I. ACADEMIC/PROFESSIONAL BACKGROUND

Please, note that activities in Year 2023 are highlighted.

A. Name: JITENDRA S. TATE **Title:** Professor, Ingram School of Engineering

Contact: Office Phone: (512) 245-4872; Fax: (512) 245-7771
Email: JT31@txstate.edu
Homepage: http://composites.engineering.txstate.edu/about/people/tate.html

B. Educational Background

Degree	***Year***	***University***	***Major***	***Dissertation/Thesis/Project***
PhD	May 2004	NC A & T State University, Greensboro, NC, USA GPA 4.0/4.0	Mechanical Engineering	Performance Evaluation and Modeling of Braided Composites
MS	May 1996	University of Pune, India Summa Cum Laude	Mechanical Engineering	Design and Standardization of Degasser Tower
BS	April 1990	University of Pune, India Summa Cum Laude Silver Medal for Academic Excellence	Mechanical Engineering	Design and Fabrication of Working Model of Single Planetary Rolling Mill

C. University Experience

Position	***University***	***Dates***
Professor	Texas State University-San Marcos	Sep 2021-Present
Visiting Research Scholar	The University of Texas at Austin	Sep 2012- Aug 2013
Associate Professor	Texas State University-San Marcos	Sep 2011- Aug 2021
Assistant Professor	Texas State University-San Marcos	Sep 2005-Aug 2011
Research Associate	North Carolina A&T State University	May 2004- August 2005
Graduate Teaching Assistant	North Carolina A&T State University	August 2000- April 2004
Lecturer	University of Pune, India	July 1991- July 2000

D. Relevant Professional Experience

Position	***Entity***	***Dates***
Manufacturing Engineer	Thermax, Ltd., India	August 1990-July 1991
Manufacturing Engineer	Tata Motors Ltd., India	Oct 1986-Sep 1987

E. Other Professional Credentials

II. TEACHING

Teaching Honors and Awards:

- Teaching Award of Honor, Texas State Alumni Association (May 2020)
- National-level Composite Educator of the Year 2020 by Composites Division of Society of Plastics Engineers
- Presidential Distinction Award for Excellence in Service 2020, AY 2019-20.
- College Achievement Award for Excellence in Teaching 2019, AY 2018-19.
- Presidential Distinction Award for Excellence in Teaching 2018, AY 2017-18.

- National-level Dow Chemical Composite Educator of the Year 2009 by Composites Division of Society of Plastics Engineers https://gato-edit.its.txstate.edu/school-of-engineering/News/tate-dow-chem-educ-award.html
- The Alfred H. Nolle Chapter of the Alpha Chi National College Honor Society, 'Favorite Professor for 2012'
- College of Science and Engineering, 2009 Dean Nominee for the Presidential Award for Excellence in Teaching

Courses Taught:
At Texas State University-San Marcos (Fall 2005-till date)

MFGE 5320: Polymer Nanocomposites
MFGE 4399: Polymer Nanocomposites
MFGE 4397: Special Topics in Advanced Polymeric Materials
TECH 4390: Internship
MFGE 4367: Polymer Properties and Processing
MFGE 4363: Concurrent Process Engineering
MFGE 4355: Design of Machine Elements
ENGR 3311: Mechanics of Materials
MFGE 2332: Material Selection and Manufacturing Processes
ENGR 2300: Materials Engineering
ENGR 1413: Engineering Design Graphics

TECH 5384: Special Topics in Polymer Nanocomposites
TECH 5384: Special Topics in Reinforced Composites
TECH 5311: Computer Aided Engineering

At NC A&T State University (Fall 2000-Spring 2005)
MEEN 2200: Mechanical Engineering Tools

At University of Pune, India (Spring 1991- Spring 2000)

Statics	Dynamics
Mechanics of Materials	Design of Machine Elements I, II, & III
Theory of Machines and Mechanisms I	Dynamics of Machinery
Numerical Computational Methods	Engineering Graphics

C. Graduate Theses/Dissertations or Exit Committees:

Major Dissertation Advisor (Completed)

Mr. Harishsaiprasad Kallagunta, Ph.D. Material Science, Engineering, and Commercialization
Dissertation Title: Penetration Behavior of Composite Structures Modified with Surface Treated Nanoparticles"
Completed: Summer 2020

Major Dissertation Advisor (In Progress)

Mr. Oluwasola Arignbabowo, Ph.D. Material Science, Engineering, and Commercialization
Dissertation Title: Developing High-Performance Polyamide Bonded Magnet for Magnetic Field-Assisted Additive Manufacturing (MFAAM) Process
Dissertation Defense: Spring 2023
Expected completion: Spring 2024

Major Dissertation Committee Member (Completed)

Ms. Tanjina N. Ahmed, Ph.D. Material Science, Engineering, and Commercialization
Dissertation Title: Magnetic Characterization of the Hard-Magnetic Polymer Composite 3D-Printer Filament for the Development of Magnetic Field-Assisted Additive Manufacturing (MFAAM)
Major Supervisor: Dr. Ir. Wilhelmus J. Geerts
Completed: Spring 2023

Mr. Chandrakant Kunjir, Ph.D. Mechanical Engineering
Dissertation Title: Investigations on Heat Transfer Enhancement by C-type Fins under Natural Convection Condition
University: Savitribai Phule Pune University
Completed: August 2021

Major Dissertation Committee Member (In Progress)

Mr. James Bank, Ph.D. Material Science, Engineering, and Commercialization
Dissertation Title: Extrusion Freeform fabrication of Piezoelectric Elastomer Nanocomposites
Major Supervisor: Dr. Anahita Emami
Expected Graduation: Fall 2023

Major Thesis Advisor Completed

1. Mr. Mandesh Khadka, MS in Engineering- Mechanical and Manufacturing Engineering

Thesis Title: Development of Polymer-Bonded Magnetic Composite Using Magnetic-Assisted Additive Manufacturing (MFAAM)
Completed: Fall 2023

2. Mr. William Fahy, MS in Engineering- Mechanical and Manufacturing Engineering

Thesis Title: Dual-Layer Fiber Reinforced Polysiloxane Composite with Ablative Nanocomposites Layer and Glass Support Layer
Completed: Fall 2022

3. Mr. Connor Hammond, MS in Engineering- Mechanical and Manufacturing Engineering

Thesis Title: Optimization of SLA photopolymers thermal expansion for Nickel plating
Completed: Summer 2022

4. Mr. Liam M. Omer, MS in Engineering- Mechanical and Manufacturing Engineering

Thesis Title: Additive Manufacturing of High-Temperature Thermoset Composites
Completed: Spring 2022

5. Ms. Aziza Nahar, MS in Engineering- Mechanical and Manufacturing Engineering

Thesis Title: Ablative Performance of Carbon Fiber Reinforced Cyanate Ester Composites Filled with Nano-Ceramics
Completed: Summer 2021

6. Ms. Maria C Belduque Correa, MS in Engineering- Mechanical and Manufacturing Engineering

Thesis Title: Development of Strontium Ferrite/Polyamide 12 Composites for Magnetic Devices Using Additive Manufacturing
Completed: Spring 2021

7. Mr. Oluwasola Arigbabowo, MS in Engineering- Mechanical and Manufacturing Engineering

Thesis Title: Developing an Electrostatic Discharge Polyamide 6 Nanocomposite for 3D Printing"
Completed: Summer 2020

8. Mr. Robert Brushaber, MS in Engineering- Mechanical and Manufacturing Engineering

Thesis Title: 3D Printing of High Temperature Thermoplastics Composites using Commercial Off-the-shelf Printer"
Completed: Summer 2020

9. Mr. William Schneider, MS in Engineering- Mechanical and Manufacturing Engineering

Thesis Title: Feasibility study of high temperature hybrid thermoset composites for Thermal Protection System", Sponsored by NASA JSC
Completed: Fall 2019

10. Mr. Swayam Shree, MS in Engineering- Mechanical and Manufacturing Engineering

Thesis Title: Fatigue characterization of glass fiber reinforced hybrid composites"
Sponsored by Evonik Corporation
Completed: Summer 2019

11. Mr. Sagar Navle, MS in Engineering- Mechanical and Manufacturing Engineering

Thesis Title: Development Thermoplastic Nanocomposites for ESD/EMI Applications Using Additive Manufacturing
Completed: Fall 2018

12. Mr. Ryan McDermott, MS in Engineering- Mechanical and Manufacturing Engineering, Ingram School of Engineering

Thesis Title: Exploration of A New Affordable Thermal Protection System Utilizing Needle-Punched (2.5D) Fabric Composites
Completed: Summer 2018

13. Mr. Kannabiran Vasudevan, Dinesh Kumar, MS in Industrial Technology, Department of Engineering Technology

Thesis Title: Mechanical and Fatigue Characterization of Carbon Fiber Reinforced Composites Containing Rubber Micro-particles and Silica Nano-particles
Funded Project: Evonik Corporation
Completed: Summer 2016

14. Mr. Andres Alvarez, MS in Industrial Technology, Department of Engineering Technology

Thesis Title: Effects of Multiwall Carbon Nanotubes on the Mechanical Properties of Carbon-Reinforced Cyanate Ester Composites
Collaborators: Lonza, Inc.and Arkema, Inc..

Completed in Fall 2014

15. Mr. Dmitri Kabakov, MS in Industrial Technology, Department of Engineering Technology
Thesis Title: Effects of dispersion techniques on flammability and mechanical properties of phenolic/E-glass nanocomposites
Collaborators: Hexion, Inc.
Completed in Fall 2010.

16. Mr. Adekunle Akinola, MS in Industrial Technology, Department of Engineering Technology
Thesis Title: Fatigue performance of glass/epoxy nanocomposites for wind turbine blades
Collaborators: Hexion, Inc.; Saertex; and Nanoresins AG, Germany
Completed in Spring 2010.

17. Mr. Srujan Kumar Konga, MS in Industrial Technology, Department of Technology
Thesis Title: Low cost Manufacturing and Performance Evaluation of Soy-based Polyurethane/E-glass Composites
Collaborators: Arkema, Inc; Fiberglass Industries, NC.
Completed in Fall 2008.

Major Thesis Advisor In progress

Mr. Kyle Johnson, MS in Engineering- Mechanical and Manufacturing Engineering
Thesis Title: Deposition and Curing of Thermoset Mixtures for Thermal Protection
Expected graduation: Spring 2024

Mr. Esmer Trevino, MS in Engineering- Mechanical and Manufacturing Engineering
Thesis Title: Performance Evaluation of 2.5D Needle-punched Composites
Expected graduation: Fall 2024

Mr. Kiran Poudel, MS in Engineering- Mechanical and Manufacturing Engineering
Thesis Title: Improving Mechanical and Magnetic Properties of Strontium Ferrite filled Polyamide 12 Composites by Surface Treatment
Proposal Defense: Summer 2023
Expected graduation: Spring 2024

Thesis Committee Member (Completed)

Saif Al Arafin Taqy, MS Engineering-Electrical Engineering)
Thesis Title: Investigation of the Growth Parameters and Electronic Structure of Q-Carbon, and its Integration with High-Power Semiconductors
Major Thesis Advisor: Dr. Ariful Haque
Completed: Spring 2023

Lauren Henderson, MS in Physics
Major Thesis Advisor: Dr. Wim Geerts
Thesis Title: Magnetic Characterization of Fe/PLA 3-D Printed Filaments and Fe-Doped Ga_2O_3 Thin Films
Completed: Summer 2022

Mr. Ricardo Ramirez, MS in Engineering, Ingram School of Engineering
Thesis Title: Harvesting and Transmitting Natural Light for Indoor Use (2017 - 2021)
Major Thesis Advisor: Dr. Bahram Asiabanpour
Completed in Spring 2021

Mr. Akin Alo, MS in Engineering, Ingram School of Engineering
Thesis Title: Capillary Driven Flows in Micro-Machined Open Polymer Microchannels
Major Thesis Advisor: Dr. Namwon Kim
Completed in Spring 2021

Mr. Joseph Miller, MS in Engineering, Ingram School of Engineering
Major Thesis Advisor: Dr. Byoung You
Thesis Title: Improving Alignment of Kinematically Coupled Polymer Microfluidic Modules by Modularization of Coupling Features
Completed in Spring 2020

Mr. Venkateshwara Mekha
Thesis Title: Tool Design and Tool Path Planning of a Universal Gripper for Warehouse Automation
Major Thesis Advisor: Dr. Fred Chen
Completed in Fall 2018

Mr. Huff Shelby, MS in Engineering, Ingram School of Engineering
Thesis Title: Autonomous TIG Welding Optimization Using Deep Learning
Major Thesis Advisor: Dr. Fred Chen
Completed in Fall 2017

Mr. Pawan Kumar, MS in Industrial Technology, Department of Engineering Technology
Project Title: Six Sigma Application for Software Industry for Process Improvement
Major Project Advisor: Dr. Farhad Ameri.
Completed in Spring 2017

Mr. Zhuo Wang, MS in Industrial Technology, Department of Technology
Thesis Title: The Effects of Aggregate Moisture Conditions on Rheological Behaviors of High-Workability Mortar Prepared with Fine Recycled-Concrete Aggregate
Major Thesis Advisor: Dr. Jiong Hu
Completed in Spring 2012

Ms. Amanda Gregory, MS in Physics, Department of Physics
Thesis Title: The effects of plastic deformation on a series of thin magnetic films
Major Thesis Advisor: Dr. Wim Geerts
Completed in Fall 2010.

Thesis Committee Member (In progress)

Md Ibrahim Khalil Tanim, MS in Engineering- Mechanical and Manufacturing Engineering
Thesis Title: Design and Additively manufacturing of flexible piezoresistive pressure sensor for enhancing sensitivity
Major Thesis Advisor: Dr. Anahita Emami
Proposal Defense: Fall 2023
Expected graduation: Spring 2024

Gabriela L. Espinosa Rodriguez, MS Physics
Thesis Title: Magnetic Anisotropy of Strontium Ferrite / PA-12 Filaments used for 3D Printing of Permanent Magnets
Major Thesis Advisor: Dr. Wim Geerts
Proposal Defense: Fall 2023
Expected graduation: Spring 2024

D. Coursesared and Curriculum Development:

New Course Development

MFGE 5320: Polymer Nanocomposites
This a graduate level project-based course offered in fall 2016 for the first time. Students' teams are assigned a project that involves new research. They use facilities from Advanced Composites Lab, Chemistry, and ARSC-Application Research Service Center at Texas State. Students are required to write their final project in the form of SAMPE (Society for Advancement of Materials and Process Engineering) international conference paper. After extending the research work for one or two semesters, total twelve out of thirteen projects from fall 2016 and 2019 were presented at SAMPE or, CAMX (The Composites and Advanced Materials Expo) international conferences.

