JANET KATHERINE ALLEN, PhD

JOHN AND MARY MOORE CHAIR OF ENGINEERING AND
PROFESSOR OF INDUSTRIAL AND SYSTEMS ENGINEERING

The School of Industrial and Systems Engineering
202 West Boyd Street, Room 116-G
The University of Oklahoma
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I. Earned Degrees

University of California at Berkeley, Berkeley, CA, PhD, Biophysics, 1973, Advisor: A. .J. Bearden.

Massachusetts Institute of Technology, Cambridge, MA, SB, Life Sciences, 1967.

II. Employment

John and Mary Moore Chair of Engineering and Professor of Industrial Engineering, The University of Oklahoma, August 2009-present.

Senior Research Scientist/Associate Professor/Professor/Professor Emerita, The George W. Woodruff School of Mechanical Engineering, Georgia Institute of Technology, Atlanta, GA. 1992/2005/2008/ 2009.

Director of Research and President, Janco Research, Inc. June 1987 - present.

Post-Doctoral Fellow/Instructor, Division of Atherosclerosis and Lipoprotein Research, Baylor College of Medicine, Houston, TX. 1982-1985/1985-1986.

Senior Research Associate/Department Coordinator, Department of Biochemistry, Rice University, Houston, TX. 1981.

Senior Scientific Officer, Royal Prince Alfred Hospital, Camperdown, N.S.W. Australia. 1977-1980.

Lecturer (Part-time), Centre for Biomedical Engineering, University of New South Wales, Kensington, N.S.W. Australia. 1978-1980.

Professional Officer, Department of Biochemistry, University of New South Wales, Kensington, N.S.W. Australia. 1975-1977.

National Institutes of Health Post-Doctoral Fellow, Andrus Gerontology Center, University of Southern California, Los Angeles, CA. 1973-1974.

III. TEACHING
III.A. Individual Student Guidance

Industrial Engineering MS Projects Supervised, The University of Oklahoma

1. Minting Xiao, *Simulation of a Plug-in Hybrid Electric Vehicle Charging Station*, December 2012.
2. Ernest West, *Solving an Inverse Problem: Radiation Shielding of Buildings*, December 2010.
3. Wisam Al-Musawy, *A Comprehensive Review of Wind Energy Industry and Suggested Research Gaps for Future Work*, December 2009.

MS's with Thesis in Progress, University of Oklahoma

1. Salman Ahmed, F. Mistree, co-advisor, MS in Mechanical Engineering*, Forging in the Materials Design Process*. anticipated completion July 2013.
2. Andrew Freeman, F. Mistree, co-advisor, MS in Industrial and Systems Engineering, *Managing Information Flow in Multiscale Design,* anticipated completion May 2015.
3. Maryam Sabeghi, F. Mistree, co-advisor, MS in Mechanical Engineering, *Material and Product Design*, anticipated completion May 2015. NSF Graduate Research Fellow.

PhD's in Progress, The University of Oklahoma

1. Amirhossein Khosrojerdi, F. Mistree, co-advisor, *Design for Controllability of Energy Systems*, PhD in Industrial Engineering anticipated May 2015.
2. Shabnam Rezapour-Behnagh, *Multiscale Design and Manufacturing Networks*, PhD in Industrial Engineering anticipated May 2015.

PhD's in Mechanical Engineering Completed, Georgia Institute of Technology

1. Matthias Messer. *A Systematic Approach Towards Simulation-Based Integrated Product, Materials and Design Process Design*. PhD January 2008. Matthias' dissertation nominated by the Woodruff School for Georgia Tech's Sigma Xi Best Dissertation Award. Innovationcenter Freudenberg, Germany.
2. Matthew Chamberlain. *An Approach to Decision Support for Strategic Re-Design*. F. Mistree, co-advisor. December 2007. Support from: ONR, AFOSR MURI, NSF Graduate Research Fellowship. Dynamic-Concepts, Inc., Hunstville, Alabama.
3. Marco Gero Fernández. *A Framework for Agile Collaboration in Engineering*. F. Mistree, co-advisor. PhD December 2005. GE Faculty of the Future, NSF Graduate Fellowship, TiGER Fellowship. Continued for an M.B.A. at Georgia Tech. Capgemini Consulting.
4. Carolyn Conner Seepersad. *A Robust Concept Exploration Method with Materials Applications.* F. Mistree and D.L. McDowell, co-advisors. PhD August 2004. Sigma Xi PhD Thesis Award. NSF Graduate Research Fellowship. Hertz Fellowship. MS Spring, 2001. Assistant Professor, University of Texas at Austin.
5. Robert Reid Bailey. *Input-Output Modeling of Material Flows in Industry*. B.A. Bras, co-advisors. PhD August 2000. Supported by DOE Integrated Manufacturing Pre-doctoral Fellowship. Assistant Professor at the University of Virginia.
6. Wei Chen. *A Robust Concept Exploration Method for Configuring Complex Systems*. PhD August, 1995. Sigma Xi PhD Thesis Award. Assistant Professor, Clemson University. Currently Professor, Northwestern. In 1995, as a research scientist, Dr. Allen could not formally be appointed as a co-chair for this dissertation. However, both the chair of her committee, Farrokh Mistree, and Wei Chen herself acknowledge that Dr. Allen served in that role.

MS with Thesis Completed, Georgia Institute of Technology

1. Jonathan Holmes. *Designing a Cost Estimation Method for the Design of Prototype Systems*, May 2012, Georgia Tech Research Institute.
2. Ayan Sinha, *Uncertainty Management in Design of Multiscale Systems,* F. Mistree, co-advisor, May 2011, PhD student, Purdue.

3. Mukul Singhee, *A Framework for the Design of Systems with Intelligent and Interactive Information Flow*. F. Mistree co-advisor, MS, August 2010, McKinsey & Company.
4. Markus Rippel, *Improved Robustness Formulations and a Simulation-Based Robust Concept Exploration Method,* MS, December 2009, Boston Consulting Group.
5. Chenjie Wang. *The Design Exploration Method for Adaptive Design Systems,* George W. Woodruff International Fellow. MS, May 2009, Continued for a PhD at Hong Kong University of Science and Technology.
6. Hannah Muchnick. *Robust Design of Multilevel Systems Using Design Templates*. MS May 2007. NSF Graduate Fellow. Research Engineer, Duke University.
7. Nathan Rolander. *An Approach for the Design of Data Center Server Cabinets for Thermal Efficiency*. Y. Joshi, co-advisor. MS December 2005. Applied Physics Laboratory, Johns Hopkins University, Baltimore, MD.
8. Jitesh Panchal. *Towards a Design Support System for Distributed Product Realization*. F. Mistree, co-advisor. MS December 2002. Continued at Georgia Tech for a PhD.
9. Michael Carone. *Augmenting the Product Platform Constructal Theory Method for Multiple Objectives.* F. Mistree, co-advisor. MS August 2003. The Mathworks, Boston, Massachusetts.
10. Matt Chamberlain *A Step Towards Web-Based Strategic Design*. F. Mistree, co-advisor. MS August 2002. Continued at Georgia Tech for a PhD.
11. Brian Davis*. Characterization and Calibration of Stereolithography Processes.* MS December 2001, GEM Fellow. BP-Amaco, Houston, TX.
12. Carolyn Conner Seepersad. *The Utility-Based Compromise Decision Support Problem with Application in Product Platform Design.* F. Mistree, co-advisor. MS June 2001. Continued at Georgia Tech for a PhD.
13. Amy Herrmann. *Coupled Design Decisions in Distributed Design.* MS August 1999. Air Force Research Laboratories, Fort Walton Beach, FL.

Undergraduate Students Supervised, The University of Oklahoma

1. Niklos Bosynak (ISE), Natalie Khan ISE), Ryan Marsh (AME), Joon Na (AME) and Tao Sun (AME), *Pump Stage Statstical Analysis*, Interdisciplinary Industrial and Mechanical Engineering Capstone. Spring 2013. Design, sponsored by GE Artificial Lift. Received 1st place in Industrial and Systems Engineering for the poster presentation of their project. Received 2nd place in the interdisciplinary capstone competition from the School of Aerospace and Mechanical Engineering.
2. *Adam Dachwicz, *Simulation and Analysis of the Process of Rolling Steel,* HERE Student (Honors Engineering Research Experience), Spring and Summer 2013.
3. *Paul Hoang, *Simulation and Location of Plug-in-Hybrid Electric Vehicle Charging Stations*, Fall 2012 and Spring 2013. HRAP (Honors Research Assistant Program) Student.
4. Brett Bone (AME), Andrew Freeman (ISE), Austin McAnely (ISE), Maryam Sabeghi (AME), *Powerpack Assembly Automation,* Industrial and Mechanical Engineering Interdisciplinary Capstone Design, sponsored by Hitachi. Awarded funding from the Interdiscipinary Capstone Conference held at the University of Illinois at Urbana-Champaign to attend and present their work.
5. Maryam Sabeghi, *Systems Engineering of a Cellphone*, Summer 2011. **Integrated Product and Process Design for Materials and Products.* Fall 2012.
6. Elizabeth Mintmire and Reyna Deese, *Improving Health and Safety for the Federal Aviation Administration with Standard Operating Procedures (SOPs),* IE 4393 Capstone Design Project, Spring 2011, FAA, Industrial Sponsor.
7. Matthew Summersgill, *Radiation Shielding of Medical Devices*, Spring 2011.
8. *Chris Adams, *Siting Wind Turbines in a Windfarm*, Fall 2010.
9. Natalia Rubio-Acevedo, *Windfarm Layout*, Fall 2010.
10. Marcus Graham, Comela Mathias, and Chris Vieux, *Equipment Calibration*, Industrial Engineering Capstone Design Project, Fall 2010, Aestellas Pharma, Industrial Sponsor.

11. *****Gueary Brigham, Nicholas Thompson, Christopher Mangano, Eric Nguyen, *Wind Energy Systems*, Business Case Deliverable for The Research Experience for Undergraduates, Summer 2010 Metrology Program.
12. Jordan Rogers and Jonathan Maze, Industrial Engineering Capstone Design Project 2010, Sponsored by the Wood Group ESP.

