

Biographical Sketch



Can Saygin, Ph.D.

("Can" is pronounced "John")

Senior Vice President for Research and Dean of the Graduate College
Professor of Manufacturing and Industrial Engineering
The University of Texas Rio Grande Valley (UTRGV)
(956) 665 – 3883 | can.saygin@utrgv.edu utrgv.edu/research
| utrgv.edu/graduate

Dr. Can (John) Saygin is a Senior Vice President for Research and Dean of the Graduate College at the University of Texas Rio Grande Valley (UTRGV). He is also a Professor of Manufacturing and Industrial Engineering at the College of Engineering and Computer Sciences.

Prior to his current administrative position, he served as a Senior Associate Vice President for Research (4/1/2020-7/30/2022), Senior Vice Provost for University Planning (6/1/2019-4/1/2020), Senior Vice Provost for Institutional

Intelligence and Strategic Initiatives (3/1/2018-7/1/2019); Interim Dean of the Graduate School (06/2018-03/2019); Advisor to President on Strategic Initiatives (11/15/2017-3/1/2018); Associate Vice President for Sponsored Project Administration in the Office of Research (2013-2018) at The University of Texas at San Antonio (UTSA).

He received his BS ('89), MS ('92), and PhD ('97) degrees in Mechanical Engineering with emphasis on advanced manufacturing and automation from the Middle East Technical University, Ankara in Turkey. In his academic career, he worked at the University of Toledo (1997-1999), the Missouri University of Science and Technology (formerly University of Missouri-Rolla) (1999-2006), and The University of Texas at San Antonio (2006-2022) before joining UTRGV in August 2022.

He is the recipient of the UTSA College of Engineering 2009 Excellence in Teaching Award, the UTSA President's 2011 Distinguished Achievement Award for Teaching Excellence, and The University of Texas System Regents' Outstanding Teaching Award in 2012.

As a faculty member, he has directed several projects funded by the Air Force Research Lab, National Science Foundation, U.S. Department of State, U.S. Department of Defense, the Boeing Company, the Ford Motor Company, UT Health San Antonio, Texas Higher Education Coordinating Board, and various manufacturing industries. He has also led regional advanced manufacturing efforts under the designation of Alamo Manufacturing Partnership.

Administrative Resume pages 2-12 | Academic Resume pages 13-37

RESUME – *Administrative*

PROFESSIONAL EMPLOYMENT HISTORY

ACADEMIC

Click on links to see publications:

ORCID <https://orcid.org/0000-0002-4728-996X>

Scopus [Scopus Author ID: 56091035900](#)

8/2022 – present: Professor of Manufacturing and Industrial Engineering, College of Engineering and Computer Science, University of Texas Rio Grande Valley (UTRGV).

09/2012 – 7/2022: Professor of Mechanical Engineering, University of Texas at San Antonio (UTSA).

08/2006 – 09/2012: Associate Professor (tenured) of Mechanical Eng. UTSA.

09/2005 – 08/2006: Associate Professor (tenured), University of Missouri – Rolla (UMR*), Engineering Management and Systems Engineering (EMSE) Department, Rolla, Missouri.

* Since 2008, UMR is MS&T “*Missouri University of Science and Technology*” **02/2000 – 09/2005: Assistant Professor (tenure-track)**, UMR, EMSE.

08/1999 – 02/2000: Lecturer, UMR, EMSE.

08/1998 – 08/1999: Visiting Assistant Professor, University of Toledo, Mechanical, Industrial, and Manufacturing Engineering Department (MIME), Toledo, Ohio.

09/1997 – 08/1998: Post-Doctoral Research Associate / Adjunct Faculty, University of Toledo, MIME, Flexible Manufacturing Systems Laboratory (Director: Dr. F. Frank Chen), Toledo, Ohio.

1989-1997: Graduate Research/Teaching Assistant in Production Engineering and Design, Mechanical Eng. Dept., Middle East Technical University, Ankara, Turkey.

ADMINISTRATIVE

08/01/2022 – present: Senior Vice President for Research and Dean of the Graduate College, University of Texas Rio Grande Valley (UTRGV).

04/01/2020 – 07/31/2022: Senior Associate Vice President for Research, University of Texas at San Antonio (UTSA).

07/01/2019 – 03/31/2020: Senior Vice Provost for University Planning, UTSA.

06/14/2018 – 02/25/2019: Interim Dean of Graduate School, Provost Office, UTSA.

01/03/2018 – 06/30/2019: Senior Vice Provost for Institutional Intelligence and Strategic Initiatives, President’s Office, UTSA.

11/13/2017 – 03/01/2018: Advisor to President for Strategic Initiatives, President’s Office, UTSA.

09/15/2016 – 03/01/2018: Associate Vice President for Research, Office of Sponsored Project Administration (OSPA), UTSA.

09/01/2015 – 11/13/2017: Director, Center for Advanced Manufacturing & Lean Systems (CAMLS), UTSA.

05/15/2013 – 09/15/2016: Assistant Vice President for Research, OSPA, UTSA.

03/2012 – 05/2013: Dean’s Fellow for Strategic Initiatives, College of Engineering, UTSA.

11/2008 – 05/2013: Center Director, Interactive Technology Experience Center (iTEC) – K-12 STEM Center,
College of Engineering, UTSA.

09/2007 – 12/2011: Director of Graduate Programs (Graduate Advisor of Record) in Mechanical Eng Dept:
MS in Mech Eng, MS in Advanced Manufacturing and Enterprise Engineering, and PhD in Mech Eng.

10/2006 – 5/2011: Director of the Machine Shop, College of Engineering, UTSA.

06/2004 – 08/2006: Co-Director of the Auto-ID Research Group, University of Missouri-Rolla (UMR).

06/2000 – 08/2006: Director of the Integrated Systems Facility, UMR, Engineering Management and
Systems Engineering (EMSE) Department, Rolla, Missouri.

2005-2006: Undergraduate Advisor for Manufacturing, UMR, EMSE.

ADMINISTRATIVE EXPERIENCE

Senior Associate Vice President for Research (04/2020 – 08/2022)

Due to the beginning of the pandemic in early 2020, President Eighmy asked me to pivot back to the Research Office (where I had started my major administrative role in 2013 as Assistant Vice President for Research) due to re-prioritized list of strategic initiatives. My specific task was to ensure the pandemic has the least negative impact on the research expenditures by revising new policies and implementing effective processes to reach the highest possible expenditure metrics. Prior to the pandemic, there were two key goals defined for UTSA. First, we must become eligible for the State of Texas “National Research University Fund” (NRUF) based on UTSA’s FY20 and FY21 research performance metrics. Second, UTSA must attain the R1 Classification, “very high research activity”, by the Carnegie Classification of Institutions of Higher Education, with this designation being a leading indicator to denote best-in-class research institutions in higher education. With pandemic on the horizon in early 2020, I pivoted back to the Research Office to lead the research initiatives related to ambitious NRUF and R1 targets. In Fall 2021, we met the criteria to be eligible for NRUF. The State Audit will take place in Spring 2022. In Jan 2022, UTSA was officially ranked by Carnegie as an R1 Institution.

As senior associate vice president for research, I have three (3) assistant vice presidents (AVP) and Research IT reporting to me, with a total of 67 staff members. AVP units include Sponsored Projects Administration, Research Support, and Research Finance. My area of responsibility spans from proposal development to contracts and industry agreements to post-award and billing/reporting. I also oversee the Research Office budget and internal operations. In terms of Research IT, I have designed and supervised development of a work-flow platforms that connects all pre- and post-award operations efficiently. All operational metrics, as well as research expenditure metrics, are also captured and displayed in a role-based dashboard for timely information. I have periodic meetings with the President, Provost, Deans, Associate Deans for Research, Faculty Senate, and Centers/Institutes on UTSA’s research metrics, specifically research expenditures.

In this role, my major accomplishments since April 2020 include the following:

- Developed various versions of the Carnegie R1/R2 Projection Model and assisted President Eighmy in strategic decision making.
- Restructured the Research Office budget and realigned with strategic initiatives.
- Developed a 3-fiscal year Research Office budget model.
- Worked with Provost and Graduate School Dean on NRUF criteria in collaboration with UTSA Internal Audit; briefed the president on a regular basis.
- Due to increasing volume of proposals and active projects, restructured the central pre and post award operations into two separate, yet connected, units as Pre-Award Administration and PostAward Administration. I aligned the Post-Award team with the Grants Accountants to streamline billing and financial reporting processes.
- With Institute for Economic Development (IED) being part of UTSA Research, I worked with AVP IED to establish a self-sufficient pre/post award unit to streamline their operations and avoid bottlenecks.

- Developed new dashboards and workflow automation platforms to connect faculty with research administrators from proposal submission to account monitoring to close outs.
- Worked closely with VP Development and Alumni Relations for accurate financial coding of gifts and endowments to make the largest impact on expenditures.
- Developed an annual evaluation process for Centers/Institutes.
- Restructured the Core Facilities in order to be more proactive with services.

Senior Vice Provost for University Planning (07/2019-04/2020)

In June 2019, I was tasked with establishing a new division, namely University Planning, to operate under three functional areas for strategic growth and innovative excellence with several project managers reporting to me on a portfolio of institutional projects across academic affairs, research, business affairs, and president's office:

1. Major Capital Projects (\$10M and over): Support UTSA's academic mission and strategic vision by providing assistance for the long-range planning of the physical environment, as well as leveraging space to its highest utilization.
2. Information Technology and Automation: Provide project management support for integration of existing and new information technology tools and platforms for effectiveness based on user requirements and integrated process and data mapping, as well as automation for a lean and nimble organization.
3. Administrative and Business Process Reengineering: Focus on policy, process, and procedure connection across the institution to evaluate "why we do what we do, and how we do it" in order to understand administrative and business processes, identify areas for improvement, and execute improvement projects.

In this role, my major accomplishments include:

- Hired project coordinators/project managers to set up the teams under the 3 pillars of operation. Hired major capital projects director.
- Worked closely with VPIMT on IT/Automation projects and coordination of VPIMT's business resource managers (BRM): FMI, Banner, DegreeWorks, Salesforce, Maxient.
- Worked closely with VPBA Facilities on identifying internal procedures and roles/responsibilities to seamlessly manage major capital projects.
- Led the University of Texas System's transition out of UTSA operations on major projects and worked with UTSA Facilities and external/consultant stakeholders to eliminate/reduce risk and facilitate business continuity.
- Negotiated with the University of Texas System for \$750K to be provided to UTSA as cost of transition.
- Developed protocols to identify delays related to the new Science and Engineering Building completion date. Together with contractors, developed monthly metrics to review and act on in order for timely completion. As opposed to 2-3 months of delay in the timeline, I was able to catch up with operations to complete according to timeline.
- Negotiated with contractor for \$400K contingency to start the new Guadalupe Student Hall without any delays. Construction started in Sept 2019 as intended.
- Implemented DocuSign and LucidChart as tools for process improvement.

- Led space management and scheduling projects related to various software applications, such as 25Live and FM Interact.
- Worked with University Architect to re-visit space usage and analysis.

Senior Vice Provost for Institutional Intelligence and Strategic Initiatives (11/2017-07/2019) (Initially started as “Advisor to President on Strategic Initiatives” 11/2017-03/2018)

President Eighmy’s vision for my role in his office was to be the System Architect for (a) Strategic Planning and Execution for institutional initiatives; and (b) Annual Evaluation method for Vice Presidents (VP).

I achieved the following institutional goals in this role:

- Operationalized the Strategic Plan
- Directed and managed the process of developing, refining, monitoring and reporting on the implementation of strategic initiatives (includes development of metrics, data analytics and other “data to actionable information” related issues).
- Contributed to the preparation of strategic initiatives plans, reports, briefings, and presentations.
- Provided strategic consultation to senior University administrators as needed.
- Collaborated with VPs to develop key metrics and performance indicators consistent with the University’s initiatives to assess institutional performance.
- Provided a systematic review of University wide processes to initiate business process improvement that cut across all VP units.
- Reviewed, analyzed, and strategized based on University wide data through Institutional Research unit.
- Provided project management leadership by coordinating the planning and implementation of University wide strategic initiatives based on project performance metrics.
- Led/co-led key University wide projects, including strategic enrollment (with Salesforce implementation), data governance, campus master plan, research excellence, and downtown revitalization.
- Facilitated the development of the UTSA Dashboard; provided guidance to the Senior Leadership Team to help promote the alignment of process and priorities.
- Facilitated establishing VP for Strategic Enrollment and VP for Student Success units based on an institutional analysis of all VP units across UTSA.
- Chaired the search committee and the overall process to recruit a VP for Information Management and Technology as a new VP unit.

For more information on active initiatives and the model I developed and executed, please see <https://www.utsa.edu/strategicplan/>. To realize the target Key Performance Indicators (KPIs) that are foundational to three destinations (Student Success; Research; Growth), I developed a project

management model for strategic planning and execution. The three destinations are mapped over the institutional KPIs, which are further broken down into Vice Presidential and department level performance indicators to create a connected organization. After conducting a gap analysis, initiatives have been identified with a launch sequence that is determined based on the criticality of targeted KPIs and resources needed. I have published the overall framework in 2019:

SAYGIN, C., "KPIs Drive Strategic Planning and Execution", *Planning for Higher Education Journal*, Vol.47, No.4, July-September 2019.

<https://go.gale.com/ps/i.do?p=AONE&u=anon~bd05b6f&id=GALE|A603504395&v=2.1&it=r&sid=googleScholar&asid=7160de69>

In this role, I also worked very closely with the Provost:

- Initiated the new Faculty Workload policy
- Developed college-specific metrics, targets, and dashboards.
- Initiated digitization of workflow in Digital Measures for annual faculty performance evaluations
- Supervised planning, implementation, and execution of the SACSCOC institutional accreditation process (Southern Association of Colleges and Schools Commission on Colleges).

Interim Dean of Graduate School (06/2018-03/2019)

In order to maintain continuity of several institutional initiatives related to graduate programs and research, I volunteered to serve as Interim Dean (an additional title while I was still serving as Senior Vice Provost for Institutional Intelligence and Strategic Initiatives) when the Graduate School Dean left UTSA in June 2018. Based on my conversation with the president and the provost, my role and responsibility in the interim period was to make radical changes while the search for permanent dean was underway. I have implemented major changes in the graduate school that led to 40% more enrollment in Spring 2019 than Spring 2018:

- *People and Processes*: I changed the organizational structure by reducing the 35-staff operation to team of 21 staff; I transformed the operational structure of the graduate school into a lean organization by revising business processes and tools:
 - Eliminated unnecessary admission requirements that were most of the time waived, which reduced the bureaucracy, thus lead time.
 - Implemented a rolling admissions process to be more responsive to prospective students' needs.
 - Developed IT queries to provide real-time actionable information to academic colleges in order to make timely decisions.
 - Redesigned the admission workflow from a long sequential flow to a parallel processing flow between the graduate school and academic colleges.
 - Revised DegreeWorks to provide standardized templates for all graduate programs in terms of course work.
 - Eliminated most of the forms and converted them into electronic forms.