MFGE 4355: Design of Machine Elements
This course is taught for the first time in the department (spring 2014). It is one of the required courses for 'Mechanical Systems' concentration majors. It covers various machine elements such as shaft, chain drive, belt drive, gear drive, springs, and bearings.

MFGE 4399B: Polymer Nanocomposites
This course was taught for the first time in the department in fall 2009. Students were exposed to different nanoparticles, dispersion techniques, morphological/mechanical/thermal characterization, and applications of polymer nanocomposites. All students were required to present at Undergraduate Research Conference at Texas State. In Fall 09, 9 students presented their research. Out of these 9 students 1 student joined MS at University of North Texas, 2 students wrote NSF Graduate Research Fellowship Program (GRFP) grant. *Students used facilities at Advanced Composites Lab, the then IEIS-Institute of Environmental and Industrial Sciences at Texas State, and Nano Science and Technology (NST) Center at UT-Austin. This was research-based course to prepare students for graduate studies.*

MFGE 4367: Polymer Properties and Processing
This course was taught for the first time in the department in spring 2006 and being offered regularly once or twice a year. Developed an individual project-based learning approach to develop research aptitude in students. The following paper has been published based on the course's experience.

- J. S. Tate and V. Sriraman, "Developing research aptitude in senior year manufacturing engineering students", UICEE's *World Transactions on Engineering and Technology Education, vol. 6, no.2, pp.267-70, 2007.*

This course is a combination of lectures, lab experiments, videos, guest speakers, plant tours, and participation in national-level Ultra Lightweight Composite Bridge Building competition organized by SAMPE. After completing, the course students are prepared to take Certified Composites (CCT) professional certification exam offered by American Composites Manufacturers Association (ACMA).

TECH 5311: Computer Aided Engineering
This course was offered after long time in the department and was taught as new course in fall 2005. Developed project-based learning approach for diverse student population. The following paper has been published related to the new pedagogical methods adopted in this course teaching.

- J. S. Tate and V. Sriraman, "Project based approach to teaching of 'computer aided engineering' to a multidisciplinary student population", UICEE's *World Transactions on Engineering and Technology Education, vol. 6, no. 1, pp. 71-74, 2007.*

Reengineered ENGR 2300: Materials Engineering
This course was heavily metallic materials oriented. It has been significantly changed to include topics from polymer structure, applications, and processing; composites applications and processing; and ceramics applications and processing. Six lab demonstrations were exercised on

- Tension test on steel, aluminum, and cast iron to evaluate % elongation, strength, and modulus, ductility/brittleness
- Flexure test on composites to evaluate flexural strength and modulus
- Hardness test on steel. Relating Brinell hardness # with strength of steel

- Mass spectrometer for analyzing chemical composition of alloys
- Thermomechanical analyzer (TMA) for coefficient of thermal expansion
- Optical microscopy to evaluate crystal structures of cast iron

The overlaps between this and MFGE 2332: Material Selection and Manufacturing Processes has been removed and course contents are streamlined. Dr. Tate taught this course from spring 2006 till summer 2013.

MFGE 4363: Concurrent Process Engineering
Acquired industry sponsored projects from Toyota and Heinemann Saw Company. Promoted cross-disciplinary projects with Department of Agriculture (International Center for Environmental Studies), Department of Exercise, and Sports Science.

Curriculum Development
Developed syllabi for following courses:
MFGE 5398B: Advanced Composite Materials, submitted in Spring 2015
ENGR 3375: Engineering Mechanics, submitted in Spring 2014
MFGE 5320: Polymer Nanocomposites, submitted in Fall 2012
MFGE 4357: Dynamics of Machinery, submitted in Spring 09
ENGR 1313: Engineering Design Graphics, submitted in Spring 08
MFGE 4355: Design of Machine Elements, submitted in Spring 08
MFGE 4399B: Special Topics in Reinforced Polymer Nano-composites, submitted in Spring 08

Advanced Composites Lab (ACL) Development, Ingram Hall 1308 (previously RFM 1218)
http://composites.engineering.txstate.edu/

RFM 1218 was an empty room when Dr. Tate joined Texas State in fall 2005. Today, it is state-of-the art Advanced Composites Lab (ACL) that houses state-of-the-art equipment dealing with manufacturing and characterization of advanced composites/nanocomposites. It is extensively used in teaching and interdisciplinary research.

- Inaugural equipment installed: Polylab extruder rheometer and injection molding machine (2005-06).
- Phase-I equipment installed: MTS servo hydraulic test system, viscometer, sonicator, polymer melt indexer, infrared thermometer, and setup for VARTM process (2005-06).
- Phase-II equipment installed: Compression press, thermo-mechanical analyzer (TMA), strain gage conditioner, and Leica microsystem (2006-07).
- Phase-III equipments installed: High shear mixer, glove box, vacuum oven, compression and interlaminar shear strength (ILSS) fixtures (2007-08).
- Phase-IV equipment installed for maintaining lab safety while handling polymer resins and dry nano-particles: Nanoparticle Containment Room. This is a portable clean room with dedicated exhaust system with ULPA (Ultra-Low Penetration Air) filters rated 99.999% efficient with particles filtration of 0.12 microns (120 nm) in diameter. Nanoparticle Containment facility is unique on-campus facility to handle dry nano-particles such as nanoclays and carbon nanotubes (2008-09).
- Phase-V: Acquired and installed Centrifugal planetary mixer, THINKY Model ARV 310 with funds from Director, School of Engineering. Director, IEIS, and the Associate Vice President for Research (2009-10)
- Phase VI: Acquired Low velocity drop impact test system, Instron Model 9340 with funds from Director, School of Engineering and the Associate Vice President for Research (2010-11)
- Phase VII: Developed Standard Operating Procedures (SOPs) and Safety Protocols for all equipment in the lab in consultation with EHS R&M; Major changes on Advanced Composites Lab website providing MSDS, SOP, machine manuals, and safety rules; (CY 2015)
- Phase VIII: Acquired Lulzbot 3D Printer as donation, installed new software for MTS and Instron machines, Ordered Haoki Megaohmeter for electrical resistivity measurements of plastics (CY 2016)

- Phase IX: Acquired and installed Twin screw extruder, Simultaneous DSC/TGA, Electromechanical MTS Tester 10kN, Electromechanical UTS Tester50kN (CY 2020)

Note: Advanced Composites Lab is extensively used for courses such as ENGR 2300: Materials Engineering; MFGE 2332: Material Selection and Manufacturing Processes; ENGR 3311: Mechanics of Materials; MFGE 4367: Polymer Properties and Processing; MFGE 5320/4399B: Polymer Nanocomposites; and other engineering and technology courses. This lab is also extensively used in conducting interdisciplinary research and being used by researchers in engineering, technology, physics, and chemistry. It also has become a magnet in attracting industry attention.

E. Funded External Teaching Grants and Contracts:
F. Submitted, but not Funded, External Teaching Grants and Contracts:
G. Funded Internal Teaching Grants and Contracts:
H. Submitted, but not Funded, Internal Teaching Grants and Contracts:

I. Other (Mentoring and Advising):

Dissertation Research Support Fellowship

- Oluwasola Aringbabowo, $5,000 (Fall 2023), Harish Kallagunta, $5,000 (Fall 2019)

Graduate Research Support Fellowships

- Kiran Poudel, $2000 (Spring 2023), Mandesh Khadka, $2000 (Fall 2022), William Fahy, $2000 (Fall 2022), Liam Omer, $2000 and Connor Hammond, $2000 (Fall 2021); Kyle Johnson, $2,000; Aziza Nahar, $2,000; and Maria C Belduque Correa, $2,000 (Fall 2020); Arigbabowo, Oluwasola K, $,2,000 (Fall 2019); Swayam Shree, $,2,000 (Fall 2018); William Schneider, $2,000; Robert Brushaber, $2,000; Esmer Trevino, $2,000 (Fall 2018); Ryan McDermott, $2,000; Sagar Navle, $2,000 (Fall 2017)

SAMPE Student Chapter Funding

- $1,000 from SAMPE Head Quarters 2023, Student President: Oluwasola Aringbabowo
- $1,000 from SAMPE Head Quarters 2022, Student President: William Fahy
- $1,000 from SAMPE Head Quarters 2021, Student President: Aziza Nahar
- $2,000 from SAMPE Head Quarters 2020, Student President: Harish Kallagunta
- $1,000 from SAMPE Head Quarters 2019, Student President: Swayam Shree
- $1,000 from SAMPE Head Quarters 2018, Student President: Shelby Vasconcellos-Murphy

SAMPE Leadership Awards-Travel Grant

- Arigbabowo, Oluwasola K; Harish Kallagunta, and Subash Panta SAMPE 2020, Seattle, May 4-7, 2020 (to be honored at SAMPE 2022)
- Harish Kallagunta (PhD MSEC), Swayam Shree (MS MME), and William Schneider (MS MME), SAMPE 2019, May 20-24, 2019, Charlotte. NC.
- Sagar Navle (MS MME) and Shelby Vasconcellos-Murphy (BS MFGE), SAMPE 2018, May 21-24, 2018, Long Beach, CA.

NSF-Travel Awards

- Sagar Navle, MS MME, POWDERMET 2017, International Conference on Powder Metallurgy and Particulate Materials, June 13-16, 2017, Las Vegas, NV
- Sagar Navle, MS MME, SFF 2017, Annual International Solid Freeform Fabrication Symposium, August 7-9, 2017, Austin, TX

NSF-SPARK Undergraduate Scholar (Women in STEM fields)

- Ms. Marisa Downey (Fall 2016, Spring 2017)

Semiconductor Research Corporation (SRC) Undergraduate Research Opportunities (URO)

- Andrew Alvarez, $2,340, Spring 2019

NSF H-LSAMP Undergraduate Scholars (Hispanics in STEM fields)

- Mr. Andrew Alvarez (Spring 2019)

- Mr. Keondre Parker (Fall 2016)
- Mr. Davontae Habbit (Fall 2013, Spring 2014, Fall 2014, Spring 2015, Fall 2015)
- Mr. James Warren (Spring 2012)
- Mr. Adrian Rodriguez (Fall 2011)
- Ms. Sara Camacho (Spring 2011)
- Mr. Alex Herrera and Ms. Lindsey Whitworth (Spring 09, Fall 09, Spring 10, and Fall 10)
- Mr. Saul Villarreal (Fall 08 and Spring 09)
- Mr. Stephen Jones (Fall 07 and Spring 08)

SAMPE Ultra-light Weight Bridge Building Contest
Advised undergraduate teams/individuals for national-level SAMPE Ultra Light-weight Composite Bridge Building Contest in Carbon, Glass, and Natural Composites categories.

- Seattle, WA, May 2014
  - 5 teams participated. None won any prize.
- Long Beach, CA, May 2013
  - 2 teams participated. One individual won first prize in I-beam Carbon Bridge category.
    http://www.engineering.txstate.edu/news/National-SAMPE-Composite-Bridge-Contest.html
    https://gato-edit.its.txstate.edu/school-of-engineering/News/National-SAMPE-Composite-Bridge-Contest.html
- Baltimore, MD, May 21-24, 2012
  - 4 teams participated. None won any prize.
- Long Beach, CA, May 23-26, 2011
  - 6 teams participated. None won any prize.
- Seattle, WA, May 18-21, 2010.
  - 6 teams participated. 3 teams won cash prizes totaling $600.
    http://www.engineering.txstate.edu/news/sampe-bridge-contest.html
  - https://gato-edit.its.txstate.edu/school-of-engineering/News/sampe-bridge-contest.html
- Baltimore, MD, May 17-21, 09.
  - 5 teams participated. 3 teams won cash prizes totaling $250.
    http://www.engineering.txstate.edu/news/SAMPE-Bridge2009.html
- Long Beach, CA, May 18-22, 08.
  - 2 students participated. 1 won cash prize of $175.
    http://www.txstate.edu/news/news_releases/news_archive/2008/06/Bridge061108.html
  - https://gato-edit.its.txstate.edu/school-of-engineering/News/SAMPE-Bridge.html

Graduate and Undergraduate Research Conferences (Presentations)
Advised undergraduate and graduate students in conducting research. These students presented their research at conferences.

- Undergraduate Research Conference (University Honors Program) at Texas State, March 2023
  Dr. Wim Geerts' students
- Undergraduate Research Conference (University Honors Program) at Texas State, April 24, 2015
  - D. Habbit, "Characterization of Carbon Fiber Reinforced Cyanate Ester Nanocomposites Modified by Multiwall Carbon Nanotubes
- International Research Conference for Graduate Students at Texas State, Nov 2-3, 2011.
  - S. Gaikwad and J. S. Tate, "Development of PA11/NGP nanocomposites for ESD applications."
- International Research Conference for Graduate Students at Texas State, Nov 4-5, 2009.
  - D. Kabakov and J. S. Tate, "Fire retardant phenolic nanocomposites."
  - A. T. Akinola and J. S. Tate, "Glass reinforced biobased polyurethane nanocomposites."
    http://www.gradcollege.txstate.edu/rsrch_conf.html

- Undergraduate Research Conference (University Honors Program) at Texas State, Dec 3-4, 2009.
  - B. Barrier and D. Velez, “Glass/phenolic nanocomposites: thermal properties.”
  - T. Hilbig and B. Butler, “Effects of mixing techniques on mechanical properties of epoxy resin with Halloysite nanotubes.”
  - C. Jacobs and B. Olson, “Thermal stability studies on nylon 11/nanographene nanocomposites.”
  - A. Herrera and E. Larson, “Kenaf reinforced soy-based polyurethane nanocomposites: mechanical and thermal properties.”
    http://www.txstate.edu/honors/forum/honorconf.html

ACMA’s Certified Composites (CCT) Professional Certification

- Advise senior-level manufacturing engineering students to take Professional certification exam, Certified Composites (CCT) offered by American Composites Manufacturers Association-ACMA. Total **45** students passed CCT till Spring 2020.
  http://composites.engineering.txstate.edu/education/CCT.html

Senior Design Project

- Advised team of undergraduate students in their senior design project, MFGE 4363: Concurrent Process Engineering course.
  - Prepreg Making Machine: Calendaring Team Fall 2023
  - Mr. Charles Jacobs, Mr. Alex Herrera, Mr. Benjamin Olson, Mr. James Hollingshed, ‘Calendaring Machine to produce Advanced Prepregs for Aerospace Applications’, Fall 2010.
  - Mr. Shane Arabie and Mr. Aaron Bowers, ‘Automation of VARTM Composite Manufacturing’ won first prize in the internal competition, Fall 2007.

NC OPT-ED Alliance Day Conference and Undergraduate Research Conference, Poster

Stephen Jones, Undergraduate Manufacturing Engineering, Advisors: Drs. J. S. Tate, and J. Massingill, “ Low cost manufacturing of polyurethane/glass composites.”

