CURRICULUM VITAE

February 2019

DEBASISH (DEBA) DUTTA
Rutgers University—New Brunswick

U. S. Citizen (Naturalized); Age 61; Married with three children

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EMPLOYMENT HISTORY

July 2017 – present
Rutgers University–New Brunswick, Chancellor 2017 – 2018
Distinguished Professor of Engineering

2014 – 2017
Purdue University, Provost and Executive Vice President for Academic Affairs and Diversity; Professor of Mechanical Engineering

2009 – 2014
University of Illinois at Urbana-Champaign, Dean of the Graduate School and Associate Provost; Edward William and Jane Marr Gutgsell Professor, Mechanical Science and Engineering; Interim Vice-Chancellor for Research

2004 – 2007
National Science Foundation, Acting Director, Division of Graduate Education; Program Director, IGERT in Education & Human Resources Directorate

1998 – 2004
University of Michigan – Founding Director, Interdisciplinary Professional Programs; Director, Program in Manufacturing; Associate Chair, Dept of Mechanical Engineering

1989 – 2008
University of Michigan – Department of Mechanical Engineering (Assistant, Associate and full Professor)

ADMINISTRATIVE APPOINTMENTS & ACCOMPLISHMENTS

RUTGERS UNIVERSITY-NEW BRUNSWICK

Chancellor
(2017—2018)

As Chancellor, I led the flagship Rutgers University campus with annual budget of $1.6Billion. My leadership team and I were responsible for more than 40,000 students, 2,000 faculty, 5,000 staff in 12 degree-granting schools, an Honors College, the Douglass Women's Residential College, Zimmerli Art Museum and nine academic

research centers. I worked with local community leaders, business leaders and state legislators to reestablish and promote the land-grant identity of the campus and to advance the higher purpose of public higher education. I helped galvanize faculty, staff, students and alumni toward a vision of academic excellence, student success, access and affordability, and service to the State.

Key Accomplishments:

At Rutgers, I focused on creating the new Office of the Chancellor, filling senior leadership positions, establishing workflows and processes for key functions of the institution. I met with faculty, staff and students in different parts of the university and with stakeholders across the State of New Jersey and beyond to discern the challenges and opportunities. What appears below is collaborative work of my leadership team. In addition to providing overall leadership and direction, my role varied from direct involvement in some projects to facilitation, supervision and encouragement in others. Much of the credit goes to the team.

Administration:

- Created the offices of the Provost, Vice Chancellor for Research & Innovation, Vice Chancellor for Administration and Planning, and Vice Chancellor for Marketing and Communication (these offices did not exist at Rutgers–New Brunswick prior to my arrival); filled leadership positions
- Restructured the academic organization – deans began reporting to the Provost, directors of institutes and centers began reporting to the Vice Chancellor for Research; established a closer alignment (reporting line) of the Vice President for Development (in Rutgers Foundation) with the Chancellor
- Promoted shared governance by working collaboratively and extensively with the New Brunswick Faculty Council (72 faculty including tenure line, non-tenured and part-time faculty)
- In collaboration with the Faculty Council restructured the Academic Athletics Oversight Committee and developed a new charge to better manage the admissions and academic progress of all student athletes
- Worked closely with Rutgers Biomedical and Health Sciences on a range of health sciences projects/centers and joint faculty hiring
- Oversaw the New Brunswick component of the successful 2018 reaccreditation of Rutgers University (all campuses) by the Middle States Commission on Higher Education

Strategic Planning:

- Organized listening and learning sessions with faculty, staff, students and alumni to understand their aspirations for the flagship campus
- Organized and presented in a series of town halls (Campus Conversations) to help the campus community understand how we measured on various metrics (academic, student success, research, student success, endowment, etc.) against our peers in the Big-10
- Organized leadership team and process to launch an academic and space masterplan in fall 2018

- In March 2018, delivered the State of the University address to a packed house that included faculty, staff, students, alumni and several state legislators

Research:

- Worked with the VCRI to identify new grant opportunities and develop interdisciplinary teams for competitive submissions
- Worked with the VCRI and Lewis Burke Associates to launch ideation workshops to catalyze new research and seed grant programs
- Campus research activity (submission and awards) increased for the first time after three straight years of decline
- Worked with the Economic Development Authority (State), the Mayor of New Brunswick and the Chamber of Commerce to collaborate and advance the new Governor's innovation agenda for New Jersey

Student Success:

- Oversaw the establishment of the flagship Enrollment Management division, separate from the system office.
- Engaged and supported the Vice Chancellor for Enrollment Management to develop and implement a plan for increasing out of state enrollment; it was successful and out of state enrollment increased by ~18% in fall 2018
- Charged a campus committee chaired by the Vice Chancellor for Undergraduate Affairs to develop a plan for degree completion opportunities for non-traditional students; report and recommendations received, May 2018
- Charged the Vice Chancellor for Undergraduate Affairs to lead a committee for improving 4- and 6-year graduation rates including transfer students; report and recommendations received, May 2018

Alumni and State Relations & Fundraising:

- Added new resources and moved the Development Office to the Chancellor's Building to communicate high priority of fundraising
- Provided leadership and strategic directions for campus fundraising (closed FY 18 with $127.46 million and several new prospects for FY19)
- Participated in numerous events across the country and abroad to engage with alumni and expand the donor base in preparation for a Capital Campaign
- Attended over 20 one-on-one meetings with state legislators (of both parties) and officials in the Governor's Office
- Secured $5 million (in New Brunswick's annual state appropriation) from the legislature for engineering and agriculture programs
- Served on the new Governor's transition team; New Jersey Chamber of Commerce Board of Directors, New Brunswick Mayor's Planning Group

PURDUE UNIVERSITY

Provost and Executive Vice President for Academic Affairs and Diversity
(2014—2017)

As Purdue University's chief academic officer, I had direct operational responsibility for all academic and faculty affairs of the main campus in West Lafayette and oversight responsibility for all curricular matters including graduate education, continuing education and faculty affairs for the four regional campuses. I also served as Purdue's Chief Diversity Officer, the only AAU provost with this responsibility.

Specific Responsibilities:

- Regional campuses—Provide overall leadership for the consolidation of Calumet campus (~9000 students) and North Central campus (~3500 students) and accreditation; provide leadership for the split of Indiana university Purdue university at Fort Wayne (IPFW) to create a new institution wholly managed by Purdue University
- Provide strategic leadership to 13 deans and 7 vice/associate provosts and their units to enhance academic excellence, student success and diversity
- Oversee the institution's academic budget of approx. $1 billion; ensure affordability, access, cost control and revenue generation
- Provide leadership to academic support units including enrollment management and admissions, registrar and records, student success, student life and cultural centers and the libraries
- Oversee the prioritization and approval of academic capital projects and the repair and renovations of academic facilities
- Ensure the centrality of diversity within academic excellence -- ensuring diversity and inclusion in all areas of the university including hiring of faculty and staff, recruiting undergraduate and graduate students, diversifying curricula and enhancing campus climate
- Communicate with a wide variety of internal and external constituencies, including the Board of Trustees, Indiana Commission on Higher Education, University Senate, student organizations and alumni for fundraising and various other outreach activities

Key Accomplishments:
What appears below is the collaborative work of the deans, vice provosts, associate provosts and others unit leaders. I chaired the Council of Deans meetings bi-weekly and Provost Cabinet meetings (vice provosts, directors and others also bi-weekly. New projects, committees and other initiatives were developed mostly in consultation with these groups. In addition to providing overall leadership and direction, my role varied from direct involvement in some projects to facilitation, supervision and encouragement in others. I assembled a very strong team and much of the credit goes to them.