- **Funding:** I restructured the budget and financial resources by giving academic colleges much more flexibility and autonomy, as opposed to the former “centralized” approach, which was built on excessive bureaucracy. Over \$3M of funding was restructured to be used for recruitment, graduate research assistantship, and various forms of scholarships over 7 academic college with primary focus on 25 PhD programs.
- **Office Space:** Due to an institutional need, which was to create a student centric environment for Honors College, I facilitated the swapping of spaces between the Graduate School and Honors College between two buildings, in the middle of all process changes, which were all successfully completed.

Associate Vice President for Research – Sponsored Project Administration (05/2013-03/2018)

I started as Assistant VP-Research, in May 2013, in charge of the Office of Sponsored Project Administration (OSPA) in the Office of the Vice President for Research (VPR). In Sept 2016, I was promoted to Associate VP-Research, with expanded role in research support. OSPA team included 37 staff members and 3 primary functions (Research Service Centers, Grants and Contracts Financial Services, and Contracts and Industry Agreements) to support the UTSA’s research mission: Supporting UTSA's research community by facilitating growth, enabling productivity, and pursuing excellence.

My primary focus in the first 6 months was on enforcing a change in culture by introducing operational metrics, key performance indicators, and accountability while redesigning business processes for core functions and facilitating personal development for staff. The second 6-month period was focused on improving productivity and revisiting all the IT platforms and tools that are used as part of research administration across UTSA, which also included Peoplesoft. In 2014, we focused on developing a framework document to guide UTSA in its journey to Tier One Status; the framework is entitled “Accelerate 2025: UTSA’s Framework for Top Tier Research”. We reached the Accelerate 2025 targets in 2021.

Director, Center for Advanced Manufacturing and Lean Systems (CAMLS) (09/2015-11/2017)

In 2006, I was hired to primarily contribute to the College of Engineering’s mission to bring “manufacturing engineering” to UTSA. Together with Dr. F. Frank Chen, we joined UTSA in August 2006. Developing undergraduate and graduate-level courses in manufacturing and establishing a research center that integrates with local industry were the two ultimate goals. In research center part of the mission, I have worked very closely with Dr. F. Frank Chen to establish the Center for Advanced Manufacturing and Lean Systems (CAMLS). CAMLS has grown to have several affiliated faculty members, member companies, and graduate students. Between 9/2015-11/2017, I served as Director of CAMLS. My efforts were focused on applied research, development, industrial training, and economic development, which exposed me to in-depth community engagement.

Director, Interactive Technology Experience Center (iTEC), College of Engineering, 11/2008 – 5/2013

Interactive Technology Experience Center (iTEC – <http://itec.utsa.edu>) was a K-12 STEM center, funded for its first 4 years by the AT&T Foundation. Its goal was to inspire young people by creating an environment where they can understand how engineering, science, and technology shape our lives and the future of the world. iTEC’s mission was to motivate young people to pursue careers in engineering by demonstrating advanced technologies and engaging them in interactive activities that build technical skills and foster critical thinking, self-confidence, communication, and leadership. As iTEC Director, my responsibility was to coordinate the research and development efforts among six faculty members, manage a \$1.5M (for 4 years) budget, establish a state-of-the-art facility for K-12 students and teachers, and demonstrate engineering and technology in an interactive way to increase awareness and interest in engineering. Towards the end of funding (2008-2010), I developed a new business model to make iTEC self-sustaining. Beginning in 2011, iTEC started to generate enough revenue under my leadership to self-sustain itself and grow. Within our new business model, our portfolio included spring-break and summer camps with over 1,000 students annually, running an annual robotics competition with approximately 1,500 people attending, and year-round programs at a dozen schools through our “iTEC on Wheels” programs.

MAJOR SERVICE ACTIVITIES

Departmental Committees (Mechanical Eng):

- ME Department Comprehensive Periodic Evaluation (CPE) Committee, Member, Fall 2017.
- ME Department Faculty Promotion and Tenure Review Advisory Committee (DFRAC), Member, Fall 2017.
- ME Department Faculty Promotion and Tenure Review Advisory Committee (DFRAC), Chair, Acad Yr 2015-2016, Acad Yr 2016-2017.
- ME Faculty Search Committee for Robotics/Manufacturing/Mechatronics, Chair, 2014–2015.
- ME Faculty Merit Review Committee, 2014-2015.
- ME Financial Management System, Advisor to the Chair, 09/01/2012– 09/01/2013.
- ME Faculty Search Committee for Energy, 09/01/2012– 05/2013.
- ME Graduate Programs Committee, Chair, 09/01/2007 – 09/01/2012.
- ME Faculty Search Committee for Manufacturing, Chair, 09/01/2011– 09/01/2012.
- Software and PC Lab Cmmt, 09-12/2006.
- Faculty and Chair Search Cmmt, 10/2006 – 04/2007.
- ABET and Undergraduate Catalogue Cmmt, 10-12/2006.

College of Engineering (UTSA):

- Biomedical Engineering (BME) Department Comprehensive Periodic Evaluation (CPE) Committee, Member, Fall 2017.
- College Faculty Review (Promotion/Tenure) Advisory Committee (CFRAC), member, 09/2017-2020.
- College Faculty Review (Promotion/Tenure) Advisory Committee (CFRAC), member, 09/30/2013-9/30/2014.
- College Faculty Development Leave Committee, member, 09/30/2013-9/30/2015.
- COE Executive Committee (CECC), Member, 03/2012-05/2013.

- Task Force for Graduation and Retention Rates in COE, 09/01/2012-12/15/2012.
- College Faculty Review (Promotion/Tenure) Advisory Committee (CFRAC), member, 09/01/2012/15/2012.
- College of Eng – Graduate Programs Cmmt, 10/2006 – 10/2010.
- College of Eng – College Academic Policy and Curriculum Cmmt (undergrad), 10/2006 – 10/2010.
(As a Member of the CAPCC, I developed a proposal for an undergraduate program in Industrial and Manufacturing Engineering in May 2009 per Dean Agrawal's request. The proposal included a detailed list of courses and comparison with other similar programs in the nation. CAPCC recommended this program to the Dean for consideration).
- College of Eng Strategic Plan (Oct-Dec 2007) – I have led the effort in revising the strategic plan and rewriting it in a new format.

University-level Committees and Academy Memberships:

- Provost Council, 2019 – 2020.
- Deans Council, 2019 – 2020.
- Institutional Audit Committee, Member of the Task Force, 05/2019-07/2022.
- Presidential Initiative on Student Success (with EAB as consultants), Member of the Task Force, 09/2017-2020.
- Presidential Initiative on Strategic Enrollment (with RNL as consultants), Member of the Task Force, 09/2017-2020.
- Presidential Initiative on Finance Budget Model: Incentivized Resource Management (Huron as consultants), Member of the Steering Committee, Member of the Task Force, 09/2017-2020.
- Presidential Initiative on Research Excellence, Member of the Task Force, 01/2018-2020.
- Presidential Initiative on Campus Master Plan, Member of the Task Force, 09/2018-2020
- Strategic Initiative on Data Governance and Integrity, Chair of the Task Force (Add sub-cmmt info), 01/2018-2020.
- Presidential Initiative on Downtown Campus Expansion/Enhancement, Chair of the Curriculum SubCommittee, 01/2018-2020.
- Presidential Initiative on Preventing Sexual Assault and Misconduct, Co-Chair of the Data Governance and Reporting Committee, 01/2019-2020.
- SACSCOC Reaffirmation of Accreditation 2020, Runs through my office (Office of Institutional Intelligence), 2017-2020.
- Construction Project for School of Data Science and National Security Collaboration Center (Downtown campus expansion), Member of the Steering Committee, 09/2018-2020.
- Member of the President's Senior Leadership Team (SLT), 9/2017 – 6/2019.
- Search Committee for Communications Manager in the President's Office, Member, 3/2019/2019.
- Search Committee for Vice President for Information Management and Technology (VPIMT), Chair, 7/1/2018-11/15/2018; Worked with Korn Ferry International (Recruitment Firm); Recruited Kendra Ketchum.
- Search Committee for Senior Vice Provost for Strategic Enrollment, Member, 02/2018-2020.
- Search Committee for Asst Vice Provost for Business Intelligence, Member, 10/2018-1/2019.
- UTSA's Strategic Planning UTSA Blueprint on President's Cabinet, 03/2017 – 8/2017.

- UTSA’s Strategic Planning Task Force for UTSA Blueprint, Eight people advising directly the President on priorities, strategies, and deployment based on collective input from the campus, 05/2015-08/2017.
- UTSA Peoplesoft e-Forms Deployment Committee, 05/2016 – 05/2017.
- UTSA Peoplesoft SciQuest Procurement Platform Deployment Project, Executive Committee, 09/2016 – 09/2017.
- Hiring Committee for Associate Vice Provost for Financials in Provost Office, 09/2016-12/2016.
- UTSA’s Strategic Planning Team for UTSA 2020 Blueprint, Focus Groups: 1) Enhance Business Processes, 2) Increase Expenditures, 02/2015-09/2016.
- UTSA PeopleSoft Task Force, 02/2015-09/2016: formed by President Romo to resolve immediate PeopleSoft issues at UTSA by working closely with the UT System and consultants.
- UTSA President’s Executive Leadership Committee (ELC), 09/2014-02/2017.
- UTSA PeopleSoft Steering Committee, Member, 08/2013-03/2016.
- UTSA Academy for Distinguished Teaching Scholars, Member, 01/2013–08/2022.
- UTSA Online Learning Steering Committee, Member, 01/2013–02/2017.
- College of Business, Department of Management Science and Statistics, Faculty Search Committee for Cloud/Big data/Informatics/Healthcare, Member, 10/1/2015 – 5/1/2016.
- University Libraries Committee, Member, 09/2012 – 08/2014.
- UTSA Graduate Council, Member, 09/2007-08/2018.
- UTSA Graduate Council Committee on Graduate Programs and Courses, Chair, 09/2011-12/2012.
- UTSA Graduate Council Executive Committee, Member, 01/01/2012-12/15/2012.
- UTSA HOP (Handbook of Operating Procedures) Review/Revisions, 05/2007-05/2008.

University of Texas (UT) System Level Committees:

- UT System “Robotic Process Automation (RPA)” Operating Committee, Member, (06/06/2019 – 2020)
- Chancellor’s Initiative on Long Range Financial Planning at Each Institution, Member, (4/2/2019 – 2020)
- UT System Strategic Planning and Peer Selection Task Force, Member, UTSA Representative (10/15/2017 – 3030)
- UTShare PeopleSoft Executive Committee, (02/2015-01/2016) This is the highest level committee at the UT System level making executive decisions in regards to “Shared IT Services” (including PeopleSoft) at University of Texas institutions.
- UT System PeopleSoft Task Force, (11/2014-01/2016) The goal is to find solutions to common PeopleSoft issues. The Task Force includes UT-Arlington (Jeremy Forsberg, AVP-Research) and UTEI Paso (Manuela Dokie, AVP-Research) in addition to UTSA (Can Saygin, AVP-Research). The effort includes consultants from the Huron Consultants Group. Richard St. Onge (Assoc Vice Chancellor, UT System) is coordinating the effort.
- UT System – PeopleSoft Cost Analysis Committee, (11/2015 – 01/2016)
- UT System – PeopleSoft Business Process Alignment Committee, (11/2015 – 01/2016)
- UT System-Level “Systems Engineering” Effort, (05/2014-2015) With a request from the UT System through Michelle Atchison (Associate Vice Chancellor for Federal Relations of the UT System), four UT System universities (The University of Texas at Arlington, The University of Texas at Austin, The

University of Texas at El Paso, and The University of Texas at San Antonio) established the Systems Engineering Advanced Research Group (SEARG) to be affiliated with the national Systems Engineering Research Center University Affiliated Research Center (SERC-UARC) at the Stevens Institute of Technology. While this was the initial basis, the intent and purpose has expanded to foster collaboration related to systems engineering research among UT System University members regardless of the funding source. As the lead at UTSA, I coordinated the efforts to establish this group and make it a formal consortium through an agreement signed by all four UT campuses. SEARG will allow us to partner with each other at UT System level, as well as with other SERC-UARC members in regards to systems engineering funding opportunities at Department of Defense level.

- UT System Effort Certification and ECRT 4.5 Deployment Task Force, (08/2013-08/2015) Eleven UT institutions are moving forward with deployment of ECRT 4.5 for Effort Certification. As the UTSA lead, I have led the UT system-wide effort to map the current business processes and propose future business processes to smooth transition into ECRT 4.5. Currently, the deployment/testing team includes UTSA, UT-Arlington, and UT-El Paso. The project is expected to be completed by the end of January 2015.

Industry Outreach and Collaborative Efforts at San Antonio and state of Texas Levels Alamo

Manufacturing Partnership (AMP): The Alamo Manufacturing Partnership (AMP) is a Manufacturing Community designated by the U.S. Department of Commerce in July 2015 under its Investing in Manufacturing Community Partnership (IMCP) program. I am the federal point of contact for the AMP initiative. AMP co-led by the University of Texas at San Antonio (UTSA) and San Antonio Manufacturers Association (SAMA). It covers an 8-county region in the San AntonioNew Braunfels metro area and is focused on Transportation and Equipment Manufacturing (NAICS 336) sector, which has its strengths in three major product lines: aerospace, motor vehicle and parts, and heavy/industrial vehicles.

UTSA was the lead partner in this proposal effort for San Antonio and I led a team of following consortium partners over a 4-month long (Dec 2013-March 2014) proposal development effort with the following (alphabetical listing): Alamo Colleges; Bexar County Economic Development Department; Center for Advanced Manufacturing & Lean Systems (UTSA); City of San Antonio Economic Development; City of Seguin Economic Development; Institute of Economic Development (UTSA); San Antonio Economic Development Foundation; San Antonio Manufacturers Association; Southwest Research Institute; Texas Manufacturing Assistance Center; Workforce Solutions Alamo. The effort was widely supported by the San Antonio community, demonstrated by the support letters from: Judge Wolff, SA Members of Congress, BioMedSA, CPS Energy, Boerne Kendall County Econ Dev Corp, Free Trade Alliance SA, HOLT CAT, Mayor Castro, ITM, Lockheed Martin, New Braunfels Mfg Assoc, North San Antonio Chamber, Port San Antonio, SA2020, San Antonio Chamber of Commerce, SAWS, Schertz Econ Dev, Toyota Motor Mfg Texas. In this round (2013-2014), we did not receive the designation. In 2014-2015, we went for a second time and this time, we were successful and received the manufacturing community designation in July 2015. Since then, I am heavily involved with the community with emphasis on workforce development, manufacturing, and economic development.

RESUME -- Academic**EDUCATIONAL BACKGROUND**

Ph.D. (1992-97) in Mechanical Engineering with *Production Engineering and Design* emphasis, Mechanical Engineering Department, Middle East Technical University (<http://www.metu.edu.tr>), Ankara, Turkey.

Dissertation Title: “*Development of a Structured Methodology for Flexible Manufacturing Management Systems.*” Advisor: Dr. S. Engin Kilic (Ph.D., UMIST, UK)

M.S. (1989-92) in Mechanical Engineering with *Production Engineering and Design* emphasis, Mechanical Engineering Department, Middle East Technical University, Ankara, Turkey.