III. SCHOLARY/CREATIVE

Scholarly/Creative Honors and Awards:

- Journal article featured as groundbreaking research at the reputable website, Advances in Engineering. https://advanceseng.com/fused-filament-fabrication-polyamide-6-nanographene-composite-electrostatic-discharge-applications/
- TXST News: Texas State partners with Saleen, WSRCA to bring composite materials training to Round Rock Campus: Newsroom : Texas State University (txst.edu) Fall 2023 https://news.txst.edu/inside-txst/2023/texas-state-round-rock-saleen-partnership.html
- JEC Composites America published article on 'Advanced Composites Lab' in July-Aug 2020 issue #135, pages #62-63 (Media).
- National Recognition, 'NSF-NUE NanoTRA: Texas Regional Alliance to Foster Nanotechnology Environment, Health, and Safety Awareness in Tomorrow's Engineering and Technology Leaders' project selected as an NAE Exemplar in Engineering Ethics Education, Spring 2016 (NAE - National Academies of Sciences, Engineering, and Medicine) http://www.txstate.edu/news/news_releases/news_archive/2016/February-2016/NanoTRA021916.html
- Hillview ran the story on it in vol. 47 no.2 edition in 2016. Refer pages 10-12 (**Media**).
- Selected for Invitation Only Workshop on Overcoming Challenges to Infusing Ethics into the Development of Engineers, organized by the National Academy of Engineering, Jan 10-12, 2017, Washington D.C.

A. Work In Print

1. Books

a. Scholarly Monographs:
b. Textbooks:

c. Edited Books:

Title: NANO-SAFETY What we need to know to Protect Workers
Editors: Dominick Fazarro, Walt Trybula, Jitendra Tate, and Craig Hanks
Publisher: De Gruyter
ISBN: 9783110781823 (2nd)
Published: 2nd edition fall 2023
https://www.degruyter.com/document/isbn/9783110781830/html

Title: NANO-SAFETY What we need to know to Protect Workers
Editors: Dominick Fazarro, Walt Trybula, Jitendra Tate, and Craig Hanks
Publisher: De Gruyter
ISBN: 978-3-11-037375-2 (1st) ,
Published: 1st edition fall 2017
https://www.degruyter.com/view/product/431858

d. Chapters in Books (Published):

1. Jitendra S. Tate and Roger Hernandez, "Chapter 4. Safety Approaches to Handling Engineered Nanomaterials", *NANO-SAFETY What we need to know to Protect Workers* edited by D. Fazarro,

W. Trybula, J. Tate, and C. Hanks, De Gruyter Publications, Chapter 4, ISBN: 9783110781823 (**2023)**

2. Jitendra S. Tate and Roger Hernandez, "Chapter 4. Safety Approaches to Handling Engineered Nanomaterials", *NANO-SAFETY What we need to know to Protect Workers* edited by D. Fazarro, W. Trybula, J. Tate, and C. Hanks, De Gruyter Publications, Chapter 4, ISBN: 978-3-11-037375**-(2017)**
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e. Creative Books:

2. Articles

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a. Refereed Conference Proceedings (Published):
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41. Hanks, J.C., Tate, J.S., Fazarro, D.E, Trybula, W. McLean, R.J.C., Dutta, S., Allhoff, F. Barton. S., and Russell, Z. "Fostering Ethical, Social, Environmental, Health, and Safety Awareness in Tomorrow's Engineers and Technologists," *ASME 2014 International Mechanical Engineering Congress,* Montreal, CA. November 14-20, 2014
42. J. Tate, C. Hanks, D. Fazarro, W. Trybula, S. Dutta, and R. McLean, "NUE: NanoTRA- Texas Regional Alliance to Foster Nanotechnology Environment, Health, and Safety Awareness in Tomorrow's Engineering and Technology Leaders", 121st ASEE Annual Conference and Exposition, Indianapolis, IN, June 15-18, 2014.
43. Hanks, J. Tate, D. Fazarro, W. Trybula, S. Dutta, F. Allhoff, and R. McLean, "The Continuing Shock of the New: Some Thoughts on why Law, Regulation, and Codes are Not Enough to Guide Emerging Technologies", 121st ASEE Annual Conference and Exposition, Indianapolis, IN, June 15-18, 2014.
44. J. Tate, A. Alvarez, S. Espinoza, D. Habbit, and J. Koo, "Effects of Multiwall Carbon Nanotubes (MWCNT) on Thermal Properties of Cyanate Ester Composites", SAMPE Tech 2014, Seattle, WA, June 2-5, 2014.
45. J. Tate, A. Akinola, S. Gaikwad, S. Espinoza, A. Alvarez, D. Habbit, and S. Sprenger "Tension-Tension Fatigue Performance of Nanosilica Modified Epoxy/Glass Nanocomposites", SAMPE Tech 2014, Seattle, WA, June 2-5, 2014.
46. Hanks, J. Tate, D. Fazarro, W. Trybula, S. Dutta, and R. McLean "A Multi-Disciplinary, Multi-Institutional Approach to Teaching Ethical, Social, Health, Safety, and Environmental Issues in Nanotechnology", 2014 IEEE International Symposium on Ethics in Engineering, Science, and Technology, Chicago, IL, May 23-24, 2014.
47. J. H. Koo, S. C. Lao, A. Hao, T. J. Moon, G. E. Wissler, L. A. Pilato, and J. Tate, "Role of different nanoparticles in flame retardant Polyamide 11 nanocomposites", *Proc. 5th International Seminar on Modern Polymeric Materials for Environmental Applications,* Krakow, Poland, May 15-17, 2013.
48. J. H. Koo, M. Natali, J. Tate, and T. Mensah, "Polymer Nanocomposites for Advanced Ablative Materials – A Comprehensive Review," *9th International Symposium on Special Topics in Chemical Propulsion*, Quebec City, Quebec, Canada, July 9-13, 2012.
49. J. Koo, M. Natali, J. Tate, and M. Mensah, "A Review of Polymer Nanocomposites as Advanced Thermal Protection Materials", *International SAMPE Symposium and Exhibition* (ISSE 2012), Baltimore, MD, USA, May 21-24, 2012.
50. S. Gaikwad, J. S. Tate, N. Theodoropoulou, E. Trevino, M. Andrews, and J. H. Koo "PA11/Nanographene platelet nanocomposite for selective laser sintering (SLS)", *International SAMPE Symposium and Exhibition* (ISSE 2012), Baltimore, MD, USA, May 21-24, 2012. ID#2088.
51. J. S. Tate, S. Gaikwad, C. Jacobs, E. Trevino, and A. Herrera, "Comparison of mechanical performance of Halloysite nanotubes modified polyurethane glass composites using aliphatic

and aromatic isocynates", *International SAMPE Technical Conference* (ISTC 2011), Forth Worth, TX, USA, Oct 17-21, 2011. ID#1724.

52. R. Schultz, J. S. Tate, S. Gaikwad, E. Trevino, and C. Jacobs, "Low velocity impact studies on rubber micro-particles and silica nano-particles modified epoxy glass composites", *International SAMPE Technical Conference* (ISTC 2011), Forth Worth, TX, USA, Oct 17-21, 2011. ID#1725.
53. C. Jacobs, J. S. Tate, R. Schultz, E. Trevino, S. Gaikwad, J. Koo, B. Williams, and A. Matthes, "Development of MWCNT modified phenolic carbon nanocomposites for rocket nozzle: collaboration with Fredericksburg High-school", International *SAMPE Technical Conference* (ISTC 2011), Forth Worth, TX, USA, Oct 17-21, 2011. ID#1726.
54. J. S. Tate, C. J. Jacobs, S. Gaikwad, B. Olson, W. Stapleton, N. Theodoropoulou ,and J. Koo, "Thermal and electrical properties of Polyamide 11/Nanographene Platelet Nanocomposites", *International SAMPE Symposium and Exhibition* (ISSE 2011), Long Beach, CA, USA, May 23-26, 2011. ", ID#1262
55. J. S. Tate, C. J. Jacobs, and J. Koo, "Dispersion of MWCNT in phenolic resin using different dispersion techniques and evaluation of thermal properties",. *International SAMPE Symposium and Exhibition* (ISSE 2011), Long Beach, CA, USA, May 23-26, 2011. ID#1261.
56. J. S. Tate, D. Kabakov, and J.Koo, "Carbon/phenolic nanocomposites for ablative applications" *International SAMPE (The Society for the Advancement of Material and Process Engineering) Technical Conference* (ISTC 2010), Salt Lake City, UT, USA, Oct 11-14, 2010, ID# 670.
57. J. S. Tate, A. T. Akinola, and S. Sprenger, "Mechanical performance of nanosilica modified epoxy/glass composites for wind turbine applications", *International SAMPE Symposium and Exhibition* (ISSE 2010), Seattle, WA, USA, May 18-21, 2010, ID#188.
58. D. Kabakov, J. S. Tate, and J. Koo, "Effect of dispersion techniques on FST and mechanical properties of phenolic/E-glass nanocomposites", *International SAMPE Symposium and Exhibition* (ISEE 2010), Seattle, WA, USA, May 18-21, 2010.
59. J. S. Tate, D. Kabakov, J. Koo and S. Lao, "Nanoreinforced phenolic composites – flammability and mechanical properties", *International SAMPE Symposium and Exhibition* (ISSE 2009), Baltimore, MD, USA, May 18-21, 2009, ID# B107.
60. J. S. Tate, A. T. Akinola, P. Patel and J. Massingill, "Nano-modified soy-based polyurethane/E-glass composites – mechanical and thermal properties", *International SAMPE Symposium and Exhibition* (ISSE 2009),Baltimore, MD, USA, May 18-21, 2009, ID# B106.
61. J. S. Tate, J. Massingill, P. Patel, and S. Konga, "Enhancement in mechanical properties by improving fiber/matrix adhesion in bio-based polyurethane/E-glass composites", *International SAMPE Symposium and Exhibition* (ISSE 2008), Long Beach, CA, USA, May 18-22, 2008, ID# L079 .
62. J. S. Tate, J. Massingill, P. Patel, P. Rikka, and S. Arabie, "Mechanical characterization of bio-based polyurethane/e-glass composites", *International SAMPE Fall Technical Conference* (ISTC 2007), Cincinnati, OH, USA, October 29 – November 1, 2007, ID# C149.
63. J. S. Tate and V. Sriraman, "Individual project-based approach to develop research aptitude in manufacturing engineering students", *ASEE (American Society for Engineering Education) 2007 Annual Conference and Exposition*, Honolulu, Hawaii, USA, June 24-27, 2007, ID# AC 2007-263.
64. J. S. Tate, A.D. Kelkar, and G. Beall, "Viscoelastics effects on fatigue behavior of braided composites", *ASME (American Society of Mechanical Engineers) 2006 International Mechanical Engineering Congress and Exposition*, Chicago, IL, November 5-10, 2006.
65. J. S. Tate and V. Sriraman, "An approach to teaching computer aided engineering to a diverse student population", *ASEE 2006 Annual Conference and Exposition*, Chicago, IL, USA, June 18-21, 2006, ID# 2006-2658.
66. J. S. Tate and A. D. Kelkar, "Flexural behavior of biaxial braided composites", *ASME 2005 International Mechanical Engineering Congress and Exposition*, Orlando, Florida, USA, November 5-11, 2005, ID# IMECE2005-81324.
67. R. Bolick, A. D. Kelkar, J. Taylor, and J. S. Tate, "Performance evaluation of unstitched, stitched, and z-pinned textile composites under static loading", *ASME 2005 International*

Mechanical Engineering Congress and Exposition, Orlando, Florida, USA, November 5-11, 2005, ID# IMECE2005-81053.

68. R. Bolick, A. D. Kelkar, and J. S. Tate, "Interlaminar shear strength comparison of stitched, unstitched, and braided composites", *International SAMPE Technical Conference* (ISTC 2005), Seattle, Washington, USA, October 31-November 3, 2005, ID# P126.
69. J. S. Tate, A. D. Kelkar, D.Goyal, J. D. Whitcomb and X. Tang, "Behavior of biaxial braided composites subjected to uniaxial tensile loading", *American Society for Composites (ASC), 20th Annual Technical Conference*, Philadelphia, PA, USA, September 7-9, 2005.
70. D. Kelkar, J. S. Tate, and P. Chaphalkar, "Performance evaluation of VARTM manufactured textile composites for aerospace and defense applications", *The 3rd International Conference on Materials for Advanced Technologies* (ICMAT 2005), Singapore, July 3-8, 2005.
71. D. Kelkar, J. S. Tate, and R. Bolick, "Structural integrity of aerosapce textile composites under fatigue loading", *The 3rd International Conference on Materials for Advanced Technologies* (ICMAT 2005), Singapore, July 3-8, 2005.
72. J. S. Tate, A. D. Kelkar, and R. Bolick, "Performance evaluation of notched biaxial braided composites", *ASME 2004 International Mechanical Engineering Congress and Exposition*, Anaheim, CA, November 13-19, 2004, ID# IMECE2004-59883.
73. J. S. Tate and A. D. Kelkar, "Effect of braid angle on fatigue performance of biaxial braided composites", *The 3rd International Conference on Fatigue of Composites* (ICFC), Kyoto, Japan, September 13-15, 2004.
74. D. Kelkar, J. S. Tate, and J. D. Whitcomb, "Durability of VARTM manufactured textile composites", *International Conference on Advances in Structural Integrity* (ICASI), Bangalore, India, July 14-17, 2004.
75. J. S. Tate, A. D. Kelkar, and V. A. Kelkar, "Failure analysis of biaxial braided composites under fatigue loading", *The 15th European Conference of Fracture* (ECF), Stockholm, Sweden, August 11-13, 2004.
76. J. S. Tate, A. D. Kelkar and J. Rice, "Feasibility study of VARTM manufacturing of carbon biaxial braided composites using EPON 9504 epoxy resin system", *8th Japan International SAMPE Symposium & Exhibition* (JISSE-8), Tokyo, November 18-21, 2003.
77. D. Kelkar and J. S. Tate, "Fatigue behavior of VARTM manufactured biaxial braided composites"; *ASME 2003 International Mechanical Engineering Congress and Exposition*, Washington, D.C., USA, November 15-21, 2003, ID# IMECE2003-43850.
78. R. Bolick, A. D. Kelkar and J. S. Tate, "Fatigue behavior of post-impacted VARTM manufactured woven laminates", *International SAMPE Technical Conference*, (ISTC 2003) Dayton, Ohio, USA, September 28-October 2, 2003.
79. D. Kelkar, J. S. Tate and R. Bolick, "Introduction to low cost manufacturing of composite laminates", Unique Lab Experiments Poster Session, *ASEE 2003 Annual Conference & Exposition*, Nashville, TN, USA, June 22- 25, 2003.
80. D. Kelkar and J. S. Tate, "Effect of fatigue loading on the stiffness degradation of VARTM manufactured biaxial braided composites", *9th International Conference on the Mechanical Behavior of Materials* (ICM9), PALEXPO Congress Center, Geneva, Switzerland, May 25-29, 2003.
81. D. Kelkar and J. S. Tate, J. D. Whitcomb and X. Tang, "Performance evaluation and modeling of braided composites"; *44th AIAA/ASME/ASCE/AHS Structures, Structural Dynamics, and Materials Conference*, Norfolk, Virginia, USA, April 7-10, 2003, ID# AIAA 2003-1475.
82. D. Kelkar and J. S. Tate; "Low cost manufacturing of textile composites using vacuum assisted resin transfer molding", *The 20th All India Manufacturing Technology, Design and Research Conference* (AIMTDR), Ranchi, India, December 12-15, 2002, pp. 712-716.
83. R. Bolick, A. D. Kelkar and J. S. Tate, "Comparative study of riveted joints and adhesively bonded joints subjected to fatigue loading", *8th International Fatigue Congress*, FATIGUE 2002, Stockholm, Sweden, June 2-7, 2002, pp. 1087-1094.