Undergraduate Students Supervised, Georgia Institute of Technology

1. *Alfredo Santos, *Evaluation of Robustness Formulations and Java-DSIDES*, with F. Mistree, full-time summer internship, 2009.
2. *Shaid Aziz, Dibyajat Mishra, Ravikant Muddu, Nilanjan Bera, F. Mistree, co-Advisor, *Materials Design*, Georgia Tech-IIT-Kharagpur Alliance Summer Intern Students (full time), May-June 2009.
3. Wesley Bryan. *Development of Heat Transfer and Pump Experiments for Mechanical Engineering Undergraduate Laboratories*. Fall 2008.
4. Steven Bradshaw*. Amphibious Robots* Fumin Zhang, co-advisor. Fall 2008, Spring 2009, Summer 2009. (Continuing work toward BSME and BSEE).
5. *Ayan Sinha *Microstructure Mediated Robust Design.* C.S. Kumar, IIT Kharagpur and J. Panchal, co-advisors. IIT Kharagpur student spent a 2 month internship at Georgia Tech, Summer 2008.
6. Stephen Harris. *Optimization of GaAs Photonic Crystal Waveguides.* Summer 2008.
7. *Jeevanjyoti Chakraborty. *Martensitic Transformation Concepts Applied to Energy Absorbing Systems.* D.L. McDowell, co-advisor. IIT-Kharagpur student spent a 2 month internship at Georgia Tech, Summer 2007.
8. *Mukul Singhee. *Configuring a Generic Decision-Based Multifunctional Alloy Design Network*. M. Chakraborty, IIT Kharagpur and F. Mistree, co-advisors. IIT Kharagpur student spent a 2 month internship at Georgia Tech in Summer 2007. Currently he is a graduate student in the Woodruff School with J.K. Allen.
9. Gautam Puri, *Simulation of Powder-Filled Blast Resistant Panel.* August 2006-August 2007. Continued toward double BS degrees in Mechanical Engineering and Aerospace Engineering.
10. Brandon Terrell. *MatLab Code That Will Adjust Variables of a Linear Cellular Alloy*. Spring 2007. Continued for graduate studies at Georgia Tech.
11. *Jin Song, *Finite Element Studies of a Blast Resistant Panel.* January 2006 to December 2006. PURA Award. Continued for graduate studies at Georgia Tech.
12. Him Chan (Tim) Lee. *Verification of Simulation of a Blast Resistant Panel.* Summer 2006.
13. *Annemarie Cardell, *Identifying Material Properties for Material Design of a Blast Resistant Panel*, 5 year BS/MS student in the Woodruff School. May 2006 to August 2006. Continued working toward 5 year BS/MS.
14. *Jonathan Gladin, *Simulation Based Design* SURF Student. Summer 2005.
15. Advised a team for MSE 4020: Designing with Materials (Capstone Design). *Simulation Based Design of Multifunctional Energetic Structural Materials (MESM).* Students: A. Battacharjee, M. Oliver, J. Peak, L. Schroeder. Fall 2004 continued to MSE 4021, Spring 2005.
16. Thang Nguyen. *Feasibility Study of Active Liquid Cooling with Cellular Materials in Temperature Combustor Liner Application.* C.C. Seepersad, co-advisor. PURA Fellow. Fall 2004. Continued for graduate studies at Georgia Tech.
17. *Hannah Muchnick *Simulation Based Design*. F. Mistree, co-advisor. SURF Student. Summer 2004, Hannah was a 5-year BS/MS student who continued for a MS with thesis at Georgia Tech with J.K. Allen.
18. *Olu Ogunsanya, (ECE). *Parametric Studies of Linear Cellular Alloys.* Summer 2003-summer 2004.
19. David Graham (ECE). *Comparative Examination of Product Platform Extent.* F. Mistree, co-advisor. Summer 2000.
20. *Abiek Musaev (CoC). *Implementing a Computer Architecture for Interactive Reflection in Design*. F. Mistree, co-advisor. Spring 1997, September 1997 – December 1998. Continued for graduate studies in Computer Science at Georgia Tech.

21. *Valerie Maier-Spredelozzi, *Using Information in Design*. F. Mistree, co-advisor. Fall 1997. Continued for graduate studies at the University of Michigan. Currently Assistant Professor at the University of Rhode Island.
22. *Amy Herrmann, *Decision Support Problems in Design*, F. Mistree, co-advisor. Summer 1997. Continued for graduate studies at Georgia Tech. Currently at the Army Research Laboratories, Fort Walton Beach, FL.
23. *Saiful Mdramali. The Role of Information Technology in Design. F. Mistree, co-advisor. Winter 1996.
24. *Richard Hamm. *Development of Planet Vayu*. F. Mistree, co-advisor. September 1995 to December 1995.
25. *Eric Witlam. *Creating a Learning Environment Around a Design Simulator*. F. Mistree, co-advisor. January 1995 to March 1995. *Creating a Learning Environment Around a Design Simulator*.
26. *Kristie McAlvin. *Web-Based Design Education*. F. Mistree, co-advisor. September 1994 May 1995.
27. *David Tibetts. *Improving the DSPT Workbook for ME3110*. F. Mistree, co-advisor. Winter 1994.
28. *Ron Dailey. *Parametric Studies in Hierarchical Design*. F. Mistree, co-advisor. January 1994 to December 1994.
29. *Douglas Nelson. *Improving the DSPT Workbook for ME3110.* F. Mistree, co-advisor. Fall 1993.
30. *Kyle Alexander. *Development of Computer-based Scheduling of Design Processes.* F. Mistree, co-advisor. Fall 1993.
31. *Zaheed Siddique. *Enhancement of the Preliminary Selection DSP for Mechanical Engineering*. F. Mistree, co-advisor. United Technologies Teaching Intern. Fall 1993. Currently Associate Professor at the University of Oklahoma.

* Indicates that the student was supported.

III.B. Teaching activities

The University of Oklahoma

Developing IE 5790 – Systems Engineering (Later this course became ISE 5033). Identifying material to be given and preparation of course, 2011. In 2012, with R.L. Shehab received funding to make this into a Presidential "Dream Course" and we have been able to invite distinguished speakers from across the United States.

ABET Preparation for the School of Industrial Engineering, Advised on various aspects of the ABET self-study report for the School of Industrial Engineering, 2010 - 2011.

IE 4394 Capstone Design, Assisted with course development, Spring 2010 – 2011. Supervising student teams, helped develop and present a lecture sequence to accompany the project, assisted with revising the evaluation rubrics.

Georgia Tech, Savannah

ME3057 Experimental Methodology, RCC, RPY, RPK. Course development Fall 2005-Fall 2008. Taught Fall 2008. In the Woodruff School at Savannah, unlike in Atlanta, ME3057 is one of the five courses which is carefully and continuously evaluated for ABET accreditation. Dr. Allen and Visiting Assistant Professor Muhammad Akbar developed the one unit communication stand associated with ME3057. This communication strand provides an opportunity to partially fulfill the Program Educational Outcomes, namely, modern topics in engineering, ethics, and lifelong learning. In addition, Dr. Allen worked with the Woodruff School Laboratory Manager, Sterling Skinner, to improve the experiments and experimental setups used in this course. She has improved the laboratory manuals for this course and also developed web-material demonstrations of the equipment available in Savannah. Dr. Allen

has also directed several undergraduate projects focused on developing the laboratory experiments for this course.

ME3322 Thermodynamics, RCC, RPK, RPY. Taught Fall 2006. Introduction to thermodynamics. Thermodynamic properties, energy and mass conservation, entropy and the Second Law. Second Law analysis of thermodynamic systems, gas cycles, vapor cycles.

ME3345 Heat Transfer, RCC, RPK, RPY. Taught Spring 2008. Introduction to the study of heat transfer, transport coefficients, steady state conduction, transient conduction, radiative heat transfer, and forced and natural convection.

ME4055 Experimental Engineering RPK, RPY. Taught Spring 2006. This was an independent-study experimental project course in which a semester-long project is managed by the students.

ME4172: Designing Sustainable Engineering Systems. Introduced 1998 – Major modifications 1998-2000, 2004, Spring 2008 course development, taught Spring 2008. Development of this course was originally underwritten by a sub-grant of a grant to the Center for Sustainable Technology from General Electric Fund for A Curriculum for Sustainable Development and Technology. In this course, Drs. Allen and Mistree provide an opportunity for students to answer the following questions: *What makes an engineering system sustainable and how can sustainability be designed into an engineering system?* The overall educational objective is to provide the opportunity to deepen understanding by undertaking a project in the design of sustainable engineering systems. The framework for this experience is decision-based design. At the end of the course, students have internalized the meaning of sustainability from different perspectives; can identify, formulate, and negotiate solutions to problems associated with sustainable development; and have gained a deeper understanding of issues typically associated with sustainable development. Earlier this course was taught under the number ME4804 in Atlanta.

ME4182: Capstone Design, RCC, RPK, RPY. Taught Fall 2005, Spring 2006, Fall 2006, Spring 2007, Fall 2007, Spring 2008, Fall 2008. In Savannah, Dr. Allen has introduced a lecture strand to strengthen the Woodruff School Savannah students' background in design and to fulfill curricular and programmatic requirements that have been articulated for purposes of ABET accreditation. Dr. Allen also worked to ensure that the Savannah students are getting an equivalent ME4182 experience to that which students in Atlanta receive. In Spring 2008 and Fall 2008, Savannah students brought posters and prototypes to display in the Mechanical Engineering Expo with the other ME4182 students in Atlanta. The Savannah students did well in these competitions. Dr. Allen worked to establish a relationship with Gulfstream Aerospace. Gulfstream has offered at least one project per semester for every semester.

Course Development

ME4053 Mechanical Engineering Systems Laboratory.

Much of the equipment/facilities from Atlanta for this laboratory could not be duplicated, therefore alternative equipment has been assembled and Dr. Allen and Visiting Assistant Professor Akbar wrote five new experiments.