Thesis Title: “*A Rule Based Approach for Sequencing Operations for Rotational Components.*” Advisor: Dr. Hakki Eskicioglu (Ph.D., UMIST, UK)

B.S. (1985-89) in Mechanical Engineering, Mechanical Engineering Department, Middle East Technical University, Ankara, Turkey.

Areas of Research & Teaching Expertise: Lean Manufacturing; Lean Systems; Manufacturing Engineering; Advanced Manufacturing Systems and Automation; Auto-ID Technologies; Shop Floor Control; Computer Aided Process Planning & Scheduling; Prognostics and Diagnostics; K-12 STEM Applications; Engineering Design-centric Project Based Learning.

ACADEMIC EMPLOYMENT HISTORY

09/2012 – 08/2022: Professor of Mechanical Engineering, University of Texas at San Antonio (UTSA).

08/2006 – 09/2012: Associate Professor (tenured) of Mechanical Eng., UTSA.

09/2005 – 08/2006: Associate Professor (tenured), University of Missouri – Rolla (UMR*), Engineering Management and Systems Engineering (EMSE) Department, Rolla, Missouri.

* Since 2008, UMR is MS&T “*Missouri University of Science and Technology*” **02/2000 – 09/2005: Assistant Professor (tenure-track)**, UMR, EMSE.

08/1999 – 02/2000: Lecturer, UMR, EMSE.

08/1998 – 08/1999: Visiting Assistant Professor, University of Toledo, Mechanical, Industrial, and Manufacturing Engineering Department (MIME), Toledo, Ohio.

09/1997 – 08/1998: Post-Doctoral Research Associate / Adjunct Faculty, University of Toledo, MIME, Flexible Manufacturing Systems Laboratory (Director: Dr. F. Frank Chen), Toledo, Ohio.

1989-1997: Graduate Research/Teaching Assistant in Production Engineering and Design, Mechanical Eng. Dept., Middle East Technical University, Ankara, Turkey.

AWARDS and HONORS

- 04/2013:** UTSA's nominee for "U.S. Professor of the Year," Carnegie Foundation for the Advancement of Teaching (*did not win*).
- 08/2012:** "The University of Texas System Regents' Outstanding Teaching Award 2012," The University of Texas – San Antonio.
Offered annually in recognition of faculty members at the nine academic and six health University of Texas System institutions who have demonstrated extraordinary classroom performance and innovation in undergraduate instruction, the Regents' Outstanding Teaching Awards are the Board of Regents' highest honor. The Regents' Outstanding Teaching Awards are among the largest in the nation for rewarding outstanding faculty performance. Given the depth and breadth of talent across the UT System, the awards program is likewise one of the nation's most competitive.
- 04/2011:** "UTSA 2011 President's Distinguished Achievement Award for Teaching Excellence", The University of Texas – San Antonio.
- 04/2010:** "2009 College of Engineering - Excellence in Teaching Award", The University of Texas – San Antonio.
- 04/2005:** "Bernard Sarchet Honorary Award" in recognition of outstanding achievements in Engineering Management, University of Missouri – Rolla.
- 06/2004:** "the Wiz award" by the ASEE Manufacturing Engineering Division for developing and implementing a Web-based conference paper review process for the Annual ASEE Conferences.
- 09/2001:** "Faculty Performance Shares Award" for efforts in student recruitment and retention, University of Missouri – Rolla.
- 1997 – 1998:** NSF and US Air Force Research Lab., 12 months visiting researcher position at the Flexible Manufacturing Systems Laboratory (NSF/DMI-9629152, PI: Dr. F. Frank Chen), University of Toledo, Mechanical, Industrial, and Manufacturing Engineering Department, Toledo, Ohio.
- 1995:** North Atlantic Treaty Organization (NATO) Scholarship, Granting Agency: Scientific and Technical Research Council of Turkey (TUBITAK), *Visiting Researcher* at the Institute of Information Technology, University of Miskolc, *Shop Floor Control*, Miskolc, Hungary.
Research Topics: CIM, Scheduling and FMS, MAP/MMS, Applications, PLC Programming.

RESEARCH

Click on links to see publications:

ORCID <https://orcid.org/0000-0002-4728-996X>

Scopus [Scopus Author ID: 56091035900](https://orcid.org/0000-0002-4728-996X)

Journal Publications:

- ZARREH, A., LEE, Y., AL JANAHI, R., WAN, H., and SAYGIN, C., "Cyber-Physical Security Evaluation in Manufacturing Systems with a Bayesian Game Model", *Procedia Manufacturing*, Elsevier, Vol.51, pp.1158-1165, 2020. <https://doi.org/10.1016/j.promfg.2020.10.163>
- SAYGIN, C., "KPIs Drive Strategic Planning and Execution", *Planning for Higher Education Journal*, Vol.47, No.4, July-September 2019.
<https://go.gale.com/ps/i.do?p=AONE&u=anon~bd05b6f&id=GALE|A603504395&v=2.1&it=r&sid=googleScholar&asid=7160de69>

3. ZARREH, A., WAN, H., LEE, Y., SAYGIN, C., and AL JANAHI, R., "Risk Assessment for Cyber Security of Manufacturing Systems: A Game Theory Approach", *Procedia Manufacturing*, Elsevier, Vol.38, pp.605-612, 2019. <https://doi.org/10.1016/j.promfg.2020.01.077>
4. ZARREH, A., WAN, H., LEE, Y., SAYGIN, C., and AL JANAHI, R., "Cyber-Security Concerns for Total Productive Maintenance in Smart Manufacturing Systems", *Procedia Manufacturing*, Elsevier, Vol.38, pp.532-539, 2019. <https://doi.org/10.1016/j.promfg.2020.01.067>
5. ZARREH, A., SAYGIN, C., WAN, H., LEE, Y., and BRACHO, A., "A Game Theory Based Cybersecurity Assessment Model for Advanced Manufacturing Systems", *Procedia Manufacturing*, Elsevier, Vol.26, pp.1255–1264, 2018. <https://doi.org/10.1016/j.promfg.2018.07.162>
6. ZARREH, A., SAYGIN, C., WAN, H., LEE, Y., BRACHO, A., and NIE, L., "Cybersecurity Analysis of Smart Manufacturing Systems Using Game Theory Approach and Quantal Response Equilibrium", *Procedia Manufacturing*, Elsevier, Special Issue based on 28th Int Conf on Flexible Automation and Intelligent Manufacturing (FAIM) 2018, Vol.17, pp.1001-1008, 2018. <https://doi.org/10.1016/j.promfg.2018.10.087>
7. BRACHO, A., SAYGIN, C., WAN, H., LEE, Y., and ZARREH, A., "A Simulation-based Platform for Assessing the Impact of Cyber-threats on Smart Manufacturing Systems", *Procedia Manufacturing*, Elsevier, Vol.26, pp.1116–1127, 2018. <https://doi.org/10.1016/j.promfg.2018.07.148>
8. SCHMIDT, S., SHAY, L., SAYGIN, C., WAN, H., SCHULZ, K., CLARK, R., and SHIREMAN, P.K. "Improving Pilot Project Application and Review Processes: A Novel Application of Lean Six Sigma in Translational Science", *Journal of Clinical and Translational Science*, Vol.2, No.3, pp.135-138, June 2018. <http://dx.doi.org/10.1017/cts.2018.30>
9. SCHMIDT, S., GOROS, M., PARSONS, H.M., SAYGIN, C., WAN, H., SHIREMAN, P.K., and GELFOND, J., "Improving Initiation and Tracking of Research Projects at an Academic Health Center: A Case Study", *Evaluation & the Health Professions*, Vol.40, No.3, pp.372-379, 2017. <https://doi.org/10.1177/0163278716669793>
10. WANG, N., SUN, S., CAI, Z., ZHANG, S., and SAYGIN, C., "A Hidden Semi-Markov Model with Duration-Dependent State Transition Probabilities for Prognostics", *Mathematical Problems in Engineering*, Vol.2014, Article ID 632702, 10 pages, *Special Issue "High-Performance Computing Strategies for Complex Engineering Optimization Problems"*, Guest Editors: Gongnan Xie, Massimo Scalia, Masoud Rokni, Balaji Raghavan, and Manyu Xiao, 2014. <https://doi.org/10.1155/2014/632702>
11. AKOPIAN, D., MELKONYAN, A., GOLGANI, S.C., YUEN, T.T., and SAYGIN, C., "A Template-Based Short Course Concept on Android Application Development", *Journal of Information Technology Education: Innovations in Practice*, Vol.12, pp.13-28, 2013. <https://doi.org/10.28945/1764>
12. WANG, N., SAYGIN, C., and SUN, S., "Impact of Mahalanobis Space Construction on Effectiveness of Mahalanobis-Taguchi System", *International Journal of Industrial and Systems Engineering*, Vol.13, No.2, pp.233-249, 2013. <https://dx.doi.org/10.1504/IJISE.2013.051794>
13. SAYGIN, C. and GULERYUZ, B., "Impact of Radio Frequency Identification on Life Cycle Engineering", Chapter 33 in *Lecture Notes in Electrical Engineering and Intelligent Systems* (Editors: Sio-long Ao and Len Gelman)", Vol.130, pp.403-413, 2013. https://doi.org/10.1007/978-1-4614-2317-1_33
14. YUEN, T.T., SAYGIN, C., SHIPLEY, H., WAN, H., and AKOPIAN, D., "Factors that Influence Students to Major in Engineering", *International Journal of Engineering Education*, Vol.28, No.4, pp. 932–938, 2012.
15. HONGAN, Y., SUN, Q., SAYGIN, C., and SUN, S., "Job Shop Scheduling Based on Earliness and Tardiness Penalties with Due Dates and Deadlines: An Enhanced Genetic Algorithm", *International Journal of Advanced Manufacturing Technology*, Vol.61, No.5-8, pp.657-666, 2012. <https://doi.org/10.1007/s00170-011-3746-z>

16. HALL, D. and SAYGIN, C., "Impact of Information Sharing on Supply Chain Performance", *International Journal of Adv Mfg Technology*, Vol.58, No.1, pp.397-409, 2012. <https://doi.org/10.1007/s00170-011-3389-0>
17. SAYGIN, C. and TAMMA, S., "RFID-enabled Shared Resource Management for Aerospace Maintenance Operations: A Dynamic Resource Allocation Model", *International Journal of Computer Integrated Manufacturing*, Vol.25, No.1, pp.100-111, 2012. <https://doi.org/10.1080/0951192X.2010.551784>
18. HUANG, G.Q., SAYGIN, C., and DAI, Q.Y., "Special Issue on RFID-Enabled Manufacturing: Insights and Lessons from Industry Cases", Editorial, *International Journal of Computer Integrated Manufacturing*, Vol.25, 2012. <https://doi.org/10.1080/0951192X.2011.625232>
19. SOYLEMEZOGLU, A., SARANGAPANI, J., and SAYGIN, C., "Mahalanobis Taguchi System (MTS) as a Multi Sensor Based Decision Making Prognostics Tool for Centrifugal Pump Failures", *IEEE Transactions on Reliability*, Vol.60, No.4, pp.864-878, December 2011. <https://doi.org/10.1109/tr.2011.2170255>
20. SAYGIN, C. and SARANGAPANI, J., "Radio Frequency Identification (RFID) Enabling Lean Manufacturing", *International Journal of Manufacturing Research*, Vol.6, No.4, 2011. <https://doi.org/10.1504/ijmr.2011.043234>
21. SOYLEMEZOGLU, A., SARANGAPANI, J., and SAYGIN, C., "Mahalanobis Taguchi System (MTS) as a Prognostics Tool for Rolling Element Bearing Failures", *ASME Transactions – Journal of Manufacturing Science and Engineering*, Vol.132, No.5, DOI:10.1115/1.4002545, pp.051014-1/12, October 2010. <https://doi.org/10.1115/1.4002545>
22. SAYGIN, C. and NATARAJAN, B., "RFID-based Baggage Handling System Design", *Sensor Review Journal*, Vol.30, No.4, pp. 324-335, 2010. <https://doi.org/10.1108/02602281011072215>
23. SAYGIN, C., MOHAN, D., SARANGAPANI, J., "Real-Time Detection of Grip Length during Fastening of Bolted Joints: A Mahalanobis-Taguchi System (MTS) based Approach", *Journal of Intelligent Manufacturing*, Vol.21, No.4, pp.377-392, 2010. <https://doi.org/10.1007/s10845-008-0186-1>
24. ANGUSWAMY, R., SAYGIN, C., and SARANGAPANI, J., "In-Process Detection of Fastener Grip Length Using Embedded Mobile Wireless Sensor Network-based Pull-type Tools", *International Journal of Manufacturing Research: Special Issue on Advanced Manufacturing Technologies*, Vol.4, No.2, pp.154-170, 2009. <https://doi.org/10.1504/ijmr.2009.024535>
25. BUYURGAN, N. and SAYGIN, C., "Application of Analytical Hierarchy Process for Real-Time Scheduling and Part Routing in Advanced Manufacturing Systems", *Journal of Manufacturing Systems*, Vol.27, No.3, pp.101-110, 2008. <https://doi.org/10.1016/j.jmsy.2008.08.002>
26. WAN, H., CHEN, F.F., and SAYGIN, C., "Simulation and Training for Lean Implementation Using Webbased Technology", *International Journal of Services, Operations, and Informatics*, Vol.3, No.1, pp.1-14, 2008. <https://doi.org/10.1504/ijsoi.2008.017701>
27. GRASMAN, S.E., BELARBI, A., SAYGIN, C., and BAGHLI, A., "An Educational Partnership to Establish Engineering/Construction Management Graduate Programs in Algeria", *Journal of Professional Issues in Engineering Education and Practice (ASCE)*, Vol.134, No.4, pp.353-358, 2008. [https://doi.org/10.1061/\(asce\)1052-3928\(2008\)134:4\(353](https://doi.org/10.1061/(asce)1052-3928(2008)134:4(353)
28. MOHAN, D., SAYGIN, C., SARANGAPANI, J., "Real-time Detection of Grip Length Deviation during Pull-type Fastening: A Mahalanobis-Taguchi System (MTS) based Approach", *International Journal of Advanced Manufacturing Technology*, Vol.39, No.9-10, pp.995-1008, 2008. <https://doi.org/10.1007/s00170-007-1280-9>