4. Abstracts:

1. J. S. Tate, A. D. Kelkar, and V. A. Kelkar, "Minimizing scatter in load-controlled fatigue test data of textile polymeric composites using statistical techniques", *International Conference on Advances in Interdisciplinary Statistics and Combinatorics*, Greensboro, NC, Oct 12- 14, 2007.
2. J. S. Tate, A. D. Kelkar, and R. Bolick, "Tension and fatigue behavior of slit sleeve braided composites", *11th International Conference on Composites/Nano Engineering* (ICCE11), South Carolina, Aug 11-14, 2004.
3. A. A. Kelkar, J. S. Tate and R. Bolick, "Investigation of braided composites for prosthetic applications", *10th Annual International Conference on Composite Engineering* (ICCE10), New Orleans, LA, USA, July 20-26, 2003, p 837-838.
4. A. D. Kelkar, J. S. Tate and R. Bolick, "Low cost manufacturing of biaxial braided composite laminate" *9th Annual International Conference on Composite Engineering* (ICCE9), San Diego, CA, USA, July 1-6, 2002, p 373-374.

1. Reports:

Internal Research Report:

Development of E-glass/bio-based polyurethane multifunctional reinforced nanocomposites using low-cost VARTM process, 117 full-text downloads since date of posting (2009-08-13)
http://ecommons.txstate.edu/osp_regs/175

Annual Reports (CY 2014, 2015, and 2016)

NSF-NUE: NanoTRA-Texas Regional Alliance to Foster Nanotechnology Environment, Health, and Safety Awareness in Tomorrow's engineering and Technology Leaders

2. Book Reviews:

- Ajit D. Kelkar, Daniel Herr, and James G. Ryan, "Advances in Nanoscience and Nanoengineering", CRC Press, July 2013. https://www.crcpress.com/Nanoscience-and-Nanoengineering-Advances-and-Applications/Kelkar-Herr-Ryan/p/book/9781482231199

- Book proposal Review, "Composites Engineering: An A-Z Guide", IOP Publishing UK, May 2020

7. Others:

Poster ONLY:

Texas State student names are underlined.

1. Chris Selsor, Oluwasola Arigbabowo, Jitendra Tate, Wilhelmus J. Geerts, "Magnetic Characterization of Strontium-Ferrite/PA12 Composites for 3D Printed Magnetic Materials", REU poster presentation (2nd prize), August 2022, Texas State University San Marcos.
2. Ahmed, T. N. (Corresponding Author), Henderson, L. (Author), Belduque Correa, M. C. (Author), Tate, J. (Author), Chen, M. (Author), Geerts, W. J. (Author), International Research Conference Texas State University, "Effect on the magnetic properties of MFAAM process on hard and soft magnetic 3D printed composite materials measured with a biaxial Vibrating Sample Magnetometer (VSM) and Torque Magnetometer (TM)," Graduate College, Texas State University, San Marcos, United States. (April 6, 2021).
3. Subash Panta, Jitendra Tate, and Harish Kallagunta, "Analysis of Dispersion, Wettability, Viscosity and Mechanical Properties of Unsaturated Polyester Nanocomposites Consisting of Dichlorodimethyl Silane Treated Alumina Nano-fibers", SPE-Automotive Composite Conference & Exhibition, September 9-11, 2020, Detroit, MI, **3rd Place in Undergraduate Category, $200**

4. Camila Belduque, Tanjina Ahmed, Wilhelmus J. Geerts, and Jitendra Tate, "Magnetic Moment and Magnetic Anisotropy Analysis of 3D printed Strontium Ferrite/PA12 filament under a Magnetic Field", SPE-Automotive Composite Conference & Exhibition, September 9-11, 2020, Detroit, MI, **3rd Place in Masters Category, $200**
5. Elizabeth Alvizo and Jitendra Tate, "Development of Natural Fiber Composites", SPE-Automotive Composite Conference & Exhibition, September 9-11, 2020, Detroit, MI.
6. Serra E. Holthaus, Venus S. Stanton, Elizabeth N. Alvizo, Mariana Ocampo, Jitendra S. Tate, , and Jennifer A. Irvin, "Sustainable Cellulose Nanofibers from Ragweed", Women in Science and Engineering Conference, College of Science and Engineering, Texas State University, March 6, 2020.
7. J. S. Tate[1*], O. K. Arigbabowo, Shree Swayam, and Roger Faria, "The effects of nanosilica on the static and fatigue properties of nanomodified carbon fiber reinforced epoxy composite", SPE (Society of Plastics Engineers) ACCE - Automotive Composites Conference & Expo, Novi, MI, September 4-6, 2019
8. Harish Sai Prasad Kallagunta[1,2], Jitendra S. Tate, "Functionalized Alumina Nanofibers Filled Polymer Nanocomposites: Mechanical and Thermal Analysis", SPE (Society of Plastics Engineers) ACCE - Automotive Composites Conference & Expo, Novi, MI, September 4-6, 2019
9. Harish Kallagunta and Jitendra Tate, "Low Velocity Impact Studies on Affordable Nano Modified Glass Composites", SPE (Society of Plastics Engineers) ACCE - Automotive Composites Conference & Expo, Novi, MI, September 5-7, 2018.
10. Swayam Shree and Jitendra Tate, "Fatigue Performance of Toughened Epoxy Glass Composites", SPE (Society of Plastics Engineers) ACCE - Automotive Composites Conference & Expo, Novi, MI, September 5-7, 2018.
11. A.W. Alo, J.M. Slupsky, C.E. Fuentes, J.D. Ratcliff, J.S. Tate, and K.Mix (2018), "Cellulose Fibers Extracted from Common Ragweed", SAMPE 2018, May 21-24, 2018, Long Beach, CA.
12. R. McDermott, J. S. Tate, J. H. Koo, T. Kunze, E. Trevino, E. Danielson, "Fabrication and Mechanical Characterization of Needle Punched Fabrics for Advanced Thermal Protection Systems", SAMPE 2018, May 21-24, 2018, Long Beach, CA.
13. Sagar V. Navle, Jitendra S. Tate, John M. Slupsky, "Electrical and mechanical properties of metal filled conductive material using fused deposition modeling", POWDERMET 2017, International Conference on Powder Metallurgy and Particulate Materials, June 13-16, 2017, Las Vegas, NV
14. C. Hanks, J. Tate, W. Trybula and H. Sterns, " NanoTRA: Texas Regional Alliance to Foster Nanotechnology Environment, Health, and Safety Awareness in Tomorrow's Engineering and Technology Leaders", Workshop on Overcoming Challenges to Infusing Ethics into the Development of Engineers, organized by the National Academy of Engineering, Jan 10-12, 2017, Washington D.C.
15. J. Tate, C. Hanks, D. Fazarro, W. Trybula, R. McLean, and S. Dutta, "NSF-NUE NanoTRA: Texas Regional Alliance to Foster Nanotechnology Environment, Health, and Safety Awareness in Tomorrow's Engineering and Technology Leaders", 2015 NSF Nanoscale Science and Engineering Grantees Conference' in Arlington, VA, Dec 8-9, 2015.
16. D. Habbit, J. Tate, A. Alvarez, and J. Koo, "Carbon Fiber Reinforced Cyanate Ester Nanocomposites: Thermal, Mechanical and Electrical Characterization", CAMX *Conference*, Dallas, TX., October 27-29, 2015.
17. Slaughter, D., Tate, J., Hanks, C. Trybula, W. Fazarro, D., and McLean, R., "Safely handling of engineered nanoparticles: Hands –on 'nanotechnology safety, teaching module." *CAMX Conference*, Dallas, TX., October 27-29, 2015.
18. Hernandez, R. , Tate, J., Hanks, C. Trybula, W. Fazarro, D., McLean, R., and Andreas, R., "Infusion of 'nanotechnology in health & medicine teaching module into engineering and technology courses." *CAMX Conference*, Dallas, TX., October 27-29, 2015.
19. J. Tate, S. Espinoza, D. Habbit, and A. Alvarez, "Military and National Security Implications", CAMEX 2014 The Composites and Advanced Materials Expo, Orlando, FL, October 13-16, 2014

20. J. Tate, D. Habbit, A. Alvarez, and S. Espinoza, "Nanotechnology in Health and Medicine", CAMEX 2014 The Composites and Advanced Materials Expo, Orlando, FL, October 13-16, 2014
21. J. Tate, C. Hanks, D. Fazarro, W. Trybula, S. Dutta, and R. McLean, "NUE: NanoTRA- Texas Regional Alliance to Foster Nanotechnology Environment, Health, and Safety Awareness in Tomorrow's Engineering and Technology Leaders", 121st ASEE Annual Conference and Exposition, Indianapolis, IN, June 15-18, 2014.
22. A. Alvarez, S. Espinoza, and J. Tate,, "Effects of Nanographene Platelets (NGP) and Multiwall Carbon Nanotubes (MWCNT) on the Mechanical Properties of Epoxy Nanocomposites Using Different Dispersion Techniques", *International SAMPE Technical Conference,* Oct 14-17, 2013, Wichita, KA
23. S. Espinoza, A. Akinola, A. Alvarez, and J. Tate, "Tension-tension Fatigue Behavior of Nanosilica Modified Epoxy/Glass Nanocomposites for Wind Turbine Blades", *International SAMPE Technical Conference,* Oct 14-17, 2013, Wichita, KA
    This poster won first prize amongst all undergraduates, masters and doctoral student participants. http://www.engineering.txstate.edu/news/SAMPE-Sergio.html
    http://www.txstate.edu/news/news_releases/news_archive/2013/November-2013/SAMPE112213.html
    https://gato-edit.its.txstate.edu/school-of-engineering/News/SAMPE-Sergio.html
24. J. Tate, A. Alvarez, and S. Espinoza, "Nanotechnology in Health and Medicine", MAES Symposium 2013, Houston, TX , September 25 - 28, 2013.
25. J. Tate, S. Espinoza, and A. Alvarez, "Nanotechnology- Military and National Security Implications", MAES Symposium 2013, Houston, TX , September 25 - 28, 2013.
26. J. Tate, A. Alvarez, and S. Espinoza, "NSF-NUE Nanotechnology Safety Education", HSI Research Day, Texas State University - San Marcos, March 20, 2013.
27. Bandyopadhyay, W. J. Geerts, K. Smith, A. Gregory, C. Moore, D. Palmer), J. S. Tate, and M.J. Sablik, "Plastic deformation of thin ferromagnetic films on nitinol sheet metal", *53rd Annual Conference on Magnetism and Magnetic Materials*, Austin, TX, Nov 10-14, 08.

Presentation ONLY:

1. Mandesh Khadka, Ir. Wilhemus J. Geerts, and Jitendra S. Tate, "Mechanical properties of polymer-bonded magnets fabricated using Magnetic Field Assisted Additive Manufacturing (MFAAM)", *The Thirty-Fourth Annual International Solid Freeform Fabrication Symposium – An Additive Manufacturing Conference, August 14-16, 2023, Austin, Texas USA.*
2. Tanjina N. Ahmed, Christopher Selsor, Jitendra S. Tate, Wilhelmus J. Geerts, "Magnetic Behavior and Chaining of Strontium Ferrite-Nylon Composite Above the Melting Temperature", oral presentation, 2022-MMM conference, Minneapolis, MN October 31-November 4, 2022.
3. Henderson, L. (corresponding author), Ahmed, T. N. (author), Belduque, M. C. (author), Tate, J. S. (author), Chen, Y. (. (author), Geerts, W. J., national APS March Meeting, "Altering Magnetic Properties of Iron Filament PLA Using Magnetic Field Assisted Additive Manufacturing," APS, virtual, College Park, MD, United States. (March 18, 2021).
4. Ahmed, T. N. (corresponding author), Belduque, M. C. (author), Tate, J. S. (author), Geerts, W. J., national APS March meeting 2021, "Magnetic Anisotropy and Torque Analysis of Strontium Ferrite/PA12 composite filament and 3D printed sample under a magnetic field," APS, College Park, United States. (March 18, 2021).
3. Luna, D. (Corresponding Author), Belduque Correa, M. C. (Author), Thramann, H. (Author), Panta, S. (Author), Omer, L. (Author), Ahmed, T. (Author), Tate, J. (Author), Geerts, W. J. (Author), 2021-Fall TSAPS Meeting, "Magnetic 3D Printing Filament Development and Printing Methods," TSAPS, University of Houston, Clear Lake, Houston, TX, United States. (October 21, 2021).

4.Ahmed, T. (corresponding author), Henderson, L. (author), Belduque Correa, M. C.

(author), Chen, M. Y. (Author), Tate, J. S. (author), Geerts, W. J. (author), International Polyolefins Conference, "Magnetic Field Assisted Additive Manufacturing (MFAAM) of magnetic polymer composite filaments," SPE South Texas Section, virtual. (February 23, 2021).