- Impact of a Jet Laboratory Experiment
- Major Losses in Pipes Experiment
- Minor Losses in Fittings Experiment
- Minor Losses in Pipes Simulation Experiment
- Computer Simulation of Major and Minor Losses in Pipes Experiment

Georgia Tech, Atlanta

The George W. Woodruff School of Mechanical Engineering

ME 3110, Creative Decisions and Design. Taught Winter, Spring and Fall, 1993; Winter and Fall 1994, Winter and Fall 1995; Winter 1996; Winter and Fall 1997; and Winter 1998. ME3110 was the first design course in the ME curriculum and was required for every ME student at the Georgia Institute of Technology. Before Drs. Allen, Mistree and Rosen developed this course, it was taught be three different instructors independently. They unified the course, improved the content and introduced modern design concepts with a focus on product design. Students werre introduced to an often-turbulent imaginary world - Planet Vayu. The inhabitants of Vayu must solve a serious problem that requires an engineered solution. Students design and build a solution to this problem. One quarter they may need to build an evacuation device, another quarter a device that will transport and drop sleeping potion in enemy territory. Important activities include learning how to observe, reflect and articulate; understand the market; identify, formulate and solve decision problems that support human decision making; design a process for designing the artifact; design, build and test the artifact; and develop a rudimentary marketing strategy. In this context, the students plan their activities for the quarter, allocate resources (cost, time, and so on), and have an artifact ready to demonstrate under competition conditions near the quarter's end. Students experience the interplay inherent in meeting design requirements subject to resource constraints, selecting most-likely-to-succeed alternatives, and resolving trade-offs. Decisions are introduced as key engineering constructs to support human designers to negotiate solutions to these interdisciplinary tasks. Several resources were created for this course including a textbook, template worksheets, old reports, and software tools (see courseware).

ME 3720 Introduction to Thermal Fluids Engineering (Service course designed for Electrical and Computer Engineers) Taught Fall 2000, Spring and Summer 2002, Spring and Summer 2003, Spring and Summer 2004. Theory and application, but no exhaustive treatment of fluid mechanics, thermodynamics, and heat transfer in alaysis and design of fluid and thermal energy systems.

ME/AE/CE/CHE 4804, Designing Sustainable Engineering Systems, F. Mistree, co-instructor. Taught Spring 1995, Spring 1997, Spring 1999, Methods of identifying and selecting sustainable solutions to design problems, including making trade-offs between alternative solutions and improving existing solutions. This course evolved into ME4172 and was taught in Savannah, see above.

College of Computing

CS 1803A, CS 3803D, Introduction to Design I, Taught Winter 1996, Spring 1997, Fall 1999. Introduce students to the cycle of design: problem formulation, generation of alternatives, evaluation of alternatives, redesign, build. Extensive development of material and assignments for this course.

College of Engineering

COE 1361: Computing for Engineers. F. Mistree, C. Paredis, J.Loenard, J. Craig, co-instructors and developers. Taught Summer 2001, Fall 2001, Fall 2002, Spring 2003. Foundations of computing with an emphasis on design and implementation of algorithms that complement and support engineering problem solving. Courseware and assignments were developed for this course.

Courseware

The Design Learning Simulator, DLS (1994-1998)

Collaborators Janet Allen, Farrokh Mistree and David Rosen

The Design Learning Simulator was a computer-based environment in which students learn about design through the “doing” a design. The Design Learning Simulator was intended to support the learning of students in ME3110, with the principal focus on the early stages of design. It consists of three components – processes that are embodied, tools that support the processes, and a domain knowledge base from which to gather information to complete tasks. Sponsors: The EduTech Institute, NSF Research Experiences for Undergraduates, Proctor and Gamble. ($175,000 invested, excluding faculty time.) The

traffic to the site was high. Around 55% of the traffic was from educational institutions in the US. The rest is from companies and educational institutions from around the world.

Requests analyzed from March 26, 1997-October 24, 1997 (212 days) Total completed requests: 246,388. Total failed requests: 3,682. Total redirected requests: 413. Average requests per day 1,181. Number of distinct hosts served: 9,361. Total bytes transferred: 1,780,966,571. Average bytes transferred per day: 8,403,951.

One of the Primers which was developed for the DLS was reprinted in:
"Basic Fastener Theory, Construction Dimensions," *The Association of the Wall and Ceiling Industries,* vol. 26, no. 5, 17-23, November 1997.

Core papers include:
Turns, J. Mistree, F. and Allen, J.K. "Quantitatively Analyzing the Use and Usefulness of the Design Learning Simulator," *American Society of Engineering Education*, Milwaukee, WI, June 15-17, 1997. Paper Number 163005.

Clark, D.D., Mistree, F., Rosen, D.W., and Allen, J.K. "Function-Behavior-Structure: A Model for Decision-Based Design," *American Society of Engineering Education. Milwaukee,* WI., June 15-17, 1997. Paper Number 162501.

Turns, J., Newstetter, W., Allen, J.K., and Mistree, F., "The Reflective Learner: Supporting the Writing of Learning Essays The Support Learning of Design Through Projects." *American Society of Engineering Education,* Milwaukee, WI, June 15-17, 1997. Paper Number 22300.

The University of Houston, Downtown

Jesse Jones Summer Institute, Physics enrichment for minority high school students. 3-4 weeks, Summers 1991, 1992, 1993, 1994, 1995.

Natural Science 1107, Introductory Physics Laboratory, Spring Semesters, 1982, 1988, 1989, 1990, 1991, 1992, Summer 1989.

The University of Houston, Main Campus

MECE 5397, Resolution of Open Problems, with F. Mistree, Summer 1990, 4^{th} year/graduate. Introduction to the resolution of open problems in engineering including their characteristics, approaches for modeling and solution and validation of the solution. The intention is to present both a hands-on introduction to computational methods *per se*, and to provide the student with an intellectual framework for the assimilation of the inevitable improvements in computational capabilities.

University of New South Wales, Biomedical Engineering, Kensington, NSW, Australia. This was a new program and Dr. Allen assisted with the development of it.

1. Biomedical Statistics (32.011G) - 1979, 1980. Presentation of medical information, tests of significance, estimation, hypothesis testing, analysis of variance and design of biomedical experiments, curve fitting, correlation and regression, cluster analysis, factor analysis. These topics were discussed using current problems from the biomedical sciences, engineering and laboratory management. An introduction to statistical computing methods was included using computer packages and hand-held calculators.
2. Mass Transfer in Medicine (32.311G) with P.C. Farrell, 1978, 1979. Theoretical framework for normal and artificial medical mass exchange reactions - renal function and hemodialysis, respiration and blood oxygenators, anesthetic administration and drug kinetics.
3. Computing for Biomedical Engineers (32.500) with F. Mistree, 1980. Introduction to computing: program development, debugging and documentation. Use of computers in biomedical engineering: design of systems for the clinical laboratory, data storage and information retrieval, use and selection of computer packages, automated patient monitoring.

4. At the University of New South Wales Dr. Allen also assisted with the research supervision of six undergraduate thesis projects in engineering.

The University of California at Berkeley, Department of Chemistry and the Group in Biophysics and Medical Physics – Dr. Allen was a tutor / teaching assistant for the following courses:

1. The Biological Applications of Electron Paramagnetic Resonance, Graduate Seminar Series on Medical Physics and Biophysics, 1973.
2. Physical Chemistry Laboratories I and II, 1969. Physical techniques for the practicing chemist - methods of nmr, vacuum lines, calorimetry, X-ray diffraction, viscosity, etc.
3. Introductory Chemistry, 1969. Stoichiometry, ideal gases, chemical cells, equilibria, qualitative analysis, introductory laboratory methods.
4. Introductory Medical Physics, 1968. Applications of physical principles to medical problems. Some aspects of radiation biology, nuclear medicine, mutagenesis and environmental considerations.
5. Introductory Radiation Biophysics, 1968. Basic aspects of the interaction of particulate and electromagnetic radiation with matter, dosimetry, shielding/safety, and elementary health physics.

Courseware

The Design Learning Simulator, DLS (1994-1998) Farrokh Mistree and David Rosen, co-developers.
The Design Learning Simulator was a computer-based environment in which students learn about design through the "doing" a design. The Design Learning Simulator was intended to support the learning of students in ME3110, with the principal focus on the early stages of design. It consists of three components – processes that are embodied, tools that support the processes, and a domain knowledge base from which to gather information to complete tasks. Sponsors: The EduTech Institute, NSF Research Experiences for Undergraduates, Proctor and Gamble. ($175,000 invested, excluding faculty time.) The traffic to the site was high. Around 55% of the traffic was from educational institutions in the US. The rest is from companies and educational institutions from around the world.

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Clark, D.D., Mistree, F., Rosen, D.W., and Allen, J.K. "Function-Behavior-Structure: A Model for Decision-Based Design," *American Society of Engineering Education. Milwaukee,* WI., June 15-17, 1997. Paper Number 162501.

Turns, J., Newstetter, W., Allen, J.K., and Mistree, F., "The Reflective Learner: Supporting the Writing of Learning Essays The Support Learning of Design Through Projects." *American Society of Engineering Education,* Milwaukee, WI, June 15-17, 1997. Paper Number 22300.

IV. SCHOLARLY ACCOMPLISHMENTS

Book, Major Report

1. McDowell, D.L., Panchal, J.H., Choi, H-J., Seepersad, C.C., Allen, J.K., and Mistree, F. *Integrated Design of Multiscale Materials and Products*, Elsevier, New York, ISBN-13-978-1-85617-662-0.
2. Hoffmann-Pinther, P., Loftin, B., and Allen, J.K., *Laboratory Experiments in Physics, Part I,* University of Houston, Downtown, 1995.
3. Mistree, F., Lautenschlager, U., Erikstad, S.O., and Allen, J.K., *Simulation Reduction Using the Taguchi Method*, NASA. Accession Number: 94N17082; Document ID: 19940012609; Report Number: NAS 1.26:4542, NASA-CR-4542, S-734, 1993.