Academic Excellence:

- Established and implemented a comprehensive academic program review process
- Established new standing committees for prestigious faculty awards and launched an initiative for promoting faculty for prestigious awards
- Collaborated with the University Senate to revise and update the University P&T criteria (first time in over 40 years)
- Established the 150th Anniversary Professorships to highlight the importance of outstanding instruction and elevate teaching excellence.
- Catalyzed new areas of scholarship through campus-wide cluster hires
- Established a new model for dual career hires providing 6 years of support through partnership with academic unit
- Established and implemented process for senior administrator reviews
- Hired more than a dozen senior administrators (deans, vice provosts and assoc. vice provosts, etc.)
- Helped establish and provided support for PROMISE and ASPIRE, new programs supporting scholarship of faculty and graduate students in the liberal arts
- Oversaw the academic expansion of engineering, computer science, business, nursing and technology
- Oversaw the undergraduate curriculum transformation of the College of Technology, now the Purdue Polytechnic Institute, and helped launch Purdue's first competency-based degree
- Launched Purdue System-wide Summit to advance system-wide priorities--diversity, faculty hiring and mentoring, and sharing best practices across the system
- Worked with President, CFO and the Board to acquire Kaplan University, which later became the Purdue University Global campus

Student Success:

- Oversaw the 4-year graduation rate increase from 48% to 56%
- Restructured and expanded undergraduate advising programs
- Significantly expanded summer offerings to increase summer credits taken by undergraduate students
- Established academic support programs for at-risk students
- Expanded active learning (IMPACT) courses across campus including faculty training and support
- Successfully completed phase-1 (first 4 years) of the newly established Honors College with record breaking enrollment and a move to a new building
- Catalyzed and supported the development of innovative programs across campus, e.g., Cornerstone, a new integrated program in liberal arts; the Summer Business Academy for non-majors to acquire business credits
- Enhanced and expanded counseling services and legal services for students

- Established regular (monthly) meetings with student leadership groups and kept office hours for students, faculty and staff.

Diversity and Inclusion:

- During my tenure faculty members of color increased by 3 percent, undergraduate URM students by 17 percent and graduate URM students by 8 percent
- Established and chaired the first ever campus Advisory Committee for Diversity (a standing committee) which helped develop the Action Plan for Diversity and Inclusion for the campus
- Institutionalized and leveraged the success of the NSF-funded ADVANCE initiative to help establish the Center for Faculty Success that focuses on leadership opportunities for women across the campus
- Launched a campus-wide $1 million Diversity Transformation Award program focusing on recruitment, retention and climate for faculty, staff and students
- Established significant outreach to Lafayette and West Lafayette communities as well as industry partners to discuss strategies for creating a diverse and inclusive community

Faculty Research:

- Faculty research funding reached record levels two years in a row, FY16 and FY17 with increases in patent applications and awards
- Established two new programs for tenured faculty—Research Refresh for mid-career faculty to enhance scholarship after service roles and New Horizons for established (full) professors to create new lines of inquiry and new domains of scholarships
- Supported, funded and helped launch the Systems Collaboratory across eight colleges to research the "system of systems" concept and create new programs
- In partnership with VP Research, organized a campus-wide effort on life sciences and leveraged that into the launch of a $250M campus-wide life sciences initiative with two new centers in integrative neurosciences and immunology and infectious diseases

Budgets and Fundraising:

- Worked with President to implement a flat tuition, both in-state and out of state (tuition now has been held flat 7 years in a row)
- Established a new collaborative and transparent process for academic budgeting and roll up to the campus budget
- Established a campus-wide committee that proposed novel ideas for cash management, policies for carry forwards, backstops for critical projects and better usage of Provost's funds to address campus wide emerging needs
- Participated in fundraising and the capital campaign by collaborating with VP of Development and academic units, crafting compelling

narratives for academic projects and meeting with donors and advisory boards to further advancement goals
- Developed and implemented a financial plan with VP Development to add 12 endowed professorships in the Krannert School of Management leveraging external funds and internal cash balances

Organizational Efficiency
- Oversaw the merger of Purdue Calumet and Purdue North Central to create Purdue University Northwest and its successful accreditation
- Oversaw the restructuring of Indiana University Purdue University at Fort Wayne (IPFW) to create the new Purdue University Fort Wayne.
- Core leadership team with President and CFO to assess, recommend and acquire Kaplan University to create Purdue University Global
- Combined existing units to create a new division of Student Academic Affairs that included end-to-end student services, from enrollment management and admissions, teaching and learning, advising and student life aspects including resident halls, cultural centers, bands and musical organizations
- Recruited Assoc. Vice Provost for Teaching & Learning and established the new Office of Digital Education and oversaw the development of an Action Plan for Digital Education for better coordination across all units for online programs and digital platforms for on campus
- Established a new and transparent process for capital project repair & renovation
- Co-sponsored with the Treasurer, Transform Purdue, a campus-wide business process reengineering for ledger management, HR functions and asset management

UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN

Associate Provost and Dean of the Graduate College
(2009—2014)

As dean, I led a transformation of the Graduate College from a service unit into an academic unit that proactively facilitated and nurtured interdisciplinary and multi-disciplinary connections across campus while providing the essential graduate student services. The College assured the integrity and quality of graduate programs through robust academic and financial policies.

Key Accomplishments:
What appears below is the good work of my associate deans, directors and staff members in the Graduate College as well as the faculty across campus who served on Graduate College committees. I reinforced the centrality of graduate education to the mission of a research university and inspired faculty and staff to support graduate students through new and innovative programs and effective policies. While I provided overall leadership and was directly involved in many projects while facilitating others, we would not have achieved

the successes below without the active engagement and support of the faculty who served on the Graduate College Executive Committee and the Fellowship Committee (both standing committees) and several ad-hoc committees drawing faculty, staff and students from across campus.

Programs:

- Established several new interdisciplinary programs to help catalyze new research and create collaborations across colleges
- Created Focal Point, a new program to stimulate new interdisciplinary research through collaborations among faculty and graduate students from multiple fields providing opportunities for graduate students to engage directly in the process of developing new research directions in areas of critical national and human need
- Created INTERSECT, a new initiative in interdisciplinary arts and humanities research & training providing up to $250,000 over two-years and opened up new vistas in the arts and humanities doctoral education at Illinois
- Established a new two-year Clean Energy Education fellowships for STEM graduate students to engage in community service and education
- Initiated and oversaw the Grad College Videos program to provide graduate students timely and helpful information on important topics

Policies and Operational Efficiency:

- Restructured the Block Grant fellowship program and developed new policies to bring about grant parity between STEM and non-STEM areas
- Worked with the Graduate Executive Committee to establish new policies for remote participation of faculty members in doctoral defense
- Led the development of fully automated (Sharepoint-based) graduate petitions, reducing the approval time from two weeks to two days
- Fully automated the thesis deposit process leading to cost reduction and increased efficiency
- Established new policies and processes for graduate tuition assessment within a system that was based on “waiving” full tuition (approx. $100 million) that lead to robust policies for graduate programs stipends, size and quality across campus

Diversity and Inclusion

- Assisted every department to frame diversity as an essential component of academic excellence and helped establish a culture of accountability
- Created several new programs – Illinois Partners for Diversity, ASPIRE and Community of Scholars – for recruitment, retention and success of underrepresented students
- Increased graduate fellowships for URM students; increased pool of underrepresented students in graduate admissions

Budgets and Fundraising

- Transformed an ad hoc budgeting process into an efficient and transparent system for graduate fellowship budgeting
- Established Campaign 2017, the first-ever fundraising campaign to celebrate the 125th anniversary of the founding of the Graduate College, a critical step that led to the College being included in the campus sesquicentennial capital campaign

Interim Vice Chancellor for Research
(2012)

In this position, I reported directly to the Chancellor and was responsible for overseeing the $400 million+ research enterprise and making progress on the strategic research initiatives. The directors of the National Center for Supercomputing Applications, the Institute for Genomic Biology, the Beckman Institute and the Singapore based Advanced Digital Sciences Center reported to me. I worked closely with Chancellor to

reimagine and rebuild the Office of Research – it's scope, role structure and policies – that impacted major research units like the National Center for Supercomputing Applications, Institute for Genomic Biology, UIUC/Mayo Alliance, as well as efforts to establish the new Carle–Illinois College of Medicine. I helped establish policies and procedures for important activities enhancing stability in the office and staff morale.

Key Accomplishments:

- Streamlined in-house workflow processes, particularly campus funds allocation process and timelines
- Implemented a new merit-based salary program approach for the annual reviews for all Center Directors and office staff
- Successfully completed the financial agreement and budgeting process and helped launch the new UIUC/Mayo Alliance
- Established the financing structure, internal agreements and helped launch the new Applied Research Institute
- Established committee and process for a full review of the federal indirect cost rate and its impact on graduate tuition assessment
- Represented UIUC at various federal research meetings in DC
- Worked with the government relations office and Lewis Burke Associates (consulting firm in DC) to engage with Capitol Hill staffers and federal agencies to promote research and explore new opportunities for faculty

Chancellor's Advisor on Diversity and Cultural Understanding
(2012—2014)

Building on the success of diversity efforts that I led as dean of the Graduate College, I worked with Chancellor Phyllis Wise to create a University-wide effort and organization structure—Chancellor's Council on Diversity—aimed at understanding the challenges and framing opportunities for improving diversity of faculty, students and staff at UIUC.

Through a comprehensive assessment, this initiative led to an alignment and sharper focus of current activities, an understanding of the unmet needs and the creation of new programs— DRIVE and EDGE—the and policies to enhance inclusiveness and campus climate. Through this initiative the institution continues its efforts to establish and sustain a culture of responsibility, support and accountability in progress on diversity. Significant positive changes have occurred at UIUC.

NATIONAL SCIENCE FOUNDATION

Directorate for Education & Human Resources
(2004—2007)

Advisor, *Office of Assistant Director, EHR*
Division Director *(Acting), Division of Graduate Education*
Program Director*, IGERT, Division of Graduate Education*

Key Accomplishments:

- Co-led IGERT, one of the largest cross-directorate programs in NSF
- Successfully organized the 2005 IGERT program evaluation by the Committee of Visitors
- Established cross-agency partnerships with National Cancer Institute (NIH) for new training programs in cancer research and with the Department of Navy for the creation of NNCS--a new scholarship for service program
- Led the Division of Graduate Education – programs, personnel, policies and budget of over $200 million; hired senior staff; oversaw key division programs NSF-Graduate Research Fellowship, GK-12, IGERT and several other interagency programs
- Represented the Division in senior leadership meetings within the foundation; participated in interagency task force on post-doc mentoring
- Member, NSF's strategic planning, Cyberinfrastructure Vision for the 21st Century; Chair, Learning & Workforce Development Working Group

NATIONAL ACADEMY OF ENGINEERING

Scholar-in-Residence
(2008 – 2015)

Developed, secured funding and completed a national study on Educate to Innovate that focuses on understanding what skill sets and experiences have the potential to enhance individual innovation capabilities. This project was funded by NSF. Report available here.

Developed, secured funding and completed a national study on lifelong learning for engineering. The project included two NAE workshop and surveys of engineering professionals. Publications include

- Summary of a workshop, National Academies Press, 2010. http://www.nap.edu/catalog.php?record_id=12866

- Lifelong Learning Imperative in Engineering: Sustaining American Competitiveness in the 21st Century, National Academies Press, 2012 http://books.nap.edu/catalog.php?record_id=13503

UNIVERSITY OF MICHIGAN, ANN ARBOR

Associate Chair, Department of Mechanical Engineering
(2002—2004)

Key Accomplishments:

- Oversaw the day-to-day operations of the department (60 tenure line faculty and 75 staff)
- Co-managed the department budget process (about $30 million)
- Conducted faculty annual reviews and developed salary merit increase
- Served as Graduate Chair (more than 400 graduate students) with responsibilities for graduate programs and policies, graduate recruiting and financial aid and TA assignments

College of Engineering
Founding Director, Interdisciplinary Professional Programs
(1999—2001)

Key Accomplishments:

- Created Interdisciplinary Professional Programs (InterPro), a new interdisciplinary academic unit, which collaborated with the School of Business and the College of Literature Science and the Arts to offer professional master's degrees in areas of need in industry.
- Grew the unit from two programs (in manufacturing and automotive systems) to six programs (adding plastics, micro-electro-mechanical systems, wireless integrated manufacturing and financial engineering)
- Significantly expanded corporate partnerships and online programs delivery
- Chaired the program advisory committee to establish academic structure, policies and program finances –creating a new academic unit from scratch

College of Engineering
Director, Program in Manufacturing
(1998—2001)

Key Accomplishments:

- Worked closely with a faculty advisory committee to lead and manage program

- Enhanced online delivery of the Master of Engineering program
- Developed a partnership with Shanghai Jiao Tong University which led to the first U-M Master of Engineering degree approved by Chinese Ministry of Education
- Taught in Shanghai three summers and built programmatic relationships with American companies.
- Built the foundation for the University of Michigan to create the UM-SJTU Joint Institute that has been hailed as a model for international collaboration by the Chinese government

COMMITTEES

AAU – APLU Public Access Working Group on Federally Sponsored Research Data
(2016—17)

Committee looked at actions universities and federal agencies can take to ensure public access to federally-sponsored research data; report contains data management resources to provide universities with the information, tools, and additional guidance for making data publicly available so as to minimize costs, enhance interoperability between institutions and disciplines

Co-Chair, Committee of Visitors, Division of Engineering Education and Centers, Engineering Directorate, National Science Foundation
(2016)

Committee of Visitors (COV) reviews are conducted at regular intervals of approximately three years for all programs and offices that recommend or award grants, cooperative agreements, and/or contracts. The COV reviews provide NSF with assessments of the quality and integrity of program operations and program-level technical and managerial matters pertaining to proposal decisions. The COV also comments on how the outputs and outcomes generated by awardees have contributed to the attainment of NSF's mission and strategic outcome goals.

Advisory Committee, Engineering Directorate, National Science Foundation
(2014—2017)

Advises NSF on issues in administration, policy and priority investment areas in engineering research. Also considers ways by which NSF can promote quality graduate and undergraduate education in engineering.

Illinois Arts Education Advisory Committee
(2012—2014)

Convened by the Illinois Arts Council Agency, the Illinois State Board of Education, and Lieutenant Governor Sheila Simon, the committee assists in the development of state-level policy agenda for increasing arts education access, equity, and quality in Illinois.

National Advisory Committee, Council of Graduate Schools & TIAA/CREF
(2013–2014)

"Enhancing Debt Management Skills and Financial Literacy of U.S. Graduate & Undergraduate Students

BOARD MEMBERSHIPS

Board of Directors, Illinois at Singapore Private Ltd., Singapore
(2011–2014 and Chair of the Board 2012—2014)

The University of Illinois, Urbana-Champaign has a major research activity in Singapore funded by the Singapore government. Illinois at Singapore Pte is a registered private company in Singapore and is the legal and business entity for the University's research activity. The PTE manages a large multi-year, multi-million dollar advanced computation research laboratory. As chair of the Board, I provided leadership for PTE's organizational, fiduciary and legal responsibilities in Singapore.

Governing Board, **Singapore A*STAR—University of Illinois Partnership (AUIP)**
(2010–2014)

The Singapore government through its Agency for Science, Technology and Research has a partnership with UIUC for doctoral education of Singaporeans in science and engineering fields. As member of the Governing Board, I provided leadership for AUIP within the University and in Singapore including funding models, organizational, and student success.

Graduate Record Examination Board, Educational Testing Services, Princeton, NJ
(2011–2013)

Served on the GRE Board for two years providing collective leadership to ETS regarding new program development (e.g., the Personal Potential Index) and on a variety of policy matters including the increasing use of GRE scores in corporate hiring.

TOEFL Board, **Educational Testing Services, Princeton, NJ**
(2012–2013)

Provided collective leadership to ETS regarding spoken and written skills of international students, test integrity in various parts of the world and new program development

Board of Directors, Illinois Consortium for the 21st Century Schools, Chicago, IL
(2010–2014)

Illinois 21 is a consortium working to develop and incorporate new skills and content for all K-12 schools that are committed to Project-Based Learning with technology as the key model of instruction. Provided

guidance on math and science curriculum relevancy and preparation for entry into undergraduate programs in the State of Illinois.