5. Kolton Dieckow, Chandan Howlader, Tanjina Ahmed, Maria Camila Belduque, Jitendra Tate, Wilhelmus Geerts, “Effect of Field Orientation and Infill Percentage on the VSM calibration factor of FFM 3D printed samples”, MMM 2020 conference, oral presentation, Palm Beach Florida, November 2-6-2020.
6. Lauren Henderson, Tanjina N. Ahmed, Camila Belduque, Jitendra Tate, Maggie Chen, Wilhelmus J. Geerts, Altering Magnetic Properties of Iron Filament PLA Using Magnetic Field Assisted Additive Manufacturing, TSAPS Fall-2020 meeting UT Arlington, oral presentation.
7. Lauren Henderson, Tanjina N. Ahmed, Camila Belduque, Jitendra Tate, Maggie Chen, Wilhelmus J. Geerts, Altering Magnetic Properties of Iron Filament PLA Using Magnetic Field Assisted Additive Manufacturing, TSAPS Fall-2020 meeting UT Arlington, oral presentation.
8. Tanjina Nasreen Ahmed, Maria Camila Belduque, Jitendra S. Tate, Wilhelmus J. Geerts, “Magnetic Anisotropy and Torque Analysis of Strontium Ferrite/PA12 composite filament and 3D printed sample under a magnetic field”, accepted for APS March-2021 meeting, March 15-19, 2021
9. Tanjina Ahmed, Binod D.C., Maria Camila Belduque, Jitendra Tate, Wilhelmus Geerts, “Time Dependence of Magnetic Moment of Strontium-Ferrite powder measured by biaxial VSM”, MMM-2020 conference, November 2 through 6 2020, Palm Beach Florida
10. Sagar V Navle, Jitendra S Tate, John M Slupsky, and Bahram Asiabanpour, “Comparison of mechanical and electrical properties of PA11/NGP nanocomposites and conductive metal filled PLA composites using fused deposition modeling", SFF 2017, Annual International Solid Freeform Fabrication Symposium, August 7-9, 2017, Austin, TX
11. W. Trybula, J. Tate, C. Hanks, and D. Fazarro, "Nanotechnology Safety Education", National Science and Engineering Education Workshop (NSEE), May 7, 2015.
12. E. Botello, J. Tate, N. Theodoropoulou, “Bringing Research Experiences for Physics Teachers back into the Classroom” American Association of Physics Teachers (*AAPT) Winter Meeting,* San Diego, CA, January 3-6, 2015.
13. D. Fazarro, J. Tate, W. Trybula, C. Hanks, S. Dutta, and R. McLean “We Are Seed Planters: A Look at Teaching Students Nanotechnology Environment, Health, and Safety Awareness”, The Association of Technology, Management and Applied Engineering (ATMAE) Annual Conference, St. Louis, MO, November 19-21, 2014
14. D. Fazarro, J. Tate, W. Trybula, C. Hanks, S. Dutta, and R. McLean. “Preparing the Nano Workforce: At Look at Educating Undergraduate Students in Nano-Safety”, *Micro Nano Technology Conference*, June 4-6, 2014, Albuquerque, NM

B. Works Not In Print

1. Papers Presented at Professional Meetings:

Note: ALL conference papers listed above were full-length peer reviewed papers and were presented at the conferences. ***77 presentations****.*

2. Invited Talks, Lectures, and Presentations:

1. J. Tate and D. Fazarro, “Education programs in Nanosafety”, San Antonio Nanotechnology Forum Conference, 13 November 2016, San Antonio.
2. C. Hanks, J. Tate, D. Fazarro, W. Trybula, S. Dutta, and R. McLean, “Infusing Ethical, Safety, Health, and Environmental Education in Engineering and Technology Curricula”, New Horizons in Texas STEM Education Conference, March 27-28, 2014, San Antonio, TX
3. Delivered lecture on India in Technology as per invitation from Prof. Scott Rowe in his TECH 3322: Developments of Technology class on April 29, 2009 and December 1, 2008;

4. Delivered lecture on Advanced Polymeric Composites and India in Technology as per invitation from Prof. Scott Rowe in his TECH 3322: Developments of Technology class on November 26, 2007; April 25, 2007; and November, 2006.

3. Consultancies:

- Safety Systems Inc., Salisbury, NC 2004-05
- Volvo, Greensboro, NC 2003
- CRS Technologies, Greensboro, NC 2002
- Thomas Built Buses, High Point, NC 2001-2003

4. Workshops (Seminars and Professional Training):

1. Selected and attended Invitation only Workshop on Overcoming Challenges to Infusing Ethics into the Development of Engineers, organized by the National Academy of Engineering, Jan 10-12, 2017, Washington D.C.
2. Attended 3-day Composites and Polycon 2009 trade-show and technical sessions organized by American Composites Manufacturing Association-ACMA, Tampa, FL, Jan 16-18, 09.
3. Attended 3-day Strain Gage Technology workshop with Vishay Micromeasurements at Raleigh, NC. May 15-17, 2007.

5. Other Works not in Print:

a. Works "submitted" or "under review"

1. Harish Kallagunta and Jitendra Tate, "Mechanical Behavior of Glass Fiber Reinforced Polyester Composites Modified with Silane Treated Alumina Nanofibers Subjected to Low Velocity Impact", submitted to *International Journal of Composite and Constituent Materials, STM Journals, Jan 2024.*

b. Works "in progress"

- Mandesh Khadka, Jitendra Tate, and Ir. Wilhelmus Geerts, "Functionalizing Magnetic Field in Fused Filament Fabrication for Magnet Fabrication"
- Camila Belduque, Jitendra Tate, Tanjina Ahmed, Wilhelmus Geerts, and Danny Luna, "Development of Strontium Ferrite/Polyamide 12 and Neodymium Iron Boron/Polyamide 12 Composites for Magnetic Devices using Additive Manufacturing."
- Jitendra Tate, Dinesh Kumar Kannabiran Vasudevan, Swayam Shree and Shelby Vasconcellos-Murphy, "Fatigue performance carbon fiber reinforced hybrid nanocomposites modified using CTBN and nanosilica" to be submitted to *International Journal of Fatigue*
- Jitendra Tate, Swayam Shree, Shelby Vasconcellos-Murphy, and Abhay Deshpande, "Tension-tension fatigue performance core-shell rubber particles and nanosilica modified carbon fiber nanocomposites", to be submitted to *Composites B: Engineering*

c. Other works not in print

Oluwasola Aringbabowo, Yash Tate, Kiran Poudel, and Wim Geerts, 2023. "Mechanical Properties of Polymer-bonded Magnets Fabricated using Magnetic Field Assisted Additive Manufacturing (MFAAM)", *The Thirty-Fourth Annual International Solid Freeform Fabrication Symposium – An Additive Manufacturing Conference, August 14-16, 2023, Austin, Texas USA*

C. Grants and Contracts

1. Funded External Grants and Contracts:

NSF S-STEM
Title: S-STEM: Scholars of Excellence in Engineering Design (SEED)
Muci-Kuchler, Karim H (PI), Tate, Jitendra (co-PI), Valles Molina , Damian (co-PI), Londa, Michelle (co-PI),, Collins, Kristina H (co-PI),, Kulesza, Stacey E (Senior Personnel), Talley, Kimberly G (Senior Personnel)
Duration: 01/01/2024-12/31/2029
Amount: $2,499,310.00

Program: DoD Research and Education Program for HBCU/MI Equipment/Instrumentation
U.S. Army Contracting Command – Aberdeen Proving
Ground – Research Triangle Park Division (ACC-APG-RTP Division), Award number: W911NF-22-1-0136
Title: Acquisition of Wide Frequency Band Characterization System for Electronic Devices, Antennas,and Intelligent Materials
Investigators: Chen, Yihong (PI), Droopad, Ravindranath (Co-PI),, Stern, Harold P.,Stephan, Karl, Tate, Jitendra S., Geerts, Wilhelmus J., and Shi, Xijun (Senior Collaborators).
Duration: 08/01/2022 – 07/31/2023
Amount: $548,700.00

Program: NSF-MRI **Award Number (FAIN):** 2216440, **Award Instrument:** Standard Grant
TitleMRI: Development of triaxial Vibrating Sample Magnetometry for Research and Education
Investigators: Wim Geerts (PI), Jitendra Tate (Co-PI), Maggie Chen (Co-PI), Rhodes, Christopher P (Co-PI), Droopad, Ravi (Co-PI),
Duration: 09/01/2022- 08/31/2024
Amount: $119,461

Program: NSF-REU
Title: **REU Site: Multidisciplinary Research Experience in Advance Manufacturing for Undergraduates**
Investigators: Dr. Farhad Ameri (PI), Khaleghian, Meysam (co-PI), Emami, Anahita; You, Byoung Hee; Tate, Jitendra; Trueba, Luis; Chen, Heping; Song, In-Hyouk (Senior Personnel)
Duration: 05/01/2021-08/01/2024
Amount: $396,737

Program: DoD Research and Education Program for HBCU/MI Equipment/Instrumentation
Title: Enhanced Optical, Electrical and Magnetic capabilities for Device and Materials Studies in Research and Education
Investigators: Nikoleta Theodoropoulou (PI), Wilhelmus Geerts, Mark Holtz, Yoichi Miyahara, Tom Myers, Chris Rhodes, Jitendra Tate, Mark Wistey, Alex Zakhidov (Senior Collaborators)
Duration: 05/10/21 – 05/09/23
Amount: $278,778

Program: University Industry Partnership Agreement, Contract, KAI, LLC., $750
Duration: October 5, 2020- Dec 31, 2021
Texas State Investigator: Dr. J. Tate (PI).

Program: NASA Phase I STTR (Topic T12.05)
Title: Deposition and Curing of Thermoset Mixtures for Thermal protection
PI: Dr. Jitendra S Tate
Company Lead: Mr. Kyle Johnson, TRI
Duration: Sep 1, 2020-Sep 30, 2021
Amount $125,000

https://techport.nasa.gov/view/102462

Program: Jacobs Task Order (NASA-JSC)
Title: Additive Manufacturing Process for Extruding UHTR Composites
Duration: April 26- Dec 31, 2019
Amount funded: $11,000

Program: University Industry Partnership Agreement, Contract, Evonik, Inc., $25,024
Duration: January 1, 2018-June 30, 2019
Texas State Investigator: Dr. J. Tate (PI).

Program: NSF-MRI
Title: MRI: Acquisition of Vibrating Sample Magnetometer for Materials Research and Education
Personnel: Wilhelmus J. Geerts (PI), Yihong (Maggie) Chen (co-PI), Ravi Droopad (co-PI), Christopher P. Rhodes (co-PI), Nikoleta Theodoropoulou (co-PI), Gregory F. Spencer (co-PI), Jitendra S. Tate (co-PI), and Casey Smith (co-PI),
Amount funded: $225,330
Duration: Sep 1, 2017, Aug 30, 2021

Title of the contract: JACOBS Task Order S24612-Extension Subcontract from Jacobs in support of a Faculty of Practice (Dr. Stephen Prejean) at Texas State University
Source: Jacobs Technology
Rev A extension: $207,958.40
PI: Dr. Jitendra Tate; co-PIs: Dr. Jesus Jimenez and Dr. Vishu Viswanathan
Performance period: 1/12/2016 – 12/31/2016

Program: Subcontract, The University of Texas at Austin, September 2015, $6,500
Duration: September 1, 2015-January 31, 2017
Texas State Investigator: Dr. J. Tate (PI).

Program: University Industry Partnership Agreement, Contract, Evonik, Inc., May 2015, $20,800
Duration: June 1, 2015- Dec 31, 2016
Texas State Investigator: Dr. J. Tate (PI).

Received donation of 3D Printer Lulzbot Taz 4, spare parts and materials worth of $3,000 from Mr. Taylor Stull of 3Degrees Askew, Kyle, TX..

Program: University Industry Partnership Agreement, Contract, KAI. LLC, August 2014, $17,500
Duration: Sep 1, 2014 – Dec 31, 2015
Texas State Investigator: Dr. J. Tate (PI)

Halliburton Foundation, Inc.
Drs. Jin (PI), Stern, Aslan, Jimenez, Novoa, Romanella, Tate, Asiabanpour, Qasem, and Mendez
Title: Developing High School Students Curiosity in Science and Technology Capstone Design Days
Amount: $8,400, Fall 2014 and Spring 2015

Program: NSF-REU Supplement Grant
Texas State Investigators: Drs. J. Tate (PI), S. Dutta, C. Hanks (co-PI); Drs. W. Trybula, R. McClean (Senior Personnel)
Subcontract: Dr. D. Fazarro (co-PI, The University of Texas at Tyler)
Amount: $5,992 for Summer 2014

THINKY, Inc.
Accessory: PPS Containers for Planetary Centrifugal Mixer
Amount: ~ $2,000, Spring 2014

Program: NSF-RET Supplement Grant
Texas State Investigators: Drs. J. Tate (PI), S. Dutta, C. Hanks (co-PI); Drs. W. Trybula, R. McClean (Senior Personnel)
Subcontract: Dr. D. Fazarro (co-PI, The University of Texas at Tyler)
Amount: $9,979 for Summer 2014

Momentive, Inc.
Material: Epoxy resin systems RIM 135 (20 gallons), EPON 9504 (10 gallons)
Amount: ~$1,000, 2013

Fiberglass Industries (FGI)
Material: E-glass fabrics rolls (Woven Riving, 0/90 Stitched, +/-45 Stitched, Untreated Plain Woven)
Amount: ~$1000, 2012

Saertex, Inc.
Material: E-glass fabrics rolls (+/-45 Stitched) popular in wind turbine blade industry
Amount: ~ $500, 2012

Program: NSF12-534: Nanotechnology Undergraduate Education in Engineering
Title: NUE: NanoTRA- Texas Regional Alliance to Foster Nanotechnology Environment, Health, and Safety Awareness in Tomorrow's Engineering and Technology Leaders
Texas State Investigators: Drs. J. Tate (PI), S. Dutta, C. Hanks (co-PI); Drs. W. Trybula, R. McClean (Senior Personnel)
Subcontract: Dr. D. Fazarro (co-PI, The University of Texas at Tyler)
Amount: $199,997 for 3 years (01/01/2013-12/31/2015)

Program: FY 2010 Susan Harwood Targeted Topic Grants, OSHA (Fall 10)
Title: Developing training modules on the safe handling of nano materials
PI: Dr. K.M. Kulinowski, Rice University
Texas State Investigators: Drs. W. Trybula, J. S. Tate
Amount: $236,000
http://www.osha.gov/dte/sharwood/2010_grant_targeted_recipients.html

Program: Air Force STTR Topic AF09-BT05 (Fall 09)
Title: Super-high energy density high voltage capacitors
PI: Dr. R. K. Pandey,
Co-PI: Drs. W. A. Stapleton and J. S. Tate
Company: US Ferroics, Inc.
Amount: $50,312

Hexion Specialty Chemicals, Houston, TX (Summer 09)
Nanomodification of two types of epoxy cure chemistries that are widely used for composite applications: (1) BPA epoxy resin cured with amine and (2) BPA epoxy resin cured with phenolic.
PI: Dr. M. Londa
Co-PI: Dr. J. S. Tate
Amount: $10,000

Service Contract, Tuskegee University (Spring 2010)
Water-jet cutting of composites samples, $320

Service Contract, Applied Nanotech, Inc., Austin, TX (Spring, Fall 08, Spring 09, Spring 2011),
Mechanical characterization of epoxy nano-composites, $4978

Service Contract, Hexion Specialty Chemicals, Houston, TX (Summer 09)
Water-jet cutting of composites samples, $960