Chapters in Books

1. Mistree, F., Panchal, J.h., Schaefer, D., Haroon, S., and Siddique, Z., "Personalized Engineering Education for the 21st Century." In Curriculum Models for the 21st Century, (Eds. M. Gosspar and D. Ifenthaler) Springer. (in presss).
2. Holmes, JF, Russell, G. and Allen, JK. 2012. "Supervisory Control and Data Acquisition (SCADA) and Related Systems for Automated Process control in the Food Industry: An Introduction." In *Robotics and Automation in the Food Industry: Current and Future Technologies*. (Ed. D. Caldwell) Woodhead Publishers, Cambridge, UK.
3. Allen, J.K., "Uncertainty Management in Materials Design and Analysis" in *Handbook of the American Society of Materials*. Eds. D. Furrer and S.L. Semiatin, Vol. 22B, pp. 631-639. 2010. Invited chapter.
4. Panchal, J.H., Choi, H-J., Allen, J.K., Rosen, D., and Mistree, F. "An Adaptive Service-Based Framework for Distributed Product Realization," in *Collaborative Product Design and Manufacturing Methodologies and Applications*. (W.D. Li, S.K. Ong, A.Y.C. Nee, and C. McMahon, Eds.) Springer Series in Advanced Manufacturing. pp. 1-36. 2007.
5. Panchal, J.H., Fernández, M.G., Paredis, C.J.J., Allen, J.K., and Mistree, F. "Leveraging Design Process Related Intellectual Capital – A Key to Enhancing Enterprise Agility." in *Collaborative Product Design and Manufacturing Methodologies and Applications*. (W.D. Li, S.K. Ong, A.Y.C. Nee and C. McMahon, Eds.) Springer Series in Advanced Manufacturing. pp. 202-233. 2007.
6. Seepersad, C.C, Pedersen, K., Emblesvåg, J. Bailey, R.R., Allen, J.K., and Mistree, F. "The Validation Square: How Does One Validate Design Methods?" in *Decision-Based Design: Making Effective Decisions in Product and Systems Design*. (W. Chen, K. Lewis, and L. Schmidt, Eds.) New York, NY. ASME Press. Chapter 25, pp. 305-326. 2006.[1]
7. Williams, C.B., Allen, J.K., Rosen, D.W., and Mistree, F. "Process Parameter Platform Design to Manage Workstation Capacity," in *Product Platform and Product Family Design: Methods and Applications*. (T. Simpson, Z. Siddique, R. Jiao, Eds.) New York, NY. Springer Press. pp. 421-456. 2006.
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2. Rezapour, S., Allen, J.K., Trafalis, T.B. and Mistree, F. "Robust Supply Chain Network Design by Considering Demand-Side Uncertainty amd Supply-side Disruption." (M. Parkinson, Editor) ASME Design Automation Conference. Portland, OR. Paper DECT2013-13188.
3. Gautham, B.P., Guota, P., Kulkarni, N., Panchal, J.H., Allen, J.K. and Mistree, F. "Robust Design of Gears with Materials and Load Uncertainties." (M. Parkinson, Editor) *ASME Design Automation Conference*, Portland, OR. Paper DETC2013-12170.
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[1] Invited contribution in honor of Dr. Craig Hartly for his 40 years of Contributions to the field of Mechanics and Materials Science.

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18. Tsui, K-L, Allen, J.K., Chen, V., and Mistree, F. "Robust Design of Product Families Using Metamodels." *NSF Grantees Conference*. Birmingham, AL. January 6-9, 2003.
19. Lin, Y., Allen, J.K., and Mistree, F. "Metamodel Validation with Deterministic Computer Experiments." *9th AIAA/ISSMO Symposium on Multidisciplinary Analysis and Optimization.* Paper No: AIAA-2002-5245. Atlanta, GA. September 4-6, 2002.
20. Mistree, F., Seepersad, C.C., Dempsey, B.M., McDowell, D.L., and Allen, J.K. "Robust Concept Exploration Methods in Materials Design." *9th AIAA/ISSMO Symposium on Multidisciplinary Analysis and Optimization.* Paper No: AIAA-2002-5568. Atlanta, GA. September 4-6, 2002.
21. Murphy, T.E., Tsui, K-L., and Allen, J.K. "Compromise Design Settings for Multiple Responses." *9th AIAA/ISSMO Symposium on Multidisciplinary Analysis and Optimization.* Paper No: AIAA-2002-5615. Atlanta, GA, September 4-6, 2002.
22. Panchal, J.H., Chamberlin, M.K., Rosen, D.W., Allen, J.K., and Mistree. F. "A Service Based Architecture for Information and Asset Utilization in Distributes Product Realization." *9th AIAA/ISSMO Symposium on Multidisciplinary Analysis and Optimization.* Paper No: AIAA-2002-5480. Atlanta, GA. September 4-6, 2002.
23. Seepersad, C.C., Dempsey, B.M., Allen, J.K., Mistree, F., and McDowell, D.L. "Design of Multifunctional Honeycomb Materials." *9th AIAA/ISSMO Symposium on Multidisciplinary Analysis and Optimization.* Paper No: AIAA-2002-5626. Atlanta, GA. September 4-6, 2002.
24. Xiao, A., Zeng, S., Allen, J.K, Rosen, D.W., and Mistree, F. "Collaborating Multidisciplinary Decision Making using Game Theory and Design Capability Indices." *9th AIAA/ISSMO Symposium on Multidisciplinary Analysis and Optimization.* Paper No: AIAA-2002-5617. Atlanta, GA. September 4-6, 2002.
25. Hernandez, G., Allen, J.K., and Mistree, F. "An Approximation-Based Approach for Making Sequential Decisions in Constructal Theory." *2001 Design, Service and Manufacture Grantees and Research Conference*. Tampa, FL. January 7-10, 2001.
26. Cowan, F.S., Allen J.K., and Mistree, F. "Exploring Perspectives with Living Systems Theory in the Design of Complex Engineering Systems." *ISSS2000: Proceedings of the 44th Annual Conference of the International Society for the Systems Sciences.* Toronto, Canada. July 16-19, 2000.
27. Allen, J.K., and Mistree, F. "Hierarchical Configuration Design*." NSF Grantees Conference.* Vancouver, Canada. Jan. 3-6, 2000.
28. Mistree, F., and Allen, J.K. "Enterprise Design." *NSF Grantees Conference*. Vancouver, Canada. January 3-6, 2000.
29. Cowan, F.S., Allen, J.K., and Mistree, F. "Modeling Perspectives with Living Systems Theory in the Design of Complex Engineering Systems." *42nd Annual Meeting of the ISSS*. (M.L. Hall and J. Wilby, Eds.). Paper No. 9937. Pacific Grove, CA. June 27-July 2, 1999.

30. Lin, Y., McDermott, S.D., Snow, B.W., Allen, J.K., and Mistree, F. "An Approach for Developing Top-Level Product Specifications: Decision Support Problems in Conceptual Design and Preliminary Synthesis." *Third World Congress of Structural and Multidisciplinary Optimization*. pp. 42-44. Amherst, NY. May 17-21, 1999.
31. Rangarajan, B., Allen, J.K., and Mistree, F. "Modeling Uncertainty in Preliminary Design Stages Through the use of Fuzzy Goals in Compromise Decision Support Problems." *Third World Congress of Structural and Multidisciplinary Optimization.* pp. 393-395. Amherst, NY. May 17-21, 1999.
32. Bailey, R., Bras, B., and Allen, J.K. "Numerical Simulation Approaches for Modeling Industrial Ecosystems." *42nd Annual Meeting of the ISSS*. Paper No: 3104. Atlanta, GA. July 19-24, 1998.
33. Herrmann, A.E., Rosen, D.W., Escoe, K., Maier-Spredelozzi, V., and Allen, J.K. "The Development of a Sustainable System under Uncertainty." *42nd Annual Meeting of the ISSS*. Paper No: 3135. Atlanta, GA. July 19-24, 1998.
34. Pedersen, K., Allen, J.K., and Mistree, F. "On Evolution and Engineering Systems Development." *42nd Annual Meeting of the ISSS*. Paper No: 3109. Atlanta, GA. July 19-24, 1998.
35. Allen, J.K., and Mistree, F. "Design of Structured Large Systems." *NSF Grantees Conference*. pp. 61-62. Monterrey, Mexico. January 6-8, 1998.
36. Koch, P.N., Allen, J.K., and Mistree, F. "A Robust Concept Exploration Method for Configuring Engines." *NSF Grantees Conference*. pp. 13-14. Monterrey, Mexico. January 6-8, 1998.
37. Allen, J.K., and Mistree, F. "Design of Structured Large Systems." *Proceedings, NSF Design and Manufacturing Grantees Conference*. pp. 25-26. Seattle, WA. 1997.
38. Koch, P.N., Allen, J.K., and Mistree, F. "A Robust Concept Exploration Method for Configuring Engines." *NSF Design and Manufacturing Grantees Conference.* pp. 27-28. Seattle, WA. 1997.
39. Allen, J.K. "Learning Physics Through Design." *NSF-Sponsored Design Education Workshop:*
40. http://guzdial.cc.gatech.edu/DEW/program.html. Georgia Institute of Technology, Atlanta, GA. September 8-9, 1997.
41. Clark, D.D., Mistree, F., Rosen, D.W., and Allen, J.K. "Function-Behavior-Structure: A Model for Decision-Based Design." *American Society of Engineering Education.* Paper No: 162501. Milwaukee, WI. June 15-18, 1997.
42. Turns, J., Mistree, F., and Allen, J.K. "Quantitatively Analyzing the Use and Usefulness of the Design Learning Simulator." *American Society of Engineering Education*. Paper No: 163005, Milwaukee, WI. June 15-18, 1997.
43. Turns, J., Newstetter, W., Allen, J.K., and Mistree, F. "The Reflective Learner: Supporting the Writing of Learning Essays That Support the Learning of Design Through Projects." *American Society of Engineering Education.* Paper No: 223001. Milwaukee, WI. June 15-18, 1997.
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45. Mistree, F., and Allen. J.K. "Position Paper: Optimization in Decision-Based Design." *Optimization in Industry Conference.* Palm Coast, FL. March 23-27, 1997.
46. Allen, J.K., and Mistree, F. "The Design of Hierarchical Systems." *Proceedings, NSF Design and Manufacturing Grantees Conference.* pp. 3-4. 1996.
47. Mistree, F., and Allen, J.K. "Introducing Manufacturing Considerations in the Very Early Stages of Product Design." *Proceedings, NSF Design and Manufacturing Grantees Conference.* pp. 61-62. 1996.
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49. Simpson, T.W., Chen, W., Allen, J.K., and Mistree, F. "Conceptual Design of a Family of Products Through the Use of the Robust Concept Exploration Method." *AIAA/NASA/USAF/ISSMO Symposium on Multidisciplinary Analysis and Optimization.* pp. 1535-1545. AIAA Paper No: 96-4161. Bellevue, WA. September 4-6, 1996.

