experimental and Computational Mechanics of Additively Manufactured Metal Alloys for High-Temperature Applications, South Dakota State University Thesis, expected: 2022.
- Ruhit Sinha. Development of Cellulose Acetate-Based Scaffold for Bone Tissue Engineering Applications, South Dakota State University Thesis, 2020.
- Chakraborty, Anirban. 3D Printed Bioreactor with Optimized Stimulations for Ex-Vivo Bone Tissue Culture South Dakota State University Thesis, 2019
- Danendra Agrawal, Stress analysis of Joint Dislocation, IIT Delhi Thesis, 2016
- Manoj Kumar (MD), Role of Extracorporeal Irradiation in Malignant Bone Tumor, AIIMS Delhi Thesis, co-guide, 2015
- Devesh Jain, Patient-specific stress analysis of Joint Dislocation, IIT Delhi Theis, 2015
- Ankur Mathur, Comparative Effectiveness of Stent-Graft Design in Curved Vascular System, IIT Delhi Thesis, 2014
- Saurabh Sahu, Design Analysis of Metal and Metal Foam structures, IIT Delhi Thesis, 2014

Undergraduates (previous institutes)

- Student Team: Martin Mead, Joseph Kutta, Design of Fiber Fracture Test Setup, Independent Study Team, Spring 2022.
- Karline Johnson, Nanomechanical Testing, Undergraudate Research, Spring 2022.
- Jordan Von Seggern, Computational Mechanics for MXenes-based Composites, supported by Air Force Research Lab, Internship, Fall 2021.
- Senior Design Team: Harness For Climbers, SDSU, 2021-2022.
- Senior Design Team: Isaiah Duhme, Megan M Fiala, Ryan Schaefer, Design of Affordable 3D Bioprinter, SDSU, 2020-2021.
- Senior Design Team: Kevin Lund, Geneva Petrich, Jacob Nomeland, Bone Tissue Compression Tester for Bio-CubeSat Project, SDSU, 2017-2018.
- Senior Design Team: Mike Jorgensen, Caden Holzer, Tessa Loberg, 3D Printed Bone Scaffold Design, SDSU, 2016-2017.
- Brooklyn VanDerWolde, Developed of Bone bioreactor, supported by SD Space Grant Fellowship, SDSU, 2020.
- Zachary Dorn, Cellulose fiber reinforcement in cast, South Dakota State University, 2020.
- Peder Solberg, Design of an Affordable Rotating Drum Electrospinner for Classroom Education, Current: Ph.D. Student at Dartmouth University. SDSU, 2019.
- Claire Eggleston, 3D Electrosppiner, currently Sales Associate at Johnson Controls, SDSU, 2018.
- Salam Thoithor, Junior Research Fellow, Indo-US Project, IIT Delhi, 2016-2018.
- Ruhit Sinha, Junior Research Fellow, Indo-US Project, IIT Delhi, 2016-present.
- Ikbal Choudhary, Junior Research Fellow, Indo-US Project, IIT Delhi, 2014-2016.
- Pranjal Singh, Study of Pulsatile Flow in Radial Artery, IIT Delhi 2013.
- Kishan Kumar Sachdeva, Blood Flow Simulation in Thoracic Aorta, IIT Delhi, 2013.

- Shilpi Jindal Bone Noninvasive Method for Hydration Monitoring in Patient, IIT Delhi, 2015
- Sumit Dey Trafadar Software Development of Blood Pressure Device, IIT Delhi, 2015
- Pratyush Sharma, Blood Pressure Pulse Waveform analysis, summer intern IIT Delhi, 2014.
- Vaibhav Gupta, Ultrasound methods for Bone material characterization, IIT Delhi, 2014.
- Pragyan Pandey, Coronary Stent and Model of Stent Crimper, IIT Delhi, 2013.