Travel grant for students to participate in Ultra light-weight bridge building contest.
Organization: SAMPE (Society for Advancement of Materials and Process Engineering)
Spring 10, $1000
Spring 09, $1000
Spring 08, $500

Travel grant, Young Researcher Award to attend International Conference on Advances in Interdisciplinary Statistics and Combinatorics, Greensboro, NC, Oct 12- 14, 2007, $500

2. External Grants and Contracts (Under Review):

Program: NSF-REU
Title: REU Site: Multidisciplinary Research Experience in Advanced Manufacturing for Undergraduates
Investigators: Dr. Farhad Ameri (PI), Khaleghian, Meysam (co-PI), Emami, Anahita; You, Byoung Hee; Tate, Jitendra; Trueba, Luis; Chen, Heping; Song, In-Hyouk (Senior Personnel)
Amount: 399,980.00
Submitted: September 2023

3. External Grants and Contracts (In Preparation):

Program: NSF-ASCENT
Title: Development of a technique to 3D print oriented magnetic structures for application in novel magnetic devices
Investigators: Dr. Will Geerts, Physics (PI), Drs. Jitendra Tate and Maggie Chen (co-PI)
To be submitted: May 2024

Program: NASA MUREP Curriculum Awards (MCA)
Title: NASA Materials and Manufacturing for Space Exploration, Education, and Diversity (NSEED)
Investigators: Tate, Jitendra, Talley, Austin, Mohan, Ram, and Kelkar, Ajit
To be submitted: February 2024

4. Submitted, but not Funded, External Grants and Contracts:

Program: DOE/SC Program Office: Basic Energy Sciences
Title: Probing Transient Evolution of Microscopic and Mesoscopic Structures in Magneto-Polymeric Fluids to Enable Subsurface Clean Energy
Investigators: Drs. Salah A Faroughi (PI) Jennifer Irvin, Jitendra S Tate, Xijun Shi, Wencheng Jin (Co-PI), and Travis McLing (Senior Person)
Submitted: August 2022
Amount requested: $450, 000

Program: NSF CREST (Pre-proposal)
Title: CREST Center for Smart and Resilient Manufacturing (CSRM) at Texas State University (TXST)
Investigators: Drs. Farhad Ameri (PI), Jitendra S Tate, Meysam Khaleghian, Mina Guirguis, Wilhelmus Geerts, Anahita Emami, Kristina H Collins (Co-PI)
Submitted: Feb 2022

Program: NSF S-STEM
Title: The LBJ Scholars of Excellence in Engineering Design (SEED) Project at Texas State University
Drs. Kristina Henry Collins (PI), Karim H. Muci-Kuchler, Michelle Londa, Jitendra S. Tate, and Zhijie Sasha Dong (Co-PI)
Amount Requested: $1.5M
Submitted: Feb 2022

Program: NASA Phase II STTR (Topic T12.05)
Title: Deposition and Curing of Thermoset Mixtures for Thermal protection
PI: Dr. Jitendra S Tate
Company Lead: Mr. Kyle Johnson, TRI
Duration: 01/2022-12/2023
Amount $1M

Program: NASA MUREP INCLUDES Activity
Title: Texas-North Carolina Alliance for NASA Materials and Manufacturing for Space Exploration, Education, and Diversity (NSEED)
Investigators: Tate, Jitendra, Talley, Austin, Mohan, Ram, and Kelkar, Ajit
Submitted: April 2021 (08/21-08/24)
Amount: $870,337

Program: DoD Research and Education Program for HBCU/MI Equipment/Instrumentation
Title: Acquisition of state-of-the-art multi-functional characterization devices to support research and education in materials science and engineering
Investigators: Ozbakkaloglu, Togay (PI), McLean, Robert J C; Kim, Namwon; Tate, Jitendra; Miyahara, Yoichi; Mastali, Mohammad (Senior Collaborators)
Submitted: August, 2020 (07/21-07/22)
Amount: $505,586

Program: NSF STTR
Title: Replacing Li-ion: Developing a Flexible Composite Membrane For a High Energy Na-Air Battery"
Company PI: Caleb Alexander, DayLyte Batteries Austin
Texas State PI: Dr. Jitendra Tate
Submitted: June 2020 (03/21-02/22)
Amount: $250,000

Program: Army STTR (Topic A20B-T010)
Title: Additive Manufacturing of Thermally Cured Thermoset Polymers
Company PI: Kyle Johnson, TRI Austin
Texas State PI: Dr. Jitendra Tate
Submitted: June 2020
Amount: $150,000 (6 months)

Program: United State-India Science and Technology Endowment Fund (USISTEF)
Title: Democratizing Spirometry in India - for diagnosis and regular monitoring of Asthma and COPD Patients

Company PI: Mr. Gajanan Sakhare, Briota Technologies Pvt Ltd
Texas State PI: Dr. Jitendra Tate
Submitted: October, 2019
Amount: $400,000

Program: United State-India Science and Technology Endowment Fund (USISTEF)
Title: VIEW (coVId-19 Early Warning) - Covid19 Monitoring System for At-Risk patients especially elderly with CoMorbid conditions
Company PI: Mr. Gajanan Sakhare, Briota Technologies Pvt Ltd
Texas State PI: Dr. Jitendra Tate
Submitted: May, 2020
Amount: $90,000

Program: NASA MSI INCLUDES Planning Grant
Title: NC–TX Alliance for Broadening Underrepresented Minority Participation in Materials and Manufacturing Engineering for Space Exploration and Education
Investigators: Dr. Ram Mohan (PI, NC A&T SU) and Dr. Jitendra Tate (PI, Texas State)
Submitted: July 2020
Period: 8/14/20-12/14/20
Amount: $50,000

NASA-MIRO
Title: NASA Center for Science, Technology and Engineering of Materials and Manufacturing for Space Exploration Education and Diversity (NASA-STEM-SEED)
Submitted: Jan 9, 2019
Lead Institute: Dr. Ram Mohan (PI), North Carolina A & T State University
Texas State - Dr. Jitendra Tate (PI), Drs. Talley and Londa
Amount Requested: $3M (**It was recommended for funding**)
Period: 3 years

NASA Phase I STTR (Topic: T12.05)
Title: In-situ Curing of Thermoset Resin Mixtures
Submitted: March, 2019
Company: Mr. Robert Brushaber (PI), Texas Research Institute Austin, Inc (TRI Austin)
University: Dr. Jitendra S Tate (PI), Texas State
Amount Requested: $125k
Period: 13 months

ONR-HBCU/MI Program (N00014-19-S-F004)
Research Area: Mission Capable, Persistent, and Survivable Sea Platforms (Advanced naval materials)
Title: Pseudo-3D Multifunctional Nanocomposites Using Needle Punched Woven Fabrics and High-Temperature Thermoset Resins
White Paper Submitted: January 16, 2019
Amount Requested: $750k
Period: 3 years

Navy Phase I STTR (Topic: N19A-T003)
TITLE: Innovations in Designing Damage Tolerant Rotorcraft Components by Interface Tailoring
Submitted: Feb 6, 2019
Company: Mr. Kyle Johnson (PI), Texas Research Institute Austin, Inc (TRI Austin)
Amount Requested: $150k +$100k
Period: 6 months + 6 months

ARMY Phase I SBIR (Topic A18-140)

Title: High Temperature Polymers for 3D Printed Injection Molding Tooling
Submitted: October 2018
Company: Mr. Robert Brushaber (PI), Texas Research Institute Austin, Inc (TRI Austin)
University: Dr. Jitendra S Tate (PI), Texas State
Amount Requested: $150k + $100k
Period: 6 months + 6 months

Program: USDA-AFRI 2017
Title: Natural Novel Fiber Crops from Arid Lands for Eco-friendly Sustainable Composite Materials, Improving Solid Health, and Enhancing Water Preservation.
Submitted: September 2017
Texas State Investigators: Drs. J. Tate (PI) and K. Mix ((co-PI)
Amount: $299,629

Program: NSF-Nano-Bio Phenomena and Processes in the Environment
Title: Texas Regional Alliance for Nanotechnology Environmental Safety (TRANES)
Submitted: January 2015
Lead Institute: The University of Texas at Austin
The University of Texas at Austin: Dr. J. Koo
Texas State PI: Dr. J. S. Tate
The University of Texas at Tyler: Dr. D. Fazarro
Baylor University PI: Dr. C. Sayes
Amount Requested: $500,000

Program: NASA-MIRO
Title: NASA Center for Research and Education on Structure Integrity for Efficient Composite Thermal Protection System
Submitted: January 2015
Lead Institute: The University of Texas at Arlington
PI: Dr. Wen Chan, Co-PI: Drs. Adnan,, Armanios, Maddalena, Taylor
Texas State PI: Dr. J. S. Tate Co-PI: Dr. Namwon Kim
The University of Texas at Austin: Dr. J. Koo
The University of Texas at Tyler: Dr. D. Fazarro
Amount Requested: $5,000,000 ($884,795 Texas State Share)

Program: Missile Defense Agency SBIR, MDA 13-025
Title: Low Thermal Diffusivity and Enhanced Ablation Carbon Fiber-Reinforced Nanocomposites for Rocket Motor Nozzle
Submitted: June 2013
Company: KAI, LLC (PI: Dr. Joseph Koo)
University PI: Dr. J. S. Tate
Amount Requested: $80,000

Program: Halliburton Foundation
Title: POWER-ME: Pipeline to Oil World Resources via Mentoring and Education
Submitted: May 2013
PI: Dr. T. Jin; Co-PI: Drs. Stern, Aslan, Asiabanpour, Tate, Qasem, Sun, Mendez and Ms. S. Romanella
Amount Requested: $29,900 for 1 year

Program: NSF11-590: Sustainable Energy Pathways
Title: Semi-Arid Regional Alliance for Sustainable Building and Construction
Submitted: February 2012
Texas State Investigators: Drs. J. Tate (PI), J. Hu, K. Mix, J. Charles (co-PI); Drs. L. Londa, W. Stapleton, Y. Kim, R. Saucier (Senior Personnel)

Subcontract: Southwest Research Institute (SWRI)
Amount Requested: $2, 000,000 for 4 years

Program: Navy SBIR N121-014
Title: Polymer Nanocomposites for Low Erosion, Affordable Solid Rocket Motor Nozzle Materials
Submitted: January 2012
PI (Company): Dr. J. H. Koo/ KAI, LLC
PI (University): Dr. Jitendra Tate
Amount Requested: $100,000 for 1 year ($27,000 for Texas State)

Program: NSF11-537: Engineering Research Center,
Title: Center for Multifunctional Nanocomposite Biomaterials (CMNB)
Submitted: September 2011
Lead Institute and Investigators: North Dakota State University, Drs. K. Katti, D. Katti, Webster, and Mallik.
Texas State Investigators: Drs. J. Tate, G. Beall, C. Powell, and Yu
Amount Requested: $15,923,588 for 5 years ($1,166,512 for Texas State)

Program: STTR – Navy N10A-T007
Title: Self-Healing Non-Catalytic Multifunctional Composite Structures
To be submitted: April 2011
PI (Company): Al Perez / Texas High Energy Materials
PI (University): Dr. Pat Cassidy
Co-PI (University): Drs. Chad Booth, Jody Neef, and Jitendra S. Tate
Phase II Amount Requested: $750,000 ($225,000 to Texas State)

Program: NSF11-524: Nanotechnology Undergraduate Education (NUE) in Engineering,
Title: Lateral diffusion of societal, ethical, and environmental concerns of nanotechnology in undergraduate curriculum
Submitted: April 2011
PI: Dr. J. S. Tate
Co-PI: Dr. W. Trybula, Dr. C. Gaedicke and Dr. D. Fazarro, UT-Tyler
Amount requested: $199,400 (2 years)

Program: Air Force SBIR Topic AF103-158
Title: Colossal energy density nano-ceramic CCTO capacitors
Submitted: August 2010
PI: Dr. R. K. Pandey
Co-PI: Drs. W. A. Stapleton and J. S. Tate
Company: US Ferroics, Inc.
Amount: $58,014

Program: NSF10-536: Nanotechnology Undergraduate Education (NUE) in Engineering,
Title: Lateral diffusion of societal, ethical, and environmental concerns of nanotechnology in undergraduate curriculum
Submitted: May 2010
PI: Dr. J. S. Tate
Co-PI: Dr. D. Fazarro, UT-Tyler, Dr. C. Gaedicke, Dept of Eng Technology, Texas State
Senior Personnel: Dr. W. Trybula
Amount requested: $185,235 (2 years)

Program: NSF-ATE (Advanced Technological Education)
Title: Collaborative research: multi-state collaboration implementing nanotechnology safety education
Submitted: October 2009
PI: Dr. D. Fazarro

Co-PI: Dr. J. S. Tate, TSTC, TCC
Senior Personnel: Ms. M. Cooper, Dr. W. Trybula, Ms. D. Newberry, and J. Mason
Amount requested: $75,227

Program: NSF-EFRI (Emerging Frontiers in Research and Innovation), Preliminary Proposal #1008700
Title: Miniaturized high energy density storage supercapacitor
Submitted: October 2009
PI: Dr. R. K. Pandey
Co-PI: Drs. W. A. Stapleton, J. S. Tate, and N. Theodoropoulou
Amount requested: $2,000,000

Program: Norman Hackerman Advanced research program (ARP/ATP) 2009, *Preliminary Proposal*
Title: Development of multifunctional phenolic nanocomposites for structural applications
Submitted: September 2009
PI: Dr. J. S. Tate
Co-PI: Dr. J. Koo, UT-Austin.
Amount requested: $200,000

Program: SBIR-Navy N093-171
Title: Innovative approaches for enhancing interlaminar shear strength of two-dimensional (2D) composite reinforced flexbeams and yokes
Submitted: September 2009
PI (Company): KAI, LLC
PI (University): Dr. J. S. Tate
Amount Requested: $80,000 ($26,600 for Texas State)

Program: NSF09-533 Nanotechnology Undergraduate Education (NUE) in Engineering
Title: NUE nanotechnology undergraduate curriculum addressing environmental issues
Submitted: April 2009
PI: Dr. J. S. Tate
Co-PI: Dr. D. Fazarro, Sam Houston State University
Senior Personnel: Dr. W. Trybula
Amount requested: $264,011

Program: NSF08-544 Nanotechnology Undergraduate Education (NUE) in Engineering
Title: NUE Nanotechnology Undergraduate Curriculum Addressing Environmental Issues
Submitted: May 2008
PI: Dr. J. S. Tate
Co-PI: Dr. D. Fazarro, Sam Houston State University
Senior Personnel: Dr. W. Trybula
Amount requested: $199,387

Program: SBIR-Air Force 2007 under area Materials/Processes; Topic Number: AF071-321
Title: Fire retardant vinyl ester resins without VOCs
Submitted: Jan 2007
Industry PI: Dr. J. Massingill
University PI: Dr. J. S. Tate
Amount requested: $80,000 ($27281 for Texas State)