50. Clark, D.D., Koch, P.N., Mistree, F., and Allen, J.K, "The Use of Living Systems Analogy in the Conceptual Creation of a Design Catalog." *Annual Meeting of the ISSS.* pp. 189-200. University of Louisville, Louisville, KY. July 14-19, 1996.
51. Koch, P.N., Mistree, F., and Allen, J.K. "Designing at the Function Level of Abstraction: Partitioning and Modeling Design Requirements." *Annual Meeting of the ISSS.* pp. 387-398. University of Louisville, Louisville, KY. July 14-19, 1996.
52. Peplinski, J., Allen, J.K., and Mistree, F. "Manufacturing Enterprise Design: Modeling the Organization, Its Product, and Its Processes." *Annual Meeting of the ISSS.* pp. 483-494. University of Louisville, Louisville, KY. July 14-19, 1996.
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54. Guzdial, M., Vanegas, J., Mistree, F., Rosen, D., Allen, J.K., Turns, J., and Carlson, D. "Supporting Collaboration and Reflection on Problem Solving in a Project-Based Classroom." *Second Congress on Computing in Civil Engineering.* Atlanta, GA. June, 1995.
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57. Mistree, F., and Allen, J.K. "Designing for Function and Manufacturability at a High Level of Abstraction." *Proceedings, NSF Design and Manufacturing Grantees Conference*. pp. 1-2. San Diego, CA. January 4-6, 1995.
58. Vadde, S., Allen, J.K., Lucas, T., and Mistree, F. "On Modeling Design Evolution along a Design Time-Line." *AIAA/NASA/USAF/ISSMO Symposium on Multidisciplinary Analysis and Optimization*. pp. 1474-1482. AIAA Paper No. AIAA-94-4313-CP. Panama City, FL. September 7-9, 1994.
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60. Allen, J.K., and Mistree, F. "Design of Hierarchical and Nonhierarchical Systems using Fuzzy Compromise Decision Support Problems." *Proceedings, NSF Grantees Conference on Design and Manufacturing Systems Research.* pp. 1-2, Boston, MA. January 6-9, 1994.
61. Mistree, F., and Allen, J.K. "Designing at the Function Level of Abstraction." *Proceedings, NSF Grantees Conference on Design and Manufacturing Systems Research.* pp. 71-73. Boston, MA. January 6-9, 1994.
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63. Mistree, F., Allen, J.K., and Attia, F. "Designing at the Function Level of Abstraction." *Proceedings, NSF Grantees Conference on Design and Manufacturing Systems Research.* pp. 621-627. Charlotte, NC. 1993.
64. Chen, W., Allen, J.K., and Mistree, F. "Decision Support Problems: An Effective Approach for Determining a Condition-Based Maintenance Program for Gas Turbines." *Proceedings 1993 Predictive Technology Symposium.* pp. 615-630. Orlando, FL. June 22-24, 1993.
65. Allen, J.K., Krishnamachari, R.S., Masetta, J., Pearce, D., Rigby, D., and Mistree, F. "Fuzzy Compromise: An Effective Way to Solve Hierarchical Design Problems." *Proceedings of the Third Air Force/NASA Symposium on Recent Advances in Multidisciplinary Analysis and Optimization.* pp. 141-147. San Francisco, California. 1990.
66. Allen, J.K., Simovich, G., and Mistree, F. "Selection under Uncertain Conditions: A Marine Application," *Fourth International Symposium on Practical Design of Ships and Mobile Units.* pp. 80.1-80.8. Varna, Bulgaria. 1989.

67. Mistree, F., Muster, D., Shupe, J.A., and Allen, J.K. "A Decision-Based Perspective for the Design of Methods for Systems Design." *Recent Experiences in Multidisciplinary Analysis and Optimization.* (J-F. Barthelmy, Ed.) NASA CP 3031. Hampton, VA. 1988.
68. Beresford, D., Allen, J.K., and Mistree, F. "Determination of the Fleet for Patrolling Australia's Exclusive Economic Zone." *Australian Symposium on Ship Technology*. pp. 353-367. University of New South Wales, Sydney, Australia. 1979.
69. Allen, J.K., and Mistree, F. "Subjective Decision Making in the Evaluation of Competing Floating Dry Dock Designs." *Australian Symposium on Ship Management.* pp. 527-541. University of New South Wales, Sydney, Australia. 1977.

IV.D. Presentations

1. Allen, J.K., "The Realization of Complex Systems: Managing Uncertainty." TACTICS Satellite Symposium, Pune, India, January 3, 2013
2. Khosrojerdi, A., Xiao, M., Ahmed, S., Sarikprueck, P., Kulvanitchaiyanunt, A., Allen, J.K., Chen, V., Rosenberger, J., Lee, W-J., and Mistree, F., "Adaptive Design for Controllability of Charging Stations for Plug-in Hybrid Electric Vehicles," INFORMS Annual Meeting. Phoenix, AZ. October 15, 2012.
3. Khosrojerdi, A., Xiao, M., Allen, J.K. and Mistree, F., "Discrete Event Simulation of Demand at PHEV Charging Stations," INFORMS Annual Meeting. Phoenix, AZ. October 15, 2012.
4. Allen, J.K. "Managing Uncertainty in the Realization of Complex Systems." Tata Consultancy Services, Pune. India. May 30, 2012.
5. Allen, J.K. and Mistree, F. "Decision Support Problems in Robust Design." Tata Consultancy Services, Pune, India. Tata Consultancy Services, Pune, India. March 17, 2012.
6. Allen, J.K. and Mistree, F. "Improving the Process of Strategic Design." Tata Consultancy Services, Pune, India. March 13, 2012.
7. Allen, J.K., "2030 Where Will We Get Our Energy?" The Green Energy Middle School Teachers at The University of Oklahoma, June 16, 2011.
8. Allen, J.K., "Engineering Power from Wind," The Department of Geography and Environmental Sustainability, The University of Oklahoma, April 22, 2011.
9. Allen, J.K., "Small Windpower," OSSM, March 1, 2011.
10. Allen, J.K. and Mistree, F., "Improving the Process of Strategic Design," *The AFIT Symposium on Product Development Research,* November 12, 2010.
11. Allen, J.K., "Managing Uncertainty in Simulation Based Engineering Design," School of Industrial Engineering. University of Texas at Arlington, May 24, 2010.
12. Allen, J.K., "Template Based Robust Design of Multiscale Materials," '07 TMS/ASM Symposium on Computational Materials Design, G.E. Global Research Headquarters, Niskayuna, NY, August 21, 2007.
13. Allen, J.K., Muchnick, H., Messer, M. McDowell, D.L. and Mistree, F., "Simulation and Template Based Robust Design of Blast Resistant Panels," *17th US Army Symposium on Solid Mechanics*, Baltimore, MD., April 4, 2007.
14. Allen, J.K., "The Woodruff School in Savannah: Mechanical Engineering in Savannah: Innovation has No Boundaries," Kiwanis at Skidaway, GA, July 16, 2006.
15. Allen, J.K., and Mistree, F. "Reconceptualizing NSF DMII: A Holistic Approach for the Realization of Complex Products in an Interconnected World." *Engineering Design 2030: A Strategic Planning Workshop*. Gold Canyon, AZ. March 26-29, 2004.
16. Allen, J.K. "Learning for 2020", Keynote Presentation at the Midsummer meeting of the Georgia Industrial Fellowships for Teachers (GIFT) Program. July 8, 1999.
17. Bailey, R., Bras, B., and Allen, J.K. "Designing Industrial Ecosystems: A Systems Approach." 100th Anniversary Celebration of Beijing University. May 1-5, 1998.
18. Mistree, F., Allen, J.K., Thompson, J.C., Clark, D.D., Turns, J. "A Design-Learning Simulator: An Environment for Learning How to Design." *American Society of Engineering Education*. Milwaukee, WI. June 15-18, 1997.
19. Thompson, J.C., McAlvin, K., Allen, J.K., and Mistree, F. "Collaborative Design using Laptops: Observations and Lessons Learned," *American Society of Engineering Education*. Milwaukee, WI. June 15-18, 1997.

20. Allen, J.K. "Research in a Learning Organization" Principal Speaker, GTRI Learning Technologies Initiative Advance. February 28, 1997.
21. Allen, J.K. "Sustainable Engineering." Kvaerner ASA, Oslo, Norway. September 17, 1996.
22. Shupe, J.A., Muster, D., Allen, J.K., and Mistree, F. "A Decision-Based Perspective for the Design of Methods for Systems Design." *Recent Experiences in Multidisciplinary Analysis and Optimization.* NASA CP 3031. September, 1988. (Invited paper).
23. Allen, J.K., Mims, M., Dennison, D.K., and Morrisett, J.D. "Flow Mircofluorometry of Native Lipoproteins and Small Unilamellar Vesicles." *29th Annual Meeting of the Biophysical Societ*y. Baltimore, MD. February, 1985.
24. Allen, J.K., Dennison, D.K., and Morrisett, J.D. "Determination of the Partition Coefficient for a Fluorescent Lipophile Probe in Lipid Vesicles by Direct Observation of Probe Distribution in Vesicle Populations." *28th Annual Meeting of the Biophysical Society.* San Antonio, TX. February 1984.
25. Allen, J.K., Pownall, H.J., and Morrisett, J.D. "Radius of Curvature Effects on the Rate of Transfer of Octyl-Pyrene from POPC-Cholesterol Vesicles," *Federation Proceedings*. vol. 42, pp. 1909. 1983.
26. Allen, J.K., and Adnea, M.A. "Plasma Lipids, Uric Acid and Ethanol Consumption." *184th National American Chemical Society Meeting.* Kansas City, MO. 1982.
27. Allen, J.K., Whitfield, J.B., and Hensley, W.J. "Assessing the Determinants of Plasma Levels of High-Density Lipoprotein Cholesterol." *Proceedings of the Australian Association of Clinical Biochemists, 19th Annual Conference.* Sydney, Australia. 1980.
28. Fraser, I.S., and Allen, J.K. "The Effects of Danazol on High-Density Lipoprotein Cholesterol," *6th International Congress of Endocrinology.* Melbourne, Australia. 1980.
29. Whitfield, J.B., Allen, J.K., Adnea, M.A., Gallagher, H.G., and Hensley, W.J. "A Biochemical and Haematological Profile of Alcohol Consumption, *1st Australasian Congress of Clinical Biochemistry.* Singapore. 1979.
30. Whitfield, J.B., Allen, J.K., Gallagher, H.G., Hensley, W.J., Nichols, A.V., and Stellino, G. "Centrifugal Method for the Measurement of High-Density Lipoprotein Cholesterol." *Proceedings of the Australian Association of Clinical Biochemists, 17th Annual Conference*. Adelaide, Australia. 1978.
31. Allen, J.K., and Matsurua, W. "The Electrocardiogram in Aging, Male, C57BL/6J Mice," *27th Annual Meeting of the Gerontological Society.* Portland, OR. 1974.
32. Allen, J.K. "Reaction of Ninhydrin with Amino Acids, Peptides and Proteins: Electron Spin Resonance Studies." *The Biophysical Society, 16th Annual Meeting*. Toronto, Canada. 1972.
33. Allen, J.K. "The Reaction of Ninhydrin with Amino Acids, Peptides and Proteins: Electron Spin Resonance Studies." *American Chemical Society. 162nd Annual Meeting*. Washington, D.C. 1971.

Other Scholarly Accomplishments

1. Allen, J.K. "Liposomes (Book Review)," *New England Journal of Medicine,* vol. 310, pp. 667, 1984.
2. Mistree, F., Allen, J.K., Karandikar, H., Shupe, J.A., and Bascaran, E. *Learning How to Design: A Minds-on, Hands-on Decision-Based Approach,* 340 pages, 1990. (Text for ME3110).
3. Mistree, F., Allen, J.K., and Rosen, D.W. *Designing for Success: Workbook for ME3110,* approximately 200 pages – different editions for different semesters had different numbers of pages.
4. Basic Fastener Theory, Construction Dimensions, *The Association of the Wall and Ceiling Industries,* Vol. 26, No. 5, Nov. 1997, pp. 17-23. (Taken from material developed for the ME3110 web.)

Edited Conference Proceedings and Edited Books of Abstracts

1. Wilby, J., Allen, J.K., and Loureiro-Koechlin, C., Eds., *ISSS2006: Proceedings of the 50th Annual Conference of the International Society for the Systems Sciences*, CD-ROM, ISBN 0-9740735-7-1.

2. Wilby, J., and Allen, J.K., Eds., *ISSS2005: Proceedings of the 49th Annual Conference of the International Society for the Systems Sciences,* CD-ROM, ISBN 0-9740735-5-5.
3. Allen, J.K., and Wilby, J., Eds., *ISSS2004: Proceedings of the 48th Annual Conference of the International Society for the Systems Sciences*, CD-ROM, ISBN 0-9740735-2-0.
4. Wilby, J., and Allen, J.K., Eds., *ISSS2003: Proceedings of the 47th Annual Conference of the International Society for the Systems Sciences*, CD-ROM, ISBN 0-09664183-6-0.
5. Allen, J.K., and Wilby, J., Eds., *ISSS2002 Proceedings of the 46th Annual Conference of the International Society for the Systems Sciences*, CD-ROM, ISBN 0-9664183-8-7.
6. Allen, J.K., and Wilby, J., Eds., *ISSS2001: Proceedings of the 45th Annual Conference of the International Society for the Systems Sciences*, ISBN 0-09664183-6-0.
7. Allen, J.K., and Wilby, J., Eds., *ISSS2000: Proceedings of the 44th Annual Conference of the International Society for the Systems Sciences*, CD-ROM, ISBN 0-9664183-5-2.
8. Allen, J.K., Hall, M.L.W., and Wilby, J., Eds., *ISSS1999: Proceedings of the 43rd Annual Conference of the International Society for the Systems Sciences*, CD-ROM, ISBN 0-9664183-2-8.
9. Allen, J.K., and Wilby, J. Eds., *ISSS1998: Proceedings of the 42nd Annual Conference of the International Society for the Systems Sciences*, CD-ROM, ISBN 0-9664183-0-1.
10. Allen, J.K. Ed., *Abstracts: ISSS1998, 42nd Annual Conference of the International Society for the Systems Sciences,* ISBN 0-9664183-1-X.

V. SERVICE

V.A. Professional Contributions

National/International

Host to NSF Decision-Based Design Workshop, November 17-18, 1996 (With F. Mistree)

Member, Organizing Committee, 1998 ASME Design Engineering Technical Conferences, Atlanta, September 13-17 1998. Dr. Allen organized exhibits for this conference. This was the first time that DETC had had a considerable exhibition – approximately $5,000 was made which was donated to funding ASME's Spria Outstanding Educator Award. Dr. Allen received letters of commendation from the ASME Design Engineering Division both for resurrecting the industrial exhibition and donating the proceeds to the Spira Award.

Chair Organizing Committee, Annual Conference of the International Society for the System Sciences (ISSS), Atlanta, July 19-24, 1998. ISSS has a distinguished history; past presidents include most of the important figures in systems sciences, e.g., Ludwig von Bertalanffy, Anatol Rapoport, Margaret Mead, George Klir, Bela Banathy, and Ilya Prigogine. However, by 1998, this society had fallen on hard times. Due to poor management, the ISSS was in debt a few hundred dollars from previous conferences. Dr. Allen organized this conference without credit and made about a $5,000 profit, thus making possible future conferences. Also, for the first time at this conference, Dr. Allen arranged for the publication of the proceedings on CD.

Co-Editor (with J. Wilby), *Annual Proceedings of the ISSS*, 1998-2006, See Other Scholarly Accomplishments, IV.E.

Co-Chair NSF/ASME Undergraduate Design Essay Competition (with F. Mistree). Obtained funding from the NSF, identified topics, reviewers, publicized the competition, arragned with the ASME for a poster session, formed a panel of judges, selected winners and presented awards. Winners of this competition receive funding to travel to IDETC, present their work in the form of a poster and receive certificates from ASME at the DED Honors and Awards Luncheon. About 10 students receive this award annually. Four of those who have won this competition have later won best paper awards, one won the student mechanisms competition, several are now assistant professors. 1998-present.

Program Chair, 2000, Conference Chair, 2001 ASME Design Theory and Methodology Conference part of the Design Engineering Technical Conferences.

Superchair (organized the review for about 30 papers related to uncertainty) AIAA/ISSMO Workshop on Multidisciplinary Analysis and Optimization Conference. September 4-6, 2002, Atlanta, GA.

Chair, ASME Design Theory and Methodology Technical Committee, 2005-2007.

Member, Committee to Select ASME/Pi Tau Sigma joint awards. 2005-2010.
Associate Editor, *ASME Journal of Mechanical Design*, 2006-2013. Co-Guest Editor for Special Issue on Designing Complex Engineered Systems, October 2011.
Broadening Participation Committee, Design Engineering Division, ASME, (August 2010 – Present). Member.
Prosecutor at the Dissertation Defense of Luis Castillo Moreno, Department of Energy and Process Engineering, Norwegian Institute of Science and Technology, Trondheim, Norway. Dissertation title: An Integrated Framework for Decision Making in Liquefied Natural Gas (LNG) Projects. 2/28/2013, in Trondheim, Norway.

Other

Reviewer, NSF – reviewed proposal in the mail 1996; Panels 1997, May 2003 and February 2006 (Dr. Allen chaired the February 2006 panel), NSF Graduate Research Fellowship Panel, Mechanical Engineering 2. 2000-2012 (Dr. Allen chaired the 2008-2012 Panels).
Reviewer, *Engineering Optimization*, since 1998.
Reviewer, *Journal of Computers and Information in Engineering*, since 2004.
Reviewer, *ASME Journal of Mechanical Design*, since 1996.
Reviewer, *Research in Engineering Design*, since 1996.
Reviewer, *Engineering Design and Automation*, since 1998.
Reviewer Text Books (with F. Mistree): Richard D. Irwin, Inc. (1991). Addison-Wesley Publishing Company (1991, 1992). John Wiley and Sons, Inc. (4/1989, 12/1989). West Publishing Company (1989). McGraw-Hill Book Company (1987).
Reviewer, WETICE Conference, 2000, 2002, 2004.
Reviewer for Tools and Methods of Concurrent Engineering (TMCE) 2004, 2007, 2009, 2011.
Review Coordinator, for ASME's Design Automation Conference 1998-2004, 2006-2007; Design Theory and Methodology Conference, 1997-2010 and Design Education Conference, 2007.
Judge, Science and Engineering Fair, Houston, 1982, 1983, 1986, 1987, 1988, 1989, 1990.
Judge, 33rd International Science and Engineering Fair, Houston, 1982.
Judge National Science Olympiad, Atlanta, GA 1996.
Judge Georgia Tech Nu Chapter, Pi Tau Sigma Design Competition, 1994.

Member, American Chemical Society, 1971 – present.
Member, American Society for Engineering Education, 1994 – present.
Fellow/Member, American Society of Mechanical Engineers, member, 1993/fellow 2005 - present.
Senior Member/Member, American Institute of Aeronautics and Astronautics – member 1995, senior member 1993.
Honorary Member, Pi Tau Sigma, National Mechanical Engineering Honor Society, 2000 - present.
Fellow of the American Heart Association 2001. and Fellow of the AHA Council on Arteriosclerosis 1986. Silver Heart Award, 2004. Resigned 2005.
Member, Society of Women Engineers, 2008-present.
Member, Informs, 2009-present.
Member, Institute of Industrial Engineers, 2009-present.

Georgia Tech Campus Contributions

Institute-Wide

Evaluated Applications for Admission to Georgia Tech (Undergraduates). Fall/Winter 1997. Evaluated approximately 400 applications.
Member, Search Committee for the Director of Industrial Design, Georgia Tech, 1997/98.

The George W. Woodruff School of Mechanical Engineering

Director, Systems Realization Laboratory, 2001-2007

The Systems Realization Laboratory (SRL) in the George W. Woodruff School of Mechanical Engineering at Georgia Tech is home to approximately 30-35 graduate students and several

undergraduates specializing in mechanical engineering design. The four founding faculty members, Farrokh Mistree, Bert Bras, David Rosen and Janet Allen were joined by Chris Paredis (2002), Dirk Schaefer (2006), Seung-Kyum Choi (2006) and Mervyn Fathianathan (2006). The mission of the SRL is to provide an opportunity for all members of the SRL – students, staff and faculty - to learn how to rise to their full potential.

During Dr. Allen's tenure as Director (2001-2007) of the Systems Realization Laboratory, four faculty members were added, 14 students graduated with PhD's, 34 students with MS theses, more than 125 refereed articles were published, more than $3,000,000 of research funding was obtained and SRL faculty members participated in an AFOSR MURI grant, an I/UCRC with Penn State University, and the Engineering Research Center for Compact and Efficient Fluid Power. Also, the SRL was recognized internationally by faculty from Cambridge University in a compendium of design education/research programs to watch:

Allen, J.K., Bras, B., Mistree, F., Paredis, C.J.J., Rosen, D. "Georgia Institute of Technology: The Systems Realization Laboratory" in *Design Process Improvement - A Review of Current Practice* Eds.: Clarkson, P.J., and Eckert, C., Springer, pp. 490-493, 2004.[1],

Faculty Advisor, The Georgia Tech Nu Chapter of Pi Tau Sigma, (2000- present).
While Dr. Allen has been faculty advisor, the Pi Tau Sigma Nu Chapter introduced the Mechanical Challenge, a jeopardy style competition. Schlumberger and Shell Oil Company fund this event. Students compete in teams of three for up to $2,700 in prizes. This competition focuses attention on opportunities in mechanical engineering and brings Georgia Tech's G.W. Woodruff School of Mechanical Engineering publicity. Dr. Allen encourages the students to focus on graduate studies by offering an information session from the Woodruff School Associate Chair for Graduate Studies, discussions of research opportunities for graduate students in various branches of mechanical engineering, a panel discussion by existing graduate students, if needed, GRE preparation, etc. Service activities have included campus beautification, TeamBuzz, the Atlanta food bank, tutoring, and various contributions to the Woodruff School. A representative from Pi Tau Sigma sits on the Woodruff School undergraduate student advisory committee (WSSAC). Since 2000, the Georgia Tech Nu Chapter has been recognized as one in Good Standing[2], Outstanding Chapter (2000, 2002-7) and recognized for Outstanding Service (2002). The Nu Chapter hosted the National Convention February 15-17, 2008 to coincide with the 75th anniversary of the Georgia Tech chapter. More than 200 people from more than 60 universities attended this conference.

Assisted starting the G.W. Woodruff School at Georgia Tech Savannah (2005-2008)
In August 2003, Professors Mistree and Allen were invited by the Provost, Professor Jean-Lou Chameau, to relocate to Georgia Tech, Savannah and help establish the Woodruff School of Mechanical Engineering in Savannah. They accepted the invitation and relocated to Savannah in July 2005. Drs. Mistree and Allen worked as a team, with the strong support of Professor Ward Winer[3] and their colleagues in Atlanta, in establishing the Woodruff School in Savannah.

Dr. Allen served as the informal undergraduate coordinator for the Woodruff in Savannah from 2005-2008. She was involved with preparations for ABET, recruiting faculty, assisting faculty establish themselves, determining course offerings and schedules, organizing and improving laboratory facilities and experiments, advising students, recruiting graduate students for all mechanical engineering faculty in Savannah, hiring administrative assistants, and created SRL Savannah. Specifically:

- Dr. Allen has worked to ensure that the educational standards set the in George W. Woodruff School on the Atlanta campus were maintained in the Woodruff School in Savannah. Before

[1] Invited contribution.
[2] There are over 160 chapters of Pi Tau Sigma. Typically less than 30 qualify for this accolade.
[3] Chair of the Woodruff School until December 2007.

her arrival, pre-requisites were not being enforced and the standards for readmission following academic dismissal were lower than in Atlanta. For calibration purposes, the untenured assistant professors and visiting assistant professors were paired with the Woodruff School Atlanta faculty. These teams worked to ensure that course content and grading standards were equivalent on both campuses. She focused on ensuring that undergraduate research activities and the design courses were up to Woodruff School standards. Further, she arranged tutorials for those who had difficulty with courses offered by faculty in Atlanta via distance learning.

- 2007-2008: Dr. Allen worked to organize and improve the mechanical engineering undergraduate laboratory experiences for ME3057 and ME4053. Dr. Allen directed students in designing and making equipment for the undergraduate laboratories and re-writing the laboratory manuals, took parts to be machined to the Woodruff School machine shop in Atlanta, worked with the faculty in Atlanta to adjust the laboratory experiments while maintaining their pedagogical goals and together with Visiting Assistant Professor Muhammad Akbar developed the experiments and manuals for five experiments. She wrote the successful Technology Fee Fund applications in 2006, 2008.
- ABET-2008: Dr. Allen did and wrote the transcript analyses for the Woodruff School in Savannah for ABET, prepared the undergraduate laboratories for the ABET visit: cleaned and organized the laboratories, checked the safety of the laboratory equipment, and developed posters describing the laboratory experiments and the communication strand. She created the display for ME4812, created the notebooks for display of student work for ME3345, ME4182, ME4172. She prepared course syllabi and rubrics and organized the systematic evaluation of ME3345, ME4182, and ME4172.

Member, Search Committee for Chair of the George W. Woodruff School of Mechanical Engineering, 2007.

Chair/Member/Observer – Design Qualifier Committee (observer 2005/2006, member 2006-2008, chair 2008-2009.)

Member, G.W. Woodruff School Graduate Committee, 2006-2009.

Member, G.W. Woodruff School - Savannah Steering Committee 2005-2008.

Member, G.W. Woodruff School - Savannah Faculty Recruiting Committee, 2005-2008.

Member, G.W. Woodruff School Undergraduate Committee, 2005/2006.

Member, G.W. Woodruff School Instructional Laboratory Committee, 2005/2006.

With C. Valle and N. Bassiri-Gharb, Dr. Allen represented the Woodruff School at the SWE08 Career Fair, November 6-7, 2008, Baltimore, MD.

Represented the Woodruff School at all MS/PhD graduation ceremonies from 2004-2009.

Georgia Tech Savannah

Member, The George W. Woodruff School of Mechanical Engineering ABET Preparation Team, 2006/2009.

Member, Committee to Investigate Possibilities for Collaboration between Georgia Tech Savannah and The Skidaway Institute 2005/2006

Reviewed Thermodynamics and Chemistry for FE Exam, GT Savannah, Fall 2005, 2006, 2007, 2008, Spring 2006, 2007, 2008.

The University of Oklahoma

Member, The School of Industrial and Systems Engineering, ABET Preparation Team, 2009/2011.

Graduate Liaison, The School of Industrial and Systems Engineering, 2012/present.

Other Contributions

Hosted Sunday School for the Atlanta Zoroastrian Community (monthly) August 1992 to October 2001 F. Mistree, co-host.
Secretary for the Troop Committee, Boy Scouts of America, Troop 77, June 1997 – December 2004
Merit Badge Coordinator, Boy Scouts of America, Troop 77, June 2000 - April 2003.

VI. GRANTS AND CONTRACTS

VI.A. As Principal and Co-Principal Investigator

1. Title: NIH Pre-Doctoral Fellowship
   Sponsor: National Institutes of Health, Administered through the Department of Medical Physics, University of California, Berkeley
   Period of Performance: 9/69-8/72

2. Title: NIH Post-Doctoral Fellowship
   Sponsor: National Institutes of Health
   Result: Funded
   Funding Level: About $100,000 over 3 years
   Period of Performance: 1/75-12/75

3. Title: NIH Post-Doctoral Fellowship
   Sponsor: National Institutes of Health Administered Through the Department of Atherosclerosis and Lipoprotien Research, The Baylor College of Medicine
   Funding Level: $51,000
   Period of Performance: 8/92-8/95

4. Title: Regulation of Lipid Transport
   Sponsor: National Institutes of Health Through the BSRG Program administered in The Baylor College of Medicine
   Funding Level: $10,000
   Period of Performance: 4/86 - 9/86

5. Title: Partitioning and Planning for Unified Life Cycle Engineering Design
   Sponsor: SBIR Program, Wright-Patterson Air Force Base
   Funding Level: $50,000
   Period of Performance: April-September 1989
   Proposal submitted by DM&A Associated, Houston, Texas, PI's: D. Muster and F. Mistree, Co-PI J.K. Allen

6. Title: Decision Support Problems: Their Use in the Early Stages of Project Initiation (Short Course)
   Sponsor: NASA Johnson Space Science Center
   Funding Level: $5,000
   Period of Performance: February through March 1991.
   PI: F. Mistree, Co-PI: J.K. Allen

7. Title: Designing Using Available Assets
   Sponsor: University of Houston: Institute for Space Systems Operation
   Funding Level: $9,000
   Period of Performance: 6/92-9/92
   PI: F. Mistree, Co-PI: J.K. Allen