29. MEYYAPPAN, L., SOYLEMEZOGLU, A., **SAYGIN**, C., and DAGLI, C.H., "A Wasp-Based Control Model for Real-Time Routing of Parts in a Flexible Manufacturing System", *International Journal of Computer Integrated Manufacturing*, Vol.21, No.3, pp.259-268, April 2008.
<https://doi.org/10.1080/09511920701268874>
30. MEYYAPPAN, L., **SAYGIN**, C., and DAGLI, C., "Real-Time Routing in Flexible Flow Shops: A SelfAdaptive Swarm-Based Control Model", *International Journal of Production Research*, Vol.45, No.21, pp.5157-5172, 2007. <https://doi.org/10.1080/00207540600871277>
31. MILLS-HARRIS, M.D., SOYLEMEZOGLU, A., and **SAYGIN**, C., "Adaptive Inventory Management Using RFID Data", *International Journal of Advanced Manufacturing Technology*, Vol.32, pp.1045-1051, 2007. <https://doi.org/10.1007/s00170-006-0616-1>
32. BUYURGAN, N., MEYYAPPAN, L., **SAYGIN**, C., DAGLI, C.H., "Real-time Routing Selection for Automated Guided Vehicles in Flexible Manufacturing Systems", *Journal of Manufacturing Technology Management*, Vol.18, No.2, pp.169-181, 2007. <https://doi.org/10.1108/17410380710722881>
33. CHA, K., ZAWODNIOK, M., RAMACHANDRAN, A., SARANGAPANI, J., and **SAYGIN**, C., "Interference Mitigation and Read-Rate Improvement in RFID-based Network-Centric Environments", *Journal of Sensor Review*, Vol.26, No.4, pp.318-325, 2006. <https://doi.org/10.1108/02602280610692033>
34. SOYLEMEZOGLU, A., ZAWODNIOK, M.J., CHA, K., HALL, D., BIRT, J., **SAYGIN**, C., and SARANGAPANI, J., "A Testbed Architecture for Auto-ID Technologies", *Assembly Automation*, Vol.26, No.2, pp.127136, 2006. <https://doi.org/10.1108/01445150610658112>
35. SAMPATH, K., **SAYGIN**, C., GRASMAN, S.E., and LEU, M.C., "Impact of Reputation Information Sharing in an Auction-based Job Allocation Model for Small and Medium-sized Enterprises", *International Journal of Production Research*, Vol.44, No.9, pp.1777-1798, 2006.
<https://doi.org/10.1080/00207540500410051>
36. AKCORA, E., GRASMAN, S.E., and **SAYGIN**, C., "A Job Shop Scheduling Heuristic for Varying Reward Structures", *Mathematical and Computer Modelling*, Vol.42, pp.1163-1174, 2005.
<https://doi.org/10.1016/j.mcm.2005.09.021>
37. BAJAJ, G., **SAYGIN**, C., GRASMAN, S.E., and LEU, M.C., "Performance Evaluation of an Auction-Based Job Allocation Model for Small and Medium-sized Enterprises", *International Journal of Networking and Virtual Organizations*, Special Issue on Organising Collaborative Supply Chains and Networks (Editor: Agostino Villa), Vol.2, No.2, pp.202-219, 2006.
<https://doi.org/10.1504/ijnvo.2006.009535>
38. BUYURGAN, N. and **SAYGIN**, C., "An Integrated Control Framework for Flexible Manufacturing Systems", *International Journal of Advanced Manufacturing Technology*, Vol. 27, pp.1248-1259, 2006. <https://doi.org/10.1007/s00170-004-2311-4>
39. GRASMAN, S.E., **SAYGIN**, C. and NAJM, M., "Computer-Simulated Enterprise Management Educational Environment", *Decision Sciences Journal of Innovative Education*, Vol.3, No.1, Spring 2005.
40. SARI, Z., **SAYGIN**, C., and GHOUALI, N., "Travel-Time Models for Flow-Rack Automated Storage and Retrieval Systems", *International Journal of Advanced Manufacturing Technology*, Vol.25, No.9-10, pp.979-987, 2005. <https://doi.org/10.1007/s00170-003-1932-3>
41. **SAYGIN**, C. and KILIC, S.E., "Dissimilarity Maximization Method for Real-time Routing of Parts in Random Flexible Manufacturing Systems", *International Journal of Flexible Manufacturing Systems*, Vol.16, No.2, pp.169-182, April 2004. <https://doi.org/10.1023/b:flex.0000044839.27404.92>

42. SIWAMOVSATHAM, T. and SAYGIN, C., "Auction-based Distributed Scheduling Scheme for Flexible Manufacturing Systems", *International Journal of Production Research*, Vol.42, No.3, pp.547-572, 2004. <https://doi.org/10.1080/00207540310001613683>
43. SAYGIN, C. and KAHRAMAN, F., "A Web-Based Programmable Logic Controller Laboratory for Manufacturing Engineering Education", *International Journal of Advanced Manufacturing Technology*, Vol.24, No.7, pp.590-598, 2004. <https://doi.org/10.1007/s00170-003-1787-7>
44. BUYURGAN, N., SAYGIN, C., and KILIC, S.E., "Tool Allocation in Flexible Manufacturing Systems with Tool Alternatives", *Robotics and Computer Integrated Manufacturing*, Vol.20, No.4, pp.341-349, 2004. <https://doi.org/10.1016/j.rcim.2004.01.001>
45. SAYGIN, C., CHEN, F.F., and SINGH, J., "Real-time Manipulation of Alternate Routings in Flexible Manufacturing Systems: A Simulation Study", *International Journal of Advanced Manufacturing Technology*, Vol.18, No.10, pp.755-763, 2001. <https://doi.org/10.1007/s001700170019>
46. CHEN, F.F. and SAYGIN, C., "A Laboratory Infrastructure for Flexible Automation and Integrated Manufacturing Research", *International Journal of Manufacturing Technology and Management*, Vol.1, No.2, pp.173-184, 2000. <https://doi.org/10.1504/ijmtm.2000.001337>
47. SAYGIN, C. and KILIC, S.E., "Integrating Flexible Process Plans with Scheduling in Flexible Manufacturing Systems", *International Journal of Advanced Manufacturing Technology*, Vol.15, No.4, pp.268-280, 1999. <https://doi.org/10.1007/s001700050066>

Book Chapters:

1. ZAWODNIOK, M., SARANGAPANI, J., SAYGIN, C., SOYLEMEZOGLU, A., "RFID-Based Asset Management of Time and Temperature Sensitive Materials", from *Engineering Asset Management 2011* conference, Chapter 48 in *Lecture Notes in Mechanical Engineering*, Editors: Lee J., Ni J., Sarangapani J., Mathew J., Springer, London, 2014. https://doi.org/10.1007/978-1-4471-4993-4_48
2. SARANGAPANI, J., SAYGIN, C., and ZAWODNIOK, M., "Condition-based Monitoring of a Centrifugal Pump Using Mahalanobis-Taguchi System", from *Engineering Asset Management 2011* conference, Chapter 53 in *Lecture Notes in Mechanical Engineering*, Editors: Lee J., Ni J., Sarangapani J., Mathew J., Springer, London, 2014. https://doi.org/10.1007/978-1-4471-4993-4_53
3. GRASMAN, S.E., CALLAWAY, V., SAYGIN, C., JANG, W., and ROZENFELD, H., "Development and Implementation of an Enterprise Learning Architecture for Collaborative Learning" in *Technology Enhanced Systems and Tools for Collaborative Learning Scaffolding*, Editors: Thanasis Daradoumis, Santi Caballé, Angel Juan and Fatos Xhafa, Springer, Vol.350, pp.47-67, 2011. https://doi.org/10.1007/978-3-642-19814-4_3
4. SAYGIN, C., SARANGAPANI, J., and GRASMAN, S.E., "A Systems Approach to Viable RFID Implementation in the Supply Chain" in *Trends in Supply Chain Design and Management: Technologies and Methodologies*, Editors: Hosang Jung, F. Frank Chen, and Bongju Jeong, Springer, pp.3-27, 2007, ISBN 978-1-84628-606-3.

SCHOLARLY PRESENTATIONS

Conference Papers (full paper refereed):

1. ZARREH, A., WAN, H., LEE, Y., SAYGIN, C., and AL JANAHI, R., "Cyber-Security Concerns for Total Productive Maintenance in Smart Manufacturing Systems", *29th International Conference on Flexible Automation and Intelligent Manufacturing (FAIM) 2019*.

2. ZARREH, A., WAN, H., LEE, Y., SAYGIN, C., and AL JANAHI, R., "Risk Assessment for Cyber Security of Manufacturing Systems: A Game Theory Approach", **29th International Conference on Flexible Automation and Intelligent Manufacturing (FAIM) 2019**.
3. BRACHO AVILA, A., SAYGIN, C., WAN, H., LEE, Y., ZARREH, A., "A Simulation-Based Platform for Assessing the Impact of Cyber-Threats on Smart Manufacturing Systems", **North American Manufacturing Research Conference (NAMRC)**, June 18-22, College Station, Texas, 2018.
4. ZARREH, A., SAYGIN, C., WAN, H., LEE, Y., BRACHO AVILA, A., "A Game Theory Based Cybersecurity Assessment Model for Advanced Manufacturing Systems", **North American Manufacturing Research Conference (NAMRC)**, June 18-22, College Station, Texas, 2018.
5. ZARREH, A., SAYGIN, C., WAN, H., LEE, Y., BRACHO AVILA, A., "Cybersecurity in Cyber-Physical Manufacturing Systems: Survey of Literature", **28th International Conference on Flexible Automation and Intelligent Manufacturing (FAIM)**, June 10-14, Columbus, Ohio, 2018.
6. ZARREH, A., SAYGIN, C., WAN, H., LEE, Y., BRACHO AVILA, A., "Cybersecurity Analysis of Smart Manufacturing System Using Game Theory Approach and Quantal Response Equilibrium", **28th International Conference on Flexible Automation and Intelligent Manufacturing (FAIM)**, June 10-14, Columbus, Ohio, 2018.
7. BONNER, E., CHAVEZ, O., CARMONA, G., ZUFLACHT, M. A., SAYGIN, C., & TRAVIS, B., "The South Texas STEM Center: A Collaborative Approach to Professional Development", **20th Annual Meeting of the Association of Mathematics Teacher Educators (AMTE)**, Irvine, California, January 28-30, 2016.
8. BONNER, E. P., CARMONA, G., CHAVEZ, O., ZUFLACHT, M., SAYGIN, C., & TRAVIS, B., "Empowering Teacher Leaders through Innovative Professional Development: The South Texas STEM Center", **2016 Annual National Council of Supervisors of Mathematics (NCSM) Conference**, Oakland, California, April 11-13, 2016.
9. CHAVEZ, O., BONNER, E. P., CARMONA, G., ZUFLACHT, M., TRAVIS, B. & SAYGIN, C., "South Texas STEM Center: An Innovative Experience in Teacher Development", **2016 American Education Research Association (AERA) Annual Meeting**, Washington, DC., April 8, 2016.
10. BONNER, E., SAYGIN, C., ZUFLACHT, M. A., CHAVEZ, O., CARMONA, G., and TRAVIS, B., "Developing STEM Educators through Project-Based Instruction", **Proceedings of the Annual Meeting of the School Science and Mathematics Association**, October 29-31, 2015, Oklahoma City, OK.
11. SAYGIN, C., BONNER, E., TRAVIS, B., CHAVEZ, O., and CARMONA, G., "Project Based Learning: An Engineering Design Centered Model", **World Scientific and Engineering Academy and Society (WSEAS), 11th International Conference on Engineering Education (EDUCATION'15)**, pp.41-46 (ISBN 978-1-61804-312-2) June 27-29, 2015, Salerno, Italy.
12. WAN, H., SAYGIN, C., ALAEDDINI, A., and CASTILLO, K., "Lean Perspectives of Maintenance in HighSpeed Printing Industry", **Industrial & Systems Engineering Research Conference (ISERC), Institute of Industrial Engineers (IIE) Annual Conference and Expo**, May 30-June 2, 2015, Nashville, Tennessee.
13. SAYGIN, C., YUEN, T., SHIPLEY, H., WAN, H., and AKOPIAN, D., "Design, Development, and Implementation of Educational Robotics Activities for K-12 Students", Paper#: AC 2012-3021, **2012 ASEE Annual Conference & Exposition**, June 10-13, 2012, San Antonio, Texas.
14. CHANDANA, B., ESFAHANIAN, M., AKOPIAN, D., and SAYGIN, C., "Template-Based Image Processing Toolkit for Android Phones", Paper#: AC2012-3546, **2012 ASEE Annual Conference & Exposition**, June 10-13, 2012, San Antonio, Texas.
15. JAGANNATHAN, S., SAYGIN, C., and ZAWODNIOK, M., "Condition-based Monitoring of a Centrifugal Pump Using Mahalanobis-Taguchi System", **The Sixth World Congress on Engineering Asset Management WCEAM 2011**, October 2-5, 2011, Cincinnati, Ohio.

16. ZAWODNIOK, M., JAGANNATHAN, S., SAYGIN, C., and SOYLEMEZOGLU, A., "RFID-based Asset Management of Time and Temperature Sensitive Materials", *The Sixth World Congress on Engineering Asset Management WCEAM 2011*, October 2-5, 2011, Cincinnati, Ohio.
17. SAYGIN, C. and GULERYUZ, B., "Impact of Radio Frequency Identification (RFID) on Life cycle Engineering", *World Congress on Engineering (WCE 2011): International Conference of Manufacturing Engineering and Engineering Management*, July 6-8, 2011, London, UK, pp.855-860.
18. SAYGIN, C. and NATARAJAN, B., "RFID Deployment at an Airport: A Simulation Study", *MATADOR 2010 (Manufacturing, Automation and Systems, Technology Applications, Design, and Organization and Management Research)*, Proceedings of the 36th International MATADOR Conference, Editors S. Hinduja and L. Li, pp. 139-142, July 14-16, 2010, Manchester, UK. https://doi.org/10.1007/978-1-84996-432-6_32
19. SAYGIN, C. and SARANGAPANI, J., "Radio Frequency Identification (RFID) in Manufacturing Enterprises: From Data to Information", *FAIM 2009 (Flexible Automation and Intelligent Manufacturing) 19th International Conference*, July 6-8, 2009, University of Teesside, Middlesbrough, UK.
20. ANGUSWAMY, R., BIRT, J., SAYGIN, C., and SARANGAPANI, J. "In-Process Detection of Fastener Grip Length Using Embedded Mobile Wireless Sensor Networks", *2007 ASME International Mechanical Engineering Congress and Exposition (IMECE)*, Seattle, Washington, November 10-16, 2007. <https://doi.org/10.1115/imece2007-41648>
21. MOHAN, D., BIRT, J., SAYGIN, C., and JAGANNATHAN, S., "Real-time Process Quality Monitoring Using Wireless Sensor-embedded Rotary Tools for Fastening Operations", *2007 ASME International Mechanical Engineering Congress and Exposition (IMECE)*, Seattle, Washington, November 10-16, 2007. <https://doi.org/10.1115/imece2007-41647>
22. WAN, H.-D., CHEN, F.F., and SAYGIN, C., "Web-based Lean Simulation and Training", *17th International Conference on Flexible Automation and Intelligent Manufacturing (2007 FAIM)*, Philadelphia, Pennsylvania, pp. 1020-1027, June 18-20, 2007.
23. SARI, B., SEN, T., KILIC, S.E., and SAYGIN, C., "An Architecture for Formation of Dynamic Virtual Enterprises", *12th International Conference on Machine Design and Production (UMTIK-2006)*, May 5-8, 2006, Izmir, Turkey.
24. SAYGIN, C. and SARANGAPANI, J. "RFID on the Manufacturing Shop Floor: Applications and Challenges", *Invited Session on RFID*, Annual Industrial Engineering Research Conference (IERC), May 20-24, 2006, Orlando, Florida.
25. MILLS-HARRIS, M.D., SOYLEMEZOGLU, A., and SAYGIN, C., "RFID Data-based Inventory Management of Time-Sensitive Materials", *The 31st Annual Conference of the IEEE Industrial Electronics Society (IECON'05)*, Special Session: Integrated Manufacturing and Service Systems, Raleigh, North Carolina, Nov 6-10, 2005. <https://doi.org/10.1109/iecon.2005.1569262>
26. MEYYAPPAN, L., BUYURGAN, N., DAGLI, C.H., and SAYGIN, C., "Intelligent Path Planning and Scheduling for Automated Guided Vehicles using Evolutionary Algorithms", *ANNIE 2004*, November 7-10, St.Louis, Missouri.
27. SAYGIN, C., "A Manufacturing Laboratory for Integrated Hands-on Applications", *2004 ASEE Annual Conference*, Paper#1669/Session#3263, June 20-23, 2004, Salt Lake City, Utah.

SAYGIN

28. , C., GRASMAN, S.E., NAJM, M., JANG, W., and ROZENFELD, H., "E-Warehouse: A Framework for E-Business Learning", *Proceedings of the 24th ASEM National Conference*, St.Louis, pp.617-620, Oct 15-18, 2003.
29. ROZENFELD, H., NAJM, M., **SAYGIN**, C., GRASMAN, S.E., "Product Life Cycle Management in the EWarehouse Learning Framework", *Proceedings of the 24th ASEM National Conference*, St.Louis, pp.620-628, Oct 15-18, 2003.
30. MILLER, J., ELLER, V.M., **SAYGIN**, C., and GRASMAN, S.E., "A Learning Pillar Management Environment for E-Warehouse", *Proceedings of the 24th ASEM National Conference*, St.Louis, pp.634-637, Oct 15-18, 2003.
31. BELARBI, A., GRASMAN, S., and **SAYGIN**, C., "An Educational Partnership Between the US and Algeria", *38th ASEE Midwest Section Meeting*, September 10-12, 2003, Rolla, Missouri.
32. **SAYGIN**, C., "A Generic Architecture for Web-Based Manufacturing", *2003 ASEE Annual Conference*, Paper#1231/Session#2463, June 22-25, 2003, Nashville, Tennessee.
33. GRASMAN, S., **SAYGIN**, C., DOW, B.L., KLUCZNY, R.M., and NAJM, M. "A Virtual Environment for Enterprise Engineering Education", *2003 ASEE Annual Conference*, Paper#1490/Session#2242, June 22-25, 2003, Nashville, Tennessee.
34. **SAYGIN**, C. and BAJAJ, G., "Integrating Shop Floor with the Enterprise: An Information Flow Perspective", *ASEM-2002*, Proceedings of the 23rd ASEM National Conference: The Role of Engineering Management in a Global Economy, pp. 612-617, October 2-5, Tampa, Florida.
35. DOW, D., GRASMAN, S. and **SAYGIN**, C., "Computer Simulated Enterprise Management", *ASEM2002*, Proceedings of the 23rd ASEM National Conference: The Role of Engineering Management in a Global Economy, pp. 250-254, October 2-5, Tampa, Florida.
36. **SAYGIN**, C., SIWAMOGSATHAM, T., and BUYURGAN, N., "A Laboratory Environment for Manufacturing Systems Education: Integrated Systems Facility", *36th American Society for Engineering Education (ASEE) Midwest Section Conference*, March 7-9, 2001.
37. **SAYGIN**, C., BUYURGAN, N., and SIWAMOGSATHAM, T., "Creating an Interactive Learning Environment for Distance Education in Integrated Manufacturing Systems: A Web-based Approach", *36th American Society for Engineering Education (ASEE) Midwest Section Conference*, March 7-9, 2001.
38. **SAYGIN**, C. and DAGLI, C.H., "Development of an Intelligent Robotic Controller: An Industrial Robot Playing Tic-Tac-Toe Against a Human Opponent", *16th International Conference on Production Research*, paper # 0446, July 30 – Aug 3, 2001, Prague, Czech Republic.
39. **SAYGIN**, C., "On Flexibility Aspects of Computer Aided Process Planning", *2000 Japan-USA Symposium on Flexible Automation*, paper # 13199, University of Michigan, Ann Arbor, July 23-26, 2000.
40. **SAYGIN**, C., "Dissimilarity Maximization Method: An Algorithm for Alternate Routing Selection in Flexible Manufacturing Systems", *Proceedings of the Group Technology/Cellular Manufacturing World Symposium – Year 2000*, San Juan, Puerto Rico, March 27-29, 2000, pp.221-226.

41. CHEN, F.F., SAYGIN, C. and DISMUKES, J.P., "Concurrent Product, Processes and Manufacturing System Design: The Imperative Strategy for the 21st Century Manufacturing", **1998 Japan-USA Symposium on Flexible Automation (JUSFA)**, Japan, July 13-15, 1998.
42. KILIC, S.E. and SAYGIN, C., "Shop Floor Manipulation of Alternative Operation Plans", **Proceedings of the REMAPHOS (EUREKA - FACTORY Project, EU-1584) Second Working Group Meeting**, Russia, 1819 March 1998.
43. KILIC, S.E. and SAYGIN, C., "On Changing Manufacturing Paradigms: From Strict Hierarchies to Holonic Organisations", **Proceedings of the REMAPHOS (EUREKA - FACTORY Project, EU-1584) First Working Group Meeting**, pp.1-14, Ankara, Turkey, 9-10 September 1996.
44. SAYGIN, C., UNVER, O., ANLAGAN, O. and KILIC, S.E., "A Reference Architecture For a Generic Manufacturing Cell Controller", **Proceedings of The 7th International Machine Design and Production Conference**, Ankara, Turkey, pp.133-143, 11-13 September 1996.
45. SAYGIN, C. and KILIC, S.E., "Restructuring of Hierarchical Manufacturing Systems Through Holonic Manufacturing Paradigm", **Proceedings of The 7th International Machine Design and Production Conference**, Ankara, Turkey, pp.145-154, 11-13 September 1996.
46. UNVER, O., SAYGIN, C., ANLAGAN, O. and KILIC, S.E., "Design of an FMS Controller: An ObjectOriented Approach", **Proceedings of the 2nd International Conference on Application of Fuzzy Systems and Soft Computing ICAFS'96**, Siegen, Germany, pp.348-357, 25-27 June 1996.
47. SAYGIN, C., UNVER, O., KILIC, S.E. and ANLAGAN, O., "A Pilot CIM Implementation for Educational Purposes: METUCIM", **Proceedings of the 2nd International Conference on Application of Fuzzy Systems and Soft Computing ICAFS'96**, Siegen, Germany, pp.155-164, 25-27 June 1996.
48. SAYGIN, C., KILIC, S.E., TOTH, T. and ERDELYI, F., "On Scheduling Approaches of Flexible Manufacturing Systems: Gap Between Theory and Practice", **Preprints of The 3rd IFAC/IFIP/IFORS Workshop - Intelligent Manufacturing Systems'95 (IMS'95)**, Bucharest, Romania, Vol. 1, pp.79-84, 24-26 October 1995.
49. SAYGIN, C. and ESKICIOGLU, H., "Problem Solving Strategy and Representation of Knowledge in Process Planning", **Proceedings of The ELITE - EUFIT'95 Conference**, Aachen, Germany, Vol.3, pp.1764-1768, August 1995.
50. SHAFIQ, M.S., SAYGIN, C. and ESKICIOGLU, H., "Donel Parcalar icin Nesneye Yonelik bir Urun Modelleme Sistemi", **Proceedings of The 6th International Machine Design and Production Conference**, Ankara, Turkey, pp.13-19, September 1994 (in Turkish).
51. SHAFIQ, M.S., SAYGIN, C. and ESKICIOGLU, H., "A Frame-Based Object Oriented Product Modelling System for Rotational Components", **Preprints of The 2nd IFAC/IFIP/IFORS Workshop - Intelligent Manufacturing Systems'94 (IMS'94)**, Vienna, Austria, pp.133-136, June 1994.
52. SAYGIN, C. and ESKICIOGLU, H., "Integrated Rule-Based Process Planning System for Rotational Components", **Proceedings of the International Conference on Engineering Softwares ICES'93**, Staffordshire University, UK, pp.2-9, September 1993.

Other Conference Papers (abstracts reviewed only):

SAYGIN

1. Schmidt, S., Shay, L.A., Saygin, C., Wan, H., Shireman, P.K., Clark, R.A. (2018) "Improving pilot project application and review processes: A novel application of Lean Six Sigma in translational science," Association for Clinical and Translational Science (ACTS) Annual Conference, April 19-21, Washington, DC., 2018.
2. SCHMIDT, S., SHAY, L.A., **SAYGIN**, C., WAN, H.-D., SHIREMAN, P.K., BALLI, V.S., and CLARK, R.A., "Improving Pilot Project Application and Review Process: A Novel Application of Lean Six Sigma in Translational Science", **Annual Meeting of the American Evaluation Association: Evaluation 2017**, Washington, DC, November 6-11, 2017.
3. BONNER, E.P., CHAVEZ, O., CARMONA, G., ZUFLACHT, M., **SAYGIN**, C., and Travis, B., "The South Texas STEM Center for Professional Learning: An Innovative Approach to Teacher Development", **National Science and Mathematics Teacher Imperative (SMTI) Meeting**, June 3-4, 2015, New Orleans, LA.
4. **SAYGIN**, C., "Digital Factory: An Effective Learning Platform for Manufacturing Engineering Education", **Manufacturing Education Transformation Summit**, Austin, Texas, Jun 18-19, 2009.
5. SOYLEMEZOGLU, A., ZAWODNIOK, M.J., SARANGAPANI, J., and **SAYGIN**, C., "Missouri S&T Mote and RFID-based Component Remaining Life Assessment", (*A Demo paper*) **2008 International Conference on Information Processing in Sensor Networks (IPSN)**, St. Louis, Missouri, April 22-24, 2008.
6. , C. and SARANGAPANI, J., "RFID in Manufacturing: the Good, the Bad, and the Ugly", **18th Production and Operations Management Society (POMS) 2007 Annual Conference**, Dallas, Texas, May 4-7, 2007.
7. SOYLEMEZOGLU, A., BIRT, J.T., **SAYGIN**, C., SARANGAPANI, J., TRIMBLE, D., and ROUSE, C., "Auto-ID Technologies and Solutions for Aerospace Manufacturing", **AEROMAT'05**, Orlando, Florida, June 6-9, 2005.
8. MILLS-HARRIS, M.D., SOYLEMEZOGLU, A., **SAYGIN**, C., ETZKORN, K.M., and FREEMAN, P., "Adaptive Inventory Management for Cost Reduction in Network-Centric Manufacturing Environments", **AEROMAT'05**, Orlando, Florida, June 6-9, 2005.
9. CHA, K., SOYLEMEZOGLU, A., BIRT, J., ZAWODNIOK, M.J., FONDA, J., TAQIEDDIN, E.S., MILLS-HARRIS, M.D., **SAYGIN**, C., SARANGAPANI, J., TRIMBLE, D., and SIEGEL, T., "A Testbed for Validation and Benchmarking of Auto-ID Solutions", **AEROMAT'05**, Orlando, Florida, June 6-9, 2005.
10. GRASMAN, S.E., **SAYGIN**, C., LEU, M.C., and AKCOR, E., "A Reward-based Job Shop Scheduling Heuristic", Proceedings of the 2005 NSF Grantees Conference, January 3-6, 2005, Scottsdale, Arizona (*full paper submitted, no peer review*).
11. **SAYGIN**, C., "Web-Based Manufacturing: From Materials Management to Manufacturing System Control", International Conference on Production Research (ICPR Americas '02): Production Research and Computational Intelligence for Designing and Operating Global Production Systems, November 14-15, 2002, St.Louis, Missouri.
12. BUYURGAN, N. and **SAYGIN**, C., "Tool Management in Flexible Manufacturing Systems: A Simulation Study", **Proceedings of the Society of Engineering Science SES 2002, Simulation Based Control Session**, page 17.4, October 13-16, 2002, State College, Pennsylvania.

13. SIWAMOVSATHAM, T. and SAYGIN, C., "A Bidding-based Control Framework for a Random Flexible Manufacturing System with Alternate Routings", **Proceedings of the Society of Engineering Science SES 2002, Simulation Based Control Session**, page 17.1, October 13-16, 2002, State College, Pennsylvania.
14. SAYGIN, C. and KARNAM, S.K., "Development of a Web-based Materials Management Software for Small and Medium sized companies in Composites Industry", **Proceedings the International Conference on Industry, Engineering, and Management Systems (IEMS) and the International Conference on Computers and Industrial Engineering (ICC&IE) 2001 Joint Meeting**, Cocoa Beach, Florida, pp.405-410, March 5-7, 2001.
15. CHEN, F.F., SAYGIN, C., "A Laboratory Infrastructure for Flexible Automation and Integrated Manufacturing Research", **5th Int. Conf. on Automation Technology and 1998 Int. Conf. of Production Research (Asia Meeting)**, Taipei, Taiwan, pp.71-76, July 20-22, 1998.
16. BAS, C., SAYGIN, C. and KILIC, S.E., "On Computer Aided Process Planning of Prismatic Parts", **MicroCAD `97 Conference**, University of Miskolc, Hungary, Vol. H, pp.61-65, 26-27 February 1997.
17. BORAN, H., SAYGIN, C. and KILIC, S.E., "Flexible Process Planning and Flexible Manufacturing Systems", **MicroCAD `97 Conference**, University of Miskolc, Hungary, Vol. H, pp.55-59, 26-27 February 1997.
18. SAYGIN, C. and KILIC, S.E., "Scheduling of Flexible Manufacturing Systems", **MicroCAD `97 Conference**, University of Miskolc, Hungary, Vol. H, pp.19-23, 26-27 February 1997.
19. SAYGIN, C. and KILIC, S.E., "Effect of Flexible Process Plans on Performance of Flexible Manufacturing Systems", **Proceedings of The 7th International DAAAM Symposium on Intelligent Manufacturing Systems**, pp.393, Vienna, Austria, 17-19 October 1996.
20. SAYGIN, C., KILIC, S.E., UNVER, O. and ANLAGAN, O., "Egitim Amacli Bir Bilgisayar Tumlesik Uretim Modeli", **Otomatik Kontrol Ulusal Toplantisi TOK`96 Bildiri Kitapcigi**, Istanbul, Turkey, pp.324-331, March 1996 (in Turkish).
21. UNVER, O., SAYGIN, C., ANLAGAN, O. and KILIC, S.E., "Event-Driven Conveyor Management in a Pilot Flexible Manufacturing System", **MicroCAD `96 Conference**, University of Miskolc, Hungary, Section H, pp.8-12, February 1996.
22. ANLAGAN, O. and SAYGIN, C., "Computer-Aided Teaching Tool for 3-Dimensional Representation of Single Point Cutting Tool Geometry", **Proceedings of The 6th International DAAAM Symposium on intelligent Manufacturing Systems**, pp.13-14, Krakow, Poland, 26-28 October 1995.
23. KILIC, S.E., SAYGIN, C. and ZUMRUT, Y., "A Graphical Method for the Optimization of Milling Operations", **MicroCAD `95 Conference**, University of Miskolc, Hungary, pp.11-14, February 1995.
24. KAFTANOGLU, B. and SAYGIN, C., "On Computer Aided Design of Machine Elements", **Academic Computing in Macintosh Environment `93**, Istanbul University, Turkey, pp.75-85, May 1993.