Program: NSF-EEP (Engineering Education Programs)
Title: Learning engineering - the project/problem based approaches
Submitted: August 15, 2006
PI: Dr. V. Sriraman
Co-PIs: Drs. J. S. Tate, B. Ashiabanpour, and D. Um
Amount requested: $1,167,386

Program: SBIR-USDA 2007 under section 8.8 Industrial Application: Advanced Materials and Processes
Title: PUR composites with increased fiber adhesion
Submitted on: April 2006
Industry PI: Dr. J. Massingill
University PI: Dr. J. S. Tate
Amount requested: $80,000 ($26,600 for Texas State)

5. Funded Internal Grants and Contracts:

Program: Research Enhancement Program
Title: Materials with intelligence: Magnetic Field Assisted Additive Manufacturing.
PI: Dr. Wim Geerts Co-PI: Dr. Jitendra Tate and Maggie Chen
Duration: January 15, 2021 – May 31, 2022
Funded: $16,000

Grant: Eco-NaNo: Eco-Friendly Natural Novel Fibers for Sustainable Composites
Research Enhancement Program
Funded: $14,101
Investigators: Jitendra Tate (PI) and Jennifer Irvin (Co-PI)
Period: January 15, 2019 – December 31, 2020

Program: Speed Networking, Spring 2017
Ragweed to Riches via Sustainable Agriculture and Composites
$2,500

Program: Student Computing Resources FY2012
Title: Upgrade of the RFM 1239+RFM1235+RFM1251+RFM1218 Computer Integrated Manufacturing, Rapid Manufacturing, Automated Systems, and Composite Materials labs to provide better data storage, memory, and processing performance
PI: Dr. B. A. Asiabanpour
Co-PI: Dr. J. S. Tate
Amount funded: $14,224

Program: Research Enhancement Program (REP, YEAR 2011) (Academic year 2010-11)
Title: Next Generation Material for Rapid Production of Complex Geometries Using Selective Laser Sintering (SLS) for Electrostatic Charge Dissipation (ESD) Applications'
Amount funded: $7,998

Matching Grant from the Associate Vice President for Research FY 2010
Equipment: Low velocity drop impact test system from Instron, Model 9340
Funds from Director, Ingram School of Engineering: $41,000
Matching funds from the Associate Vice President for Research: $17,000

Program: Student Computing Resources FY2009
Title: Major upgrade of the RFM 1239 Computer Integrated Manufacturing laboratory to offer high-performance computing and visualization for engineering and technology students. A collaborative proposal between the Ingram School of Engineering and the Department of Technology
PI: Dr. J. S. Tate, Ingram School of Engineering
Co-PI: Dr. J. Hu, Department of Technology

Amount funded: $42,500

Program: Library Research Grant, 2008 (Academic year 2008-2009)
This proposal was written to purchase 11 state-of-the art videos in the areas of failure analysis, alternate energy, nono-manufacturing, semi-conductor manufacturing, and MEMS (micro-electro-mechanical-systems). These videos are used in courses such as ENGR 2300: Materials Engineering, MFGE 2332: Material Selection and Manufacturing Processes, ENGR 3311: Mechanics of Materials, MFGE 4367: Polymer Properties and Processing and MFGE 4399: Polymer Nanocomposites.
Amount funded: $2,198

Matching Grant from the Associate Vice President for Research FY 2008
Equipment: Planetary Centrifugal Mixer, THINKY Model ARV 310
Funds from Director, Ingram School of Engineering: $9,000
Funds from Director, IEIS (Institute of Environmental and Industrial Science): $3,000
Matching funds from the Associate Vice President for Research: $12,000

Program: Research Enhancement Program (REP, YEAR 2008) (Academic year 2007-2008)
Title: Development of E-glass/bio-based polyurethane multifunctional reinforced nanocomposites using low-cost VARTM process
Amount funded: $7,965

6. Submitted, but not Funded, Internal Grants and Contracts:

Program: TXST Multidisciplinary Internal Research Grant Program (MIRG)
Title: Necessities Ecological and Economic Development and Education (NEEDED)
Investigators: Sangchul Hwang (PI), Gwendolyn Hustvedt (Co-PI), Tina Waliczek-Cade (Co-PI), and Jitendra Tate (Co-PI)
Duration: September 1, 2021 – August 31, 2022
Award amount: $29,978

Program: Research Enhancement Program, 2018 (Academic year 2017-18)
Title: Eco-NaNo: Eco-friendly Natural Novel Fibers for Sustainable Composites
PI: Jitendra Tate Co-PI: Jennifer Irvin
Amount requested: $16,000

Program: Research Enhancement Program, 2014 (Academic year 2013-14)
Title: Development of Multifunctional Cyanate Ester Nanocomposites for 'Next Generation Thermal Protection System'
Amount requested: $7,990

Program: Library Research Grant, 2010 (Academic year 2010-11)
Amount requested: $2,478
This proposal was written to purchase state-of-the art videos in the areas of nanometrology, brazing and soldering, modern marvels, industrial robotics, and market research reports on composites.

Program: Research Enhancement Program (REP, YEAR 2010)
Title: Development of fatigue-resistant fiber reinforced polymer nanocomposites for wind turbine blades
Amount requested: $7,940

Program: University Lecturers Series Fall 09 and Spring 10
Speaker: Dr. Dr. A. B. Strong, Professor in Manufacturing Engineering Technology, Ira Fulton College of Engineering and Technology, Brigham Young University (BYU)
Lecture topic: Creativity in engineering
For whom: Engineering and Technology students

Amount requested: $1500

Program: Research Enhancement Program (REP, YEAR 2007)
Title: VARTM manufacturing and performance evaluation of bio-based PU/E-glass composites
Amount requested: $7,515

Program: Research Enhancement Program (REP, YEAR 2006)
Title: Development of low-cost composite materials from natural resources
Amount requested: $7,800

D. Fellowships, Award, Honors

Academic Honors and Awards

- Who's Who in Academia, News Digest International, Jan 31, 2013.
- Member of Round Table Group Expert Consortium
- Marquis Who's Who in America 2010 edition
- Young Researcher Award to attend International Conference on Advances in Interdisciplinary Statistics and Combinatorics, Greensboro, NC, Oct 12- 14, 2007
- Certificate of Merit for maintaining GPA 4.0/4.0 throughout graduate studies at NC A & T State University, Greensboro, NC, USA, 2004
- Silver Medal for academic excellence at Bachelor's study at University of Pune, 1990
- National Merit Scholarship for 1983-1990 from Government of India

IV. SERVICE

A. University

- Nominated by Dean to the Outside College Review Group Committee AY 2018-19
- Serving as engineering representative at University Lab Safety Committee (from Fall 2018-present)
- Serving as engineering representative at MSEC PhD Admissions Committee (from Fall 2018-present).
- Serving as engineering representative at Shared Research Operations (SRO) Advisory Committee (from Spring 2018-present)
- Faculty Advisor to campus organization, SAMPE at Texas State (Fall 2016-Present)
- Served as engineering representative at PhD MSEC Admission Committee inception- Fall 2012
- Chair of Lab Safety Committee, College of Science and Engineering (AY 2016-17 and 2017-18). Spearheaded formation of charter for the committee, established standard practices such as area registration forms, in the event of injury, AND chemical hygiene plan. Closely worked with EHS R&M.
- Academic Program Administrator, Academic Partnership between Texas State University-San Marcos and American Composites Manufacturers Association-ACMA. Students and local industry people can take CCT-Certified Composite exam at Texas State campus. 36 senior-year Manufacturing Engineering students have passed it successfully since 2008 (Fall 2008-Present).
- Texas State University is a member of ACMA. Serving as representative. Providing information to faculty and staff regarding subsidized publications, CCT exam, webinars, seminars, and training programs.
- Mentor, H-LSAMP Undergraduate Scholars (Fall 2008-Present)
- Outreach to industry and academia (2005-Present): C-Fan, San Marcos, TX; Enduro Composites, Houston, TX; Composites Consultancy, New Braunfels, TX; Microstrate, Kyle, TX; Albany Composites, San Antoniao, TX; Belco Manufactuirng, Belton, TX; NASA JSC; Baylor University; Hexion Specilaity Chemicals; ABF Technology, Techeglas Industries; Applied Nanotech, Austin, TX; Evonik Corporation; Joint School of Nanoscience and Nanoengineering, Greensboro, NC; The University of Texas at Austin/Arlington/Tyler.
- Outreach Activities India (2012-Present)
    - Dr. Srinivasa Regalla, Chair Mechanical Engineering Department, Birla Institute of Technology and Sciences (BITS) Pilani-Hyderabad Campus, Andhra Pradesh, India.
    - Dr. Pramod Joshi, Chair of Polymer Engineering Department, Maharashtra Institute of Technology, Pune, Maharashtra, India
    - Dr. Rajesh Jalnekar, Director, Vishwakarma Institute of Technology, Pune, Maharashtra, India
    - Dr. G. N. Kulkarni, College of Engineering Pune, Maharashtra, India
    - Mr. Rajendra Kharul, Joint Director and Head, World Institute of Sustainable Energy. Head office: Pune, Maharashtra, India
    - Mr. Shrirang Chandekar, Founder Director, Leanway Energy Pvt Ltd, Pune, Maharashtra, India
- Dr. Vedraman Sriraman was Presidential Fellow (2012-13). Worked with him on white paper on BS Mechanical Engineering.
- Served as a member of faculty search committee in Manufacturing Technology, Department of Technology chaired by Dr. Vedraman Sriraman (Fall 2011 and Spring 2012).
- Served on College of Science Scholarship Committee (Spring 2011).
- Served on official committee for Material Science and Engineering doctoral program under College of Science established by Dr. Gary Beall. Other committee members were Dr. Bob

McLean (Biology), Dr. Terry Golding (Physics), Dr. Shrinivas Reddy (Director, IEIS), and Dr. Walt Trybula (Director, NAC), Fall 07 and Spring 08.
    - Attended meetings to discuss preliminary authority request
    - Represented and provided input for Ingram School of Engineering
- Served as a member of search committee for Director and faculty in Materials Science and Engineering chaired by Dr. David Donnelly, Fall 07 and Spring 08.
    - Evaluated 12 applicants based on established criteria
    - Attended research presentations and lunch of 3 finalists during on-campus interview
    - Attended meeting to finalize the top candidate.
- Served as a member of faculty search committee in Manufacturing Technology, Department of Technology chaired by Dr. Vedraman Sriraman, Fall 08 and Spring 09.
    - Evaluated 13 applicants based on established criteria and shortlisted top 6 for phoe interview
    - Attended teaching and/or research presentations of 4 finalists during on-campus interview
    - Attended meeting to finalize the top candidate.
- Served as a member of faculty search committee in Concrete Industry Management (CIM), Department of Technology chaired by Dr. Vedraman Sriraman, Fall 07 and Spring 08.
    - Evaluated 14 applicants based on established criteria, 2 were for professor position; 4 were for associate professor and 8 were for assistant professor position
    - Attended teaching and/or research presentations of finalists during on-campus interview: 1 professor; 4 assistant professors
    - Attended meeting to finalize the top candidate/s.
- Served as a member of faculty search committee in Physics chaired by Dr. Terry Golding, Fall 07 and Spring 08.
    - Total applicants were 150+. Committee had 9 members in it. It was subdivided into 3 members. Evaluated 55 applicants based on established criteria and shortlisted top 11 candidates.
    - Attended teaching and/or research presentations of finalists during on-campus interview
- Delivered lecture on India in Technology as per invitation from Prof. Scott Rowe in his TECH 3322: Developments of Technology class: April 29, 2009; December 1, 2008; November 26, 2007; April 25, 2007; and November, 2006
- Developed library resources such as books and videos since fall 2005. Requested 150+ books and 20+ videos on different subjects related to manufacturing engineering, through department funds or library proposals.

B. Department

- Served as a member of Proposal Writing Team for new Mechanical Engineering Program, Feb 2020-Aug 2021
- Served as faculty search committee, Mechanical Engineering Full Professor, Sep 2020-Aug 2021
- Served as faculty search committee, Mechanical Engineering Professor-of-practice, Sep 2020-Aug 2021
- Served as a Member of Steering Committee for the “Ingram Hall” new Engineering and Science Building (September 2015 – Fall 2019).
- Served as Program Coordinator of Manufacturing Engineering Program. Major tasks include ABET accreditation efforts, SACS accreditation reporting; new building, MS admissions, GIA/UGIA assignments, Manufacturing M&O budget, curriculum changes, courses scheduling, undergraduate courses transfer/substitute/override requests, teaching assignments to faculty, five year planning of course offerings, safety committee, and career advising (September 2013-August 2019).
- Served as a member MS Engineering Admission Committee and Curriculum Development Committee (September 2011-August 2019)
- Serving as member of Personnel Committee at Ingram School of Engineering (September 2011-Present).

- Serving as faculty advisor of SAMPE student chapter (Fall 2016-Present)
- Served as Chair of Manufacturing Engineering Faculty Search Committee AY 2013.
- Served as faculty co-sponsor of SAMPE student chapter (UT, Austin/Texas State Joint Chapter) Fall 2012-Spring 2016.
- Demonstrated Advanced Composites Lab to industry, community college students, and K-12 students
    - Bobcat Day at Texas State, High school students and parents visit, Saturday, October 10, 2015, 9:30am-12.00pm.
    - Harmony and Dripping high school students visit (~22 students), Friday,September 18, 2015, 10-11 am
    - San Anotnio Community College_ students visit (~30 students), Friday,September 18, 2015, 10-11 am
    - Dripping Springs High School students visit (30 students), Thursday, May 28, 2015, 11.00am - 2.30pm
    - STEM Open house at Texas, Oragnised by SACNAS Student Chapter,High and Middle school students visit (~22 students), May 1, 2015, 10.15am-12.00pm
    - Judson Early College high school students visit (~22 students), Friday, April 17, 2015, 1.00pm-2.00pm
    - Annual Science Extravaganza organized by MAES - middle school students (~40 students), Saturday, April 11, 2015, 9.30am-3.30pm
    - High Tech University students visit (~15 students), Friday, April 10, 2015, 11.00am-12.00pm
    - Bobcat Day at Texas State, High school students and parents visit, Saturday, February 28, 2014, 10am-12.30pm
    - Austin STEM Council, High school students visit (~65 students), Nov 14, 2014, 10.30am-12.45pm
    - Presidio ISD (~25 students/faculty) July 12, 2014
    - The Pre-freshman Engineering Program (PREP) at UTSA (~100 students/day)- June 27, July 8, July 9, and July 18, 2014
    - Annual Science Extravaganza organized by MAES - Latinos in Science and Engineering for middle school and high school students (~80 students), April 12, 2014
    - High Tech University students visit, High school students visit (~40 students), March 4, 2014
    - Science and Engineering Industry Day, Representatives from several Companies visit (~25 people), November 22, 2013
    - Engineering Tour Day, High school students visit (~90 students), November 8, 2013
    - 22 high school students and 10 teachers/staff, visited on Thursday July 11th at 4:30 PM.
    - Presidio ISD students/faculty visit, June 15, 2013 (15 students and 5 faculty).
    - Annual Science Extravaganza organized by MAES - Latinos in Science and Engineering for middle school and high school students (~50 students), Saturday, April 13, 2013, 8.30am-5.30pm
    - Reagan High School (18 students), Austin, TX, Tuesday, March 26, 2013
    - Austin STEM Council, High school students visit (~90 students), Feb 22, 2013, 10.30am-12.45pm
    - High Tech University students visit, High school students visit (~40 students), Feb 20, 2013, 10.15am-12.15pm
    - 27 middle-school students during MAES Extravaganza. Event was organized by The Society of Mexican American Engineers and Scientists (MAES), Texas State Chapter, April 14, 2012.
- Organized guest lectures
    - Dr. Rich Hooper, “Where are all Robots?”, SAMPE and SME Joint Student Chapter Activity, November 9, 2016.
    - Dr. Vibhas Deshpande, “"Disruptive Technologies in Healthcare", SAMPE and SME Joint Student Chapter Activity, November 16, 2016.