Professional Science Master's Board, **Council of Graduate Schools**
(2010–2011)

The PSM programs have grown rapidly nationwide to provide science plus business curriculum to individuals who do aspire to a science based leadership position outside the laboratory. In 2011, the CGS transferred the administration of PSMs to the Keck Graduate Institute.

HONORS & AWARDS

Educator of the Year, American Council of Engineering Companies of New Jersey (March 2018)

Educational Leadership Award, Jewish Family Services (JFS), Middlesex County, New Jersey (June 2018)

Fellow, American Association for the Advancement of Science (2011)

Selected to represent the State of Illinois (one of 5 members) in the National Endowment for the Arts sponsored Education Leaders Institute, Chicago, July 2010

NSF Director's Award for Collaborative Excellence (July 2006)

Fellow, American Society of Mechanical Engineers (May 2005)

ASME Design Automation award (Sep 2004) *for fundamental and sustained contributions to design automation research and global product development*

Computerworld Smithsonian Honors (2002) *for novel use of IT in education* (Nominated by John Chambers, CEO, Cisco Systems)

Service Excellence Award, College of Engineering, University of Michigan (2001)

Guest Professor, Mechanical Engineering Department, Shanghai Jiao Tong University, Shanghai, China (Aug 2001-04)

William Mong Fellow, Mechanical Engineering Department, University of Hong Kong (Feb 2000)

Teaching Excellence Award, Mechanical Engineering Department, University of Michigan (1996)

ACADEMIC APPOINTMENTS

6/2017 –	Distinguished Professor of Engineering, Rutgers University—New Brunswick
7/14 – 6/17	Professor, Mechanical Engineering, Purdue University, West Lafayette
1/09 – 6/14	Edward William and Jane Marr Gutgsell Professor, Mechanical Science and Engineering; Professor of Industrial & Enterprise Systems Engineering, University of Illinois, Urbana-Champaign
2000 – 2008	Professor, Mechanical Engineering, U Michigan, Ann Arbor
1995 – 2000	Associate Professor, Mechanical Engineering, U Michigan, Ann Arbor
1989 – 1995	Assistant Professor, Mechanical Engineering, U Michigan, Ann Arbor

EDUCATION

Ph.D., Industrial Engineering, Purdue University, West Lafayette, IN

M.S., Engineering Management, University of Evansville, Evansville, IN

B.S., Mechanical Engineering, Jadavpur University, Calcutta, India

PROFESSIONAL SOCIETIES

American Society of Mechanical Engineers (ASME)

American Association for the Advancement of Science (AAAS)

American Society of Engineering Education (ASEE)

Society of Manufacturing Engineers (SME)

MAJOR COMMITTEE ASSIGNMENTS—UNIVERSITY OF ILLINOIS

Chair, University IT Governance Executive Committee
(2012—2014)

Chaired the Provost appointed 16-member campus IT Governance Executive Committee. This body establishes strategic priorities, recommends policies, directs resource allocation, assesses results, and encourages institutional and inter-institutional IT collaboration. The Executive Committee evaluates IT recommendations from the topical committees (Research, Teaching and Learning, Outreach, Administration, and Information Security and Privacy). Recommendations made by the Executive Committee go to the Provost and Chancellor for final approval. The implementation of approved recommendations is coordinated by the IT Council which reports to the Executive Committee.

Chair, Committee for Review of the Office of the Vice President for Research, University of Illinois System
(2013—2014)

Chaired the President appointed 10-member committee to conduct a comprehensive review of the OVPR and its system-wide activities. This task involved numerous interviews of faculty, staff and administrators in the Urbana-Champaign, Chicago and Springfield campuses to assess value add and effectiveness of the operations. A final report was submitted to the President.

Chair, Organization for Excellence Task Force
(2012—2013)

Chaired the Provost appointed 6-member deans committee to assess new opportunities and develop strategies for enhancing excellence, visibility and impact of the academic enterprise. Enhancing spheres of influence as well as reputational excellence were considered. This led to a Provost Office strategy for faculty hiring and new initiatives.

Chair, Doctoral Program Assessment Committee
(2011—2012)

Chaired the Provost appointed 18-member University committee in to conduct the first ever comprehensive assessment of 97 doctoral programs. Developed the overall process, metrics and student surveys informed by the Carnegie Initiative on the Doctorate (Formation of Scholars, by George Walker and Chris Golde). Led the committee through a 9-month review of all doctoral programs including meetings with college deans and department heads for the dissemination of results. Faculty and programs have embraced the assessment which has been institutionalized as AIDE and is conducted annually (all programs in a 5-year cycle). This assessment has kindled a campus wide dialog about all aspects of doctoral education, including the time to degree, completion rates, program size, mentoring and financial models. Worked with the Council of Deans, Provost and Chancellor to develop a new budgeting and tracking model for graduate tuition that is being piloted.

Chair, Steering Committee, Stewarding Excellence at Illinois
(2010–2011)

Chaired the 10-member Steering Committee charged by the Chancellor and Provost to develop a process for institutional transformation. Using that process, led the Steering Committee to conduct the most extensive assessment of units, budgets, operations, and programs within the University. Engaged faculty, Council of Deans, Senate leadership and students in the process that was transparent, inclusive and time bound. Oversaw the launch and successful completion of 17 campus projects in 2010 involving project teams (500+ faculty and staff), monitored a

feedback loop that included the unit leadership, Council of Deans, Faculty Senate and other relevant stakeholders. Stewarding Excellence led to significant cost savings across the institution and has better positioned the University in the face of declining state appropriations.

OTHER SIGNIFICANT COMMITTEE ASSIGNMENTS
(2011–2014)

- Chair, Dean Search Committee, University Libraries
- Chair, Dean Search Committee, College of Fine & Applied Arts
- Member, Big Vision Committee; Chancellor's Strategic Plan development
- Member, University Strategic Plan Implementation and Validation Committee
- Member, Provost's Advisory Committee on Development Road-mapping (University fundraising strategic planning exercise)
- Campus Senior Leadership Committee for contract negotiations with the Graduate Employees Organization

MAJOR COMMITTEES AND ASSIGNMENTS—UNIVERSITY OF MICHIGAN

Chair, Tenure Committee, **Faculty Senate (2008)**
Member, Financial Affairs Advisory Committee, **Faculty Senate (2002-2004)**
Member, Provost's Committee on Academic Affairs (2000-2004)

I chaired the tenure committee investigation of a violation of University code of conduct by a tenured faculty member, a rare event in the University's history. Chaired the grand jury where the University was represented by the Office of the General Counsel and the faculty member by a private firm. Developed the final (consensus) report containing the investigation findings and the recommendations for consideration by the President which led to a mutually acceptable outcome for both parties.

Interdisciplinary Task Force, **Rackham Graduate School**
(2007)

Task Force consulted with faculty and generated ideas for enhancing interdisciplinary opportunities for faculty and graduate students and made recommendations to the Graduate Dean. The key recommendation (Michigan Meetings) was implemented and has been very successful. It is now a regular event at Michigan.

Conflict of Interest Committee, **Office of Vice President for Research**
(2002–2004)

A standing oversight committee in the Office of VPR that met regularly to assess effectiveness of COI policies and develop new frameworks as needed. Most importantly this committee reviewed all COI management plans submitted by faculty. Approvals or modifications were recommended.

Provost's Committee on Email Policy
(2002–2003)

Ad-hoc committee charged to develop campus policy for email spam and spoof, and use of electronic signatures.

Chair, Committee on Interdisciplinary Research Activities, **College of Engr**
(2002–2003)

Ad-hoc committee charged by the Associate Dean for Research to develop recommendations for enhancing interdisciplinary research in the College. Topics considered included faculty incentives, shared infrastructure and services and financial models.

Provost's Committee on Economic Status of the Faculty
(2000–2001)

A standing committee (of the Faculty Senate) that focuses on issues related to faculty compensation for ensuring competitiveness and transparency. It monitors and analyzes faculty salary, fringe benefits, and equity with peer institutions.

University Bargaining Team, Contract Negotiations with Graduate Employees **Organization**
(1994-95 and 1998-99)

Served in the University team (4 faculty and 4 staff) in two successful contract negotiations. Provided faculty perspectives on GEO proposals and developed University proposal that enhanced the quality of graduate experience. A unique learning experience and I volunteered to participate the 2nd time and was selected to do so.

RESEARCH INTERESTS

- Sustainable Manufacturing
- Global Product Development and Lifecycle Management
- Impact of Globalization on Product & Technology Development
- Computer Aided Design and Manufacturing

PROFESSIONAL RECOGNITION & ACTIVITIES

July 2016	Keynote Speaker, Times Higher Education Latin Americas Universities Summit, Bogota, Columbia, July 6-8
May 2016	Plenary Speaker, NSF Workshop on Stimulating Germination of Transformative Research, May 12-13, Arlington, VA (accepted invitation)
June 2015	Keynote Speaker, Computer Aided Design conference, London, U.K.
June 2014	Keynote Speaker, IEEE International Conference on Engineering, Technology and Innovation, Bergamo, Italy
May 2014	Keynote Speaker, IEEE SMC Conference in Computer Supported Cooperative Works in Design conference, Taipei, Taiwan
July 2013	Keynote Speaker, IFIP 10th International Conference on Product Lifecycle Management, Nantes, France
April 2011	Member, International review team; 5-year evaluation of the School of Mechanical Engineering, Shanghai Jiao Tong University, Shanghai, China
Apr 2008	Program Chair, Partnerships for Innovation Inaugural Workshop, National Science Foundation
Jan 2008	Chair, Colloquium on Seeding and Sustaining Interdisciplinarity, World University Forum, Davos, Switzerland
May 2007	Invited participant, 5X ME Workshop, National Science Foundation
Nov 2006	Invited Panelist, “What kind of doctoral graduates do we need?” Korean Ministry of Education, Seoul, South Korea
Nov 2006	Invited Panelist, “What kind of doctoral graduates do we need?” German Rectors Conference on Doctoral Education Reform, Frankfurt, Germany
July 2006	External Review Committee, Mechanical Engineering department, Seoul National University, Seoul, South Korea
2001 – 2006	Member, Advisory Board, Worcester Polytechnic Institute
July 2005	Keynote Speaker, Concurrent Engineering Conference, Dallas, TX
June 2005	Keynote Speaker, 2005 CAD conference, Bangkok, Thailand
March 2005	Invited Speaker, PLM Conference, New Delhi, India

Jan 2004	Keynote Speaker, Int'l Conference on Advanced Manufacturing Technologies, CMERI, Durgapur, India
Oct 2003	Keynote Speaker, Global Collaborative Product Development Symposium, ITRI and NTHU, Taipei, Taiwan
May 2003	Keynote Speaker, PLM Symposium, National Tsing-Hua University, Taipei, Taiwan
May 1998	Keynote Speaker, 8th Int'l Manufacturing Conference, Singapore
Feb 1997	Invited Participant, NSF Workshop on Advanced Information Infrastructure for Solid Freeform Fabrication. Stanford University
May 1997	Invited Participant, USA-South Africa Research Collaboration Team, Visited several SA universities. (Sponsored by NSF)
Jan 1992	Invited Member, Internal Technical Review Committee, NSF-Engineering Design Research Center, Carnegie Mellon University
Sep 1991	Invited Panel Member, ASME Flexible Assembly Conference, DETC, Symposium on Research & Development Issues in Flexible Assembly Systems

PROFESSIONAL SERVICE

Editorial Service

- Int'l J of Product Lifecycle Management (Editorial Board)
- Computer Aided Design & Applications (Editorial Board)
- Rapid Prototyping Journal (Editorial Board)
- J of Mechanics of Structures and Machines (Associate Editor, 1/06—12/09)
- SME Journal of Manufacturing Systems (Associate Editor, 1/02—12/07)
- ASME J of Computer and Information Science in Engineering (1/01—12/02)
- ASME Journal of Mechanical Design (Associate Editor, 1/95—12/97)

Guest Editor

Computer Aided Design**,** Special Issue on Product Lifecycle Management (with W. Bronswoort & B. Gurumurthy) May 2005

Journal of Manufacturing Systems, Special Issue on Layered Manufacturing, v16, n4, 1997

Computer Aided Design**,** Spc Issue on Mathematical Methods for CAD, v26, n3 1994

Journal of Design and Manufacturing (Co-Editor) Special Issue on Concurrent Engineering, v4, n3, 1993

Chair, Human Factors & Education working group, CIRP (Aug '02 – Jul '05)

Member, Advisory Board, ASME/ACM Journal of Computers and Information Science in Engineering; Chair, 2002-2004

Member, Executive Committee, Solid Modeling Association (2001-03)

CONFERENCES

2008— **Member, Steering Committee**, IFIP WG 5.1 Conference on PLM[1]
Doha, Qatar, October 19-21, 2015
Tokyo, Japan, July 7-9, 2014
Nantes, France, July 8-10, 2013
Montreal, Canada, July 9—1, 2012
Eindhoven, Netherland, July 11-13, 2011
Bremen, Germany, July 10-12, 2010
Bath, United Kingdom, July 11-13, 2009
Seoul, Korea, July 10-12, 2008

2005— **Conference Co-Chair**, International Conference on PLM
10th IFIP Int'l Conference on PLM, Nantes, France, July 6—10, 2013
4nd Int'l Conference on PLM, Milan, Italy, July 11-13, 2007
3nd Int'l Conference on PLM, Bangalore, India, Jul 10-12, 2006
2nd Int'l Conference on PLM, Lyon, France, July 11-13, 2005

July 2003 **Program Chair,** 1st Int'l Conf. on PLM, Bangalore, India, July 17-19

June 2001 **Conference Chair,** 6th ACM Solid Modeling Conf, Ann Arbor, MI

June 1999 **Conference Chair,** 5th ACM Solid Modeling Conf, Ann Arbor, MI

Sep 1997 **Conference Chair**, ASME Design Automation Conf, Sacramento, CA

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[1] *I co-founded the International Conference on Product Lifecycle Management with Professor B. Gurumurthy of the Indian Institute of Science, Bangalore, India. Since 2010, at the invitation of Working Group 5.1 of the International Federation of Information Processing, this conference is the annual conference of the IFIP, WG5.1.*

May 1993 **Conference Chair,** MCAD Conference 1993, SIAM Great Lakes Section University of Michigan, Ann Arbor, MI

1994 – 1998 **Member**, Executive Committee, ASME Design Automation Conference; **Chair,** 1997-98

1996 **Papers Review Chair**, ASME Design Automation Conf., Irvine, CA

1995 **Papers Review Chair,** ASME Design Automation Conf., Boston, MA

1994 **Foreign Papers Review Chair,** ASME Design Automation Conference, Minneapolis, MN

1994 **Co-Editor**, Proc of ASME Winter Annual Meeting, PED–62 (Organizer Symposium on Non-traditional Design and Layered Manufacturing, ASME Winter Annual Meeting, Chicago)

1992 **Co-Editor**, Proc of ASME Winter Annual Meeting, Vol. PED–59, (Co-Organizer, Symposium on Automation in Design, Manufacturing & Assembly, ASME Winter Annual Meeting, Anaheim)

Additional service roles include (i) panelist at NSF (ii) memberships in scientific program committees of numerous conferences and workshops, (iii) organizer of focused sessions in conferences, and (iv) referee for journals, conferences and research proposals (including from agencies outside the US).

COURSES TAUGHT AT U MICHIGAN

- ME589 Global Product Development (Graduate) –new course developed
- ME554 Computer Aided Design Methods (Graduate) –new course developed
- ME250 Introduction to Design & Manufacturing (UG) –new course developed
- ME350 Mechanical Component Design (UG)
- ME450 Senior Design Project (UG)
- ME551 Geometric Modeling (Graduate)
- Mfg 501 Topics in Manufacturing (Graduate)

EXTERNAL THESIS EXAMINER

- Jaco van Niekerk, PhD thesis, 2007, **University of Johannesburg, S. Africa**
- D. Songlin, PhD thesis, 2003, **National University of Singapore**
- E. Marais, PhD thesis, 2003, **Rand Afrikaans University, S. Africa**

- Zeng Jianming, PhD thesis, 2000, **Hong Kong University**
- Xu Fen, PhD thesis, 2000, **National University of Singapore**
- Pieter Smith, MS thesis, 2000, **Rand Afrikaan University, S. Africa**
- C C Mun, PhD thesis, 2000, N**ational University of Singapore**
- J. Wilharms, MS thesis, 1999, **University of Twente, Netherlands**
- H. Koelman, PhD thesis, 1999, **Delft University, Netherlands**
- Ian Campbell, PhD thesis, 1997, **University of Nottingham, UK**
- E. Marais, MS thesis, 1997, **Rand Afrikaans University, S. Africa**
- K H Cher, MS thesis, 1994, **National University of Singapore**

DOCTORAL STUDENTS GRADUATED—University of Michigan

Seungcheol Yang (Ph.D. August 2010)
Current position: Postdoctoral researcher at University of Texas at Austin, Department of Physics

Il Yeo (Ph.D. Aug 2009)
Current position: Research Staff, Microsoft Corporation, Seattle, WA

Chandresh Mehta (Ph.D, August 2010)
Current position: Research Staff, Intel Corporation, Chandler, AZ
Vijay Srivatsan (Ph.D. December 2006); Co-chaired with Dr Reuven Katz, ME
Current position: Technical staff, Bloom Energy, Sunnyvale, CA

Nikhil Joshi (Ph.D. December 2006)
Current position: Technical Staff, John Deere India, Pune, India

Farhad Ameri (Doctor of Engineering, December 2006)
Current position: Assistant Professor, Mechanical Engineering, Texas State University

Lalit Patil (Ph.D. August 2005)
Current position: Member of Technical Staff, Ford Motor Company, Dearborn

Prabhjot Singh (Ph.D. October 2004)
Current position: Group Leader, Digital Manufacturing, GE Research & Development Center, Schenectady, NY

Gil Abramovich (Ph.D. January 2004)
Employment after graduation: Member of Technical Staff, GE Research & Development Center, Schenectady, NY

Madhumati R Ramesh (Ph.D. January, 2002)
Current position: Research staff, Autodesk, Portland, OR

Ki-Hoon Shin (Ph.D. December 2001)
Employment after graduation: Research Staff at Daewoo Electronics, Seoul, South Korea

Xiaoping Qian (Ph.D. May 2001)
Current position: Associate Professor, ME Dept, University of Wisconsin—Madison (Jan 2014)

Anne Marsan (Ph.D. March 1999)
Employment after graduation: Technical Staff member, Flexys, Ann Arbor, MI

Vinod Kumar (Ph.D. December 1998)
Current position: Group Leader, GE Research & Development Center, Bangalore, India

P. Kulkarni (Ph.D. December 1997)
Current position: Member of Technical Staff, GE Research & Development Center, Schenectady, NY

Derek Yip-Hoi (Ph.D. July 1997)
Current position: Associate Professor, Mechanical Engineering Dept., Western Washington University

Seth Allen (Ph.D. December 1996) Co-chaired with Prof Lizhen Ji of Math Current position: Department; Research staff, Kubotek Corporation, Boulder, CO

Radha Sarma (Ph.D. November 1996)
Employment after graduation: Adjunct Associate Professor, Mechanical Engineering Dept., Univ of Michigan

Y. L. Srinivas (Ph.D. August 1994)
Current position: Group Leader, CAD/CAM/CAE Dept, Ford Motor Company

C. J. Ong (Ph.D. August 1993) Co-chaired w/ Prof Elmer Gilbert, EECS, Current position: Associate Professor, Mechanical Engineering Dept., National University of Singapore

MASTER'S STUDENTS GRADUATED—University of Michigan

N. Belludi (M.S. August 2002) University of Michigan
Employment after graduation: Cummins Engine, Columbus, IN

Bahadir Pakis (M.S. August 2001) University of Michigan

Employment after graduation: Z-Consulting, Evanston, IL

Paul Alexander (M.S. October 1998) University of Michigan
Employment after graduation: POM Inc., Ann Arbor

Mark Fischer (M.S. June 1995) University of Michigan
Employment after graduation: Intel Corp., Chandler, AZ

Anne Marsan (M.S. April 1995) (Continued PhD with me)

P. Kulkarni (M.S. April 1994) (Continued Ph.D. with me)

Kar-Lan Kam (M.S. August 1993) University of Michigan
Employment after graduation: AT&T, Omaha, NE

Jordan B. Levin (M.S. 1992) University of Michigan
Employment after graduation: HP Manufacturing Labs, CA

UNIVERSITY OF ILLINOIS

SungKu Kang, Mechanical Science & Engineering, (doctoral candidate)

Lalit Patil, Ph.D. Postdoctoral Research Fellow, Mechanical Science & Engineering (2009-14)

Shashank Chaudry, Mechanical Science & Engineering (MS thesis, 2014)

Xueting Fan, (M.S. May 2012) Industrial & Enterprise Systems Engineering,
Employment after graduation: Yahoo! Champaign, IL

Tristan Herman, (M.S. May 2012) Mechanical Science & Engineering,
Employment after graduation: Caterpillar Inc., Peoria, IL

MULTI-INVESTIGATOR RESEARCH INITIATIVES

Jan 2005 – 2009	**Founding Co-Director**, Product Lifecycle Management Alliance (an industry consortium), University of Michigan
Sep 2002 – 2004	**Founding Director**, Globalization Technology & Culture Initiative, University of Michigan International Institute, College of Literature Science and the Arts

RESEARCH GRANTS AWARDED

A. FEDERAL GRANTS

A1. **National Science Foundation**, Division of Design and Manufacturing; Research Initiation Award; "Natural Quartics in Solid Modeling", $70,000, (1990 – 93)

A2. **National Science Foundation**, Division of Design and Manufacturing; Industry Internship Award; "Towards Automation of Die Design and Manufacture", $24,789 (7/91–6/92)

A3. **Air Force Office of Scientific Research**; "Next Generation Solid Modelers for Electronic Prototyping", $200K (12/92 – 1/95)

A4. **Air Force Office of Scientific Research**; **AASERT award**; "N.C. Machining of Cyclide Surfaces", $130K approx, (7/93 – 6/96)

A5. **National Science Foundation**, Division of Design and Manufacturing; "Computer-Aided Process Planning for Parallel Machines: A Disassembly Approach" $130K approx, (7/93 – 6/98 with NCTX); REU Supplement $10K received November 1995

A6. **National Science Foundation**, Division of Design and Manufacturing; "Optimal Design of Topology and Microstructure of Discrete Parts in Project MAXWELL", w/ N. Kikuchi, P. Papalambros, $240K (7/93 – 6/96)

A7. **Office of Naval Research**, "Research in Design Optimization and Computational Geometry in Project MAXWELL", w/ N. Kikuchi, P. Papalambros, $750K approx, (11/93– 10/96)

A8. **US Army TACOM**, "Homogenization Design and Layered Manufacture of Mechanical Components in Project MAXWELL" w/ N. Kikuchi, P. Papalambros, $490K approx, (9/93– 8/96)

A9. **Office of Naval Research**, "Computational Methods for Rapid Prototyping of Analytic Solid Models", w/ R. Farouki, $ 401K approx. (3/95 – 2/98)

A10. **Air Force Office of Scientific Research**, “Algorithms for Geometric Computations in Solid Modelers for Electronic Prototyping” $400K approx. (3/95 – 2/98)

A11. **Office of Naval Research**, "Towards Comprehensive Visualization: Seamless Integration of Soft and Hard Visualization", $ 350K approx. (1/96 – 12/99)

A12. **Univ of Michigan NSF-ERC**, "Process Planning Tools for Reconfigurable Machining Systems", $ 350K approx (9/96 – 8/00)

A13. **National Institute of Standards & Technology (NIST),** “Towards STEP Based Data Transfer in Layered Manufacturing", $180K, (3/98 – 4/02)

A14. **National Science Foundation,** "Investigations on Material Modeling" (SGER) $45K, (1997–98)

A15 **National Science Foundation,** "CAD Representations and Process Planning Algorithms for Layer Manufacturing of Heterogeneous Objects" $360K for 3 years (1/98–12/00)

A16. **DARPA,** "Direct Deposition of Graded Materials for High Temperature Performance", One of 5 Co-PIs, Jyoti Mazumder PI, approx $1M for 2 yrs (7/98–6/00)

A17 **National Science Foundation,** "Scalable Enterprise Systems: Coopetitive Design and Manufacture Across Organizations" one of 4 Co-PIs, H V Jagadish (PI), $197,058 for 1 year (9/00–8/01)

A18 **National Institute of Standards & Technology (NIST),** “Semantics-based Interoperability in Computer Aided Product Design”, $180,000, (7/02–6/05)

A19 **National Science Foundation** “Collaborative DfE for Global Products”, PREMISE Initiative $100K, for 1 year, (Co-PI, Tom Gladwin and D. Yip-Hoi) (9/02–8/03)

A20 **National Science Foundation** “Product Realization by Closed Loop DMD: Environmental and Energy Impact”, PREMISE Initiative $100K, for 1 year, (PI: J. Mazumder, Co-PI, D. Dutta and S. Skerlos) (9/02–8/03)

A21 **National Institute of Standards & Technology (NIST),** “Semantics-based Interoperability in Computer Aided Product Design”, $130K (9/06–8/08)

A22 **National Science Foundation** “Semantic Integration of Multiple Information Resources in Product Development”, $309,936, (Co-PI, L. Patil) (7/07–6/10)

A23 **National Science Foundation** “Global-Hub A Virtual Community for Global Engineering”, $200,000, Co-PI, Multi-university award, E D Hirleman, Purdue University (PI), (10/1/07 – 9/30/09)

A24 **National Science Foundation** “Managing the impact of Engineering Changes in a Cyberinfrastructure enabled environment”, $310,000, (Co-PI, L. Patil) (7/08 – 6/11)

A25 **National Institute of Standards and Technology** “Systems Biology and Systems Engineering: An Integrative Approach Towards Healthcare Informatics”, 64,997.00 (Co-PI, L. Patil) (8/06 - 7/07)

A26 **National Science Foundation** “Sustaining Competitiveness through Lifelong Learning”, $99,980, (10/10 – 9/11)

A27 **National Science Foundation** “Clean Energy Education Workshop”, $50,000, (Co-PI, J. Abelson) (5/11 – 4/12)

A28 **National Science Foundation** “Educate to Innovate: What and How?” $298,500, (Co-PI, L. Patil) (10/12 – 9/14)

A29 **National Science Foundation** “Envisioning the Future of Online Graduate Education in the 21st Century Research University --Workshop” $40,000, (B. Buttlar and D. Dutta)

B. INDUSTRIAL GRANTS

B1. **Applicon-Schlumberger** "A Computer-Aided Process Planning System for Mill-Turns", $80K approx (1991 - 1993) [1992-93: Co-PI Jim Bean, IOE Dept.]

B2. **General Motors,** "Towards Automation of Die Design and Manufacture", $24,789, matching funds for NSF Industry Internship see A2; (7/91 - 6/92)

B3. **Cummins Engine Corp** "A Computer-Aided Process Planning Systems for Mill-Turns", $70K (1992 - 94); [1992-93: Co-PI Jim Bean, IOE Dept.]

B4. **Caterpillar Inc.** "Computer-Aided Process Planning for Mill-Turns", $100K approx (6/95 - 5/96)

B5. **Lockheed Martin** "Homogenization Design & Layered Manufacturing", $100K approx; w/ N. Kikuchi (1/99–12/99)

B6. **Boeing Corporation,** "Object Reconstruction from Point Cloud Data", $60K approx; (10/00–8/01)

B7. **PLM Alliance,** Various companies; approx 500K (2005-09)

B8. **General Electric,** Research gift funds; $100 (2013-14)

Additional funding equipment grants from federal agencies and University as well as and block grants and educational gifts received from industry.

REFEREED JOURNAL PUBLICATIONS

1. V. Chandru, D. Dutta, and C. M. Hoffmann, "On The Geometry of Dupin Cyclides," The Visual Computer, Vol. 5, No. 5, 1989, pp. 277-290.

2. A. C. Woo and D. Dutta, "Automatic Disassembly and Total Ordering in Three Dimensions," ASME Journal of Engineering for Industry, May 1991, pp. 207-213.

3. D. Dutta and Y. L. Srinivas, "Reconstruction of Curved Solids From Two Polygonal Orthographic Views," Computer Aided Design, Vol. 24, No. 3, March 1992, pp. 149-159.

4. J. Levin and D. Dutta, "Computer-Aided Process Planning for Parallel Machining," Journal of Manufacturing Systems, Vol. 11, No. 2, April 1992, pp. 79-92.

5. D. Dutta, R. R. Martin, and M. J. Pratt, "Cyclides in Computer Aided Geometric Design," IEEE Computer Graphics & Applications, January 1993, pp. 53-60.

6. D. Dutta and C.M. Hoffmann, "On the Skeleton of Simple CSG Objects," ASME Journal of Mechanical Design, March 1993, pp. 87-94.

7. K. Wentland and D. Dutta, "A Method for Offset Curve Generation in Sheet Metal Design" Computer Aided Design, Vol. 25, No. 10, October 1993, pp. 662-670.

8. Y. L. Srinivas and D. Dutta, "An Intuitive Procedure for Constructing Geometrically Complex Object Using Cyclides ", Computer Aided Design, Vol 26, No 4, April 1994, pp. 327-335.

9. Y. L. Srinivas and D. Dutta, "Blending and Joining with Cyclides" ASME Journal of Mechanical Design, Vol. 116, No. 4, Dec 1994, pp. 1034-1041

10. S. Gelston and D. Dutta, "Boundary Surface Recovery from Skeleton Curves and Surfaces", Computer Aided Geometric Design, Vol 12, Jan 1995, pp. 27-51.

11. D. Dutta and T. C. Woo, "Algorithms for Multiple Disassembly and Parallel Assemblies" ASME Journal of Engineering for Industry, Vol 117, February 1995, pp. 102-109

12. Y. L. Srinivas and D. Dutta "Cyclides in Geometric Modeling: Computational Tools for An Algorithmic Infrastructure", ASME Trans. J of Mechanical Design, Vol 117, No 3, Sept 1995, pp. 363-373

13. D. Yip-Hoi and D. Dutta, "Data Extraction From Geometric Models for Process Planning for Parallel Machining", Journal of Manufacturing Systems, Vol 14, No. 5, 1995, pp. 307-318

14. Y. L. Srinivas and D. Dutta "Rational Parametric Representation of Parabolic Cyclide: Formulation and Applications", Computer Aided Geometric Design, Vol 12, 1995, pp. 551-566

15. S. W. Allen and D. Dutta, "Computation and Evaluation of Part Orientations Using Support Structures in Layered Manufacturing", Journal of Design & Manufacturing, Vol 5, 1995, pp. 153-162

16. D. Dutta, N. Kikuchi, P. Papalambros, "Project MAXWELL: A Technical Overview" Ceramic Transactions, Vol 50, " Special Issue on Design for Manufacturability of Ceramic Components" Ghosh, Hiremath, Halloran (Eds.) April 1995

17. V. Kumar and D. Dutta, "Quadric Shell Intersections", Computer Aided Design Vol 27, No 8, August 1995, pp 573-586

18. P. Kulkarni, D. Dutta and R. Saigal, "An Investigation of Techniques for Asymmetry Rectification", ASME Journal of Mechanical Design, Vol 117, No 4, December 1995 pp. 620-626

19. D. Yip-Hoi and D. Dutta, "A Genetic Algorithm Application for Sequencing Machining Operations in Process Planning for Parallel Machining", IIE Transactions, Vol 28, 1996, pp. 55-68

20. R. R. Martin and D. Dutta, "Tools for Asymmetry Rectification in Shape Design", Journal of Systems Engineering, Vol 6, 1996, pp. 98-112

21. A. Barrakat and D. Dutta, "Evaluation and Derivation of Process Plans for Turning", Int'l Journal of Applied Manufacturing Technology, Vol 11, No. 2, Feb 1996

22. Y. L. Srinivas, V. Kumar and D. Dutta, "Free-form surface composition using cyclide patches", Computer Aided Design, Vol 28, No. 4, April 1996, pp. 263-276

23. J. B. Levin and D. Dutta, "PMPS: A Prototype CAPP System for Parallel Machining", ASME Trans. J of Manufacturing Science & Engineering, Vol 118, No 3, August 1996, pp. 406-414

24. P. Kulkarni and D. Dutta, "An Accurate Slicing Procedure for Layered Manufacturing", Computer Aided Design, Vol 28, No. 9, 1996, pp. 683-697

25. A. Marsan and D. Dutta, "Construction of a Surface Model and Layered Manufacturing Data From 3D Homogenization Output", ASME J of Mechanical Design Vol 118, September 1996, pp. 412–418

26. R. Sarma and D. Dutta, "Efficient NC Machining of Cyclide Surfaces", Computers in Industry, 31 (1996) pp. 129-142

27. S. W. Allen and D. Dutta, "Cyclides in Pure Blending I", Computer Aided Geometric Design, Vol 14, No. 1, 1997, pp. 51-75

28. S. W. Allen and D. Dutta, "Cyclides in Pure Blending II", Computer Aided Geometric Design, Vol 14, No. 1, 1997, pp. 77-102

29. V. Kumar and D. Dutta, "An Assessment of Data Formats for Layered Manufacturing", Advances in Engineering Software Vol 28, No 3, April 1997, pp. 151-164

30. R. Sarma and D. Dutta, "The Geometry and Generation of NC Tool Paths", ASME Journal of Mechanical Design, Vol 119, No 2, June 1997, pp. 253-258

31. S. W. Allen and D. Dutta, " Supercyclides and Blending", Computer Aided Geometric Design, 14, 1997, pp. 637-651

32. S. W. Allen and D. Dutta, "Results 0n Non-singular Cyclide Transition Surfaces", Computer Aided Geometric Design 15, (1998), pp. 127-145

33. R. Sarma and D. Dutta, "An Integrated System for NC Machining of Multi-Patch surfaces" Computer Aided Design, Vol 29, No 11, November, 1997

34. R. Sarma and D. Dutta, "Tool Path Generation for NC Grinding", International Journal of Machine Tool and Manufacture" Vol 38, No 3, 1998, pp. 177-195

35. D. Yip-Hoi and D. Dutta, "Computation of Minimum Turnable Volumes for Mill-Turn Parts", Computer Aided Design, Vol 30, No 1, January 1998.

36. P. Alexander, S. W. Allen and D. Dutta, "Part Orientation and Cost Determination for Layer Manufacturing", Computer Aided Design, Vol 30, No 5, April 1998, pp. 343-356

37. S. W. Allen and D. Dutta, "Wall Thickness Control in Layered Manufacturing for Surfaces with Closed Slices", Computational Geometry: Theory & Applications Vol 10, 1998, pp. 223-238

38. V. Kumar and D. Dutta, "An Approach to Modeling and Representation of Heterogeneous Objects" ASME J of Mechanical Design, Vol 120, No 4, Dec 1998, pp. 659-667

39. P. Kulkarni and D. Dutta, "Deposition Strategies and Resulting Part Stiffnesses in Layered Manufacturing ", ASME J of Manufacturing Science & Engg, Feb 1999, pp. 93-103

40. A. Marsan and D. Dutta, "Computational Techniques for Automatically Tiling and Skinning Branched Objects", Computer & Graphics Vol 23, No 1, 1999, pp. 111-126

41. K. Mani, P. Kulkarni and D. Dutta, “Region-Based Adaptive Slicing”, Computer Aided Design, Vol 31, 1999, pp. 317-333

42. V. Kumar, D. Burns, D. Dutta, C.M. Hoffmann, "A Framework for Object Modeling", Computer Aided Design Vol 31, No 9, August 1999, pp. 541-556

43. P. Kulkarni, A, Marsan and D. Dutta, "A Review of Process Planning Techniques in Layered Manufacturing", The Rapid Prototyping Journal, V6, No 1, Feb 2000

44. D. Yip-Hoi and D. Dutta, "Finding Minimum Cost Tool Grouping Schemes on Machining Systems", ASME Trans. J of Manufacturing Science & Engineering Vol 122, No 3, August 2000, pp. 543-548.

45. P. Alexander and D. Dutta, "Layered Manufacturing of Surfaces with Open Contours Using Localized Wall Thickening ", Computer Aided Design, Vol 32, No 3, March 2000, pp. 175-189

46. S. Bhashyam, K. H. Shin and D. Dutta, "An Integrated CAD System for the Design of Heterogeneous Objects", Rapid Prototyping Journal Vol 6, No 2, 2000, pp. 119-135

47. V. Kumar, P. Kulkarni and D. Dutta, “Adaptive Slicing of Heterogeneous Solid Models for Layered Manufacturing" Intl Journal for Material Processing and Manufacturing

48. P. Kulkarni and D. Dutta, "On the Integration of Layered Manufacturing and Material Removal Processes", ASME Trans. J of Manufacturing Science & Engineering, Vol 122, February 2000, pp. 100-108

49. J. Mazumder, D. Dutta, N. Kikuchi and A. Ghosh, “Closed loop direct metal deposition: art to part” Optics & Lasers in Engineering, 34 (2000) pp 397-414

50. D. Dutta and M. Shpitalni, "Heterogeneous Solid Modeling for Layered Manufacturing" Annals of the CIRP, Vol 49, No 1, 2000, pp. 109-112

51. S. Rajagopalan, R Goldman, K H Shin, V. Kumar, M. Cutkosky, D. Dutta "Design, Processing and Freeform Fabrication of Heterogeneous Objects" Journal of Materials & Design, v 22, 2001, pp 185-197

52. X. Qian and D. Dutta, "Feature Based Design for Layered Manufacturing", ASME Journal of Mechanical Design, September 2001, pp. 337-345

53. D. Dutta, F. Prinz, D. Rosen and L Weiss, "Layered Manufacturing: Current Status and Future Trends", ASME Transactions JCISE (invited paper) Vol 1, No 1, Feb 2001

54. P. Singh and D. Dutta, "Multi-Directional Slicing for Layered Manufacturing", ASME Transactions JCISE June 2001, pp. 129-142

55. Ki-Hoon Shin and D. Dutta, “Constructive Representations for Heterogeneous Objects”, ASME Transactions JCISE, Vol 1, No 3, Sept 2001, pp. 205-217

56. M. Ramesh, D. Yip-Hoi and D. Dutta, “Feature based Shape Similarity measurements for Retrieval of Mechanical Parts” ASME Transactions JCISE, Vol 1, No 3, Sept 2001, pp. 245-256

57. G. Tryggvason, M. Thouless, D. Dutta, S. Ceccio and D. Tilbury, "The New Mechanical Engineering Curriculum at the University of Michigan", ASEE Journal of Engineering Education**,** July 2001, pp. 437-444

58. L. Patil, D. Dutta, A. Bhatt, K. Jurrens, K. Lyons, M. Pratt and R. Sriram, “A Proposed STEP-Based approach for representing heterogeneous objects for layered manufacturing” Rapid Prototyping Journal, Vol 8, No 3, 2002, pp. 134-146

59. M. Pratt, A. Bhatt, D. Dutta, K. Lyons, L. Patil, and R. Sriram, “Progress towards an international standard in data transfer in rapid prototyping and layered manufacturing” Computer Aided Design, Vol 34, 2002, pp. 1111 - 1121

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