Other Publications (full paper refereed):

1. SAYGIN, C., KILIC, S.E., TOTH, T. and ERDELYI, F., "On Scheduling Approaches of Flexible Manufacturing Systems: Gap Between Theory and Practice", **Selected Papers** - Postprint Volume of the 3rd IFAC/IFIP/IFORS Workshop - **Intelligent Manufacturing Systems`95 (IMS`95)**, Th. Borangiu

SAYGIN

and I. Dumitrache (Editors), Pergamon/Elsevier Science, October 1995, pp. 61-66. *(Cited by others once)*

2. **SAYGIN**, C. and KILIC, S.E., "A Framework for the Design of an Integrated Production Management System (IPMS)", *Publications of the University of Miskolc*, Miskolc, Hungary, September 1995, Vol.45, Series C, pp.75-83.

Invited Lectures, Presentations, Panels, and Workshop:

1. **SAYGIN**, C., Invited by VPR of University of Houston, "Effectiveness and Efficiency in Research Administration using Lean Six-Sigma Tools", Houston, Texas, Jan 31, 2017.
2. **SAYGIN**, C., Panelist, "Investing in Manufacturing Community Partnership (IMCP) – Connecting Talent, Innovation, and Place", with C.E. Shoopman, M. Dozier, and J. Wenah, University Economic Development Association (UEDA) Annual Summit, 10/17/2016, Roanoke, VA.
3. **SAYGIN**, C., Panelist & Moderator, "Cybersecurity and Manufacturing", with L. John, J. Millander, and C. Scullion, US Department of Commerce - Investing in Manufacturing Community Partnership (IMCP) Program Annual Summit, 10/20/2016, Washington, DC.
4. **SAYGIN**, C., Panel Moderator, "IMCP-Best Practices", US Department of Defense - Investing in Manufacturing Community Partnership (IMCP) Program Annual Summit, 10/20/2016, Washington, DC.
5. **SAYGIN**, C., "Improving Biostatistics Research Services of an Academic Health Center", Engineering Lean & Six Sigma Conference of Institute of Industrial Engineers (IIE ELSS), 9/14/2016, San Antonio, Texas.
6. **SAYGIN**, C., "Alamo Manufacturing Partnership (AMP) Consortium – An IMCP (Investing in Manufacturing Community Partnership) Community, Jay Williams Asst Secretary of the US Department of Commerce and delegation visiting San Antonio, 9/8/2016, San Antonio, Texas.
7. **SAYGIN**, C., "Engineering Design-centric Project Based Learning", STEMsation Conference VII, UTSA Downtown Campus, Nov 1, 2014, San Antonio, Texas.
8. **SAYGIN**, C., "Evidence-Based Strategies for Reducing Waste: Lean and Six Sigma", 2014 Summer Institute on Evidence-Based Practice Conference, Theme: Making the Evidence-Outcome Connection, organized by School of Nursing at UT Health Science Center San Antonio, Aug 7-8-, 2014, Grand Hyatt Hotel, San Antonio, Texas.
9. **SAYGIN**, C., EVANS, P., HUTCHINGS, B., and RAD, P., "Cloud-Based Manufacturing: Perspectives From Industry and Academia", Panel Presentation and discussion, Flexible Automation and Intelligent Manufacturing Conference (FAIM 2014), San Antonio, Texas, May 20-23, 2014.
10. , C., WILSEY, K., RAY, J., SILVER, J., CODY, J., and MEDINA, M., "Lean Implementation in Proposal Development and Submission: Metrics and Operational Performance", NCURA (National Council of University Research Administrators) Region-V Spring Meeting, Austin, Texas, May 4-7, 2014.
11. **SAYGIN**, C. and TRAVIS, B., "Project-Based Learning: An Engineering Design Approach", Teacher Training Workshops, Spring 2014 Series (Jan 11, Feb 1, Mar 1, and Apr 5), UTSA.

12. **SAYGIN, C.** and TRAVIS, B., "Project-Based Learning: An Engineering Design Approach", Teacher Training Workshop, Summer 2014 Series (June 23-27), UTSA.
13. **SAYGIN, C.** and TRAVIS, B., "Project-Based Learning: An Engineering Design Approach", Teacher Training Workshops, Fall 2013 Series (Sept 14, Oct 12, Nov 9, and Dec 7), UTSA.
14. **SAYGIN, C.**, "Engineering Design using Lego Robotics Kits", iTEC Train-the-Trainer 2-Day Workshop for 13 teachers from Northside Independent School District (NISD), Apr 12-13, 2013, UTSA 1604 Campus, San Antonio, Texas.
15. **SAYGIN, C.**, "Teaching versus Learning", College of Engineering Effective Teaching Workshop, with 4 other faculty members as organizers and presenters, Dec 11, 2012, UTSA.
16. "Solar Energy and Solar Hot Rods" by iTEC, Dates: June 16, June 23, June 30, and July 14; Four K-12 STEM Workshops delivered in collaboration with P-20 to communities in South San Antonio, 2012.
17. **SAYGIN, C.** and PINNELL, C., "How to Start a LEGO MINDSTORMS Robotics Program for Elementary and Middle School Students", A K-12 Workshop, 2012 ASEE Annual Conference & Exposition, June 9, 2012, San Antonio, Texas.
18. **SAYGIN, C.**, "Engineering Design: Examples from LEGO and VEX Robots", A Workshop for HISPA (Hispanics Inspiring Students' Performance and Achievement), May 25, 2012, UTSA.
19. **SAYGIN, C.**, "Life After PhD: The Good, The Bad, and The Ugly", Workshop for Academic Career Path for PhD Engineering Students, UTSA, March 5, 2012.
20. **SAYGIN, C.**, "Activity Design using Lego RCX Kits", iTEC Train-the-Trainer 2-Day Workshop for 5 teachers from the San Antonio Southwest Independent School District (SWISD), June 10-11, 2011, UTSA 1604 Campus, San Antonio, Texas.
21. **SAYGIN, C.**, "Engineering Design using Lego MindStorms NXT", iTEC Train-the-Trainer 1-Day Workshop for 15 teachers from the Academy of Careers and Technologies, April 2, 2011, UTSA 1604 Campus, San Antonio, Texas.
22. **SAYGIN, C.**, "Engineering Design using Lego MindStorms NXT", iTEC Train-the-Trainer 2-Day Workshop for 20 educational specialists from UTSA's Academy for Teacher Excellence, May 20-21, 2011, UTSA 1604 Campus, San Antonio, Texas.
23. **SAYGIN, C.**, "Engineering... A Better Life", Engineering Festival, STEM RAM Academy, Lee High School, Feb 19, 2011, San Antonio, Texas.
24. **SAYGIN, C.**, "Engineering Design: Examples from Lego and VEX Robots", Austin Science and Engineering Festival, Oct 23-24, 2010, Austin Convention Center, Austin, Texas.
25. **SAYGIN, C.**, "Technology for Enhancing STEM Instruction", Texas High School Project, T-STEM Fall 2010 Cluster Meeting, Oct 29, 2010, San Antonio, Texas.
26. **SAYGIN, C.**, "Learning in a Digital Factory", North American STEM (Science, Technology, Engineering, and Math) Education Symposium, Manchester, New Hampshire, October 8, 2009.
27. **SAYGIN, C.**, "Interactive Technology Experience Center", North American STEM (Science, Technology, Engineering, and Math) Education Symposium, Manchester, New Hampshire, October 8, 2009.
28. **SAYGIN, C.**, "Enabling Lean Manufacturing Using Radio Frequency Identification", Graduate Seminar Class of Mechanical Engineering, Texas A&M, College Station, Sept 9, 2009.

SAYGIN

29. , C., "Adaptive Enterprises: Enabling Lean through RFID Deployment", Manufacturing Data Management Conference (Webinar), organized by the Society of Manufacturing Engineers (SME), Nov 11, 2008.
30. **SAYGIN, C.**, "RFID as Process Improvement Enabler: A Lean Systems Perspective", Workshop *RFID at Work: Enabling Process Visibility and Productivity Improvement*, Organized by the San Antonio Manufacturers Association (SAMA), May 29, 2008, UTSA, San Antonio, Texas.
31. **SAYGIN, C.**, "Adaptive Enterprises: Enabling Lean through RFID Deployment", CAMLS (Center for Advanced Manufacturing and Lean Systems) Seminar Series, Apr 30, 2008, UTSA, San Antonio, Texas.
32. **SAYGIN, C.**, "RFID at Work", Workshop for Lancer Corp. Managers, Manufacturing Systems and Automation Lab., April 25, 2008, UTSA, San Antonio, Texas.
33. **SAYGIN, C.**, "RFID in Manufacturing", A demonstration on technical capabilities on RFID technologies was given to Boeing San Antonio employees (35 people), Nov 15-16, 2007, San Antonio, Texas.
34. **SAYGIN, C.**, "RFID in Manufacturing: The Good, the Bad, and the Ugly", Guest Lecturer, MOT 5163 Management of Technology (Professor William T. Flannery), Nov 1, 2007, UTSA, San Antonio, Texas.
35. **SAYGIN, C.**, "RFID in Manufacturing: The Good, the Bad, and the Ugly", CAMLS (Center for Advanced Manufacturing and Lean Systems) Seminar Series, Oct 24, 2007, UTSA, San Antonio, Texas.
36. **SAYGIN, C.**, "RFID on the Manufacturing Shop Floor: Applications and Challenges", Invited Session on RFID, Annual Industrial Engineering Research Conference, May 20-24, 2006, Orlando, Florida.
37. **SAYGIN, C.**, "Developing Networking Among Universities: Review of the Digital Manufacturing Initiative", FESTO Digital Manufacturing University Network Group Meeting, October 6-7, 2005, Chicago, Illinois.
38. **SAYGIN, C.** and SARANGAPANI, J., "Auto-ID Technologies Research Group at the University of Missouri-Rolla", US Air Force Depot Maintenance Transformation (DMT) Automatic Identification Technology (AIT) Workshop, Sept 12-15, 2005, Ogden, Utah.
39. **SAYGIN, C.**, "Network-centric Manufacturing Systems", Next Generation Manufacturing Technologies Initiative (NGMTI) TestNet Forum, May 2005, Charleston, South Carolina.
40. SARANGAPANI, J. and **SAYGIN, C.**, "Monitoring, Diagnostics, and Prognostics Research at the University of Missouri-Rolla", 9th Bi-annual Industry Advisory Board Meeting of the Intelligent Maintenance Systems (NSF I/UCRC) Center, May 2005, Ann Arbor, Michigan.
41. SARANGAPANI, J. and **SAYGIN, C.**, "Monitoring, Diagnostics, and Prognostics Research at the University of Missouri-Rolla", 8th Bi-annual Industry Advisory Board Meeting of the Intelligent Maintenance Systems (NSF I/UCRC) Center, Nov 1-2, 2004, Milwaukee, Wisconsin.
42. **SAYGIN, C.**, Invited Speaker, "A Perspective on Research and Educational Issues in Integrated Manufacturing Systems", Robert Morris University, December 4, 2003, Moon Township, Pennsylvania.
43. **SAYGIN, C.**, GRASMAN, S., WOOSEUNG, J., ROZENFELD, H., and NAJM. M, "Developing Plug-and-Play Learning Modules for SCM and PLM using an E-Business Learning Warehouse Framework", SAP Innovation Congress, February 15-17, 2003, Miami, Florida.
44. **SAYGIN, C.**, Invited Speaker, "Automated Manufacturing Over the Internet", Mechanical Engineering Department, Middle East Technical University, Dec 17, 2002, Ankara, Turkey.

45. **SAYGIN, C.**, Invited Speaker, "Web-Based Manufacturing", International Forum on New Didactic Concepts for Robotics and Automation, Organized by FESTO Didactic, Oct 20-23, 2002, Monterrey, Mexico.
46. **SAYGIN, C.**, and KARRAS, U., "Real and Virtual Learning Environments for Integrated Manufacturing and Automation", A Joint Presentation with FESTO Germany for ISF Seminar Series #2, October 16, 2001, Engineering Management Department, UMR.
47. **SAYGIN, C.**, "On Web-Based Manufacturing", ISF Seminar Series #1 on Computer-Aided Design and Computer-Aided Manufacturing (CAD/CAM) Tools, Applications, and Integration Issues, July 20, 2001, Engineering Management Department, UMR.
48. **SAYGIN, C.**, "Development of a Materials Management Software Package for Small and Mediumsized Enterprises in Composites Industry", NSF Directors Meeting at UMR, Design and Manufacturing Group Selected Research Abstracts, April 2000, page 19.
49. **SAYGIN, C.**, "Integration in Manufacturing", IEEE – ACM Invited Speaker, Computer Science Department, University of Missouri – Rolla, November 18, 1999.
50. DISMUKES, J.P., **SAYGIN, C.**, and CHEN, F.F., "Information Technology's Role in the 21st Century Industrial Revolution: Challenges for Scientists and Engineers", First International Symposium On Government, Academic and Industrial Interactions in the New Global Economic Environment, 193rd Electrochemical Society Meeting, San Diego, May 4, 1998.
51. **SAYGIN, C.**, "Flexible Manufacturing Systems, Scheduling, and Tool Management", Technical University of Budapest, Hungary, May 16, 1995.