  - Dr. Alex Weldon, Firefly Space Systems on November 19, 2014 on behalf of Student Chapters of SAMPE and SME on “Launch Platforms to Coffee Rings: A Snapshot of New Space and Novel Nanomaterials”.
  - Dr. Johnny Golden, Boeing on November 7, 2014 on behalf of Student Chapters of SAMPE and SME on “The Komplast Experiment: Space Environmental Effects after 12 Years in LEO (and Counting)”.
  - Dr. Christie Sayes, RTI International on September 11, 2014 on behalf of Student Chapters of SAMPE and SME on “Nanotoxicology in Education, Industry, and the Regulatory Environment”.
  - Dr. B. Strong, Brigham Young University (BYU) on April 19, 2011 on behalf of Student Chapter of Society of Manufacturing Engineering on “Why manufacturing engineering as career option?” and “Creativity in Engineering”.
  - Mr. Brett Williams, Director, Systemsgo Aerospace Program at Fredericksburg High School on March 24, 2011 on behalf of Student Chapter of Society of Manufacturing Engineering on “Aerospace program at Fredericksburg High School” and “Career opportunities for engineers as high school teacher”.
  - Dr. B. Strong, Brigham Young University (BYU) on April 20, 2010 and March 23, 09 on behalf of Engineering/Technology Seminar Series and Student Chapter of Society of Manufacturing Engineering on “Advanced Plastics and Composites” and “Creativity in Engineering”
- Served as faculty liaison to Graduate College fall 2008-spring 2012.
  - Attended annual Graduate Council meetings
  - Conveyed important issues to faculty in engineering
- Served as faculty sponsor of Formula SAE competition (UT, Austin/Texas State collaboration) and upcoming SAE International student chapter at Texas State, AY 2011.
- Represented Ingram School of Engineering at Austin Science and Engineering Festival, Nov 5-6, 2011.
- Represent Ingram School of Engineering at designated booth at Rockets 2011 rocket launching national-level competition. 50+ high schools all-over nation are participating. Advertise engineering programs to potential STEM major students. May 5-8, 2011.
- Served on Department Scholarship Committee (Spring 2011, Spring 2012).
- Coordinated career advising for 57 junior and senior year manufacturing engineering students as per ABET requirement, AY 2011.
  - Prepared pre-advising and post-advising evaluation form
  - Advised 31 students on one-on-one basis
- Serving as a member of committee preparing Master of Science in Engineering proposal at Ingram School of Engineering. There are 4 members in committee.
  - Attended all 4 meetings to discuss the preliminary authority abstract
  - Provided idea and format of 1-page faculty data sheet
  - Provided input for manufacturing engineering
  - Contributed in initial draft of preliminary authority abstract
- Worked as a member of ABET team for Manufacturing Engineering program accreditation. There were 4 members in the committee, AY 2009.
  - Attended all meetings to discuss the ABET related issues
  - Provided input regarding mission statement, program educational objectives, program outcomes for manufacturing engineering
  - Worked very closely on Self-study document
  - Collected data regarding lab equipment/instruments Advanced Composites Lab, Materials Testing lab, Foundry and Metal Casting, Machine Shop, and Welding Lab
  - Provided guidance to adjunct faculty and faculty from other departments regarding student assessment based on class work, student self evaluation, mapping of ABET criteria against assessment data
  - Manufacturing Engineering program is accredited by ABET in fall 2010 (retroactive to October 2008)
- Served as member of Scholarship Committee in spring 2008

  - There were 6 scholarship opportunities namely Joan Austin Memorial Scholarship, Dorothy Coker Research Fellowship, Durrenberger Scholarship for Women in Science, Mariel M. Muir Endowed Science Scholarship, Outstanding Graduate and Undergraduate Award- College of Science, Presidential Upper Level Scholarship
  - Made students aware of these opportunities through emails, class announcements, and announcements on web page
  - Encouraged good students to apply for scholarship/s. Ms Molly Rodgers received Presidential Upper level Scholarship
  - Recommended top candidates for scholarship based on established criteria
- Prepared very detailed space requirement document for future Department of Mechanical Engineering.
- Served as a member of faculty search committee in Manufacturing Engineering chaired by Dr. Harold Stern, 2009-10
  - Evaluated 74 applicants based on established criteria and selected 10 for phone interview
  - Attended 10 phone interviews
  - Attended research and teaching presentations and lunch of 3 finalists during on-campus interview
  - Attended meeting to finalize the top candidate
  - Evaluated all applicant and recommended top candidates for scholarship
- Served as a member of faculty search committee in Manufacturing Engineering chaired by Dr. Harold Stern, 2008-09
  - Evaluated 29 applicants based on established criteria and selected 10 for phone interview
  - Attended 10 phone interviews
  - Attended research and teaching presentations and lunch of 3 finalists during on-campus interview
  - Attended meeting to finalize the top candidate.
- Served as a member of faculty search committee in Manufacturing Engineering chaired by Dr. Harold Stern, 2007-08
  - Evaluated 36 applicants based on established criteria and selected 5 for phone interview
  - Attended 4 phone interview
  - Attended research and teaching presentations and lunch of 3 finalists during on-campus interview
  - Attended meeting to finalize the top candidate
- Served as a member of search committee for Director, School of Engineering chaired by Dr. Vedraman Sriraman, 2006-07.
  - Evaluated all applicants based on established criteria and 2 were selected 10 on-campus interview
  - Attended presentations and lunch with one finalists during on-campus interview
  - Attended meeting to finalize the candidate.
- Provided academic advising to manufacturing engineering majors from fall 2005 till fall 2008. Average 12 students per semester.
  - Print students Degree Audit Report and check which courses he/she needs to take in particular semester
  - Provide list of courses to enroll such that students fulfills prerequisites and graduates in timely manner
- Provided guidance to College of Science Advising on course equivalency for transfer students. Few transfer students approach directly. Given tour of facilities and explained career opportunities to these students. Approximately total 8+ students since fall 2005.
- Provided academic advising in summer to freshman and transfer students. Summer 2008, 2009, and 2010. Attended 24+ sessions and average 4 students/session.
  - Provide list of courses to enroll such that student fulfills prerequisites and graduates in timely manner

- Provided career advising to manufacturing engineering majors since fall 2005. Open door policy. Average 5 students per semester.
    - Inform student about possible career options such as industry, academics, research, graduate studies, and teaching in high schools
    - Inform students about any job shadowing, summer internship, and full-time job opportunities
- Represented Ingram School of Engineering at BobCat Days 2005- present. Attended 2 BobCat days per academic year. Total 12+.
    - Prepare handouts for distribution to high school students and parents
    - Provide counseling to students if engineering is right for them
    - Provide information on job opportunities in manufacturing engineering
- Represented Ingram School of Engineering for Commencement Ceremonies 2005- present. Attended 1 or 2 ceremonies per academic year. Total 7+.
- Attended Industrial Advisory Board, Ingram School of Engineering meetings 2005-present.

C. Community

- Founder and President of non-profit organization “Maharashtra Majha” for cross-culture interactions with various programs in the City of Austin and various non-profit charity associations such as CRY (Children’s Rights and You), SEF (Shankara Eye Foundation), ASHA for education, and ACES (Austin Cultural and Educational Seva).
- Active supporter and donor since 2000:
    - March of Dimes
    - Saraswati Orphanage, Pune, India
      This orphanage has 40+ boys and 20+ girls. I have established a small group (20+ members) titled ‘Janiv’ meaning realization/consciousness. These members donate small amounts per month. We deliver donations in the form of books, bag packs, stationery, food, and building material.
- Member of Austin Marathi Mandal
  This is group of Marathi speaking people. Marathi is regional language of state of Maharashtra, India. We raise funds during natural calamities, celebrate festivals, and inculcate Indian culture and values in kids.

D. Professional

- Served as Technical Co-Chair of SAMPE 2021 International Conference, Seattle, WA, May 2021.
- Served as Technical Chair of CAMX 2020 International Conference, Orlando, FL, Sep 21-24, 2020.
- Served as Vice Chair, S Texas SAMPE Professional Chapter (July 2019-June 2020).
- Served in Technical Committee for annual conference SAMPE 2016, Long Beach, CA. The conference was organized by South Texas SAMPE Professional Chapter.
- Served as Chair of Election Committee, South Texas SAMPE Professional Chapter 2018
- Served as Session Chair,
    - CAMX 2018 Joint Conference and Exhibition of ‘SAMPE’ and ‘ACMA’.
    - CAMX 2014 Joint Conference and Exhibition of ‘SAMPE’ and ‘ACMA’.
    - Nanomaterials: Nanocomposites and Technology-I and II, SAMPE 2011, Long Beach, CA, May 2011.
        - Invited well-known researchers to submit an abstract/s
        - Reviewed 14 papers in sessions along with co-session chair
    - Natural Fibers and Reinforcements, SAMPE Fall Technical Conference 2010, Salt Lake City, UT, October 2010.
        - Reviewed 4 papers in the session along with co-session chair
        - Notified authors about minor/major modifications and acceptance/rejection

- Nanocomposites: Fabrication and Processing, SAMPE 2010, Seattle, WA, May 17-21, 2010.
  - Reviewed 6 papers in the session along with co-session chair
  - Notified authors about minor/major modifications and acceptance/rejection
- Natural Fibers and Reinforcements, SAMPE 09, Baltimore, MD, May 18-21, 09.
  - Reviewed 4 papers in the session along with co-session chair
  - Notified authors about minor/major modifications and acceptance/rejection
  - Coped all presentations on laptop; introduced authors to audience; and monitored sequence and time limit of presentations
- Session Co-Chair, Statistical Techniques in Experimental Fatigue Studies at International Conference on Advances in Interdisciplinary Statistics and Combinatorics at University of North Carolina, Greensboro, NC, USA, October 12-14, 2007
  - Reviewed 4 abstracts and informed authors about acceptance/rejection

- Serving as reviewer for journals
  - MRS Advances since December 2019
  - Journal of Sandwich Structures and Materials-JSMM Sage Publications since July 2019
  - Journal of Composite Materials, Sage Publications since 2016
  - Journal 'Communications in Statistics- Simulation and Computation', since March 2013
  - Composites B: Engineering journal published by Elsevier since 2012
  - ASME Journal of Pressure Vessel Technology since 2011
  - Material Science and Engineering B journal published by Elsevier since 2009
  - Scientific Journals International (SJI) as a member of Editorial Review Board (http://www.scientificjournals.org/editorial_board.htm) Invitation: Feb 13, 08
  - Journal of Intelligent and Fuzzy Systems, Prose Publications, http://www.jifs.prosemanager.com/listpapers.asp Invitation: June 16, 08
  - MRS Communications
- Book reviewer
  - Nanoscience and Nanoengineering: Advances and Applications, Ajit D. Kelkar (Editor), Daniel J.C. Herr (Editor), James G. Ryan (Editor) ASIN : B00OD3XVQ0, Publisher : CRC Press; 1st edition (May 28, 2014)
- Served as a reviewer for conferences
  - IEEE Nano-2012 12th International Conference on Nanotechnology, Aug 20-23, 2012, Birmingham, UK
  - Annual ASME Conference, Houston in 2012.
  - ASME International Mechanical Engineering Congress and Exposition
    - 2010 (Vancouver, Canada, November 2010)
    - 2006 (Chicago, Illinois, USA, November 2006)
    - 2005 (Orlando, Florida, USA, November, 2005)
    - Reviewed papers in sessions mainly dealing with advanced
    - composites/nanocomposites manufacturing and characterization
  - International conference held at Kean University, NJ in October 2006 organized by International Journal of Modern Engineering (IJME) and its five partner journals.
- Served as member on Advisory Board,
  - Centre for Advanced Material Research and Manufacturing Innovation at VJTI Mumbai India since Spring 2016
  - IFS Academy, India. This academy deals with undergraduate/graduate students' training to prepare them for current and future engineering industry, especially mechanical/manufacturing type. Invitation: Jan 19, 08
    Provided suggestions/recommendations on soft skills and technical skills
- Served as judge for University of Texas ASME Paper Contest for 3 years, Spring 2010, 11 and 12
  - Reviewed 4+ essays and recommended order based on provided criteria

- Worked with Mr. Brett Williams, Instructor, Aeroscience and Propulsion, Ignite, SytemsGo Director, Fredericksburg High School, www.igniteeducation.org
    - Mr. Brett Williams at Fredericksburg High School, uses problem solving and project-based learning to stimulate skills in design, development, testing, analysis, and innovation. Teams of high school students design and built rockets. These rockets are launched at Fredericksburg and Army facility.
    - Advising and constructing next generation rocket nozzles for their rocket projects. We have plan to construct these nozzles cost-effectively in Advanced Composites Lab at Ingram School of Engineering.

E. Organizations

1. Honorary:

2. Professional:

ASME: American Society of Mechanical Engineers	member
SAMPE: Society for the Advancement of Material and Process Engineering	member
ACMA: American Composites Manufacturers Association	member
AAE: Association of American Educators	member
AIAA: American Institute of Aeronautics and Astronautics	member

F. Services Honors and Awards:

- Presidential Distinction Award for Excellence in Service 2020, AY 2019-20.
- Certificate of Excellence - Safe Lab Practices, Environmental Health Science and Risk Management - Texas State. (August 2018).

G. Grants and Contracts

1. Funded External Grants and Contracts:
2. Submitted, but not Funded, External Grants and Contracts:
3. Funded Internal Grants and Contracts:
4. Submitted, but not Funded, Internal Grants and Contracts: