

PRANESH B. ASWATH



Provost *Ad Interim* and Vice President for Academic Affairs
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EDUCATION

Ph.D. (Materials Science)	Brown University (Advisor: Dr. Subra Suresh)	1990
M.Sc (Materials Science)	Brown University (Advisor: Dr. Subra Suresh)	1987
B.E (Metallurgy)	Indian Institute of Science	1985
B.Sc. (Phy. Chem. Math)	St. Joseph College, Bangalore University	1982

PROFESSIONAL EXPERIENCE

2020-Current	Provost <i>Ad Interim</i> and Vice President for Academic Affairs, The University of Texas at Arlington (May 2020-Current)
2019-Current	Senior Vice Provost, Academic Planning and Policy, The University of Texas at Arlington
2016-2019	Vice Provost, Academic Planning and Policy, The University of Texas at Arlington
2013-2016	Associate Dean for Graduate Affairs, College of Engineering, The University of Texas at Arlington.
2008-2013	Associate Chair, Materials Science and Engineering Department, The University of Texas at Arlington.
2010-2019	Visiting Professor, Department of Industrial Technologies, University of Trento, Trento, Italy. (Intermittent visits to continue research collaboration)
2009-2010	Fulbright Fellow, Department of Materials and Industrial Technologies, University of Trento, Trento, Italy.
Spring 2009	BREAKTHROUGH Program for Entrepreneurs and Startup's - TECH Ft. Worth.
2007-Current	Professor, Materials Science and Engineering and Mechanical and Aerospace Engineering Departments, University of Texas at Arlington.
2000-2007	Professor and Graduate Advisor, Materials Science and Engineering Program and Mechanical and Aerospace Engineering, University of Texas @ Arlington.
1995-2000	Associate Professor and Graduate Advisor, Materials Science and Engineering Program and Mechanical and Aerospace Engineering, University of Texas @ Arlington.
Summer 1996	Visiting Faculty, Department of Materials Science and Engineering, Ohio State University.
Summer 1994	Visiting Faculty, Dept. of Metallurgy, Indian Institute of Science, Bangalore, India.
1990-1995	Assistant Professor, Materials Science and Engineering Program and Mechanical and Aerospace Engineering, University of Texas at Arlington.
Summer 1990	Post Doctoral Fellow, Materials Science Program, Brown University.
1985-1990	Graduate Research Assistant, Materials Science Program, Brown University.
1988-1990	Graduate Teaching Assistant, Materials Science Program, Brown University.
1982-1985	Undergraduate Student Assistant, Metallurgy Department, Indian Institute of Science, Bangalore, India.

HONORS AND ACCOMPLISHMENTS

-  THECB - STAR Awardee-2021 for Excellence in COVID Response in Higher Education (Part of the team at UTA that received the award).
-  Outstanding Industry Leadership in Education - US-India Chamber of Commerce, 2021
-  Senior Member, National Academy of Inventors, Inducted in 2020.
-  Fellow of American Society of Materials International, Inducted in 2015.
-  University of Texas at Arlington: Academy of Distinguished Scholars, Inducted in 2015. (Less than 5 % of the active faculty members at the University are current members of the academy)
-  Fellow of Society of Tribology and Lubrication Engineers (STLE): Inducted 2015
-  University of Texas at Arlington: Graduate Dean's 2013 Excellence in Doctoral Mentoring Award. (One award is given in the entire university to a faculty member in recognition of their efforts in mentoring Doctoral students)
-  Fulbright Faculty Fellowship at University of Trento, Italy, 2009-2010.
-  Fulbright Travel Grant to Visit and Lecture at IMDEA in Madrid, Spain - July 2010.
-  Fulbright Travel Grant to Visit and Lecture at Ecole Polytechnique de Centrale in Lyon, France - June 2010.
-  Fulbright Travel Grant to Visit and Lecture at AC2T GmbH in Vienna, Austria.
-  Fulbright Travel Grant to Visit and Lecture at University of Cagliari, Sardegna, Italy in March of 2010.
-  University of Texas at Arlington: University Award for Outstanding Research Achievement or Creative Activity, 2009-2010 (This award is given to only one UT Arlington faculty each year)
-  University of Texas at Arlington: College of Engineering: Research Excellence Award – 2005-2009
-  Clarence E. Earle Memorial Award, - 2006 by National Lubrication and Grease Institute for Outstanding Contribution to the Literature in Lubricating Grease.
-  University of Texas at Arlington: Halliburton Outstanding Research Faculty in Engineering, University of Texas at Arlington, 1999-2000. (One award is given each year to one faculty member in the College of Engineering at UT Arlington)
-  University of Texas at Arlington: Halliburton Outstanding Young Faculty in Engineering, University of Texas at Arlington, 1993-94. (One award is given each year to one faculty member in the College of Engineering at UT Arlington)
-  National Science Foundation, Research Initiation Award, 1992
-  Awarded the J.N. Tata Fellowship (Travel) for International Studies - 1985

- Recipient of Karnataka Government Merit Scholarship, 1982-85 while a student of B.E. (Metallurgy) at Indian Institute of Science, Bangalore, India.
- Offered a Government of India Graduate Fellowship for Postgraduate Studies at Indian Institute of Science, Bangalore.
- Placed 2nd (out of approximately 3000 students) in B.Sc. in Bangalore University, India, 1979-82.
- Elected Student of the Year 1981-82 at St. Joseph's College, Bangalore University, India.

AREA OF RESEARCH SPECIALIZATION

- Tribology, lubrication and wear. Development and evaluation of high performance lubricants for automotive, aerospace and industrial applications.
- Processing and properties of biomaterials for Tissue engineering and other biological applications.
- Fundamental studies of the mechanism of bone remodeling in necrosis and osteoporosis.
- Synthesis, processing and characterization of ceramics, intermetallics and composites for structural applications.
- Deformation, creep, fatigue and fracture of high temperature intermetallics, ceramics and their composites.
- Oxidation and environmental degradation of materials.
- Analytical electron microscopy, Auger and X-ray photoelectron spectroscopy, X-ray diffraction, X-ray absorption near edge structure spectroscopy.
- Structural materials for civil structures including earthquake resistant structures, ductile concrete and green structures.

TECHNOLOGIES DR. ASWATH'S LAB HELP COMMERCIALIZE

- *In-Situ* ceramic matrix composites based on barium aluminosilicate with β - Si_3N_4 reinforcements. This project done in collaboration with Loral Vought Missiles (Now Lockheed Martin) were extensively evaluated and the mechanism of synthesis of these composites were developed in Dr. Aswath's laboratory. In addition, the mechanical properties of the composites were evaluated and chemistry and process conditions optimized based to a large extent on fundamental research in Dr. Aswath's lab. BAS- Si_3N_4 composites are used as radomes for missiles and rockets.
- Pyrolysis derived ceramic matrix composites reinforced with NicalonTM and NextelTM fibers were developed and characterized by Dr. Aswath's group in collaboration with Northrop Grumman Aerospace. These composites were made by polymer pyrolysis of poly siloxane precursors and process chemistry, conditions and environment were optimized to develop net shaped composites with significant high temperature properties. These composites were used in applications such as afterburners in low observable (stealth) aircraft,
- High performance MoS_2 free grease which has low friction and high load bearing capacity was developed in Dr. Aswath's lab using proprietary organophosphate chemistry and long chain fluorocarbons. This patented technology has been funded by Boeing Corporation. It finds application in various applications including aerospace, CV joints, railroad applications, heavy duty applications etc.
- Several next generation ashless and ashed anti-wear additives have been developed in Dr. Aswath's lab. These additives formed the basis of several patent disclosures which have now been commercialized for applications such as engine oil and transmission oils. These additives have the potential to improve fuel economy by reducing friction and also result in reduced de-

posits on catalytic converters resulting in lower green house gas emissions. These patented technologies have been licensed to companies such as ESL Tech and Vanderbilt Technologies.

- Si based material coatings for regenerative biological applications including bone remodeling and trauma healing. The project a collaboration with Dr. Venu Varanasi and Dr. Marco Brotto focuses on the development of next generation of Si based coatings and *in-situ* 3D printed scaffolds for improved osseointegration. The patented technology developed here is in the process of being licensed for next generation clinical applications by several companies.

CURRENT MEMBERSHIPS IN SOCIETIES

- American Ceramic Society.
- American Society for Materials International
- Society of Tribology and Lubrication Engineers.
- American Associate for Advancement of Science
- Tau Beta Pi.

REVIEWER FOR FOLLOWING JOURNALS/AGENCIES (AT DIFFERENT TIMES)


- Acta Metallurgica et. Materialia
- Advances in Tribology
- Acta Biomaterialia
- Analytica Chimica Acta
- Analytical Chemistry
- Annals of Thoracic Surgery
- Scripta Metallurgica et. Materialia
- Lubrication Science
- Metallurgical Transactions.
- Materials Science and Engineering A and B
- ASME-Journal of Engineering Materials and Technology.
- Surface Science.
- European Polymer Journal.
- Polymer Bulletin
- International Journal of Polymer Science.
- Journal of Biomaterial Applications
- Journal of the American Ceramic Society.
- Journal of Materials Science.
- Journal of Nanoresearch
- Tribology Letters.
- Tribology Transactions.
- Tribology International
- Journal of Engineering Tribology
- Wear
- Journal of Biomedical Materials Research A and B
- ASTM- Journal of ASTM International.
- Journal of the Mechanical Behavior of Biological Materials.
- Society of Automotive Engineers.
- U.S. Civilian Research and Development Foundation - Proposals for Funding
- U.S. CRDF-Young Scientist Program.
- Fundacao Para a Ciencia e a Tecnologia (Portugal)
- National Science Foundation.
- University of Missouri Research Board


ADMINISTRATIVE RESPONSIBILITIES AND ACCOMPLISHMENTS


Provost Ad Interim and Vice President Academic Affairs,(May 2020 - Current)


Senior Vice Provost: Academic Planning and Policy, (2019 - Current)

Vice Provost, Academic Planning and Policy, (2016-2019)

 **General Provost Responsibilities:** Oversee academic affairs that includes 8 colleges (Engineering, Science, Liberal Arts, Education, Business, Architecture and Public Affairs, Nursing, Honors College and 1 school (Social Work) as well as the Office of the Graduate School and the Library. Current THECB enrollment at UTA is 42,000 and Global IPEDS enrollment is over 60,000 students. Oversight of Division of Faculty affairs which includes faculty affairs. Center for Research, Teaching and Learning Excellence (CRTLE), Center for Distance Education, Office of Institutional Effectiveness and Research, Division of Student Success, UTA Ft-Worth campus, Academic Planning and Policy. Details of these responsibilities are provided in the sections below.

 **COVID-19 Planning and Response:** Dr. Aswath transitioned to the role of Provost just as it became clear that the pandemic was here to stay. Dr. Aswath headed up a task force in April 2020 to develop and operationalize a plan to reopen the academic operation of the campus. Details of this work can be found at <https://www.uta.edu/announcements/coronavirus>. The team that Dr. Aswath put together had 7 sub task forces that included (i) Class room scheduling task force (ii) Class Modality task force (iii) Faculty training task force (iv) International Student task force (iv) Study abroad task force (v) Faculty issues and challenges task force (vi) Staff issues and challenges task force (vii) Communication task force. Over 100 faculty, staff and administrators were part of the task force that worked over a period of 3 months to develop a plan including all stakeholders on campus to ensure a safe and viable return to the Fall semester. Listening sessions were organized for faculty, staff, advisors and students to determine the challenges and issues faced by different stakeholders for the safe return to campus. This was in addition to comprehensive surveys that were put together for faculty, staff and students. In addition, the changing landscape of international student issues required creative approaches to offer both current and new international students options to take classes at the international locations. Many faculty and students indicated reservations to teaching/attending traditional face to face classes, in response 7 modalities of classes were developed including 2 fully online, 4 hybrid and one face to face modality to accommodate the needs of the faculty/students.

 **Division of Student Success (DSS):** Deeply engaged in all aspects of student success with a focus on retention, persistence and graduation. The DSS reports to me and is the largest division within the Provost office. The focus includes (a) Oversee a combination of centralized and distributed student advising on campus (b) Design, develop and deliver First Year Experience course for 4500 freshman yearly on campus (c) Use data analytics with CIVITAS to follow student progress and work on early intervention strategies to improve persistence and retention (d) Developed case management approach to address complex student needs (e) Supported supplementary instruction, IDEAS center for advising, development of peer academic leaders and resident assistants to help in student success (f) Development of experiential major maps for all programs. Additional projects impacting student success include student success help desk, academic coaching, success U, supplemental instruction, nudges to finish line and first year experience courses. These executed strategies resulted in improved outcomes which includes 8% increase in 6 year graduation rate since 2017, 5% increase in 4 year graduation rate since 2018 and 4% increase in retention rate since 2017.

 **Internationalization of Campus:** Developed undergraduate pathway programs with international universities (3+1+1 programs) in Asia and international Dual Ph.D. programs in Europe. Pre-Pandemic travelled extensively overseas to both engage with alumni and present at various events to enhance international student enrollment, Spring 2022 global international student enrollment is a record of 5100 students. Partner with Office of International Education to increase study abroad opportunities for our students.

- **Faculty Hiring:** Despite the pandemic the Office of the Provost has moved full steam in faculty hiring with 175 new hires (Tenure, Tenure Track and Full Time NTT) in the two year period from 2019-2021. In the current year we have 40 open searches for Tenure Track faculty. This growth in faculty is driven by increased enrollment and credit hour increases.
- **Process Optimization and Streamlining Academic Operations:** Focused on optimizing approval process at all stages to reduce lead time to launch programs. Reduced time to launch new degrees and certificates by over 50% and improved checks and balances by introducing streamlined cost assessments and forecasting into the planning process.
- **Project Management:** Recognized early on that academic initiatives needed to be treated as projects and use principles of project management with clear metrics and deliverables established on the front end to ensure success. All major initiatives in Academic Affairs are treated as Projects with assistance from Office of Information Technology to manage these initiatives with scheduled deliverables and accountability.
- **New Degree Program Creation:** Point person in the Provost's office to coordinate all new programs at the undergraduate and graduate level. Work closely with the academic planning policy office in the Provost Office, academic programs, dean's offices, academic resource planners and the Office of the Chief Financial Officer to vet all new degree programs both for academic and fiscal soundness. Coordinate review and submission to University of Texas System and THECB and finally to SACS. **New programs launched under my watch:** BS and MS -Construction Management, BS-Architectural Engineering, Ph.D.-Kinesiology, BS-Public Health, BA-Music Industry Studies, MS-Public Health, BA-Philanthropy, BS-Business Analytics, BS-Data Science, MS-Learning Analytics, M.Ed-Special Education, BS-Substance Abuse, BS-Sustainable Building Design, MS-Sustainable Building Technologies, MS-Data Science. **Programs in Advanced Stage of Development:** BS in Resource Engineering, MS in Biomedical Sciences, BS in Applied Sociology, MS in Instructional Design and Technology, DEd. In Educational Leadership.
- **New Certificate Programs:** Over the last decade much of the growth in enrollment has been in online education at the graduate level. There is clear indication that students are looking to re-skill and up-skill and not necessarily commit to longer degree programs. Over the last several years, the Office of the Provost has coordinated the launch of several for credit certificate programs. A few examples of these include..*Certificates in:* Sustainable and Renewable Energy, Managing Diversity and Inclusion, Health Care Informatics, Instructional Design, Military Social Work, Business Analytics, Gerontology, Embedded Systems in EE etc...
- **Establishment of Partnerships with Community Colleges:** Work closely with Tarrant County Community College, Dallas College and Collin College among others to establish pathways for community college students to transfer to UTA with minimal loss of credits.
- **Data Driven Decision Analytics:** Work closely with University Analytics to use the power of data to optimize process, enhance student persistence and progression and develop Dean's Metrics to assess college/school performance.
- **Faculty Senate:** Together with the President meet with the leadership (every two weeks) and all members (monthly) of the faculty senate to work on issues of importance to the faculty. Resolve issues of concern and keep faculty informed on the progress at the university. Was particularly important during the pandemic to keep the faculty senate in the loop in the rapidly changing environment where faculty buy-in was critical for the effective functioning of the university.
- **Responsibility Centered Management (RCM) Budget Model:** Working closely with the President, CFO's office and Academic Resource Planners to develop a transition from a growth model to a RCM based model. The model was developed in partnership with Huron and is being socialized with the Dean's and Vice Presidents. Have been involved in all aspects of developing and vetting the budget model in addition to helping develop the governance process.
- **Enterprise Risk Management (ERM) Committee:** Serve on the university ERM committee to periodically assess risk register and establish hierarchy of enterprise risk and mitigation methodologies.
- **APLU-USU Committee:** I serve on the APLU-USU Council of Academic Affairs and the USU group of provosts. We meet on a regular basis to discuss issues of interest for public

- urban serving institutions. Most recently was awarded a grant by APLU to build a pipeline for transfer students to develop embedded credentials in their journey to graduation and find gainful employment at graduation.
- **University EAB Liaison:** Serve as the university liaison with Education Advisory Board to help disseminate information on best practices in educational management including student success, curriculum management, new program development, recruitment and retention and faculty affairs.
 - **Academic Analytics Liaison:** University wide liaison with Academic Analytics to help use data to determine faculty performance, longitudinal program assessment, identification of faculty for nomination for awards, retention analysis, equity adjustments, DEI initiatives etc was part of the larger data initiative to ensure effective and ethical use of data to make informed decisions.
 - **University Audit Committee:** Serve on the University Audit committee to ensure that best practices are used in all university process and for periodic review of different aspects of university activities.
 - **Compliance Accountability Risk and Ethics (CARE) Committee:** Part of the university committee that oversees compliance across the university and establishes the use of best practices in ensuring the health and wellbeing of the institution.
 - **UTA-Ft. Worth Center:** Oversee all aspects of UTA Ft. Worth center including operational, strategic and partnership with community. Oversee activities of current director and staff and help coordinate activities with main campus including curricular and course programming.
 - **Academic Liaison for OPM:** Point person at the university for all academic issues with the OPM who manages the recruitment of the students for the distance education program in College of Nursing, College of Education and College of Architecture, Planning and Public Policy. Currently help negotiate a new contract with the OPM with more favorable splits and new pricing model.
 - **Texas Council of Chief Academic Officers (TCCAO)-Treasurer/Vice President/President:** Currently serve as the President of TCCAO. The group includes Chief Academic Officers and/or their representatives from all the public institutions in Texas.
 - **Affiliation Agreements:** Review and approve all affiliation agreement (after review by legal counsel) between UTA and agencies and providers that host our clinical students. (This responsibility has since transitioned to the newly hired Asst. Vice Provost for Academic Planning and Policy)
 - **Institutional Effectiveness Reporting (IER):** Oversee all of IER activities. Assistant Vice Provost for IER activities reports to me and I am involved with all activities related to institutional effectiveness including reporting, data gathering, surveys, and information storage and management.
 - **New Academic Partnerships:** Review all academic partnership agreements both internally and externally. In particular, work with academic programs to develop strategic and operational priorities in partnerships and develop pipelines of students from partner institutions both domestically and internationally.
 - **SAS and Data Governance:** Serve on the university level SAS and UTA Data Governance Executive steering committee. Over the past several years, UTA has transformed its IT infrastructure to make data driven decisions more of a reality.
 - **Distance Education:** Chairing a committee that is working on a strategic plan for Distance Education at the university that encompasses in-house developed online courses, partner assisted accelerated on-line courses and curriculum that is available for both credit and not-for credit. Continue to be the point of contact in Academic Affairs for distance education. Serve as the university liaison with Education Advisory Board in Continuing and Online Education.
 - **Scholarships:** Chairing a committee that is reviewed the mechanism of awarding the scholarships in the university. This involves examining not only the financial impact of the scholarships in the university, but also its role in recruitment and retention. New policy developed as part of this committee responsibility developed. Oversee the actual review and award of all non-resident tuition waivers at the university.

- **Undergraduate Assembly:** Chair (Ex-Officio) the Undergraduate assembly that oversees new program creation and curriculum development at the university level for all educational programs. Help coordinate the completion and review of new undergraduate program applications to the UT System and THECB.
- **Search Committees:** Currently chairing the committee to hire a new Vice President for Research at UT Arlington. Chaired a search committee to hire a new Vice-Provost for Faculty Affairs and Director of Academic Operations. In addition have served on search committees for Dean of Engineering, Vice President for Enrollment Management, Vice Provost for International Affairs.
- **Enrollment Management:** Worked closely with VP-Enrollment Management, Director of University Analytics to develop strategy to streamline student enrollment and admission processes. Helped implement the strategy with the Dean's of the different colleges.
- **SACS, THECB and UT System:** Worked with the Assistant Provost for Institutional Effectiveness and Reporting to ensure that programs remain in compliance with SACS requirements and meet the requirement of UT System and THECB. Assisting in developing the narratives for the SACS Compliance report. Working with stakeholders to ensure all offsite locations are in SACS compliance.
- **SACS Compliance:** Coordinated the SACS Offsite visit to China to review the EMBA programs in Shanghai, Beijing and Xian. Member of the UT Arlington SACS Compliance committee during the recent SACS visit.
- **SACS Reports:** Worked with Assistant Vice-Provost for Institutional Assessment to review all the reports submitted to SACS including the Compliance Report and Focus report.
- **Overseas Recruitment:** Travel overseas as required to meet with strategic partners and participate in events to recruit top level students to UT Arlington (Expanded footprint in South Asia and Far East Asia and China). Review all joint, dual and transfer agreements with national and international partners.
- **Tenure and Promotion Policy Committee:** Participated in the university wide tenure and promotion policy committee to develop new guidelines for setting up a university level oversight committee to review tenure and promotion decisions.
- **Endowment Compliance Committee:** Currently serve on the university wide Endowment Compliance committee to review the performance and assessment of the endowment and distribution.
- **Digital Measures:** Helping with the implementation of Digital Measures tool for faculty workload and activity reporting campus wide. Housed and directed within the Vice Provost for Faculty Affairs.
- **Program Reviews:** All graduate programs at UT Arlington have to go through a comprehensive review of their academic programs every 10 years with external reviewers culminating with a self study report and program review submitted to the THECB. My role involves coordination, review and oversight of all Academic Program reviews across the university. This is currently being transitioned to the reformulated Graduate School that will report back to the Office of the Provost.
- **Core Curriculum:** Coordinating the development and review of core courses at the university level and overseeing the operation of the core curriculum committee. Currently being overseen by the recently hired Assistant Vice Provost for Academic Planning and Policy who reports to the Provost and an independent committee of faculty headed by a self selected chair of the core curriculum committee.
- **Undergraduate Curriculum Committee:** Oversee the operation of the UCC at the university, that includes the development of new courses, programs and curricula. Currently being overseen (ex-officio) by the Assistant Vice Provost for Academic Planning and Policy who reports to the Provost. The UCC is a faculty body with a self selected chair representative of the faculty.
- **Texas Affordable Baccalaureate Program:** University representative in the TAB program to help develop low cost options for Texas residents. Coordinate the writing of the proposal to THECB for new degree completion initiatives.
- **Coordination Board Initiatives:** Member of the THECB Engineering Field of Study (FOS) Advisory Committee from 2015-2017. The committee's responsibility is to identify classes at the undergraduate level that can be transferred between institutions for which students

receive credit. Represented COE interests at FOS. Currently coordinating the participation of individual programs in the FOS being developed by THECB and ensure that faculty representation is there in as many FOS as possible.



edX Course: ENGR 1.0x/2.0x Introduction to Engineering and Engineering Mathematics: Wrote the proposal that was funded by edX to introduce high school students to engineering and introduce mathematics using engineering examples. This course is offered for the first time in May 2015 and I was responsible for coordinating the course and developing the targets for the learning outcomes, content management and production. Total course enrollment is 32,000 students from 180 different countries. Continue to offer the course as an archived latest version being offered as **ENGR 2.0x Introduction to Engineering** and about 8000 students enrolled.

Special Projects (2008 - Current)

- 2022- **Mayor's Task Force on Education:** Part of a multidisciplinary task force appointed by the Mayor of Arlington, Texas to look at student success and pathways for marketable skill development for the youth in the city. The task force included representatives of ISD's, Community Colleges, Universities, community leaders and industry partners.
- 2022- **UERU Curricular Innovation Project:** The [Association for Undergraduate Education at Research Universities](#) has funded The University of Texas at Arlington to participate in the cohort to develop equitable curricular pathways to increase retention and graduation of students.
- 2022- **Equitable Pathways Project:** Project funded by The University of Texas System to develop to harness the power of data to develop equitable pathways for student success. Involves collaboration between University Analytics and Division of Student Success.
- 2021- **APLU/USU Funded Project:** "Building the Transfer Pipeline to High Demand Employment with 21st Century Skills in the DFW Metroplex" is a project partnership between community colleges in the DFW, UT Arlington and Revature LLC to provide a seamless pathway to high paying jobs for transfer students in both STEM and non-STEM backgrounds. This projects focuses on incorporating highly valuable credentials including certificates and certification and a path to high paying jobs. Project funded by APLU/USU.
- 2021- **Lumina Foundation- Data Agency and Insight: Redesigning Student Pathways to Ensure Equity:** Sponsor one of the cohorts as part of the UT System grant from Lumina Foundation to use data effectively to reduce equity gaps. In examine and rectify curricular pathways that impede student progress amongst at risk students. Awarded a grant from UT System
- 2021- **Athletic Master Plan:** Working with the Director of Athletics and the external firm Populus on the future of the athletic facilities on campus. Development of a masterplan that integrates existing facilities and envisions expansion of new facilities and athletic programs at UTA.
- 2021- **E-Learning Transformational Learning Task Force:** Executive owner of the task force examining the incorporation of e-learning into the portfolio of post-pandemic toolkit for our faculty. Strategic task force to examine lessons learned and incorporation of best practices into an operational framework to develop and market certificates and degrees that lead to marketable skills for students.
- 2020- **Experiential Major Maps:** In a partnership between EAB, Division of Student Success and Academic Affairs developed [Experiential Major Maps](#) to help students and advisors

to navigate the academic journey at the undergraduate level. This is now integrated into the retention and graduation strategy at the institution.

- 2020- **Executive COVID-19 Task Force:** Member of President's council on UT Arlington's response to COVID-19. Focused on all academic issues and assisted the Provost in developing strategies to transition the institution into an entirely online institution in a period of 2 weeks. Lead a sub task force on dealing with the issues related to academic, financial and scheduling in the period of the pandemic. Worked with office of international education to bring all our overseas students back and helped develop domestic and international travel policies.
- 2020- **Enterprise Risk Management Task Force:** Part of the university leadership in developing a strategic approach to mitigate risk from a variety of sources, internal and external, academic and non-academic, fiscal, immigration, cyber threats etc.
- 2020- **Threat Assessment Management Task Force:** Part of the campus task force on developing policies to mitigate threats on campus and develop response processes to minimize negative outcomes.
- 2020- **Timekeeping Project Rollout:** Part of the Executive Taskforce to implement a solution to track and record clock in and clock out and other time management tools campus wide.
- 2019-21**Development of Multi-semester Enrollment:** Leading an institutional task force to develop multi semester enrollment plan for the university to help improve persistence and student success.
- 2019-21**Admission Integrity Task Force:** Chaired the task force that was tasked with developing processes for ongoing training and audit process to ensure admission criteria was applied consistently and presented clearly. Reviewed processes across the entire institutions and all programs.
- 2018- **UT Arlington Student Success Task Force:** Oversight of the administrative task force that includes participants from division of student success, enrollment management, faculty, student services and academic affairs to develop and implement a strategic plan for improving student success on campus.
- 2018-20**UTA Digital:** Part of an administrative team that is looking at developing an independent entity that handles all forms of digital learning technology including design, development, delivery, assessment and oversight of the programs.
- 2019- **UT System Affordable Learning Taskforce:** Part of the UT System task force to develop a strategic plan to leverage OER and other low cost learning resources to reduce the cost of attendance for students in the UT System institutions.
- 2019- **UT System Online Learning Taskforce:** Part of the UT System task force to look at best practices in digital learning and online learning both from the point of view of curricular and content development, delivery and assessment.
- 2019- **UT System Task Force on Graduate Education:** Part of the UT System task force on best practices in Graduate Education. Includes representation from all academic institutions.
- 2018-20**Annual NRUF Reporting:** Have worked closely with IER to put the annual National Research University Fund (NRUF) report submitted to THECB to demonstrate progress towards Tier 1 eligibility. Worked closely with enrollment management on recruitment of high quality students to meet the criteria. Worked closely with the graduate school to focus on meeting the 200 Ph.D./year criteria. Worked with VPR's office as needed to

focus on the research expenditures. Helped the president as needed to recruit the national academy members to meet the criteria of high quality faculty to meet the NRUF criteria.

2015-16 Texas Higher Education Coordinating Board: Field of Study Committee in Engineering:
Represented UT Arlington at the Field of Study Committee focused on developing a better understanding of the transfer protocols between institutions for lower division classes.

2014 University Strategic Plan Planning Committee
Part of a team tasked by the President to work on different aspects of the University Strategic Plan. Chaired the Guiding Aspiration Subgroup on Impactful Research and Scholarship and the Operational Priority Group on Graduate Education. Tasked with developing the roadmap in these areas of strategic interest in the university.

2014 UT System Engineering Task Force
Assisted the Dean of Engineering in putting together the data and planning information for the input from UT Arlington to the UT System Engineering Task Force. The task force was entrusted with the role of developing a 10 year plan to double the enrollment and number of engineering graduates in the State of Texas. Duties included developing a sustainable growth model and resource model to achieve these goals.

2014 UT System: Leading for Success (Deans)
Represented the College of Engineering at the UT System Leading for Success workshop in Austin. Developed a strategic initiative related to an area of critical importance to the university i.e. retention and graduation of undergraduate students in both STEM and non-STEM fields. Together with other Associate Dean's from UT Arlington developed strategic plan to use Career Development opportunities to enhance undergraduate experience leading to improved retention and graduation metrics.

2014 Center for Integration of Research, Teaching and Learning (CIRTL)
Member of the University Steering committee on CIRTL and involved in development of policy issues and planning for the implementation of CIRTL vision on campus.

2013 Vice-Provosts Committee on University Wide Orientation of Graduate Students
Part of a team involved in the development of policy for orientation of graduate students at UT Arlington across different colleges. Development of policy towards a universal orientation university wide.






2013 Provost's committee to reorganize UT Arlington Office of the Provost
Part of a team involved in developing the organization structure for the provost office and all the departments reporting to this office. This was a once in a generation re-organization of the Provost office to streamline operations and improve response time for recruitment, retention and graduation issues.

2012 Recruiting Trip to Thailand - OGSC Fair and Royal Thai Scholars
Part of a team that travelled to Thailand to interview Royal Thai Scholars and participate in the OGSC fair to recruit MS and Ph.D. students for UT Arlington. Also visited King Mongkut's University of Technology and Chulalongkorn University to discuss possible collaboration and joint research program.

2012 University Ad-Hoc Committee on Increasing Ph.d. Enrollment and Graduation Rates
Part of a university wide committee (6 members) charged by the Provost's office to come up with a strategic plan to increase Ph.d. enrollment, retention and graduation rates of Ph.d.'s across campus. Developed a framework to assist the Provost in recruiting and retention of Ph.d. students.

- 2011 Program Reviewer: Materials Science and Engineering Department at University of Trento** Conducted a comprehensive on-site review of the Doctoral School in Materials Science and Engineering at The University of Trento in Italy. Provided the University of Trento with a written report of the review with recommendations.
- 2012 College of Engineering Strategic Planning Committee** Part of a committee charged with the task of developing a strategic plan for the College of Engineering at UT Arlington. Participated in numerous planning sessions to identify areas of critical importance for the mission of the college and develop road maps for achieving them.
- 2009-15Biomaterials Interest Group (UT-Arlington, UNT, UT Dallas, Baylor College of Dentistry, UTSW-Med School, Scottish Rite Hospital)**
Serve as one four founding members of the discussion group that was formed to bring about interaction of faculty these institutions who share a common interest in the design, development and application of materials and structures for biological applications. The group currently has 60 faculty members, clinical professors, VC's and surgeons.
- 2010-17Member, Annual Meeting Program Committee (AMPC), Society for Tribology and Lubrication Engineers.**
Members of the AMPC are responsible for setting the agenda for the Annual Meeting of the STLE (typically involves between 1500-2000 attendees and 400 papers and 100 posters). This involves development of different tracks for presentation, invited presentation, plenary sessions etc. In addition, responsibilities include coordination of submissions for several different tracks. Will be chair of the AMPC when responsible for the entire conferences.
- 2008 Member of US Chamber of Commerce – North Texas Education Mission to India**
Represented University of Texas at Arlington in partnership meetings with over 10 universities/Colleges in India to identify potential partner universities for joint degree programs. In addition, represented UT Arlington in Industry-University Roundtables in India.

Associate Dean, College of Engineering. (January 2013-January 2016)

-  **Petition Management and Review:** Students who perform poorly and drop below a GPA of 3.0 have to petition to continue in their respective graduate programs. All of these petitions (in College of Engineering) are reviewed and final disposition provided by the Associate Dean (Dr.Aswath). Of the 3000 graduate students in the COE approximately 200 fall into this category every semester requiring a comprehensive review.
-  **Flipped Classroom Initiative:** Chaired the committee in the College of Engineering to develop best practices for using “Flipped Classroom” as a method to impart instruction at the undergraduate level. The committee has developed recommendations on the best approach to implement and incentivize faculty to use this approach in teaching.
-  **Curriculum Development:** Responsible for overseeing different aspects of the Graduate Programs in all departments in the College of Engineering. This includes recruitment, retention issues as well as issues related related to curriculum development, special projects etc.
-  **Unmanned Vehicle Systems:** Coordinated the multi-departmental initiative on Certificate Program in Unmanned Vehicle Systems. Helped in development of curriculum at both UG and Graduate level and getting approval from Graduate Assembly to offer the certificate.
-  **Distance Education Initiatives:** Coordinate efforts in COE in distance education initiatives. Currently in the process of developing a Strategic Plan to implement new Distance Education degree plans, curriculum, delivery and marketing strategies. Worked with indi-

vidual departments to bring 4 Master's program fully on-line in 2014-15 (ME, AE, IMSE, EE). Currently in the process of bringing the interdisciplinary Engineering Management program fully online.

- **Chemical Engineering:** Co-Developed the proposal for a new Graduate Program in Chemical Engineering (MS and Ph.D.) and getting the proposal approved by the COE Curriculum committee, Graduate Assembly for submission to the THECB (final proposal on hold for submission at a later date)
- **Petroleum and Chemical Engineering:** (BS) Chairing and participating in the development of the proposal to be submitted to the THECB to establish new undergraduate programs in Petroleum and Chemical Engineering (proposal on hold for future submission)
- **Graduate Recruitment:**
 - Initiated inter-university cooperative agreements to share information on graduating undergraduates between institutions to enhance recruiting activities.
 - Helped develop recruiting material in COE for all departments. This includes brochure, contact cards, flyers and other publicity materials.
 - Participated in various recruiting fairs domestically and internationally to recruit well qualified graduate students into the program.
 - Instituted recruiting processes to quicken the process time for applications and develop quantifiable measures to improve yield of admitted students to matriculants in the graduate program.
 - Brought in quantitative measures to evaluate recruitment efforts.
 - The efforts in the very first year of implementation of recruiting efforts has seen a 200 % increase in matriculated graduate students in COE (1000 in Fall 2014, 600 in Fall 2013 from 300 in Fall 2012).
- **Graduate Assembly:** Member of Graduate Assembly for many years and served as Chair of Committee on Graduate Students for a year.
- **Inter-University Agreements:** Coordinated the creation of agreement between UT Arlington and Universities around the world for opportunities ranging from dual degrees, faculty exchange, student exchange etc. The universities that were part of the agreements include University of Trento-Italy, Chulalongkorn University-Thailand, National Central University-Taiwan, Pontificia Universidad Javeriana-Columbia, National Taiwan University-Taiwan, Xidian University-China among others.
- **Graduate Fellowships:** Coordinated all applications for University Level Scholarships and Fellowships (Carrizzo, Utle, Dissertation Fellowships) for graduate students.
- **Undergraduate Fellowships:** Coordinate all the awards for undergraduate fellowships that are managed by the Dean's office in the College of Engineering
- **Nuclear Engineering Program:** Oversee the Undergraduate-Nuclear Engineering Minor administered from the College of Engineering.
- **Awards Committee:** Chair of the College of Engineering Awards committee (2013-2015), where responsibilities include co-ordinating all the different faculty awards in the College of Engineering.

Associate Chair, Materials Science and Engineering (2008-2013)

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|-------------|--|
| 2012-2013 | Chair, Committee on Graduate Students at the Graduate Assembly
The committee has been charged with examining ways in which graduate Ph.d. students post comprehensive may register for fewer number of hours to reduce costs while maintaining full time status at the University. |
| 2010 - 2011 | Member, College of Engineering, Periodic Review Committee
Member of committee responsible to set criteria for review of upper administration in College of Engineering. |
| 2010- 2011 | Member, UT Arlington Faculty Representative to Federal Demonstration Partnership |

Members of the FDP are involved in advising federal agencies on methods to improve efficiency and assist in coordinating between different agencies. The members meet 3 times a year in Washington DC.

- 2009-10 **Member, College of Engineering Search Committee to Hire a Professor for the TI Endowed Chair in Nanoelectronics**
Member of the search committee tasked with recruiting a distinguished scholar as a Professor and TI Endowed Chair in Nanoelectronics.
- 2008-2013 **Developed and Implement Fast Track Program in Materials Science and Engineering:**
Developed the curriculum for the Fast Track Program where a student gets a BS degree in Physics and a MS program in Materials Science and Engineering. The package has been approved by the curriculum committees in Physics and Materials Science and Engineering and has been approved by the Graduate Council and is being currently implemented.

Professor, Materials Science and Engineering (1990-Current)

- 1990-Current **Supervise BS, MS and Ph.D. Students**
Have continuously had a strong research group in the department and have supervised (chaired) over 40 MS Thesis, 20 Ph.D. dissertations and supervised many undergraduate capstone and research projects (Mechanical Engineering). Have also served on MS and Ph.D. committees of students who were mentored by other faculty in Materials Science, Mechanical Engineering, Bioengineering, Physics, Chemistry, Civil Engineering and Electrical Engineering. Have published over 150 peer reviewed journal papers.
- 2011 **Mentor, Upward Bound:Siemens Research Experience Program**
Mentored high school merit scholars who spent summer in my lab on research projects.
- 2011 - Current **Graduate Assembly, UT Arlington**
Member of committee responsible for review of curriculum changes and program changes in the graduate program at UT Arlington.
- 2011- 2019 **Reviewer, ASM International K-12 Teacher Grants**
Member of committee responsible for reviewing 80 proposals submitted to ASM for K-12 teacher grants. These grants are awarded to high school teachers to further education in Materials Science and Engineering at the High School Level.
- 2010 **Member, College of Engineering Committee to review proposals for Research Enhancement Program**
As member of committee responsible to review all proposals submitted in the College of Engineering to the Research Enhancement Program and submit recommendations.
- 2010 - 2015 **Member, College of Engineering Awards Committee**
As member of committee responsible to evaluate the packages submitted by faculty and staff for all the awards within the College of Engineering as well as nominations from the COE for University Level Awards.

2010-11	<p>Member, Search Committee to Hire a new Dean of Engineering. As member of committee responsible for helping develop the search protocols and coordinating with the executive search firm to recruit the best candidate for the position of Dean of Engineering at UT Arlington.</p>
2010	<p>Chair, College of Engineering Tenure and Promotion Committee. As chair of the College of Engineering Tenure and Promotion committee responsibilities include coordinating the review of all cases in the college that include both annual review of tenure-track candidates as well as faculty in their decision year as well as candidates for promotion. The college of engineering currently has 160 faculty.</p>
2007-2009	<p>University Intellectual Property Committee Member of University Intellectual Property committee. Meet once a month to review all invention disclosures at the university and vote on decisions on pursuing science and technology developed at UTA for patent protection.</p>
2006-2007	<p>Member, Minor in Materials Science and Engineering Committee Assisted in the development of a minor in Materials Science and Engineering. The option is encouraged for non-MSE majors to gain a concentration in Materials Science and Engineering.</p>
2007-2009	<p>Member, Committee to implement admission and curriculum for the BS to Ph.D. program in Materials Science and Engineering. Helped to develop admission and curriculum requirements for admission into a BS to Ph.D. fast track program in the Materials Science and Engineering Department.</p>
2003-2012	<p>Member, College of Engineering, Tenure and Promotion Committee. Review packages submitted by faculty for promotion, tenure and continued appointment (Yrs 1-6) annually and make recommendations to the Dean, College of Engineering. Review packages for promotion from Associate to Full Professor and make recommendations to the Dean of Engineering.</p>
1999-2013	<p>Student Affairs Chair: ASM-North Texas Chapter. Participate in monthly meetings of the executive committee of the American Society of Materials – North Texas Chapter and formulate agenda and plan for education and student affairs at the chapter. Coordinate joint meetings between the North Texas Chapter of ASM and the Student Chapter of ASM at UT Arlington.</p>
2004-2019	<p>Member, National Committee for Education, ASM Education Foundation: Member of the national committee on education of American Society of Materials International. Responsible for helping set the agenda for education in Materials Science and Engineering. In addition served on various sub-committees charged with issues ranging from developing recruiting materials for undergraduate and graduate Materials Education as well as selection of National Merit Scholars in Materials Science.</p>
2006-2019	<p>Action in Education Committee of ASM International- Subcommittee on Selection of National Merit Scholars: One of 5 members of a national committee responsible for selection of National Merit Scholars in Materials Science and Engineering.</p>

2006-2012	<p>Lubrication Fundamentals: Program Section Chair for the Lubrication Fundamentals Part of the STLE Annual Meeting. Organized the Lubrication Fundamentals section at the 2007 STLE Annual meeting in Philadelphia and the 2008 STLE Annual Meeting in Cleveland. Responsible for identifying session chairs and co-chairs and selecting papers for the conference.</p>
2007 –2008	<p>Chair, Search Committee to Hire 3 Faculty Members in MAE. Chairing the search committee that is charged with hiring 3 new faculty members in the MAE department.</p>
2008-2009	<p>Member, Search Committee to Hire a New Junior Faculty Member Served on the search committee that hired a new faculty member in the MSE program.</p>
2002 –2003	<p>Member, Search Committee to Hire a New Junior Faculty Member Served on the search committee that hired a new faculty member in the MSE program.</p>
2003 – 2004	<p>Member, Search Committee to Hire a New Director Served on the search committee that hired a new chair in MSE Program.</p>
2003 –2004	<p>Chair, Search Committee to Hire a New Junior Faculty Member Chaired the search committee that hired a new faculty member in the MSE program.</p>
2004 –2005	<p>Chair, Search Committee to Hire a New Junior Faculty Member Chaired the search committee that hired a new faculty member in the MSE program.</p>
1996-1997	<p>Chair, Search Committee for hiring an Electron Microscopy Technician Responsible for advertising the position. Reviewing all the applicants and chaired the committee for hiring the new technician.</p>
1991-2002	<p>Department Representative, United Way-State Employees Charitable Campaign. Dr. Aswath has been the MAE department representative of United Way. This responsibility includes overview of the United Way campaign in the MAE department, including the solicitation of contributions.</p>
1995-1997	<p>Member, High School Outreach Committee. Dr. Aswath has been involved in the development of the structure of the outreach program for improved recruitment of high school students for eventual admission to UTA. Dr. Aswath has designed and put together the recruitment brochure detailing the MAE program and history of mechanical engineering.</p>
1994-1997	<p>Editorial Committee, College of Science Newsletter Served on the editorial committee that oversaw the content and makeup of the science newsletter. Also contributed couple of articles to the newsletter.</p>
1996-2001	<p>Steering Committee, Electron Microscopy Facility Served on the steering committee, which oversaw the use of all electron microscopy facilities on campus and provided recommendations on improvements to the Dean of Science.</p>

Graduate Advisor, Materials Science and Engineering (1996-2007)

- 1996-2007 **Graduate Advisor, Materials Science and Engineering Program.**
Graduate advisor of Materials Science and Engineering Program. Responsible for advising graduate students in the program, registering students, maintaining records of each student. In addition Dr. Aswath is involved in a major recruitment campaign to enhance the enrollment of students in the graduate program. This responsibility included traveling on recruiting and partnership development trips both nationally (Texas Swing, Southwest Swing) and internationally (Korea, India and Thailand).
- 2005–2008 **College of Engineering, Undergraduate Scholarship Committee.**
Member of committee that sets the criteria for selection of undergraduate candidates for scholarship at the College of Engineering. The committee also selects all recipients of the scholarship.
- 1995-2013 **Chair, Scholarship Committee, Materials Science and Engineering Program.**
Coordinate all the applications that come in for scholarship in the MSE program. Chair the committee that decides the list of recipients and co-ordinate the awards.
- 1990-2016 **Member, Graduate Studies Committee, Materials Science and Engineering Program.**
As a member of this committee since 1990, Dr. Aswath has been actively involved in the committee that revamped the curriculum for the MS and Ph.D. program in Materials Science and Engineering. His activities in the committee included review of existing course materials and development of new course materials, review and develop curriculum requirement for both MS and Ph.D. students that include requirements for diagnostic and comprehensive exams.
- 1992-2012 **Chairperson, Diagnostic Committee, Materials Science and Engineering Program.**
As Chairperson of this committee for the last five years Dr. Aswath have been involved in the co-ordination and administration of the semiannual Diagnostic exams for the Ph.D. students in Materials Science and Engineering Program.
- 1995-2012 **Member, Undergraduate Curriculum Committee.**
Dr. Aswath has been involved in a study to examine the focus of the undergraduate curriculum in the MAE department and examine ways of improving it.

PATENT PUBLICATION'S AND FILINGS

- 2006** Harold Shaub, **Pranesh B. Aswath** and Zahedul Huq
 "Engine Oil Additive"
(Issued) **U.S. Patent Number 7,074,745**, July 11, 2006.
(Issued) **European Patent Number EP 1685219**, August 2nd, 2006.
(Issued) **Chinese Patent Number CN 1867655A**, April 14th, 2006.
(Issued) **Canadian Patent Number CA 2542127**, June 4th, 2006.
(Issued) **Japanese Patent Number JP 2007509201**, April 12th, 2007.
(Issued) **Mexican Patent Number MX PA06004189A**, December 4th, 2006.

- 2006** Zahedul Huq, **Pranesh B. Aswath**, Ronald Elsenbaumer and Conrad Greer.
 "Friction-Induced In-Situ Formation Of Organo-Fluorides"
(Application) US Patent Office Application 20060063682, March 23rd 2006.
(Application) World Intellectual Property Organization: WO2006/033781, Published March 30th 2006.
- 2007** **Pranesh Aswath** and Ronald L. Elsenbaumer
 "Method to Synthesize Fluorinated ZDDP"
(Application) US Patent Office Application 2006281644, April 14th 2006.
(Application) World Intellectual Property Organization: WO2007143414, Published December 13th 2007.
- 2007** Ronald L. Elsenbaumer, **Pranesh B. Aswath**, Harold Shaub and David Owen
 "System and Method for Providing Continuous, In-Situ, Antiwear Chemistry to Engine Oil Using a Filter System".
(Application) US Patent Office Application 20070193935, August 23rd, 2007.
- 2010** **Pranesh B. Aswath**, Harold Shaub, Ramoun Mourhatch, Krupal Patel, David Owen and Ronald Elsenbaumer,
 "High Performance Lubricant Additives for Crankcase Oils, Greases, Gear Oils and Transmission Oils"
(Issued) US Patent Number 7,754,662, July 13th 2010.
- 2011** Krupal Patel, **Pranesh B. Aswath**, Harold Shaub and Ronald L. Elsenbaumer,
 "High Performance Lubricant Additive".
(Issued) US Patent Number 7,879,776, February 1st, 2011.
(Issued) European Patent Number EP1951850 A2, June 27th 2008.
- 2011** Kytai Nguyen, **Pranesh B. Aswath**, Abhimanyu Sabnis and Aniket Wadajkar,
 "Compositions and Methods for Composite Nanoparticle Hydrogels"
(Application) US Patent Office Application US 20110171309, July 14th, 2011.
(Application) European Patent Application EP09731430, October 10th, 2009
- 2012** Kajal Parekh, **Pranesh B. Aswath**, Hal Shaub and Ronald L. Elsenbaumer
 "Low Phosphorous Lubricant Additive".
(Issued) US Patent Number 8,216,986, July 10th, 2012
(Issued) European Patent: EP1907400, April 9th, 2008.
- 2012** Kajal Parekh, **Pranesh B. Aswath**, Harold Shaub and Ronald L. Elsenbaumer
 "Low Phosphorous Lubricants"
(Issued) US Patent Number 8,216,992, July 10th, 2012
- 2012** **Pranesh B. Aswath**, Harold Shaub, Ramoun Mourhatch, Krupal Patel, David Owen and Ronald Elsenbaumer,
 "High Performance Lubricant Additives for Crankcase Oils, Greases, Gear Oils and Transmission Oils"
(Issued) US Patent Number 8,227,387, July 24th, 2012.
- 2013** Xin Chen, **Pranesh B. Aswath** and Ronald Elsenbaumer
 "Alkylthioperoxydithiophosphates Lubricant Additives"
(Application) US Patent Office Application US 20130296598 filed with US Patent office on May 6th 2012 and Published on November 7th, 2013.

- 2014** Xin Chen, **Pranesh B. Aswath** and Ronald L. Elsenbaumer,
 “Alkylphosphorofluoridothioates Having Low Wear Volume and Methods for Synthesizing and using Same”
(Application) European Patent: **EP11798993**, Published on December 29th, 2011
(Issued) US Patent **8,791,056** on July 29th, 2014.
- 2016** Letia Blanco, Chris Grace, Christopher Alberts, Andrew Patin, Kyle Godfrey, Panayotis Shiakolas and **Pranesh Aswath** “Controlled Release Nanoparticulate Matter Delivery System”
(Issued) U.S. Patent Number **9,522,241** On December 20th 2016.
- 2017** **Pranesh B. Aswath**, Xin Chen, Vibhu Sharma, Maria Igartua, Fransesco Pagano, Wolfgang Binder, Parvin Zare, Nicole Doerr,
 “Synergic Blends of Ionic Liquids and Ionic Liquids with Ashless Thiophosphates for Antiwear Applications”
(Application) US Patent Application Number US 2013/0331305A1 filed with the US Patent Office, Published on December 12, 2013.
(Issued) U.S. Patent Number **9,725,669** Issued On August 8th 2017.
- 2018** **Pranesh B. Aswath**, Sujay Bagi, Ami Shah, Kush Shah and Kane Mordaunt “Lubricant Compositions”
US Provisional Patent Application Serial No: 62/215990 on September 9th 2015 with a conversion date of 9/8/2016 and **US Serial Number 15/259608**
US Patent Publication US 2017/0066990 A1, March 9th 2017
(Issued) U.S. Patent Number **10,066,183** On September 4th 2018.
- 2019** Venu Varanasi, Ilyas Azhar, Philip Kramer, Taha Azimale, **Pranesh Aswath**, Tugba Cebe.
 “In Vivo Live 3D Printing of Regenerative Bone Healing Scaffolds for Rapid Fracture Healing”
US Patent Application US 15/360,788, November 23, 2016.
(Issued) U.S. Patent Number **10,442,182** On October 15th 2019.
- 2020** Venu Varanasi, Ilyas Azhar, Philip Kramer, Taha Azimale, **Pranesh Aswath**, Tugba Cebe.
 “In Vivo Live 3D Printing of Regenerative Bone Healing Scaffolds for Rapid Fracture Healing” **(Additional Claims)**
US Patent Publication US 2020/0055302 A1, February 20th , 2020.
- 2020** Letia Blanco, Chris Grace, Christopher Alberts, Andrew Patin, Kyle Godfrey, Panayotis Shiakolas and **Pranesh Aswath** “Controlled Release Nanoparticulate Matter Delivery System” **(Additional Claims)**
(Issued) U.S. Patent Number **10,569,067** On February 25th, 2020.
- 2020** **Pranesh B. Aswath**, Vinay Sharma, Richard Timmons and Ali Erdemir, “Lubricant Compositions Comprising Core Shell Nanoparticles”
Invention Disclosure Filed on 2/23/2016.
US Provisional Patent Application Serial No: 62/336176 filed on May 13th 2016.
US Patent Application: Serial No: 15/593,444 May 12th 2017.
US Patent Application Number 2017032776, on November 16th, 2017
(Issued) U.S. Patent Number **10,696,916** On June 30th, 2020.
- 2020** Venu Varanasi, **Pranesh B. Aswath**, Megan Maginot, Ilyas Azhar and Philip Kramer,
 “Si-O-N-P Related Fabrication Methods, Surface Treatments and Uses Thereof”
Invention Disclosure Filed on 8/26/2015.

Provision Filed on 03/09/2016.

US Final Application No: 15/455120, Filed on 3/9/2017

US Patent Application US 20170348459 A1, December 7th, 2017.

(Issued) U.S. Patent Number 10,828,393 On November 10th 2020.

- 2021** Venu Varanasi, **Pranesh B. Aswath**, Megen Maginot and Nickolay Lavrik “ Amorphous Silicon Oxynitride and Amorphous Silicon Nitride Thin Films and Uses Thereof”.
(Application) US Provisional Patent Application Serial No: 62/04742162 filed on September 8th, 2014,
US Final Patent Application Serial No: 14/848107 filed on September 8th 2015.
US Patent Application Number: 201600067387, March 10th 2016.
(Issued) U.S. Patent Number 10,898,618 On January 26th 2021.

BOOK CHAPTER

- 2017** Venu Varanasi, M.F. Velten, T. Odatsu, A. Ilyas, S.M. Iqbal and **Pranesh B. Aswath**, “Surface Modifications and Surface Characterization of Biomaterials Used in Bone Healing” Materials and Devices for Bone Disorders, Elsevier and AP Publications, ISBN: 978-0-12-902792-9, Eds. Susmita Bose and Amit Bandyopadhyay, Chapter 9, pp. 405-452.
- 2014** Venu Varanasi, Panayotis Shiakolas and **Pranesh B. Aswath**, “Engineered Scaffolds: Materials and Microstructure from Nanostructures to Macrostructures for Tissue Engineering” *Scaffolds for Tissue Engineering: Biological Design, Materials and Fabrication*, Pan Stanford Publications, ISBN: 978-981-4463-20-1, Eds. Claudio Migliaresi and Antonella Motta, Chapter 12, pp. 411-461, 2014.

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- 2021** Kamal Awad*, Neelam Ahuja*, Matthew Fielder, Sara Peper*, **Pranesh Aswath**, Marco Brotto and Venu Varanasi, “Ionic Silicon Mitigates Oxidative Stress and Promotes C2C12 Myoblast Cell Viability, Migration and Differentiation In-Vitro”, *In Review, Biomaterials Science* **2021**.
- 2021** Vinay Sharma*, Richard Timmons, Ali Erdemir and **Pranesh Aswath**, “Fundamental Tribochemical Interaction between ZDDP and TiO₂ nanoparticles under Boundary Lubrication” *In preparation for submission, ACS Nano*, 2021.

JOURNAL PUBLICATIONS (*STUDENT)

- 2022** Kamal Awad*, Simon Young, **Pranesh Aswath** and Venu Varanasi, “Interfacial Adhesion and Surface Bioactivity of Anodized Titanium modified with SiON_x and SiONP_x Surface Coatings”, *Surfaces and Interfaces*, 28, 101645, **February 2022**. <https://doi.org/10.1016/j.surfin.2021.101645>
- 2021** Kamal Awad*, Natasha G Boyes*, Ramlah Iqbal, Muhammad Ahmed, Adel Mohammed, **Pranesh Aswath**, Corey R Tomczak and Venu Varanasi, “Effect of Hepatocyte Growth Factor on Bone Chemical Structure in Diabetic Hypertensive Rats: XANES Analysis”, *Journal of Materials Research*, Vol 36, pp. 3936-3951, **2021**. <https://doi.org/10.1557/s43578-021-00300-8>
- 2021** Kimaya Vyvahare*, Vibhu Sharma*, Vinay Sharma*, Ali Erdemir and **Pranesh Aswath**, “XANES Study of Tribofilm. Formation with Low Phosphorous Additive Mixtures of Phosphonium Ionic Liquids and Borate Esters” *Frontiers of Mechanical Engineering*, Vol 7, Article 671457, **2021**. <https://doi.org/10.3389/fmech.2021.671457>

- 2021 Kimaya Vyavhare*, Richard Timmons, Ali Erdemir, and **Pranesh B Aswath**, "Tribological interaction of plasma functionalized CaCO₃ nanoparticles with zinc and ashless dithiophosphate additives" *Tribology Letters*, Vol 69, 49, 2021. <https://doi.org/10.1007/s11249-021-01423-z>
- 2021 Kimaya Vyavhare*, Richard Timmons, Ali Erdemir, Brian Edwards and **Pranesh B Aswath**, "Core Shell Structure Zinc Oxide Nanoparticles as High Performance Anti-wear Additives" *Wear*, 474-475, Article 203717, June 2021. <https://doi.org/10.1016/j.wear.2021.203717>
- 2021 Neelam Ahuja*, Kamal R. Awad*, Marco Brotto, **Pranesh B Aswath** and Venu Varanasi, "A Comparative Study of Silicon Nitride, Titanium and Poly-Ether Ketone on Mouse Pre-Osteoblast Cells", *Medical Devices and Sensors*, 4(1), e10139, April 2021, <https://doi.org/10.1002/mds3.10139>
- 2021 Kimaya Vyavhare*, Sujay D. Baji*, Pradip S. Pichumani*, Vibhu Sharma* and Pranesh B. Aswath, "Mechanical and Chemical Properties of Tribofilms formed by the Interaction of Ashless Thiophosphate Anti-wear Additives", *Lubrication Science*, 33(4), pp. 188-200, 2021. <https://doi.org/10.1002/lis.1537>
- 2021 Kimaya Vyavhare*, Richard Timmons, Ali Erdemir, Brian Edwards and **Pranesh B Aswath** "Polymer Coated ZnO Nanoparticles Driven Robust Interfacial Tribofilms Leading to Improved Wear Protection Under Boundary Lubrication", *Langmuir*, 37(5), 1743-1759, 2021. <https://doi.org/10.1021/acs.langmuir.0c02985>
- 2021 Kamal Awad*, Neelam Ahuja*, Matthew Fielder, Sara Peper*, Zhiying Wang, **Pranesh Aswath**, Marco Brotto and Venu Varanasi, "Ionic Silicon Protects Oxidative Damage and Promotes Skeletal Muscle Cell Regeneration", *International Journal of Molecular Sciences*, 22, pp. 497, 2021. <https://doi.org/10.3390/ijms22020497>
- 2020 Kamal R Awad, Neelam Ahuja, Matthew Fielder, Jian Huang, Leticia Brotto, **Pranesh Aswath**, Marco Brotto and Venu Varanasi, "Micro-patterned Bioactive Amorphous Silicon Oxynitride Enhances Adhesion, Growth and Myotubes and Axon Alignment in Muscle and Nerve Cells", *The FASEB Journal*, 34, S1, 1-1, April 2020. <https://doi.org/10.1096/fasebj.2020.34.s1.02245>
- 2020 Neelam Ahuja, Kamal Awad, Matthew Fielder, Pranesh Aswath, Marco Brotto, Venu Varanasi, "Preliminary Study of In-Situ 3D Bioprinted Nano-Silicate Biopolymer Scaffolds for Muscle Repair in VML Defects", *The FASEB Journal*, 34, S1, 1-1, April 2020. <https://doi.org/10.1096/fasebj.2020.34.s1.03514>
- 2020 Shashi Ram, Meghna S. Tare, **Pranesh B. Aswath** and Rahul V. Ralegaonkar, "Potential of Co-Fired Fly Ashes as a Construction Material-A Review", *Encyclopedia of Renewable and Sustainable Materials*, 1, 2020, 674-685. <https://doi.org/10.1016/B978-0-12-803581-8.11173-7>
- 2021 Felipe Monte*, Neelam Ahuja, Kamal R. Awad*, Zui Pan, Simon Young, Harry K.W. Kim, **Pranesh Aswath**, Marco Brotto and Venu Varanasi, "Silicon Oxynitrophosphide Nano-scale Coatings Enhances Antioxidant Marker Induced Angiogenesis During In-vivo Cranial Bone Defect Healing" *Journal of Bone and Mineral Research*, 5(4), e10425, 2020. <https://doi.org/10.1002/jbm4.10425>
- 2020 Sujay Bagi*, Carl Justin Kamp, Rick Bowker, Vibhu Sharma* and **Pranesh Aswath**, "Mul-

- tiscale Characterization of Exhaust and Crankcase Soot Extracted from Heavy Duty Diesel engine and Implications for DPF Ash”, *Fuel*, 282, December 2020, 118878. <https://doi.org/10.1016/j.fuel.2020.118878>
- 2020 Tugba Cebe*, Neelam Ahuja* Felipe Monte*, Kamal Awad*, Kimaya Vyavhare*, **Pranesh Aswath**, Jian Huang, Marco Brotto and Venu Varanasi “Novel 3D-Printed Methacrylated Chitosan-Laponite Nanosilicate Composite Scaffolds Enhance Cell Growth and Biomineral Formation on MC3T3 Pre-Osteoblasts” *Journal of Materials Research*, **38(1)**, pp. 58-75, 2020. DOI: <https://doi.org/10.1557/jmr.2018.260>
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- 2018 B. Uzer, F. Monte, K.R. Awad, **P.B. Aswath**, V.G. Varanasi, D. Canadinc, (2018) "The Influence of Plastic Deformation Mechanisms on the Adhesion Behavior and Collagen Formation in Osteoblast Cells". In: Materials Society (eds) TMS 2018 147th Annual Meeting & Exhibition Supplemental Proceedings. TMS 2018. The Minerals, Metals & Materials Series. Springer. pp. 295-301. https://doi.org/10.1007/978-3-319-72526-0_27
- 2015 Olusanmi Aderniran, Sujay Bagi, Mihir Patel, Vibhu Sharma and **Pranesh B. Aswath** "Structure and Chemistry of Soot and its Role in Wear of Diesel Engines" International Tribology Conference, Tokyo, September 16th - 20th, 2015.

- 2015** Yeonho Park, Ali Abolmaali, Swoo-Heon Lee and **Pranesh B. Aswath** "The Effect of Compressive Strength of Fly Ash Based Geopolymer Concrete with Crumb Rubber Replacing Fine Aggregates", 2015 World Congress on Advances in Structural Engineering and Mechanics, Songdo Convensia, Incheon, Korea, August 25th to 29th, 2015.
- 2014** Jayapradhi Rajendran, Stefano Gialanella and **Pranesh B. Aswath** "XANES Analysis of Dried and Calcined Bones" Canadian Light Source 2013 Annual Report. pp. 72-73.
- 2014** Xin Chen, **Pranesh B. Aswath** and Ronald L. Elsenbaumer. "Alkylthioperoxydithiophosphates Lubricant Additives". Canadian Light Source 2013 Annual Report. pp. 102-103.
- 2014** M.F. Velten, T. Odatsu, **P.B. Aswath**, N. Kamiya, H. Kim and V. Varanasi "PECVD SiO_x Accelerate Hydroxyapatite Surface Formation for Enhanced Early Osteogenic Differentiation" Biomaterials Science: Processing and Applications IV: Ceramic Transactions, Volume 251, MS&T Conference, Montreal, Canada. Oct. 27th- 31st, 2013. pp 105-113. DOI: [10.1002/9781118995235.ch11](https://doi.org/10.1002/9781118995235.ch11)
- 2013** Letia Blanco, Panos Shiakolas, **Pranesh B. Aswath**, Christopher Alberts, Chris Grace, Kyle Godfrey and Andrew Patin, "A Thermoresponsive Hydrogel Based Controlled Drug Delivery Device" *Proceedings of 2012 ASME International Mechanical Engineering Conference and Exposition*, November 9-15th 2012, Houston, TX, IMECE2012-88564, pp. 371-378. doi:[10.1115/IMECE2012-88564](https://doi.org/10.1115/IMECE2012-88564).
- 2010** Mihir Patel and **Pranesh Aswath**, "Diesel Soot Chemical Characterization Using XANES" Tribology and Lubrication Technology, **66(2)**, February 2010, pp. 17-18.
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- 2010** Mihir Patel and **Pranesh Aswath** "Chemical Characterization of Diesel Soot using XANES" Canadian Light Source, 2010 Annual Report, p. 44-45.
- 2008** Hande Demirkiran, Yongfeng Hu, Lucia Zuin and **Pranesh Aswath**, "XANES Study of Bioglass 45S5-Hydroxyapatite Co-Sintered Bioceramics" Canadian Light Source, 2009 Annual Report, p. 50-51.
- 2008** Arunya Suresh, Ramoun Mourhatch and **Pranesh Aswath**, "Effect of Test Parameters on the Four Ball Wear and Weld Performance of Greases with MoS₂ and without MoS₂ as EP Additives", Paper 08XX, Williamsburg, VA, USA, June 7-10, 2008.
- 2007** BoHoon Kim and **Pranesh Aswath** "XANES Study of Tribofilms" Canadian Light Source, 2007 Annual Report, p. 17-18.
- 2006** Ramoun Mourhatch and **Pranesh B. Aswath** "Mechanism of Lubrication with Zinc Dialkyl Dithiophosphate" STLE/ASME International Joint Tribology Conference, October 22-25, 2006, San Antonio, TX. Paper IJTC2006-12386.
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- 2006** Kajal Parekh and **Pranesh Aswath** "Synthesis of Fluorinated ZDDP Compounds", STLE/ASME International Joint Tribology Conference, October 22-25, 2006, San Antonio, TX. Pa-

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- 2005** Anurag Pandey, Sunil Bellagundu, Panayotis Shiakolas and **Pranesh Aswath** "Microchannel Biodegradable Devices For Drug Delivery" Society For Biomaterials, 30th Annual Meeting Transactions, April 27-30, Memphis Tennessee, p. 114.
- 2005** Anurag Pandey, Eric Jan and **Pranesh Aswath**, "Hot Rolled Hydroxyapatite - High Density Poly Ethylene Composites" Society For Biomaterials, 30th Annual Meeting Transactions, April 27-30, Memphis Tennessee, p. 220.
- 2005** Kajal Parekh, Ramoun Mourhatch and **Pranesh Aswath** "ZDDP-Additive-Catalyst Interactions In Engine Oil", WTC2005-64075, Proceedings of World Tribology Congress III September 12-16, 2005, Washington, D.C., USA.
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- 2005** Sunit Munot, Krupal Patel, **Pranesh Aswath** and R.L. Elsenbaumer "Development and Evaluation of a High Performance Universal Grease", WTC2005-64079, Proceedings of World Tribology Congress III September 12-16, 2005, Washington, D.C., USA.
- 1996** C.S. Arun, **P.B. Aswath**, K.L. Lawrence and D. Vanecek "Fracture of Polycrystalline Silicon Wafers", 25th IEEE PVSC Conference, Dr. Sheila Bailey, Program Chair.
- 1995** W.O. Soboyejo, **P.B. Aswath** and C. Mercer "Cyclic Deformation and Fracture Mechanisms in Gamma-Based Titanium Aluminide Intermetallic", *Proc. of the Symp. on The Fatigue and Fracture of Ordered Intermetallic Materials II*, Eds. W.O. Soboyejo, T.S. Srivatsan and R.O. Ritchie., TMS-ASM Materials Week 94, Oct. 2-6, 1994, Rosemont IL, pp. 57-84.
- 1995** W.O. Soboyejo, **P.B. Aswath** and L. Xu "An Investigation of the Effects of Heat Treatment on The Microstructure and Fracture and Fracture Behavior of Ti-24Al-11Nb", *Proc. of the Symp. on The Fatigue and Fracture of Ordered Intermetallic Materials II*, Eds. W.O. Soboyejo, T.S. Srivatsan and R.O. Ritchie., TMS-ASM Materials Week 94, Oct. 2-6, 1994, Rosemont IL, pp. 85-116.
- 1994** R. Thomas, P.M. Ganesa, **P.B. Aswath** and A. Haji-Sheikh "Prediction of Temperature Distribution in a Spray-Cooled Cylinder for Determination of Microstructure," *Thermal Processing of Materials*, Eds. V. Prasad, Y. Joshi, M.K. Alam, C.-L. Chan, M. Kulkarni,

- R. Pitchumani and S.J. Pien, ASME, **HTD-Vol. 289**, 1994 International Mechanical Engineering Congress and Exposition, Chicago, IL, pp. 31-41.
- 1993** D.L. Hunn, **P.B. Aswath** and R.D. Goolsby "Processing and Oxidation Properties of Zirconium Aluminides," *Processing and Fabrication of Advanced Materials for High Temperature Applications III*. Eds. V.A. Ravi, T.S. Srivatsan and J.J. Moore, 1993 **TMS-Fall Meeting**, Pittsburgh, PA, pp. 535-546.
- 1993** A. Bandyopadhyay and **P.B. Aswath** "Role of Processing Variables on Room and Elevated Temperature Flexure Properties in a $\text{AlPO}_4\text{-SiC}_f$ Composite" *Processing and Fabrication of Advanced Materials for High Temperature Applications III*. Eds. V.A. Ravi, T.S. Srivatsan and J.J. Moore, 1993 **TMS-Fall Meeting**, Pittsburgh, PA, pp. 355-365.
- 1993** **P.B. Aswath** "Fatigue of Titanium Intermetallics at Room and Elevated Temperatures" *Fatigue and Fracture of Ordered Intermetallic Materials I* Eds. W.O. Soboyejo, T.S. Srivatsan, and D.L. Davidson. 1993 **TMS-Fall Meeting**, Pittsburgh, PA, pp. 329-339.
- 1993** S.R. Pejavara and **P.B. Aswath** "Effect of Accelerated Cooling on the Mechanical Properties and Microstructure of a Low Carbon Microalloyed Steel" *The International Symposium on Low Carbon Steels for the 90s* Sponsored by ASM International, The Minerals, Metals and Materials Society and Centre de Recherches Metallurgiques., eds. R. Asfahani and G. Tither, **TMS Fall Meeting**, Pittsburgh, PA, Oct. 18-21, 1993, pp. 265-274.
- 1993** S.A. Kekare, D.K. Shelton and **P.B. Aswath** "Study of Oxidation Kinetics, Oxide Scale Morphology and Composition in Binary and Ternary TiAl Base Alloys". *International Symposium on Structural Intermetallics.*, Eds. R. Darolia, J.J. Lewandowski, C.T. Liu, P.L. Martin, D.B. Miracle and M.V. Nathal, Champion, Pennsylvania, USA, Sept. 26-30, 1993, pp. 375-385.
- 1992** M.L. Stewart and **P.B. Aswath** "A Study of the Processing and Compositional Variables on the Microstructural Development and Oxidation Characteristics of Rapidly Solidified NiAlCo Alloys". *High Temperature Ordered Intermetallic Alloys V*. **MRS Fall Meeting**, Boston, MA, Dec. 1992, pp. 1007 - 1012.
- 1992** S.A. Kekare, D.K. Shelton and **P.B. Aswath** "Effect of Ternary Additions on the Microstructural Stability and Oxidation Characteristics of Ti-48Al". *High Temperature Ordered Intermetallic Alloys V*. **MRS Fall Meeting**, Boston, MA, Dec. 1992, pp. 1025 - 1030.
- 1992** B.G. Velasco and **P.B. Aswath** "Microstructural Stability, Hardness and Oxidation Characteristics of *In-Situ* Composite Ti - 8.5 Al - 1 B - 1 Si (wt.%)". *Microstructure and Mechanical Properties of Aging Materials*. 1992 **TMS Fall Meeting**, Chicago, IL, Nov 1 - 5, 1992, pp. 467-473.
- 1990** **P.B. Aswath** and S. Suresh "Microstructural Effects on Fatigue Crack Growth of Titanium Aluminides "Elevated Temperature Crack Growth.", Eds. S. Mall and T. Nicholas, **MD-Vol. 18**, ASME Winter Annual Meeting., Dallas, TX, Nov. 25-30, 1990, pp. 69-77.
- 1990** **P.B. Aswath**, W.O. Soboyejo and S. Suresh. "Microstructural Effects on Fatigue Crack Growth in Titanium Aluminides" *Fatigue 90*, Eds. H. Kitagawa and T. Tanaka, Materials and Component Engineering Publications Ltd., Warley, UK, 1990, **Vol. III**, pp. 1941-1946.

INVITED PRESENTATIONS AND PRESENTATIONS IN CONFERENCES

Dr. Aswath gives between 5-10 presentations in conferences, universities and industry every year. 3-5 of the presentations each year are invited.

RESEARCH FUNDING

- 1990 "Research Initiation Grant"
Sole PI
UTA Permanent University Fund
Duration of research: Sept. 1, 1990- Aug. 31, 1992.
Amount: \$40,000
Type: Equipment
- 1991 "Effect of Cooling Rate on Dimensional Stability and Properties of Forgings"
Co-PI with Prof. A. Haji-Sheikh,
Trinity Forge Inc., Mansfield, TX.
Duration of research: June 1, 1991- May 31, 1992.
Amount :\$20,000
Type: Restricted to research performed for Trinity Forge Inc.
- 1991 "Engineering Research Equipment: Electron Microscopy of Solid State Materials."
P.I. With Prof. R.D. Goolsby, Prof. K. Alavi, Prof. W.S. Chan and Prof. T-J Shieh as
Co-PI
National Science Foundation, Research Equipment Awards
Duration of research, Sept. 1, 1991-Aug. 31, 1992.
Amount awarded by NSF \$ 90, 708 Grant # MSS 9112233 (+ \$90,708 Matched by UTA).
Type: Equipment
- 1991 "Tough Ceramics? An analysis of fatigue and creep of Al₂O₃ with Controlled Amounts of SiO₂."
Sole P.I.
National Science Foundation, Research Initiation Awards.
Duration of research, Sept. 1, 1991- Feb. 28, 1994.
Amount awarded by NSF \$ 69,958 Grant # MSS 9108991 (+ \$10,000 matching money provided by UTA).
Type: Research Initiation
Students: One graduate student and one undergraduate student.
- 1993 "NASA/UTA Center for Hypersonic Research"
Co-Investigator
NASA in collaboration with **Loral Vought Systems Corporation (LVSC)**, Grand Prairie, TX and **Lockheed Fort Worth Company (LFWC)**, Fort Worth, TX.
With Prof. D.R. Wilson (PI), Prof. D. A. Anderson, Prof. W.S. Chan, Prof. S.P. Joshi, Prof. F. K. Lu, Prof. I. H. Parpia, Prof. K. L. Lawrence and Prof. A. Haji-Sheikh.
Duration of research, Sept. 1, 1993 to Aug. 31, 1996.
Amount awarded by NASA \$ 600,000
Type: Research
- 1994 "Development of Hypersonic Technologies"
Co-Investigator
Lockheed-Fort Worth Company
With Prof. D.R. Wilson (PI), Prof. W.S. Chan and Prof. F. Lu.

- Duration of Research, June 1, 1994 to Dec. 31, 1996.
Amount awarded by Lockheed-Fort Worth Company \$ 55,000
Type: Research and Equipment
- 1997 “Development of Near-Net Shaped Functionally Graded Al₂O₃/Bioactive Glass Composites for Biomedical Applications”
Sole PI
ATP-THECB
Duration of Research, January 1, 1998 - Dec 31, 1999.
Amount awarded by THECB \$132,289.
Type: Research.
- 1999 “Development of High Performance Lubricants”
Co-PI
Platinum Research Organization, Ltd. (PRO)
With Prof. R.L. Elsenbaumer
Duration of Research, August 20th, 1999 to August 19th 2000.
Amount awarded by PRO \$ 50,055.
Type: Research
- 2000 “Development of High Performance Lubricants”
Co-PI
Platinum Research Organization, Ltd. (PRO)
With Prof. R.L. Elsenbaumer
Duration of Research, Oct 18th 2000 to Oct 17st 2001
Amount Awarded by PRO \$ 60,125
Type: Research
- 2001 “Development of High Performance Lubricants”
Co-PI
Platinum Research Organization, Ltd. (PRO)
With Prof. R.L. Elsenbaumer
Duration of Research, Oct 18th 2001 – Dec 31st 2001
Amount Awarded by PRO \$ 26,012
Type: Research
2001. “Environmentally Friendly High Performance Lubricants and Anti-Icing Aircraft Coatings”
PI with Dr. Elsenbaumer
TDT-THECB
Duration of Research, January 1, 2002 – Dec 31, 2003
Amount awarded by THECB \$235,000
Type: Research
- 2002 “Environmentally Friendly High Performance Lubricants and Anti-Icing Aircraft Coatings”
PI
Platinum Research Organization, Ltd. (PRO)
With Prof. R.L. Elsenbaumer
Duration of Research, Jan 1st 2002 to Dec 31st 2002.
Amount awarded by PRO \$39,000.
Type: Research
- 2003 “Environmentally Friendly High Performance Lubricants and Anti-Icing Aircraft Coatings”
PI
Platinum Research Organization, Ltd. (PRO)

- With Prof. R.L. Elsenbaumer
Duration of Research, Jan 1st 2003 to August 31st 2004.
Amount awarded by PRO \$31,000.
Type: Research
- 2004 “Environmentally Friendly High Performance Lubricants and Anti-Icing Aircraft Coatings”
PI
Platinum Research Organization, Ltd. (PRO)
With Prof. R.L. Elsenbaumer
Duration of Research, Jan 1st 2004 to August 31st 2004.
Amount awarded by PRO \$22,140.
Type: Research
- 2004 “Environmentally Friendly High Performance Lubricants and Anti-Icing Aircraft Coatings”
PI
Platinum Research Organization, Ltd. (PRO)
With Prof. R.L. Elsenbaumer
Duration of Research, Sept 1st 2004 to December 31st 2004.
Amount awarded by PRO \$18,142.
Type: Research
- 2005 “Environmentally Friendly High Performance Lubricants and Anti-Icing Aircraft Coatings”
PI
Platinum Research Organization, Ltd. (PRO)
With Prof. R.L. Elsenbaumer
Duration of Research, Jan 1st 2005 to January 15st 2006.
Amount awarded by PRO \$99,240.
Type: Research
- 2005 “Development of Microchannel biodegradable devices for Drug Delivery Applications”
PI
Center for Convergent Biotechnology
Duration of Research, Jan 1st 2005 to January 31st 2006.
Amount of Award: \$24,000.
Type; Research
- 2006 “Environmentally Friendly High Performance Lubricants and Anti-Icing Aircraft Coatings”
PI
Platinum Research Organization, Ltd. (PRO)
With Prof. R.L. Elsenbaumer
Duration of Research, Jan 15st 2006 to January 15st 2007.
Amount awarded by PRO \$135,500.
Type: Research
- 2007 “Environmentally Friendly High Performance Lubricants and Anti-Icing Aircraft Coatings”
PI
Platinum Research Organization, Ltd. (PRO)
With Prof. R.L. Elsenbaumer
Duration of Research, Jan 15st 2007 to January 15st 2008.
Amount awarded by PRO \$268,000.
Type: Research

- 2007 "Environmentally Friendly High Performance Lubricants and Anti-Icing Aircraft Coatings"
PI
Platinum Research Organization, Ltd. (PRO)
With Prof. R.L. Elsenbaumer
Duration of Research, Jun 15st 2007 to January 15st 2008.
Amount awarded by PRO \$65,000.
Type: Research
- 2007 "Acquisition of a Nanomechanical Test System"
PI
College of Engineering Excellence Fund
With Profs: Kytai Nguyen, Harry Stephanou and Panos Shiakolas
Duration of Research, May 1st 2007 to August 31st 2007.
Amount Awarded by COE: \$50,000 + \$45,000 match
Type: Equipment
- 2008 "Environmentally Friendly High Performance Lubricants and Anti-Icing Aircraft Coatings"
PI
Platinum Research Organization, Ltd. (PRO)
With Prof. R.L. Elsenbaumer
Duration of Research, Jan 15st 2008 to May 31st 2009.
Amount awarded by PRO \$ 294,000.
Type: Research
- 2008 "Finite Element Model and Assessment of Forging Process"
Co-PI
Trinity Industries
With Dr. Heather Beardsly, Dr. Raoul Fernandez and Mr. Drew Cassani
Duration of Project: July 6th 2008 to December 11th 2008.
Amount Awarded by Trinity \$ 43,019
Type: Research and Development
- 2008 "Finite Element Analysis of Thermo-Elastic Hydraulic Structures"
Co-PI
American Concrete Pipe Association
With Dr. Ali Abomaali (PI), Dr. Guillermo Ramirez, Dr. Tri Le, Dr. Anand Puppala,
Duration of Project: June 2nd 2008 to August 31st 2009.
Amount Awarded: \$ 210,000
Type: Research
- 2009 "From Tribology to Drug Delivery, Innovative Methods to Create and Deliver Knowledge"
Fulbright Faculty Fellowship
Sole PI
Duration of Fellowship: January 1st 2010 to August 31st 2010.
Location: University of Trento
Amount of Awarded: \$20,000 (+Full housing and Travel Support)
- 2011 "Application of Steel Fiber for Precast Concrete"
Co-PI
Bekaert Corporation and American Concrete Pipe Association
with Dr. Abomaali (PI). Dr. Simon Choi and Dr. Tri Le,
Duration of Award January 1st 2011 to July 31st 2012
Amount Awarded: \$155,000 + \$150,000 (Matching from ACPA)
Type: Research

- 2011 "Mechanism of Wear with Diesel Soot"
PI
Chevron-Oronite Corporation
Duration of Award Dec. 1st 2011 - July 26th 2012
Amount of Award: \$20,000
Type: Research
- 2012 "Mechanical and Chemical Analysis of Bioactive Glass Ion Treated Bone Matrices"
PI
Baylor College of Dentistry
with Dr. Shiakolas
Duration of Award May 1st 2012 - August 31st, 2013
Amount of Award: \$12,000
Type: Research
- 2012 "Development and Optimization of Fluorinated Thiophosphates for Automotive Engine Applications"
PI
Rebirth Partners
with Dr. Elsenbaumer
Duration of Award April 1st 2012 - August 31st 2013
Amount of Award: \$126,775
Type: Research
- 2012 "Development of New Strategies to Mitigate Abrasive Wear in EGR Diesel Engines by Optimizing Additives in Lubricant Formulations"
PI
Rebirth Partners
with Dr. Elsenbaumer
Duration of Award, April 1st 2012 - August 31st 2013
Amount of Award: \$66,400
Type: Research
- 2012 "Mechanism of Wear with Diesel Soot"
PI
Chevron-Oronite Corporation
Duration of Award July 7th 2012 - July 6th 2014
Amount of Award: \$30,000
Type: Research
- 2013 "Development of High Performance Aerospace Grease"
PI
Boeing Corporation
Duration of Award October 2012 - May 2013
Amount of Award: \$46,000
Type: Research
- 2013 "Determination of the Chemistry and Structure of Diesel Soot from Ford F-150 Engine"
PI
Ford Corporation
Duration of Award January 2013 - August 2013
Amount of Award: \$ 27,500
Type: Research

- 2013 "Determination of the Chemistry and Structure of Diesel Soot from Ford F-150 Engine"
PI
Lubrizol Corporation
Duration of Award January 2013 - August 2013
Amount of Award: \$ 27,500
Type: Research
- 2013 "Development of High Performance Aerospace Grease-Phase 2"
PI
Boeing Corporation
Duration of Award: March 1st 2013 - December 31st, 2013
Amount of Award: \$89,416
Type: Research
- 2013 "The CIRT Network: 25 Research Universities Preparing a National Faculty to Advance STEM Undergraduate Learning" David Mathieu, U of Wisconsin, PI:
\$5,000,000 (3 years)
Co-PI (UTA-PI, Dr. Kevin Schug)
NSF:Subcontract for Grant DUE-1231286
Duration of Award: August 15th 2013-July 31st 2016
Amount of Award: \$159,075
Type: Educational
- 2014 "A Combinatorial Approach to Design an Aerospace Grease"
PI
Boeing Corporation
Duration of Award: October 1st 2013 - January 31st, 2016
Amount of Award: \$ 131,500
Type: Research
- 2014 "Silicon, A New Antioxidant for Rapid Bone Healing"
Co-PI
NIH: 1R03DE023872-01
Duration of Award, 7/1/2014 - 6/30/2017
Amount of Award: \$24000 (UTA Share)
Type: Research
- 2014 "Introduction to Engineering and Engineering Mathematics"
PI
EdX
Duration of Award: 9/1/2014 - 5/31/2018
Amount of Award: \$101,863 (\$24,800 from edX, balance from Cost Share)
Type: Educational
- 2015 "I/UCRC for Expansion of CICI to Add a New Site at UTA on Sustainable Utilization of Composites in Infrastructure Systems
Co-PI (Dr. Puppala-PI)
NSF
Duration of Award: 3/1/2015 - 2/29/2020
Amount of Award: \$325,000
Type: Research:
- 2016 "Development and Optimization of Next Generation Ashless Chemistries for Next Generation Automotive Applications"

PI
Vanderbilt Chemicals
Duration of Award: 3/1/2015 - 5/31/2018
Amount of Award: \$ 72,250
Type: Research:

2019 "Printing and Regenerating Fractured Bone Using Antioxidant Materials"
Co-PI (Dr. Varanasi-PI)
NIH: 1R56DE027964-01A1
Duration of Award: 9/1/2019-8/31/2020
Amount of Award: \$427,584
Type: Research:

2021 "Texas Reskilling Support Fund Grant Program"
Co-PI (Ms. Amanda Nickerson -PI)
THECB:
Duration of Award: 12/21/2020-9/30/2022
Amount of Award: \$862,500
Type: Student Support

2021 "Building the Transfer Talent Pipeline to High Demand Employment with 21st Century Skills in the DFW Metroplex"
PI (Ms. Amber Smallwood - Co-PI)
APLU-USU: Seeding Innovation to Deliver 21st Century Skills Collaborative Opportunity Grant
Duration of Award: 01-01-2022 to 5-31-2023
Amount of Award: \$50,000
Type: Project.

SYNCHROTRON RESEARCH FUNDING

Over the past 15 years Dr. Aswath has written many proposals to Canadian Light Source in Saskatoon, Canada, SRC in Madison, Wisconsin (Now defunct) and Eletta in Trieste, Italy and has been awarded hundreds of hours of beam time in various beamlines. The use of these beam times has resulted in significant research projects, student dissertations and thesis, patents issues, invention disclosures and significant value to Dr. Aswath's research group and UT Arlington and Board of Regents of UT System.

GRADUATE COURSES DEVELOPED BY DR. ASWATH

"Special Topics in Tribology Lubrication and Coatings": (MSE 5390)

Tribology, the science of contacting surfaces is ever present in all moving objects that are in contact with other objects or stationary surfaces. The resulting interaction results in different outcomes depending on the presence or absence of a lubricant in between the contacting surfaces. The nature of interaction also depends on the condition of contact ranging from hydrodynamic to boundary lubrication. The surfaces that come in contact play a very important role in tribology with the surfaces them-

selves participating in the formation of protective tribo or thermal films on the surface. Other areas of interest covered in the course include the fundamentals of corrosion protection of Al alloys as well as development of protective coatings for marine applications. The course aims to provide a comprehensive understanding of the Tribology and Lubrication process in materials. This course will employ theoretical and practical examples.

"Fatigue of Engineering Materials": (MSE 5315)

The syllabus includes cyclic deformation, formation of persistent slip bands, fatigue crack initiation and growth in ductile solids; Phenomenological approaches based on cyclic stress and cyclic strain; Application of fracture mechanics in fatigue; Mechanisms of crack closure; Crack initiation and growth ahead of stress concentrations; Small fatigue cracks; Variable and multiaxial fatigue and corrosion fatigue; Fatigue of brittle solids.

"Creep and Oxidation of Materials": (MSE 5316)

The syllabus includes Mechanisms and phenomenology of fatigue and creep of metallic, intermetallics and ceramic materials; Parabolic, logarithmic and steady state creep; Nabarro-Herring Creep, Harper-Dorn Creep, Coble Creep and Power Law Creep; Ashby Maps. Mechanisms of oxidation; Design of materials for elevated temperature applications with emphasis on aerospace materials like nickel based superalloys, titanium intermetallics, ceramics, intermetallic matrix composites etc.

"Ceramic Materials": (MSE 5345)

The syllabus includes a general review of different types of ceramics with special emphasis on applications. Traditional and more recent developments in the processing of oxide and non-oxide ceramics; Physical and mechanical properties of ceramic fiber reinforcements; Processing of ceramic matrix composites; Mechanisms of deformation in ceramics and ceramic matrix composites which include toughening mechanisms, failure mechanisms and creep deformation; Electrical, magnetic and optical properties of ceramics.

"Fundamentals of Materials Science and Engineering I": (MSE 5302)

The syllabus of this course was developed with Dr. Goolsby and Dr. Elsenbaumer as part of the new curriculum. The syllabus includes the following: interatomic and intermolecular forces, crystal structures, x-ray diffraction, electron theories of metals, defects and imperfections, dislocation and slip phenomena, solid solutions, diffusion, phase diagrams, precipitation.

"Mechanical Behavior of Materials": (MSE 5312)

This course was developed with Dr. Goolsby as part of the new curriculum. The syllabus of the course includes the following: Elementary theory of elasticity, tensoral analysis, elementary theory of plasticity, yield criteria; Deformation of single crystals and polycrystalline materials; Elementary theory of dislocations; Theory and mechanism of precipitation hardening, solution strengthening, composite strengthening; Fatigue, failure, fracture mechanisms, fracture mechanics and creep of materials.

"Transmission Electron Microscopy in Materials Science": (MSE 5341)

Specimen preparation for transmission electron microscopy, electropolishing, ion milling and microtoming; Design of the transmission electron microscope; Crystallography and reciprocal lattice; The dynamical and kinematic theories of electron diffraction; Bright field, dark field, weak beam analysis of defects; Convergent beam electron diffraction. Scanning transmission electron microscopy, Energy dispersive spectroscopy in the electron microscope. Analysis of biological samples.

"High Temperature Composites": (MSE 5390 Co-developed with Dr. Chan)

Processing and fabrication of high temperature composites with special emphasis on titanium matrix composites nickel based superalloy matrix composites and ceramic matrix composites. Role of fiber coating on long term durability of high temperature composites. Constitutive equations of high temperature materials. Mechanical properties of high temperature composite materials. Thermomechanical analysis of composite materials. Design and application.

"Materials Science Seminar": (MSE 5193)

Graduate students and faculty present seminars of their research work over a sixteen-week period. An important aspect of this course is to expose graduate students to the research going on in various aspects of Materials Science at UTA. In addition, presentation skills of the students will be examined and a review of their research project will be made.

UNDERGRADUATE COURSES DEVELOPED BY DR. ASWATH**"Honors Materials Science": MAE 2413**

Physical, mechanical, electrical and chemical properties of metals semiconductors, ceramics, polymers and composites with an emphasis on understanding fundamental issues. Relationship between the processing, micro and macro structure of materials with their properties such as strength, ductility,

toughness, fatigue, fracture and creep with special emphasis on mechanical properties of metals, polymers, ceramics and composites.

“Advanced Mechanical Properties of Materials”: MAE 4336

Elementary theory of elasticity, tensor analysis, elementary theory of plasticity, yield criteria; Deformation of single crystals and polycrystalline materials; Elementary theory of dislocations; Theory and mechanism of precipitation hardening, solution strengthening, composite strengthening; Fatigue, failure, fracture mechanisms, fracture mechanics and creep of materials.

“Materials Science Laboratory”: MAE 3121

Revamped the existing laboratory course, updated the manual for the course and added several new labs dealing with composite processing and x-ray diffraction.

MOOC COURSES DEVELOPED BY DR. ASWATH

“Introduction to Engineering and Engineering Mathematics”: ENGR 1.0x

Put together a MOOC for high school students and college freshman to introduce them to history of engineering, basic principles of engineering, the different disciplinary fields within engineering and applications of engineering in the real world. The use of mathematics to solve engineering problems was also explored. In the first offering of the course in Summer of 2015, 33,000 students from 180 different countries enrolled in it.

M.S. THESES COMPLETED UNDER DR. ASWATH'S SUPERVISION

Name	Title of Work	Grad Date	Current/Last Known Placement
Bruno Velasco	"Effect of Processing Variables on the Development and Oxidation Characteristics of <i>In-Situ</i> Composite Ti-8.5 Al-1B-1Si"	Dec. 1991	University of Lima, Peru/Independent Business
Melinda Stewart	"A Study of the Processing and Compositional Variables on the Microstructural Development, Fatigue and Oxidation Characteristics of Rapidly Solidified NiAlCo Alloys"	May 1992	Bell Helicopter, Arlington, TX
Douglas Shelton	"Effect of Ternary Additions on the Oxidation Behavior of Ti-48Al (at.%) Alloy"	Aug. 1992	Koehler Corporation, TX
Sanjay Pejavar	"Studies in Cooling Forged Parts with an Atomizer and the Effect of Accelerated Cooling on the Microstructure and Properties of a Microalloyed Steel"	Aug. 1992	Kobe Steel, San Jose, CA
Yuan (Tony) Peng	"An Auger Electron Analysis of Segregation and Microstructural Features in Ti-alloys"	Dec. 1992	Grad Student Univ. of Maryland, College Park
William Gatlin	"Effect of Additions of Cr, V, Mn, Nb and W on the Microstructural Stability of TiAl Alloys"	May 1993	Professor, Richland Community College, Irving, TX
Sagar Kekare	"Effect of Ternary Additions on the Oxidation Behavior and Oxide Products in Ti-48 Al Base Alloy Systems and Composites"	Aug. 1993	Rockwell International, CA
Stephen Quander	"Effect of Processing Variables on the Fracture Toughness and Flexure Properties of <i>In-Situ</i> Reinforced Ceramic Matrix Composites"	May 1994	Nokia Telecommunication, Irving TX
Rony Thomas	"A FEM Model to Determine Temperature Distribution, Microstructure and Thermal Stress in Spray Cooled Steel"	Dec. 1994	Komag, San Jose, CA
Edward Volckmann	"Observation of the Effect of Grain Size on the Thermoelectric Properties of Polycrystalline Bismuth Antimony"	May 1996	Marlow Industries, Arlington, TX
Mark Linteau	"Impression Creep in Near Eutectic Tin-Lead and Tin-Silver Solders"	May, 1997	Kaiser Optical , Michigan

Name	Title of Work	Grad Date	Current/Last Known Placement
James Dove	"Creep Behavior of Thin Nextel™-312(BN)/Blackglas™ Ceramic Matrix Composites"	May, 1997	Independent Consultant, Dallas, TX
Vidya Khasbardar	"Processing and Properties of Biocompatible Al ₂ O ₃ based Composites"	Dec. 1997	National Semiconductor, Arlington, TX
Brad Bailey	"Microstructure and Properties of Sn:Pb Alloys Modified by Ultrasonic Energy"	May 1998	Plasmaquest, Grand Prairie, TX
Sazzadur Raham	"Ag/CaP Composite Coating on Au Substrated by Occlusion Electrodeposition Technique"	Aug, 2000	Novelus, San Jose, CA
Johnathan Rowley	Role of Solder Process Variables on Properties of Lead Free Solders	May 2003	Nuclear Regulatory Commission, Washington, DC
Krupal Patel	"Development of Low Phosphorous Engine Oils"	May. 2004	NCH Corporation, Dallas, TX
Muthur Srinath Purushotham Kaushik	"A Statistically Based Evaluation of Creep and Shear Behavior of Monolithic and Composite Lead Free Solders for Microelectronic Applications"	Aug 2004	Intel Corporation, Chandler, Arizona
Aravind Munukutla	"Tensile Behavior of Lead Free Composite Alloys"	Aug. 2004	Intel Corporation, Portland, Oregon
Sunit Munot	"Development of Low Phosphorous Environmentally Friendly High Performance Greases"	Aug. 2004	Running His Own Company in Maharashtra, India
Kajal Parekh	Interaction Between Antiwear Agent and Novel Additive in Engine Oils	Dec 2005	Research Scientist, Munzig, New Jersey
Mayur Uttarwar	Novel Techniques of Fabrication Porous, Biodegradable Polymer Scaffolds for Sustained Drug Release	Aug 2006	Analyst at Allergan Medical, Santa Barbara
Beibei Wang	Mechanism of Boundary Lubrication of Aluminum Alloys using XANES	Aug. 2009	Graduate Student at University of California-Davis
Hansika Parekh	Corrosion and Leaching Study of Low Copper (I) Paints for Anti-Fouling Applications	Dec. 2009	Ingenia Polymers

Name	Title of Work	Grad Date	Current/Last Known Placement
Arunya Suresh	Synergistic and Antagonistic effect of Sulfur Based Additives on the Performance of Greases with ZDDP and PTFE	Dec 2009	Nanomech, Ar-kansas
Tonye Adeogba	Nanoscale Properties of Lead Free Solder Interconnects	Dec. 2009	Associate Engineer at Worley Parsons
Shruthi Gandhi	Pulsative Protein Release from a Thermoresponsive Hydrogel: Effect of Device Architecture, Nanoparticle and Polymer Concentration using Factorial Analysis	May 2011	Scientist, Aditya Birla Group, Mumbai, India.
Jayapradhi Rajendran	XANES and FTIR Analysis of Dry and Calcined Bone	Aug. 2011	Development Engineer, Biotech Company.
Sujay Bagi	Effect of Spectrum Loading on Performance of Greases.	December 2012	Completed Phd. At MIT
Pradip Sairam Pitchumani	XANES and Tribological Study of Surfaces Lubricated with Ashless Antiwear Agents	December 2012	Process Engineer, Global Foundries, NY.
O I u s a n m i Adernain	Role of Engine Age and Oil Chemistry on Characteristics of Diesel Engine Soot	December 2013	Development Engineer, LUK USA LLC-Schaeffler Group
Gaurav Nagalia	Development of Low Calcium Flyash Based Geopolymer for Structural Applications	Aug. 2014	Working for consulting firm in NY
Ami Shah	Study on Thermal Effects and Sulfurized Additives in Lubricating Greases	Aug. 2014	Pursued Ph.D. in Dr. Aswath's group
Kush Shah	Interaction of Antiwear Additives and Friction Reducing Agents in Grease	December 2015	Works at Karma Automobiles
Annabelle Yao	Osteogenic Differentiation in Preosteoblast MC3T3-E1 Cell Induced by Beta Tricalcium Phosphate Bioglass Composite	Aug. 2016	Works for TSMC in Taiwan
K i m a y a Vyavhare	The Influence of the Interaction of Carbon Based Materials with Ionic Liquids on the Tribological Performance of Lubricating Grease and Oil	December 2016	Ph.D. Student in my group
Tugba Cebe	Nanosilica Based 3D Printed Scaffold Facilitate Osteoblast Mineral Formation	August 2017	Pursuing Ph.D. in the UK
Kamal Awad	Osteoprogenitor Cell Adhesion and Growth on the Bioactive Silicon Nitride Surface for Craniofacial Implant Applications	May 2018	Pursuing Ph.D. with Dr. Varanasi

PH.D DISSERTATIONS COMPLETED UNDER DR. ASWATH'S SUPERVISION

Name	Title of Work	Grad Date	Current/Last Known Placement
Amit Bandyopadhyay	"Processing and Properties of Ceramic Matrix Composites"	May 1995	Professor, Washington State University, Pullman, WA. https://www.linkedin.com/in/amit-bandyopadhyay-bb43375/
Sriram Rangarajan	"Processing and Characterization of Ceramics and Ceramic Composites Synthesized by Pyrolysis of Siloxane Based Precursors"	Aug. 1996	Senior Scientist, Stealth Energy. (https://www.linkedin.com/in/sriram-iyer-311601/)
Ronald Belardinelli	"Processing and Properties of Blackglas™ Ceramic Matrix Composites Reinforced with Nextel™ 312(BN) Fabric"	Dec. 1996	Manager, Northrup Grumman Corporation, Dallas TX.
Muralidhar Hanabe	"Processing and Properties of Near Net Shape Al ₂ O ₃ /Al Composites"	Dec 1997	Senior Engineer, Texas Instruments. https://www.linkedin.com/in/murali-hanabe-629a758/
Stephen Warfield-Quander	"A Study of Enhanced Toughening in Alumina-Mullite Ceramic Composites"	May 1998	School Teacher, DISD. https://www.linkedin.com/in/stephenquander/
Kuo-Tong Lee	"Studies of Hexacelsian or Celsian Barium Aluminosilicates Reinforced <i>In-Situ</i> with Silicon Nitride"	May. 1998	Associate Professor, Mingchi Technical University, Taiwan
Gabi Nehme	"Performance Testing and Analysis of Antiwear Additives in Engine Oil for Reducing Phosphorous Content and Improving Tailpipe Emissions"	May 2004	Associate Professor, Balamand University, Lebanon. https://www.researchgate.net/profile/Gabi_Nehme
Anurag Pandey	"Microwave Assisted Synthesis of Biodegradable Polymers, Blends and Composites: Potential for Drug Delivery and Orthopedic Applications"	Sept 2005	Research Manager, Oral Drug Delivery Technology, . https://www.linkedin.com/in/anurag-pandey-82884a10/
Ramoun Mourhatch	"Tribological and Anti-wear Mechanisms of Fluorinated Zinc Dialkyl Dithiophosphate in Comparison to Zinc Dialkyl Dithiophosphate in Engine Oils"	May 2008	Research Scientist, Chevron Oronite Corporation. https://www.linkedin.com/in/ramoun-mourhatch-9088196/
Anuradha Somayaji	"A Study of the Antiwear Behavior and Oxidation Stability of Fluorinated Zinc Dialkyl Dithiophosphate in the Presence of Antioxidants"	May 2008	Post Doc, at Dr. Aswath's group

Name	Title of Work	Grad Date	Current/Last Known Placement
Hande Demirkiran	"Synthesis and Applications of Bioceramics for Orthopedics and Tissue Culture Applications"	May. 2009	R&D Engineer at Alvimed-ica. https://www.linkedin.com/in/hande-demirkiran-910a916/
BoHoon Kim	"Tribological Performance of Ashless Anti-wear Additives under Extreme Pressure"	Dec. 2009	CEO at Story and Brothers Co., Ltd. https://www.linkedin.com/in/bo-hoon-kim-b1b8176/
Mihir Kumar Patel	:Fundamental Understanding of Soot Induced Wear in Diesel Engines"	Dec. 2011	Lead Product Development Scientist, Chevron Corporation, CA. https://www.linkedin.com/in/mihirk-patel/
Gideon Momanyi Siringi	Properties of Concrete with Tire Derived Aggregates and Crumb rubber as Lightweight Substitute for Mineral Aggregates in a Concrete Mix	May 2012	Sr. Process Engineer at Lhoist North America, Inc. https://www.linkedin.com/in/gideon-siringi-phd-pe-09b1b445/
Megen Maginot	Chemical Changes in DMP-1 Null Murine Bone and Silicon-Oxygen-Nitrogen-Phosphorous Coatings for Titanium Implant Osseointegrations	Aug 2014	Research Scientist, Conoco Phillips. https://www.linkedin.com/in/megen-maginot-03b5045b/
Olumide Aruwajoye	Material Changes of Bone Following Ischemia of the Immature Femoral Head	Fall 2015	Research Scientist, Medtronic Corporation. https://www.linkedin.com/in/olumide-aruwajoye-13ab0a128/
Vibhu Sharma	Mechanism of Wear and Tribofilm Formation with Ionic Liquids and Ashless Antiwear Additives	Summer 2016	Research Scientist, Intel Corporation. https://www.linkedin.com/in/vibhu-sharma-36a40b26/
Vinay Sharma	Development of Plasma Functionalized Nano-Additives for Oils and Study of their Tribological Properties	Dec 2017	Research Scientist, Alcon Corporation. https://www.linkedin.com/in/vinay-sharma-95733758/
Felipe Monte	Plasma Enhanced Chemical Vapor Deposition Coating of Amorphous Silica Based Implants Enhancing Angiogenesis and Mitigating Toxic Oxidative Stress in Critical Size Bone Defects	Dec 2017	Surgeon and Professor. https://www.linkedin.com/in/felipe-monte-8a749831/
Ami Shah	Nature Inspired Technology: A New Process for Silicification based on Marine Sponges	May 2018	Independent Family Business in Pharmacology
Kimaya Vyavhare	Development of Core Shell Polymer Coated Nanoparticles for Tribological Applications	May 2021	Research Scientist, Kenametal Corporation. https://www.linkedin.com/in/kimaya-vyavhare-60a38455/

POST DOCTORAL FELLOWS AND VISITING FACULTY IN DR. ASWATH'S GROUP

Name	Research Project	Start Date	Role
Gabi Nehme	Tribology of MoS ₂ based Greases	Summer 2011	Visiting Faculty from University of Balamand
Ramoun Mourhatch	Development of Low Phosphorous Engine Oils	June 2008-March 2009	Post Doctoral Fellow
Xin Chen	Synthesis of Fluorinated Lubricants	Jan. 2008-Current	Post Doctoral Fellow
Byeong Kim	Tribology and Lubrication	Aug. 2008 - March 2009	Visiting Faculty from Inje University
Zahedul Huq	Tribology and Lubrication	Aug 2006-Aug 2008	Post Doctoral Fellow
Tedutso Odatsu	Bioactive SiO ₂ based coatings for Implant Applications	Sept. 2013-Aug 2014	Visiting Faculty Nagasaki University
Azhar Ilyas	Mechanism of Biomineralization with SiON and SiONP Coatings for Implant Application	Fall 2014-2016	Post Doctoral Fellow: Dr. Varanasi's Group

PH.D DISSERTATIONS IN PROGRESS UNDER DR. ASWATH'S SUPERVISION

Name	Title of Work	Start Date	Role
Harikrishnan Kumarasamy	Development of high performance coatings for orthopedic applications	Fall 2020	Advisor

PH.D EXCHANGE STUDENTS UNDER DR. ASWATH'S SUPERVISION

Name	Title of Work	Period	Role
Natascia Cozza	Conversion of Cuttlefish bone to bioactive HA and Glass Matrix Composites	2014-2015	Advisor. Primary Advisor Prof. Migliaresi: University of Trento
Piyush Verma	Tribology of Brake Pads	2015-2016	Advisor. Primary Advisor Prof. Gialanella: University of Trento
Cristiano Carlomagno	SiON and SiOC thin films by Breath Figure	2016-2017	Advisor. Primary Advisor Prof. Migliaresi: University of Trento

UNDERGRADUATE RESEARCH PROJECTS (PAID) COMPLETED UNDER DR. ASWATH'S SUPERVISION

Name	Title of Work	Finish Date	Role
Jeremy Spray, Kerri Palmer and Olivia Corey	Design and Development of Bamboo reinforced Concrete (NSF- REU)	Dec 2006	Advisor
Joonas Ponkala	Development of HFRR System	Dec 2006	Advisor
Abraham Laws	Design and Construction of Tribotester	May 2006	Advisor
Hiroshi Ito	Lubrication of Engine Oils	Sp. 2004	Advisor
Tom Jones	Wear of Bearings	Fall 2001	Advisor
Scott Thornton	Wear of Bearings	Aug 2001	Advisor
Angela Borneman	Alumina/Bioglass Composites by co-sintering and melt infiltration	Aug 2000	Advisor
Amy Smastrala	Hydroxyapatite coatings on Ti substrates by electrophoretic deposition.	May 1999	Advisor
Jana Weaver	Hydroxyapatite coatings on Ti substrates by electrophoretic deposition.	Aug 2000	Advisor
Salvador Anguiano (NSF AMP Scholar)	Oxidation of β -21s/SCS Composites	May 1995	Advisor

SENIOR UNDERGRADUATE CAPSTONE PROJECTS COMPLETED UNDER DR. ASWATH'S SUPERVISION

Name	Title of Work	Finish Date	Role
Letia Blanco Chris Grace Andrew Patin Kyle Godfrey Chris Alberts	Design, Fabrication and Evaluation of a Thermoresponsive Hydrogel Based Drug Delivery Device [The Project was Judged the Best Design Project Nationally by ASM International in 2011]	May 31st 2011	Co-Advisor
Joonas Ponkala Abraham Laws Mahmood Hassan Cynthia Sanchez Jayton Cagle	Design and Construction of a High Frequency Reciprocating Rig	Aug. 31st 2006	Advisor
Arnold Woods Chris Ezell Ken Cope Donna Morrison	Development of a Block on Ring Grease Test Station	Aug 2003	Advisor
William Buchanan Inpeng Bouphanh Sara Miller Keith Pierre-Auguste Tony King	Design and construction of a Tribometer	Dec 2002	Advisor
Steven Ainsworth Derek Johnson Terrence Johnson Jody Hamilton Jeremy Parr	Design and Construction of Solder Joint Tester	May 2002	Advisor
Nathan Cain Randy Thomas Tim Patek	Lead Free Solder Fatigue Testing Machine	May 2002	Advisor
Brent Lim Steve Polansky Harold Burwell Chris Ludwig	Design and Construction of an Impression Creep Tester to study Solder Joints	Aug 2001	Advisor
Angela Borneman Michael Fleming Andrew Hern Brad Rohloff	Hydraulic Press for Manufacture of Alumina Oxide Samples	May 2000	Advisor
Brad Billman William Wicker Matt Web	Design and build a block on ring wear tester	Dec, 1999	Advisor
Jana Weaver April Garcia Jeremy Tolsdorf Subra Yegna	Design and build a ball on cylinder wear tester to examine tribological properties of engine oil lubricants.	Dec 1999	Advisor

M.S. THESIS COMMITTEES SERVED BY DR. ASWATH

Name	Title of Work	Date	Role	Advisor
Joseph Stoyack	"Effect of Temperature and Frequency on Fatigue Properties of a Film Adhesive"	Dec. 1990	Committee Member	W.S. Chan
Pei-Yuan Chien	"Effects of Injection Molding Parameters on the Mechanical Properties of Short Glass Filled Polyphenylene Sulfide"	Dec. 1991	Committee Member	R.D. Goolsby
Manisha Pujara	"Ohmic Contact Technology for AlGaAs Light Emitting Diodes: Gold plating and Wire Bonding"	May 1992	Committee Member	T-J Sheih
Donald Cudmore	"Production, Analysis and Characterization of Amorphous Magnetic Materials using X-ray Diffraction, Auger electron spectroscopy and the Magneto-Optic Kerr Effect",	May 1993	Committee Member	A. Koymen
Avinash Kant	"Fatigue and Fracture of Discontinuous TiC reinforced Ti-6Al-4V"	Jan. 1994	Committee Member	R.D. Goolsby
Yaw Shiu	"Effect of Heat Treatment on Fatigue and Fracture of Ti-matrix Composites"	May 1995	Committee Member	R.D. Goolsby
Zhihai Chang	"Transmission Electron Microscopy of Al 6092/17 % SiCp Metal Matrix Composite"	Dec. 1996	Committee Member	R.D. Goolsby
Amit S. Nangia	Experimental Determination of Positron Related Surface Characteristics of 6H-SiC"	Dec 1996	Committee Member	A. Weiss
Shriram Rajamani	"A Study of Magnetoresistance in Magnetic Multilayered Structures" (thesis substitute)	Dec 1996	Committee Member	A. Koymen
Shuo-Lin Hsu	"Characterization and Modeling of Tunneling Gate Oxide for Non-Volatile Memory Applications"	August 1998	Committee Member	R.L. Carter
Sujatha Naik	"Microstructural and Electrical Characterization of Germanium Nickel Eutectic Alloy"	Dec 1999	Committee Member	C.U. Kim
Nancy McClannahan	"Electromigration Study of Cu Thin Film with Cu(Al) and Cu(SN) Cross Strips	Dec 1999	Committee Member	C.U. Kim
Ajaykumar Tapiawala	"Electro-optic Properties of a Polymer Dispersed Liquid Crystal"	Dec 1999	Committee Member	S. Sharma
Abhijit Kaisare	"A 3 Dimensional Thermomechanical Analysis of a Ball Grid Array	Dec 2001	Committee Member	D. Agonafer
Jee Yong Kim	"The Study of Interface Electromigration in Copper Interconnects"	Aug 2002	Committee Member	C.U. Kim
Jiong Yan	Study of Growth and Morphology of Ge/Si(001) Nanostructures	May 2003	Committee Member	A. Weiss
Rajendra Kabade	Metallurgical Investigation of Ag-Cu Lead Free Solder with the Addition of Au	Aug. 2003	Committee Member	C.U. Kim
Tripti Rao	Study of Grain Growth in Copper Interconnects	Aug 2003	Committee Member	C.U. Kim
Archana Ashok	Conjugated Polymer Light Emitting Diodes	Aug 2004	Committee Member	R.L. Elsenbaumer
Sara Kiani	Thermal Conductivity Measurements of Braided Composites	May 2005	Committee Member	Wen S. Chan

Name	Title of Work	Date	Role	Advisor
Solmaz Torabi	Piezoelectric Analysis of Heterogenous Media	August 2005	Committee Member	Seiichi Nomura
Vamsi Chakka	Study of Nanoparticles Produced by Surfactant Assisted Ballmilling	August 2005	Committee Member	Ping Liu
Nittin Upal	Femtosecond Laser Micromachining of Engineering Materials	May 2005	Committee Member	Panos Shiakolas
Akash Deodar	Intelligent Heat Control for a Hot Embossing Microreplication system	Dec 2004	Committee Member	Panos Shiakolas
Mitesh Kumar Joshi	Piezoelectric Micropump for Drug Delivery Applications	May 2005	Committee Member	Shashank Priya
Vikram Patil	Parametric Analysis of Femtosecond Laser Micromachining on Poly Methyl Methacrylate	Dec 2004	Committee Member	Panos Shiakolas
Leena Khare	Performance Evaluation of Bamboo Reinforced Concrete in Structural Members	Aug. 2005	Committee Member	Ali Abolmaali
Youngsi Jung	Investigation of Bamboo as Reinforcement in Concrete	Aug. 2006	Committee Member	Ali Abolmaali
Puneet Saagar	Experimental Study of Laminated Composite Tubes Under Bending	May 2007	Committee Member	Wen Chan
Aaron Slager	Inter laminar Fracture of Unidirectional Reinforced Composites with Toughened Resin Systems	May 2007	Committee Member	Efstahios Meletis
Abhimanyu Sabnis	Cytotoxic Evaluation and Factorial Analysis of 3D Photopolymerizable Thermoresponsive Composite Nanoparticle Hydrogels for Controlled Drug Delivery in Restenosis and Wound Healing	August 2007	Committee Member	Kytai Nguyen
Vidyalakshmi Kolachure	DNA Based Thin Film as Hole Transport Layer in Bulk Heterojunction Polymer Solar Cells	August 2007	Committee Member	Michael Jin
Hyunuk Kim	Design and Fabrication of Piezoelectric Microgenerator using Laser Micromachining and MEMS techniques	July 2008	Committee Member	Shashank Priya
Michael Frink	Tribological Behavior of Nanocrystalline Metals Prepared by Surface Mechanical Attrition Treatment	May. 2009	Committee Member	Efstahios Meletis
Joonas Ponkala	On the Design and Fabrication of POC-HA Stents	Aug. 2009	Committee Member	Panos Shiakolas
Hou Kuan Lee	Negative Differential Resistance in Hydrated Deoxyribonuclei Acid Thin Films Mediated by Diffusion Limited Redox Reaction	Dec. 2009	Committee Member	Michael Jin
Alex Alphonse	Thioacetamide as a Sulfur Precursor for-Chalcocite Thin Film Solar Cells	Dec. 2009	Committee Member	Michael Jin
Jeong-Min Kim	Effect of Aging on the Transformation of Phases in Solder Joint of PBGA Packaging	Dec. 2009	Committee Member	Choongun Kim

Name	Title of Work	Date	Role	Advisor
Anjana Shamasundar	A Study on the Corrosion Behavior of Nanocrystalline Nickel in Aqueous Environments	Dec 2010	Committee Member	Efstahios Meletis
Shailesh Jayant Divey	Extension of a Progressive Failure, Energy Dissipation, Composite Tailoring Concept to a Healing Configuration	Aug. 2011	Committee Member	Stephan Dancila
Preeti Shresta	Development of Geopolymer Concrete for Precast Structures	Dec. 2013	Committee Member	Ali Abolmaali
Ryan Neufeld	Improving Scoliosis Rehabilitation	May 2014	Committee Member	Panos Shiakolas
Tushar Saini	Additive Manufacturing Methodologies for Multiprocess and Multimaterial Scenarios	Dec. 2015	Committee Member	Panos Shiakolas
Shahid Faizee	Parametric Analysis of Solarez Ultraviolet Curable Resin using Photo-Polymerization on Multimodality Bioprinter	Dec. 2015	Committee Member	Panos Shiakolas
Matt Heuser	Investigation of robotic Based Additive Manufacturing	May 2016	Committee Member	Panos Shiakolas
Philip Zachary James	Processing beta Tricalcium Phosphate and 45S5 Bioglass Mixtures for Osteogenic Bone Tissue Scaffolds	Aug 2017	Committee Member	Panos Shiakolas
Tirth Patel	Synthesis, Characterization and Tribological Properties of Mo-DLC	Dec 2021	Committee Member	Efstahios Meletis

PH.D DISSERTATION COMMITTEES SERVED BY DR. ASWATH

Name	Title of Work	Date	Role	Advisor
David L. Hunn	"Investigation of Oxidation Resistance Improvements for Zirconium Aluminide"	Dec. 1992	Committee Member	R.D. Goolsby
Laura Sullivan	"Effect of Polymer Morphology on the Mechanical, Thermal and Fractographic Characteristics of Poly (P-Phenylene Sulfide)"	Dec. 1992	Committee Member	R.D. Goolsby
Rajiv N. Pathak	"A Systematic Study for the Evaluation of Chirped Superlattice Asymmetric Wells (CSAW) for use in the Active Region of P-I (MQW)-N Transverse Electroabsorption Modulators MBE Growth, Fabrication, Characterization and Analysis"	May 1993	Committee Member	K. Alavi
Fred. P. Buckingham	"Heat Transfer in Spray Cooling"	Aug 1993	Committee Member	A. Haji-Sheikh
Gimo Yang	"A Study of the Stability of Ultra Thin Films of Rh Deposited on Ag(100), Au Deposited on Cu(100) and Au Deposited on Si(100)"	May. 1994	Committee Member	A.H. Weiss

Name	Title of Work	Date	Role	Advisor
Deverajan Ganesan	"A Study of Texture and Negative Electron Affinity of Diamond Thin Films Grown by Chemical Vapor Deposition"	August 1995	Committee Member	S.C. Sharma
Wei-Kang Lu	"Corrosion Protection of Steels by Coatings Containing Electrically Conductive Polymers"	Dec. 1995	Committee Member	R.L. Elsenbaumer
Judson Bauman	"Fatigue Crack Growth of an Acrylonitrile Elastomer"	August 1996	Committee Member	R.D. Goolsby
Melinda Lou Stewart	"An Experimental Investigation of Composite Bonded and/or Bolted Repairs Using Single Lap Joint Designs"	Dec. 1996	Committee Member	W.S. Chan
Ping-Yuan Chen	"Experimental Investigation of the Frequency and Temperature Dependencies of ALGaAs/GaAs HBTs with Parasitic Schottky Barrier Diodes"	May 1997	Committee Member	A. Davis
Alex Freeman	"The Effect of Stress on the Ferroelectric Properties of Barium and Lead Titanate Perovskites"	August 1997	Committee Member	S.P. Joshi
Sanjay R. Pejavar	"Investigation of the Coarsening of Dispersed Phases and the Effect of Hot Rolling on the Fracture Toughness of Al 8019/12.5 v/o SiCp"	Dec 1997	Committee Member	R.D. Goolsby
Licheng Han	"Synthesis and Application of Thin Film Materials Obtained Via Pulsed Plasma Polymerizations of Cyclic Organic Monomers"	May 1998	Committee Member	R.B. Timmons
Dale L. Ball	"Titanium Matrix Composite Thermomechanical fatigue Analysis Method Development"	Dec 1998	Committee Member	W.S. Chan
Taposh Gayen	"Quantum Dynamics of Charge Carriers in Donor-Bridge-Acceptor Molecular Segments with Applications to Molecular Electronics"	Dec 1998	Committee Member	H.K. McDowell
Erika Shoemaker	"CO ₂ Sensing Mechanisms of a Tungsten Stabilized Bismuth Oxide Solid Electrolyte in an Electrochemical Sensor/Cell"	May 1999	Committee Member	Choong-un Kim
Austin Kozman	"Characterization and Improvement of temperature and Critical Dimension Uniformity in a Microlithography Cluster: An Analytical and Experimental Study"	Dec 2000	Committee Member	K.L. Lawrence
Haibo Qiu	"Controlled Chemical and Morphological Surface Modifications via Pulsed Plasma Polymerizations: Synthesis of Ultrahydrophobic Surfaces"	May 2001	Committee Member	R.B. Timmons
Manjong Lee	"Mechanism of Precipitation and Shape Evolution of HgTe Nanocrystallites in HgTe-PbTe Induced by Controlled Precipitation Technique"	Dec 2001	Committee Member	Choong-un Kim

Name	Title of Work	Date	Role	Advisor
Roman Okielo	Analysis of Composite Reinforced Concrete	Sum 2002	Committee Member	R.L. Yuan
Nancy Micheal	"Electromigration in Cu Interconnects	Dec 2002	Committee Member	Choong-un Kim
Heedong Yang	"Microstructural Characterization of Ultra Thin Copper Interconnects"	Dec 2004	Committee Member	C.U. Kim
Ying Li	Raman Spectroscopy Measurements on C60 Compressed Under High Pressure	May 2005	Committee Member	Suresh Sharma
Sunil Belligundu	Experimental Characterization of Femtosecond Laser Micromachining for Silicon Mold Fabrication and Hot Embossing for Polymer Microreplication	Dec 2005	Committee Member	Panos Shiakolas
JeeYong Kim	Investigation on the mechanism of interface electromigration (EM) in copper (Cu) thin films	Aug 2006	Committee Member	C.U. Kim
Dongmei Meng	Thermal Failure Mechanism and Voltammetry Metrology for Cu/barrier/low k integration	Dec 2006	Committee Member	C.U. Kim
Xin Chen	Synthesis and Characterization of Polythiophene Derivatives	May 2007	Committee Member	Ronald Elsenbaumer
Gunhua Song	Diffusion-free back-contact solar cells on S-Passivated Si(100) Substrates	Dec 2007	Committee Member	Meng Tao
Kevin Elkins	Fabrication of FePt Ferromagnetic Nanoparticles	May 2008	Committee Member	Ping Liu
Rasheed Islam	Composition-Microstructure-Property Relationships in Dual Phase Bulk Magnetoelectric Composites	May 2008	Committee Member	Shashank Priya
Nitin Uppal	A Mathematical Model Development and Sensitivity Analysis of Two Photon Polymerization for 3D Micro/Nano Fabrication	July 2008	Committee Member	Panayotis Shiakolas
Vishva Priyo Ray	CMOS Based Room Temperature Single Electron Devices	Dec. 2008	Committee Member	Seong Jin Koh
Anupong Kararam	Non-Linear Finite Element Dynamic Analysis of the Effect of Compaction on Underground Conduits	Dec 2009	Committee Member	Ali Abolmaali
Vishwas Bedekar	Self Powered Sensing by Combining Novel Sensor Architecture with Energy Harvesting	Dec. 2009	Committee Member	Shashank Priya
Bernardo Dismà Monelli	Mechanical Characterization of Metallic Materials by Instrumented Spherical Indentation Testing	April 2010	Committee Member	Vigilio Fontanari (University of Trento)
David Dodoo-Arhin	Nanostructured Copper Oxides: Production and Applications	April 2010	Committee Member	Paolo Scardi (University of Trento)
Dario Zeni	Cell Sheet Engineering: Smart Polymers and Self-Assembled Monolayers	April 2010	Committee Member	Claudio Migliaresi (University of Trento)

Name	Title of Work	Date	Role	Advisor
Fabio Zomer Volpato	Composites for Biomedical Applications	April 2010	Committee Member	Claudio Migliaresi (University of Trento)
Hoa Nguyen	Assessments of Three Dimensional Orthotropy of Human Mandibular Cortical Bone Using Miniaturization Techniques: Ultrasonic Bar and Bulk waves, Nano-Indentation, and Micro-Computer Tomography	March 2011	Committee Member	Paul Dechow (Baylor College of Dentistry)
Punnapob Punnakitashem	Templated Synthesis and Characterization of High Moment Magnetic Nanoparticles for Bioapplications	May 2011	Committee Member	Yaowu Hao
Paule Njiwa	Comparison of Tribological Behavior of Zinc Thiophosphates and Phosphate Molecules as Anti-wear Additives	Dec 2011	Committee Member	Jean Michael Martin (Ecole Centrale Lyon)
Mohammadreza Mehdi-zadeh	Synthesis, Characterization and Applications of Injectable Citrate Based Mussel-Inspired Biodegradable Adhesive (ICMBA) Polymers and Hydrogels	Dec 2012	Committee Member	Jian Yang
Saliou Diof	Production of a nanostructured copper by Spark Plasma Sintering	April 2013	Committee Member	Alberto Molinari (U of Trento)
Anna Fedrizzi	Production of steel matrix composites by mechanical milling and spark plasma sintering	April 2013	Committee Member	Massimo Pellizzari (U of Trento)
Luca Gasperini	Strategies for Cell Encapsulation and Deposition	April 2013	Committee Member	Claudio Migliaresi (U of Trento)
Matteo Stoppato	Bone Tissue Engineering: Structures and Strategies for Functional Scaffold Design and Evaluation	April 2013	Committee Member	Antonella Motta (U of Trento)
Alena Mikhaylova	Nonlinear Finite Element Based Constitutive Law for Zero Slump Steel Fiber Reinforced Concrete Structures	Dec 2013	Committee Member	Ali Abolmaali
Mojtaba Salehi Dezfooli	Staged Construction Modeling of Large Diameter Steel Pipes using 3-D Non-Linear Finite Element Analysis	Dec 2013	Committee Member	Ali Abolmaali
Jessica Mooney	The Effects of Microstructure on the Mechanical Properties of Hard Transition Metal Silicon Nitride Nanocomposite Coatings	Dec 2013	Committee Member	Efstathios Meletis
Salman Khan	Biomechanical Analysis of the Cornea to Improve Post Surgical Outcomes through Finite Element Analysis	May 2015	Committee Member	Panos Shalakolas
Sheikh Fahad Ferdous	Improving Fracture Toughness of Silicon Carbide Based Ceramics by Microstructure Tailoring	May 2015	Committee Member	Afshaq Adnan

Name	Title of Work	Date	Role	Advisor
Orathai Thumthan	Magnetic Plasmonic Multilayered Nanorods	May 2015	Committee Member	Yaowu Hao
Syed Dawar Sajjad	Guanidinium Based Anion Exchange Membranes for Solid Polymer Alkaline Fuel Cell Applications	Dec. 2015	Committee Member	Fuqiang Liu
Margarita Rakou	Numerical and Experimental Investigation of Buried Large Diameter Steel Pipes with Controlled Low Strength Steel	Aug. 2016	Committee Member	Ali Abolmaali
Derek Wong	The Characterization of Secondary Lithium Ion Battery Degradation when Operating Complex, ultra-High Power Pulsed Load	Aug. 2016	Committee Member	David Wetz
Sina Moeendarbari	Gold Nanoparticle Based Theranostic Agents for Radiotherapy of Malignant Solid Tumors	Aug. 2016	Committee Member	Yaowu Hao
Mohammad Abu Hasan	On the Development of a Methodology to Induce Artificial Proprioception in the Mandibular Fixed Implant Prosthesis for Fully Edentulous Patients	Dec. 2016	Committee Member	Panos Shidakolas
Golsa Mortazavi	Investigation of the Plasma Electrolytic Oxidation Mechanism of Ti	August 2017	Committee Member	Efstathios Meletis
Ravi Prashanth	Towards the fabrication of bioresorbable constructs with customized properties using additive manufacturing	Aug 2017	Committee Member	Panos Shidakolas
Minghui Zhang	Investigation of Microstructure Effects on Hardness and Oxidation resistance of New Generation of Ceramic Coatings	Aug 2017	Committee Member	Efstathios Meletis

ADVISORY DUTIES FOR DR. ASWATH

Number of Advisees	Dates	BS/MS/Ph.D	Role	Student Organization/Group
Approx. 50- 70/ year	1995-2007	MS and Ph.D.	Graduate Advisor (Handled advising all students in the graduate program towards their MS and Ph.D. degree programs and helped in career counseling)	Graduate Program in Materials Science and Engineering
Varies	1990-Current	MS and Ph.D.	Thesis Advisor (Thesis and Dissertation advisor for students in my research group)	Graduate Program in Materials Science and Engineering
Approx. 10/ year	1990-1998	BS	Undergraduate Advisor (Advised undergraduate students on career and academic planning.)	Undergraduate students

Number of Advisees	Dates	BS/MS/Ph.D	Role	Student Organization/Group
Approx. 500/year	2000-2008 / 2011-2013	B.S./MS/ Ph.D.	Faculty Advisor (Oversee the FSI membership and advice students on developing programs for students and help with new student orientation and support. In addition develop scholarship sources to support students, also assist the organization in developing cultural and music events for the broader university community)	Fine Arts Association of India at UTA
Approx. 30/year	2003-2013	MS/Ph.D	Faculty Advisor (Advice students on Professional Opportunities and assist them as they navigate the social and academic environment. Help organize and run a successful summer camp for high school students as well as inter university conferences)	Student Chapter of ASM International at UTA.
Approx. 30/year	1990-1994	BS/MS/Ph.D.	Faculty Advisor (Cultural organization for promotion of classical music at UTA, Assisted students in organizing cultural events on campus for the broader community)	SPICMACAY
Approx. 50/year	1991-1997	BS/MS/Ph.D.	Faculty Advisor (Advised honor students on their responsibilities as student scholars)	Tau Beta Pi

INFRASTRUCTURE DEVELOPMENT

1. Electron Microscopy Laboratory

Dr. Aswath has been one of the principal people responsible for the continued development of the electron microscopy laboratory facilities for solid state materials. Dr. Aswath was the PI (together with four other faculty in engineering) who developed the infrastructure to study solid state samples by electron microscopy. Dr. Aswath was primarily responsible for the procurement and set up of all the new facilities acquired as a consequence of the NSF funded equipment grant for electron microscopy. The facility is now part of the central characterization facility that is run independently by a facilities manager.

2. Mechanical Testing Laboratory

Dr. Aswath was primarily responsible for acquiring and setting up facilities for high temperature creep and fatigue testing. This important area of research is of importance to local industries like Loral Vought, Lockheed Martin etc. In addition the availability of these facilities makes UTA a good competitor for local, state and federal grants.

3. Tribology Laboratory

Dr. Aswath has put together a tribology testing laboratory from scratch by acquiring and building several tribometers. This facility has the capacity to evaluate oils and greases for their lubricating properties. This facility has made it possible to develop collaborative research projects with companies in the lubrication field such as Platinum Research Organization, Chevron-Oronite, Lubrizol Corporation, Exxon-Mobil, Vanderbilt Chemicals among others.