Poster Presentations:

1. NGUYEN, T., BECERRIL, J., FAWCETT, T., and **SAYGIN, C.**, "A Test-bed for Deploying Automatic Identification Technologies (AIT) in Manufacturing", ***CISER (Center for the Integration of Science Education and Research) Conference: On Being an Engineer***, Lubbock, Texas, February 1-2, 2008.
2. "MRI: Acquisition of An Automated Assembly System and RFID Equipment for Research and Education in Advanced Manufacturing", PI: C. **SAYGIN**, Co-PI: Dr. F.F. Chen (CMMI-#0722923), ***NSF Grantees Conference***, Knoxville, Tennessee, January 7-10, 2008.
3. FONDA, J.W., ZAWODNIOK, M.J., SARANGAPANI, J., and **SAYGIN, C.**, "Industrial Monitoring and Control Using Wireless Multi-hop Network Routing Protocol", ***12th Industrial Advisory Board meeting of the NSF I/UCRC Center on Intelligent Maintenance Systems***, St. Louis, Missouri, Nov 14-15, 2006.
4. BALACHANDRAN, T., BASSI, N., THUMATI, B., SARANGAPANI, J., **SAYGIN, C.**, "Pump Prognostics – Seal Failure Prediction", ***12th Industrial Advisory Board meeting of the NSF I/UCRC Center on Intelligent Maintenance Systems***, St. Louis, Missouri, Nov 14-15, 2006.
5. RAMACHANDRAN, A., CHA, K., SOYLEMEZOGLU, A., ZAWODNIOK, M.J., **SAYGIN, C.**, and SARANGAPANI, J., "Shop Floor Management Using Auto-ID Technology in Network-Centric Manufacturing Environments", ***12th Industrial Advisory Board meeting of the NSF I/UCRC Center on Intelligent Maintenance Systems***, St. Louis, Missouri, Nov 14-15, 2006.
6. ANGUSWAMY, R., FONDA, J.W., BIRT, J., SARANGAPANI, J., and **SAYGIN, C.**, "Product Quality

SAYGIN

- Monitoring and Onboard Diagnostics Using Mobile Mote-based Networking”, **12th Industrial Advisory Board meeting of the NSF I/UCRC Center on Intelligent Maintenance Systems**, St. Louis, Missouri, Nov 14-15, 2006.
7. MOHAN, D.,T., SARANTAKOS, T.H., BIRT, J., FONDA, J.W., **SAYGIN**, C., and SARANGAPANI, J., “Online Quality Monitoring of Threaded Fasteners Using Sensor-Embedded Hand-Held Tools”, **12th Industrial Advisory Board meeting of the NSF I/UCRC Center on Intelligent Maintenance Systems**, St. Louis, Missouri, Nov 14-15, 2006.
 8. FONDA, J., ZAWODNIOK, M., BIRT, J., SARANGAPANI, J., and **SAYGIN**, C., “Pull-Type Tool Health Monitoring and Product Quality Verification Using Wireless Sensor Networks”, **Integrated Systems Health Management Conference**, Air Force Research Lab, Cincinnati, Ohio, Aug 14-17, 2006.
 9. SARANTAKOS, T., MOHAN, D., BIRT, J., **SAYGIN**, C., and SARANGAPANI, J. “Online Quality Monitoring of Threaded Fasteners Using Sensor-Embedded Hand-Held Tools”, **Integrated Systems Health Management Conference**, Air Force Research Lab, Cincinnati, Ohio, Aug 14-17, 2006.
 10. “An Architecture for Productive Collaboration Among Small and Medium-sized Enterprises”, PI: C. **SAYGIN**, Co-PIs: Dr. S. Grasman and Dr. M. Leu (DMI-#0323028), **NSF Grantees Conference**, Scottsdale, Arizona, January 2005.
 11. “An Architecture for Productive Collaboration Among Small and Medium-sized Enterprises”, PI: C. **SAYGIN**, Co-PIs: Dr. S. Grasman and Dr. M. Leu (DMI-#0323028), **NSF Grantees Conference**, Dallas, Texas, January 2004.

PROPOSALS, GRANTS, and CONTRACTS**UTSA****Funded** (\$ shown does not include institutional contributions or cost sharing)

Title	Incorporating Lean-Six Sigma Methodologies into the Institute for Integration of Medicine and Science (IIMS) – Phase 2
Start-End	9/1/2017 – 8/31/2018
Agency	UT-Health
Team	C. Saygin (PI), H. Wan (Co-PI)
Shared Credit	50% Each
Total Budget	\$50,000
Title	Alamo Manufacturing Partnership
Start-End	9/1/2016 – 8/31/2018
Agency	US Dept of Labor, Economic Development Agency

Team	PI: C. Saygin (40%); Co-PIs: B. Velasquez (40%), F. Chen (10%); H. Wan (10%)
Shared Credit	40% for C. Saygin
Total Budget	Federal: \$101,000 Mandatory cost share: \$101,000
Title	Incorporating Lean-Six Sigma Methodologies into the Institute for Integration of Medicine and Science (IIMS) - CAMLS Membership
Start-End	6/1/2016 – 9/1/2017
Agency	UT-Health Science Center at San Antonio (UTHSCSA)
Team	C. Saygin (PI), H. Wan (Co-PI)
Shared Credit	50% Each
Total Budget	\$50,000
Title	Harland Clarke CAMLS Membership (2015-2017)
Start-End	08/01/2015 – 07/31/2017
Agency	Harland Clarke
Team	H. Wan (PI), C. Saygin (Co-PI), F. Chen (Co-PI), A. Alaeddini (Co-PI), and K. Castillo (Co-PI)
Shared Credit	20% each
Total Budget	\$62,000 (CAMLS Membership)
Title	Older Americans Independence Center (OAIC) at UTHSCSA
Start-End	2015 – 2020 (Dates to be finalized with NIH)

Agency	National Institutes of Health (UTHSCSA is the lead institution)
Team	C. Saygin (PI)
Shared Credit	100%
Total Budget	\$184,958
Title	Predictive Maintenance - Phase 2: From Data to Performance Metrics
Start-End	9/1/2015 – 8/31/2016
Agency	Harland-Clarke
Team	C. Saygin (PI), H. Wan, K. Castillo, A. Alaeddini
Shared Credit	25% Each
Total Budget	\$90,000
Title	Incorporating Lean-Six Sigma Methodologies into the Institute for Integration of Medicine and Science (IIMS) - CAMLS Membership
Start-End	5/15/2014 – 5/14/2016
Agency	UT-Health Science Center at San Antonio (UTHSCSA)
Team	C. Saygin (PI), H. Wan (Co-PI)
Shared Credit	50% Each
Total Budget	\$100,000
Title	Continuous Improvement and Sustainability at Harland Clarke
Start-End	07/01/2013 – 06/30/2015
Agency	Harland Clarke
Team	H. Wan (PI), C. Saygin (Co-PI), F. Chen (Co-PI), A. Alaeddini (Co-PI), K. Castillo (CoPI), H. Rashed Ali (Co-PI)
Total Budget	\$33,000 (CAMLS Membership)
Title	South Texas STEM Educator Center
Start-End	06/01/2013 – 08/31/2015
Agency	Texas Higher Education Coordinating Board
Team	C. Saygin (PI) and E. Bonner
Total Budget	\$570,000
Title	Predictive Maintenance – Phase 1: A Roadmap for Intelligent Maintenance
Start-End	3/1/2013-8/31/2013
Agency	Harland-Clarke

Team	Can Saygin (PI), Co-PIs: F. Frank Chen, HungDa Wan, Adel Alaeddini, Krystel Castillo
Shared Credit (%)	20%
Total Budget	\$108,784
Title	Continuous Improvement Projects at Reyes Automotive Group
Start-End	3/21/2012-3/20/2014
Agency	Reyes Automotive Group
Team	Can Saygin (PI) and HungDa Wan (Co-PI)
Shared Credit (%)	50%
Total Budget	\$30,000

Title	Integrating High Performance Computing in Research and Education for Simulation, Visualization and Real-Time Prediction (NSF Award #: 0932339)
Start-End	9/1/2009-8/31/2014
Agency	National Science Foundation (CREST Program)
Team	Stathis Michaelides (PI) and 18 Co-PIs
Total Budget	\$5,000,000
Title	Process Planning, Operation Sequencing, and Automation
Start-End	1/1/2009 – 1/6/2009
Agency	Transplant Technologies of Texas
Team	Can Saygin
Shared Credit (%)	100%
Total Budget	\$7,675
Shared Credit (\$)	\$7,675
Title	Web-Based Manufacturing
Start-End	7/1/2008 – 6/30/2010
Agency	Intelitek
Team	Can Saygin
Shared Credit (%)	100%
Total Budget	\$30,000
Shared Credit (\$)	\$30,000
Title	Design and Development of a Production Management System for FMS-200
Start-End	1/1/2008 – 12/31/2009

Agency	SMC International Training (Spain)
Team	Can Saygin
Shared Credit (%)	100%
Total Budget	\$56,000
Shared Credit (\$)	\$56,000
Title	Lean Transformation at the Chism Company: Process Improvement, Visualization, and Automation
Start-End	1/1/2008 – 12/31/2009
Agency	The Chism Company (San Antonio, Texas)
Team	F. Frank Chen, PI (25%), Can Saygin (25%), Hungda Wan (25%), Brent Nowak (25%)
Shared Credit (%)	25%
Total Budget	\$100,000
Shared Credit (\$)	\$25,000
Title	RFID Applications in Network-Enabled Virtual Enterprises
Start-End	10/2007 – 10/2008
Agency	The Boeing Company (St. Louis, Missouri)
Team	Can Saygin
Shared Credit (%)	100%
Total Budget	\$25,500
Shared Credit (\$)	\$25,500
Title	Process and Work Flow Improvement
Start-End	08/2007-12/2008
Agency	Gunze Electronics USA (Austin, Texas)
Team	Can Saygin
Shared Credit (%)	100%
Total Budget	\$42,000
Shared Credit (\$)	\$42,000
Title	MRI: Acquisition of An Automated Assembly System and RFID Equipment for Research and Education in Advanced Manufacturing (NSF Award #: 0722923)
Start-End	08/01/2007 – 07/31/2011
Agency	National Science Foundation (MRI – NSF 07-510)
Team	Can Saygin, PI (50%) and F. Frank Chen (50%)
Shared Credit (%)	50%

Total Budget	\$374,482
Shared Credit (\$)	\$187,241
Title	Instrumentation for Research and Education in Advanced Manufacturing and Enterprise Systems
Start-End	08/01/2007 – 07/31/2009
Agency	Department of Defense (W911NF-07-R-0002)
Team	F. Frank Chen, PI (50%) and Can Saygin (50%)
Shared Credit (%)	50%
Total Budget	\$499,856
Shared Credit (\$)	\$249,928
Title	Virtual Reality and Simulation Software for Manufacturing Labs at UTSA
Start-End	N/A
Agency	Bennack Poland Foundation
Team	F. Frank Chen, PI (50%) and Can Saygin (50%)
Shared Credit (%)	66%
Total Budget	\$9,400
Shared Credit (\$)	\$6,400
Title	Wireless Sensor Network-based Health Monitoring and Prognostics for Levee and Communication Infrastructures
Start-End	08/01/2006 – 07/31/2007
Agency	National Science Foundation (Electrical and Communications Systems)
Team	J. Sarangapani (69%, Univ of Missouri-Rolla) and C. Saygin (31%)
Shared Credit (%)	31%
Total Budget	\$55,699
Shared Credit (\$)	\$17,500

GRANTS and CONTRACTS: University of Missouri-Rolla [Aug 1999 – Aug 2006] (\$
shown does not include institutional contributions or cost sharing)

BREAKDOWN OF MAJOR FUNDING (1999-2006)	Budget
Air Force Research Lab	\$606,677
National Science Foundation	\$282,058
U.S. Department of State	\$263,738
NSF I/UCRC Center	\$221,000

Boeing	\$42,300
SAP America	\$237,300
FESTO	\$175,339
FORD Motor Company	\$77,655
Missouri Enterprise	\$74,205
Metro (Bi-State Development Agency)	\$74,950
Halliburton Foundation	\$15,000
Others (smaller grants)	\$71,985
TOTAL:	\$2,142,207

INTELLECTUAL PROPERTY: PATENTS & INVENTION DISCLOSURES

1. ***“Unified Control System and Method for Machining of Parts”***, COX, W.T., **SAYGIN, C.**, Patent Number: US 11,281,183, Date of Patent: Mar 22, 2022 (Patent Application # 16597524, Oct 9, 2019).
2. ***“Unified Control System and Method for Machining of Parts”***, COX, W.T., **SAYGIN, C.**, European Patent Office, Application # 20200897.5 - 1205, Oct 8, 2020.
3. ***“Decentralized Radio Frequency Identification System”***, SARANGAPANI, J., RAMACHANDRAN, A., **SAYGIN, C.**, and CHA, K., Patent Number: US 8,143,996 B2, Date of Patent: Mar 27, 2012.
4. ***“Adaptive Inventory Management System”***, SARANGAPANI, J., RAMACHANDRAN, A., **SAYGIN, C.**, and CHA, K., Patent Number: US 7,752,089 B2, Date of Patent: July 6, 2010.
5. ***“Process Monitoring and Product Quality Verification for Handheld Pull Type Tools”***, ANGUSWAMY, R., FONDA, J., BIRT, J. SARANGAPANI, J. and **SAYGIN, C.** – University of Missouri Invention Disclosure Number: 07UMR035 (2006)
6. ***“Online Quality Monitoring of Threaded Fasteners Using Sensor-Embedded Handheld Rotary Tools”***, MOHAN, D., SARANTAKOS, T., BIRT, J., FONDA, J., **SAYGIN, C.**, and SARANGAPANI, J. – University of Missouri Invention Disclosure Number: 07UMR036 (Nov 2006)
7. ***“RFID Read Rate and Coverage Improvement Through Reader Power Control”***, SARANGAPANI, J., CHA, K., RAMACHANDRAN, A., and **SAYGIN, C.** – University of Missouri Invention Disclosure Number: 06UMR040 (Nov 2006) – Patent filed in Dec 2007.
8. ***“Smart Freezer”***, THIAGARAJAN, M., ZAWODNIOK, M., BIRT, J., SARANGAPANI, J., and **SAYGIN, C.** – University of Missouri Invention Disclosure Number: 07UMR074 (April 2007) – Patent filed in January 2008.

TEACHING ACTIVITIES

LIST OF FORMAL COURSES TAUGHT: (*number of classes taught shown in parenthesis*)

ME 1301 Introduction to Engineering Design (1) ME 1302 Mechanical Engineering Practice (3)	Fall 2006 Fall 2012, Spring 2013, Fall 2013
ME 3263 Manufacturing Engineering (8)	Fall 2009, Summer 2010, Fall 2010, Spring 2011, Fall 2011, Spring 2012, Fall 2012, Spring 2013
ME 4563/5563 Computer Integrated Manufacturing (2)	Fall 2007, Fall 2008
ME 4573/5573 Facilities Planning and Design (7)	Spring 2007, Spring 2009, Spring 2010, Summer 2011, Summer 2012, Spring 2015, Spring 2016.
ME 4953 Fundamentals of Manufacturing (1)	Fall 2006
ME 4913 Special Studies in Mechanical Engineering (3)	Summer 2007 (4 students), Spring 2008 (3 students), Fall 2010 (2 students) – Total: 9 students
ME 6953 Independent Study (11)	Summer 2007 (1 student), Fall 2007 (2 students), Summer 2008 (1 student), Fall 2008 (1 student), Spring 2009 (2 students), Summer 2009 (3 students), Fall 2009 (5 students), Spring 2010 (1 student), Fall 2010 (2 students), Spring 2011 (1 student), Spring 2013 – Total: 20 students

Previous

1999 – 2006: University of Missouri-Rolla:

EMgt 257/ME 256 – Material Handling and Plant Layout (2)

EMgt 324 - Fundamentals of Manufacturing (6, off campus at Ft. Leonard Wood)

EMgt 334 - Computer Integrated Manufacturing Systems (6)

Emgt/ME 344 - Interdisciplinary Problems in Manufacturing Automation (7)

EMgt 434 – Advanced Manufacturing Systems Integration (5) **1997**

– **1999:** University of Toledo:

MIME 4710 / 5710 - Processes, Planning, and Inventory Control (2)

MIME 4010 / 5010 - Engineering Statistics II (1)

MIME 4020 / 5020 - Statistical Quality Control and Management (1)

MIME 4100 / 5100 - Manufacturing Systems Simulation (1) **1989–**

1997: Middle East Technical University (Mechanical Eng Dept):

Courses Assisted as a Teaching Assistant: ME 202 - Manufacturing Processes, ME 303 - Manufacturing Engineering, ME 307 - Machine Elements I, ME 308 - Machine Elements II, ME 310 - Numerical Methods, ME 407 - Mechanical Engineering Design, and ME 445 - Integrated Manufacturing Technologies.

TEACHING PERFORMANCE RELATED AWARDS

04/2013: UTSA's nominee for "U.S. Professor of the Year," Carnegie Foundation for the Advancement of Teaching (*did not win*).

08/2012: "The University of Texas System Regents' Outstanding Teaching Award 2012," The University of Texas – San Antonio.

Offered annually in recognition of faculty members at the nine academic and six health University of Texas System institutions who have demonstrated extraordinary classroom

performance and innovation in undergraduate instruction, the Regents' Outstanding Teaching Awards are the Board of Regents' highest honor. The Regents' Outstanding Teaching Awards are among the largest in the nation for rewarding outstanding faculty performance. Given the depth and breadth of talent across the UT System, the awards program is likewise one of the nation's most competitive.

- 04/2011:** "UTSA 2011 President's Distinguished Achievement Award for Teaching Excellence", The University of Texas – San Antonio.
- 04/2010:** "2009 College of Engineering - Excellence in Teaching Award", The University of Texas – San Antonio.

STUDENT ADVISING: MS THESES and PHD DISSERTATIONS

PhD Students – Graduated (4 University of Missouri-Rolla, 1 Univ of TX San Antonio)

- 1) AliReza Zarreh, PhD in ME, "***Proactive Evaluation and Risk Analysis for Cybersecurity in Manufacturing Systems Using Game Theory Methods***", Mechanical Engineering Department, The University of Texas at San Antonio, with Dr. HungDa Wan as co-advisor, Fall 2019.
- 2) Ahmet Soylemezoglu, PhD in Engineering Management, "***Sensor Data-based Decision Making***", Missouri University of Science and Technology (formerly University of Missouri – Rolla), Engineering Management and Systems Engineering Department, Co-Advised by Dr. C. Saygin and Dr. J. Sarangapani, Rolla, Missouri, Spring 2010.
- 3) Lakshmanan Meyyappan, (Co-advising w/ Dr. Cihan Dagli) (Sep 02-July 06), "***Domain-Adaptive Control Architecture for Advanced Manufacturing Systems***", University of Missouri – Rolla, Engineering Management and Systems Engineering Department.
- 4) Nebil Buyurgan, (Jun 00 – Dec 03), "***An Integrated Control Framework for Discrete Event Systems***", University of Missouri – Rolla, Engineering Management Department, Graduation date: Dec 2003. Dr. Buyurgan joined the Industrial Engineering Department at the University of Arkansas as a tenure-track Assistant Professor in July 2004.
- 5) Thananun Siwamogsatham, (Sep 99-Dec 03), "***Auction-based Decision Making for Distributed Real-time Control of Flexible Manufacturing Systems***", University of Missouri – Rolla, Engineering Management Department, Graduation date: Dec 2003.

PhD Student – Special (Finland)

- 1) Minna Lanz, PhD in Production Engineering, "***Logical and Semantic Foundations of Knowledge Representation for Assembly and Manufacturing Processes***", Tampere University of Technology in Finland, Opponents in Public Defense: Dr. C. Saygin and Dr. Michel Cotsaftis (France), July 2010, Tampere, Finland.

MS Students – Graduated (Total 23 completed -- 8 UTSA & 15 U-Missouri)

- 1) Alejandro Bracho, **MS Student**, MS in AMEE, Assessing the Impact of Cyber-Threats on Smart Manufacturing Systems through a Simulation Study, Start Date: Spring 2016, Completion Date: Fall 2017, Mechanical Eng Dept, UTSA.
- 2) Mario Puente, MS in Advanced Manufacturing and Enterprise Engineering, "***Production Planning and Scheduling of Injection Molding Machines***", Co-Advising w/ Dr. F. Chen, did NOT complete.

- 3) Burcu Guleryuz, MS in Advanced Manufacturing and Enterprise Engineering, "**Impact of Remanufacturing on Market Cannibalization and Profitability: A Simulation Study**", Spring 2011.
- 4) Avinash Joshi, MS in Advanced Manufacturing and Enterprise Engineering, "**A Simulation Study for Inventory Management Policies and its Impact on Profitability for a Product Recovery Facility**", Spring 2011.
- 5) Ishtiaq M. Syed, MS in Advanced Manufacturing and Enterprise Engineering, "**Vehicle Routing Problem in Logistics: A Genetic Algorithm-based Comparative Study**", Spring 2011.
- 6) Narendran Sridhar, MS in Mechanical Eng (*non-thesis option*), "**Comparison of Worst Case and Root Sum Square Methods for Tolerance Analysis using Monte Carlo Simulation**", Spring 2010.
- 7) Bajisankar Rachakonda, MS in Mechanical Eng (*non-thesis option*), "**Comparison of Direct Linearization and Monte Carlo Simulation Methods for Tolerance Analysis**", Spring 2010.
- 8) Balaji Natarajan, MS in Mechanical Eng, "**Impact of RFID Physics on Airport Baggage Handling System: A Simulation Study**", Fall 2009.
- 9) Shilpa Tamma, MS in Mechanical Eng, "**Dynamic Resource Allocation in Flow Lines with Stationlevel Flexible Operation Sequences and Alternative Resources**", The University of Texas – San Antonio, Summer 2009.
- 10) Ayhan Oruc, MS in Mechanical Eng, "**Dynamic Resource Allocation in Flow Lines using Statistical Throughput Control**", The University of Texas – San Antonio, Spring 2009.
- 11) Reghu Anguswamy, MS Graduate, Starting date: 2005, "**Wireless Mote-based In-process Diagnostics using Hand-held Tools in Network Enabled Manufacturing Environments**", Missouri University of Science and Technology (formerly University of Missouri – Rolla), Systems Engineering Program, Graduated in May 2008.
- 12) Deepak Mohan, MS Graduate, Starting date: Sept 2005, "**Use of Mahalanobis-Taguchi System for Fault Detection in Bolted Assemblies**", University of Missouri – Rolla, Electrical and Computer Engineering Dept, Graduated in May 2007.
- 13) Thomas H. Sarantakos, MS Graduate, Starting date: Sept 2005, "**Real-time Fault Detection in Bolted Assemblies Using Torque-Angle Signatures**", University of Missouri – Rolla, Engineering Management and Systems Engineering Department, Graduation November 2006.
- 14) Yashesh Chhaya, Master of Engineering, Starting date: Jan 2005, "**Dynamic Resource Management for Flow Shops**", University of Missouri – Rolla, Manufacturing Engineering Program, Graduation May 2006.
- 15) David Hall, MS Graduate, Starting date: Jan 2005, "**Impact of Information Sharing on Operational Aspects of a Supply Chain**", University of Missouri – Rolla, Engineering Management and Systems Engineering Department, Graduation May 2006.
- 16) Misty D. Mills Harris, MS Graduate, Starting date: June 2004, "**Adaptive Inventory Management of Time-Sensitive Materials Using RFID Data**", University of Missouri – Rolla, Manufacturing Engineering Program, Graduation date: May 2005.
- 17) Kaushik Sampath, MS Graduate, Starting date: Jan 2004, "**A Distributed Auction Model for Small and Medium-sized Enterprises**", University of Missouri – Rolla, Engineering Management Department, Graduation date: May 2005 (Co-advised w/ Dr. Scott Grasman).
- 18) Evren Akcora, MS Graduate, Starting date: Sept 2003, "**Scheduling Models for Small and Medium-sized Enterprises**", University of Missouri – Rolla, Engineering Management Department, Graduation date: May 2005 (Co-advised w/ Dr. Scott Grasman).

- 19) Govind Bajaj, MS Graduate, Starting date: March 2001, ***“Performance Evaluation of an AuctionBased Job Allocation Model for Virtual Enterprises”***, University of Missouri – Rolla, Engineering Management Department, Graduation date: Dec 2003.
- 20) Ahmet Soylemezoglu, MS Graduate, Starting date: Sept 2002, ***“Tool Management in Flexible Manufacturing Systems”***, University of Missouri – Rolla, Engineering Management Department, Graduation date: Dec 2003.
- 21) Burak Arasli, MS Graduate, Starting date: January 2002, ***“A Ladder Logic Generation Methodology for Programmable Logic Controllers”***, University of Missouri – Rolla, Engineering Management Department, Graduation date: Oct 2003.
- 22) Firat Kahraman, MS Graduate, Starting date: January 2001, ***“Design and Development of an Interactive Web-Integrated Programmable Logic Control System”***, University of Missouri – Rolla, Manufacturing Engineering Education Program, Graduation date: May 22, 2002.
- 23) Ravi Sharda, MS Graduate, Starting date: September 2000, ***“Design and Development of an Interactive Web-Integrated Flexible Manufacturing Cell Control System”***, University of Missouri – Rolla, Engineering Management Department, Graduation date: March 18, 2002.
- 24) Sanjay Kumar Karnam, MS Graduate, Starting date: September 1999, ***“Development of a Materials Management Software Package for Small and Medium-sized Enterprises in Composites Industry”***, University of Missouri – Rolla, Engineering Management Department, funded by the Lemay Center for Composites Technology - St.Louis, Graduation date: March 19, 2001.
- 25) Jasraj Singh, MS Graduate, ***“Real-Time Management of Alternate Routings in Flexible Manufacturing Systems”***, University of Toledo, Mechanical, Industrial and Manufacturing Eng. Dept., *Co-Advised with Dr. Frank Chen*, Graduated May 2000.

Graduate Students Mentoring - Project Basis - University of Missouri-Rolla (6 students) 1)

- 1) Sagi Ritesh, SAP/SMART Project, 2002.
- 2) Arun Thangamani, SAP/SMART Project, 2002.
- 3) James Klotz, Graduate Students, ***“Improvement of the Packaging Line at the Integrated Systems Facility”***, University of Missouri – Rolla, Engineering Management Department, September – December 2000.
- 4) Sivananda Nittala (MS in Computer Science, University of Missouri – Rolla), Research Assistant in the project entitled ***“Development of a Materials Management Software Package for Small and Medium-sized Enterprises in Composites Industry”*** (co-funded by the Lemay Center for Composites Technology - St.Louis and the Manufacturing Research & Training Center – Rolla), February - December 2000.
- 5) Eric Ye Chen (MS in Computer Science, University of Missouri – St.Louis,), Research Assistant in the project entitled ***“Development of a Materials Management Software Package for Small and Medium-sized Enterprises in Composites Industry”*** (co-funded by the Lemay Center for Composites Technology - St.Louis and the Manufacturing Research & Training Center – Rolla), duration of work: December 1999 – February 2000.
- 6) Jaiganesh Panneerselvam, MS Student/Non-thesis Option, ***“Effect of Tool Management Policies in System Performance in Flexible Manufacturing Systems: A Simulation Study”***, University of Missouri – Rolla, Engineering Management Department, funded by the Intelligent Systems Center (Missouri, Rolla), June - December, 2000.

Undergraduate Student Mentoring at UTSA – Research Lab (18 students)

- 1) Nelly Zapata, **Barcode Systems** (Sept 2008 – Dec 2009)
- 2) Joseph Becerril, **Web-based Manufacturing** (Aug 2007– May 2010)
- 3) Than Nguyen, **RFID Applications** (Sept 2006 – Dec 2009)
- 4) Justin Elmer, **Robotics and Vision Systems** (Sept 2007 – Sept 2009)
- 5) Alex Manelis, **Database Systems** (Dec 2008 – Sept 2010)
- 6) Ryan Hoyle, **Web Page Design** (Dec 2008 – Sept 2010)
- 7) Walter Madalinski, **Controllers and Sensors** (Feb 2007 – Aug 2009)
- 8) Thomas Fawcett, **RFID and Warehouse Operations**, (Jan 2007 – Aug 2009)
- 9) Nicholas Gerne, **Servers, IT Systems** (Dec 2007 – Dec 2008)
- 10) Edward Minter, **CNC Machining** (Sept-Dec 2008)
- 11) Kevin Smith, **CAD/CAM**, (Nov 2007 – May 2008)
- 12) Jose Camero, **Robotics**, (Jan – May 2008)
- 13) Austin Alaniz, **PLC Programming** (Sept 2007 – May 2008)
- 14) Jeremy Mercer, **Tool Management, CNC Programming** (Sept 2006 – May 2008)
- 15) Royce Michna, **Shop Floor Control, Database, IT** (Sept 2006 – Dec 2007)
- 16) Andres Pon, **Flexible Manufacturing Systems** (Sept-Dec 2006)
- 17) Fidencio Romero, **Lean Manufacturing** (Sept-Dec 2006)
- 18) Ryan Martin (Freshman), **Virtual Reality and Simulation** (Sept-Dec 2006)

Undergraduate Students Mentoring - Project Basis - University of Missouri-Rolla (12 students)

- 1) Douglas Brian Finley, Emgt 300 Special Topics – Shop Floor Control, 2005.
- 2) James A.H. Jacobs, Student Helper, Integrated Systems Facility, 2005
- 3) Matthew Brooks, Undergrad Research Asst, An Architecture for Productive Collaboration Among Small and Medium-sized Enterprises – NSF Project (DMI-#0323028), 2005.
- 4) Brian Westre, Undergrad Research Asst, An Architecture for Productive Collaboration Among Small and Medium-sized Enterprises – NSF Project (DMI-#0323028), 2005.
- 5) Joe E. Miller, Software Developer, SAP/E-Warehouse Project, 2003.
- 6) Charles Davis, Teaching Assistant for Machine Shop, 2001.
- 7) Alvina Center, Student Helper, “Re-Organization of the Integrated Systems Facility at the Eng. Mgt. Dept. in UMR”, May 2000 - 2001.
- 8) Joshua Love, Student Helper, “Re-Organization of the Integrated Systems Facility at the Eng. Mgt. Dept. in UMR”, May 2000 - 2001.
- 9) Tom Hall, Graduate Student, “Improvement of the Packaging Line at the Integrated Systems Facility”, University of Missouri – Rolla, Engineering Management Department, September – December 2000.
- 10) Ryan D. Heckman, Research Assistant in the project entitled “Development of a Materials Management Software Package for Small and Medium-sized Enterprises in Composites Industry” (co-funded by the Lemay Center for Composites Technology - St.Louis and the Manufacturing Research & Training Center – Rolla), February - May 2000.
- 11) Matt Mercurio, Student Helper, “Re-Organization of the Integrated Systems Facility at the Eng. Mgt. Dept. in UMR”, February - May 2000.

- 12) Oguzhan Yavuz, Student Helper, *“Re-Organization of the Integrated Systems Facility at the Eng. Mgt. Dept. in UMR”*, February - May 2000.