8. Title: Designing at the Functional Level of Abstraction
   Sponsor: National Science Foundation
   Funding Level: $156,000
   Period of Performance: 1/93-12/96
   PI: F. Mistree, Co-PI: J.K. Allen

9. Title: Design of Hierarchical and Non-Hierarchical Systems
   Sponsor: National Science Foundation
   Funding Level: $213,210
   Period of Performance: 1/93-12/96
   PI: F. Mistree, Co-PI: J.K. Allen

10. Title: Research Experiences for Undergraduates
    Sponsor: National Science Foundation
    Funding Level: $30,000
    Period of Performance: 1/93-12/96
    PI: F. Mistree, Co-PI: J.K. Allen

11. Title: Research Experiences for Undergraduates
    Sponsor: National Science Foundation
    Funding Level: $30,000
    Period of Performance: 12/92-12/95
    Co-PI's: F. Mistree and J.K. Allen

12. Title: Development of an Integrated and Collaborative Learning Simulator
    Sponsor: EduTech Institute, Georgia Tech
    Amount Requested: $26,300.
    Period of Performance: June 1994 to May 1995.
    Co-PIs: J.K. Allen, F. Mistree, D. Rosen (ME), Mark Guzdial (CoC)

13. Title: Collaborative Learning Based on Real-World Engineering Tasks
    Sponsor: ARPA/DODDS
    Amount: $475,000
    Period of Performance: About 6/95-5/99
    PI's: J. Kolodner (CoC), J.K. Allen, Paul Chinowski (CE), Mark Guzdial (CoC), Cindy Hmelo (CoC), Mike McCracken (CoC). (Lead taken by J. Kolodner)

14. Title: Learning for Global Competitiveness: Preparing Students for the New Design Workplace
    Sponsor: Procter and Gamble Foundation
    Funding Level: $149,675
    Period of Performance: 9/96-8/99
    PI: Janet Kolodner, Co-PIs: F. Mistree, M. McCracken, M. Realff, J.K. Allen and S.Khan.

15. Title: A Curriculum for Sustainable Development and Technology
    Sponsor: Sub-grant of a grant from the General Electric Fund through the Center for Sustainable Technology
    Funding Level: $50,000
    Period of Performance: 4/96-6/97
    PIs: F. Mistree and J.K. Allen

16. Title: A Design Center: Using Cognitive Science and Technology to Facilitate Learning and Doing Design
    Sponsor: National Science Foundation
    Funding Level: $50,000
    Period of Performance: 9/96-8/97
    PIs: Janet Kolodner and Mark Guzdial, Co-PIs: Gregory Abowd, Chris Atkenson, Peter Freeman, Scott Hudson, Mike McCracken, Ashwin Ram, Chuck Eastman, Sabir Khan, Craig Zinring, Janet Allen, Farrokh Mistree, David Rosen, Pete Lodovice, Matthew Realff, Fred Martin and Michael Resnick of MIT, Andy diSessa of the University of California, Berkeley, Michael Eisenbery/Gerhard Fischer/Clayton Lewis and Alex Repenning of the University of Colorado Boulder, Rich Lehrer and Leona Schauble of the University of Wisconsin, Madison. Corporate Partners: Addison-Wesley, Apple Computers and Netscape

17. Title: Enterprise Design: Integrating Product, Process and Organization
    Sponsor: National Science Foundation
    Funding Level: $324,839
    Period of Performance: 3/97-2/00
    PI: F. Mistree, Co-PIs: J.K. Allen and W. Riggs

18. Title: Research Experiences for Undergraduates
    Sponsor: National Science Foundation
    Funding Level: $10,000
    Period of Performance: 12/97-12/98
    Co-PI's: F. Mistree and J.K. Allen

19. Title: A Robust Concept Exploration Method for Configuring Engines
    Sponsor: National Science Foundation
    Funding Level: $324,546
    Period of Performance: 10/96-9/99
    Merit Based Extension to 9/2000: Additional Funding Received $64,909
    PI: F. Mistree, Co-PI's J.K. Allen and D. Mavris
    REU Supplement: $10,000 received 1/2000

20. Title: Rapid Tooling Test Bed for Injection Molding
    Sponsor: National Science Foundation
    Funding Level: $1,349,000
    Period of Performance: 9/97-8/00
    PI: D. Rosen, Co-PI's: J.K. Allen, J. Colton, T. Kurfess, F. Mistree

21. Title: A Scientific Formalism for Product Realization for a Global Manufacturing Enterprise: An Opportunity for Undergraduates
    Sponsor: National Science Foundation
    Funding Level: $35,000
    Period of Performance: July 1, 1998-June 30, 2004
    PI: J.K. Allen, Co-PI: F. Mistree

22. Title: Distributed Design and Manufacture Using PRE
    Sponsor: SANDIA National Laboratories, Livermore, California
    Funding Level: $60,000
    Period of Performance: 10/98-9/00
    Prime: De-AC04-AL85000, Contract: LG-6207
    Co-PI's: F. Mistree, J.K. Allen, A. Dugenske

23. Title: Characterization and Calibration of Stereolithography Products and Processes
    Sponsor: Rapid Prototyping and Manufacturing Institute
    Funding Level: Support for one MS student
    Period of Performance: September 1999 – August 2001
    PI: J.K. Allen

24. Title: Distributed Design and Manufacture: A Practical Usage Scenario
    Sponsor: National Institute for Standards and Technology (NIST)
    Funding Level: $25,000
    Period of Performance: 1/00-9/00
    PIs: F. Mistree and J.K. Allen

25. Title: Engineering Open Product Architectures: A Constructal Approach
    Sponsor: National Science Foundation
    Funding Level: $342,020
    Period of Performance: 10/00-9/03
    REU Supplements: $12,000 approved, 1/2001, $12,000 approved 6/2003
    PI: F. Mistree, Co-PI: J.K. Allen

26. Title: A Decision Support Environment for Affordable Change
    Sponsor: Office of Naval Research
    Funding Level: $119,406
    Period of Performance: 12/2000-9/30/2001
    PI: F. Mistree, Co-PI: J.K. Allen

27. Title: Robust Design Optimization for Designing Product Platforms
    Sponsor: National Science Foundation
    Funding Level: $436,300
    Period of Performance: 8/15/2001-8/14/2004
    PI: K-L Tsui (ISYE), Co-PI's: Allen, Chen (ISYE-U Texas, Arlington), Mistree

28. Title: MURI 2002 – Multifunctional Energetic Structural Materials
    Sponsor: Air Force Office of Scientific Research
    Funding Level: $4.99 million
    Period of Performance: 5/02-4/07
    PI S. Hanagud (AE), Co-PIs: Allen, Li, McDowell, Mistree, Saxena, Thadani, Min Zhou. plus several others at the University of Florida and the University of Maryland.
    (Farrokh Mistree and Janet Allen developed a distributed computational framework and accompanying design and analysis capabilities as a part of this initiative. Their share of funding is $50,000 per year. They received an additional supplement of $30,000 to demonstrate proof-of-concept for a computer-enabled distributed design framework.)

29. Title: NSF/AFOSR Joint Project for an Interactive, Distributed, Computational Environment for the Design of Multifunctional Materials and Processes
    Sponsor: National Science Foundation
    Funding Level: $20,000
    Period of Performance: 4/15/04-3/31/05
    Co-PI's: F. Mistree, J.K. Allen, D.L. McDowell

30. Title: Aircraft Interior Redesign
    Sponsor: Gulfstream, Inc.
    Funding Level: $82,763
    Period of Performance: 8/04-12/05
    Co-PIs: F. Mistree, J.K. Allen
    Extension being processed by the Georgia Tech Foundation; funds have been received at GTF.
    Funding Level: $25,000

31. Title: A Scientific Formalism for Product Realization for a Global Marketplace
    Sponsor: National Science Foundation
    Funding Level: $30,000
    Period of Performance: 0715/2005-6/30/2007
    Co-PI's: J.K. Allen and F. Mistree

32. Title: ICAMDD 2005
    Sponsor: National Science Foundation
    Funding Level: $25,000
    Period of Performance: 09/15/2005-08/31/2006
    Co-PI's: J.K. Allen and F. Mistree

33. Title: Systems-Based Robust Materials Design: Methods that Account for Both Risk and Uncertainty
    Sponsor: I/UCRC - Center for Computational Materials Design (An NSF Sponsored I/UCRC between The Pennsylvania State University and Georgia Tech).
    Funding Level: $79,000
    Period of Performance: 4/06-3/08.
    PI: J.K. Allen Co-PI: D.L. McDowell

34. Title: SACE-Statistics-Aided Computer Experiments
    Sponsor: National Science Foundation
    Funding Level: $300,000
    Period of Performance: 8/06-7/09.
    PI: C.F.J. Wu (ISYE) Co-PIs: J.K. Allen, K-L. Tsui and R. Joseph

35. Research Support – Farrokh Mistree and Janet Allen
    Sponsor: Gulfstream Aircraft, Inc.
    Funding Level: $65,000
    Period of Performance: 1/07-1/11.
    CoPI's: J.K. Allen and F. Mistree

36. Student Design Essay Competition: Foundations of Design
    Sponsor: National Science Foundation
    Funding Level: $37,500
    Period of Performance: 7/08-6/10.
    Co-PIs: J.K. Allen and F. Mistree

37. ME-Shell-Pi Tau Sigma
    Sponsor: Shell Oil Company
    Funding Level $31,000
    Period of Performance: 3/07- 12/09.
    PI: J.K. Allen

38. ME-Pi Tau Sigma National Convention
    Sponsor: Schlumberger
    Funding Level: $25,000
    Period of Performance: 9/08-6/10.
    PI: J.K. Allen

39. SEED: Robust Control of Wind Power Generating Systems
    Sponsor: College of Engineering, University of Oklahoma,
    Funding Level: $10,000
    Period of Performance 6/2010- 4/2011
    PI: J.K. Allen, co-PI's J.S. Greene, M.L. Morrissey

40. Student Design Essay Competition: Designing Complex Systems in 2030
    Sponsor: NSF
    Funding Level: $49,998
    Period of Performance 8/15/2011-7/1/2014
    PI's J.K. Allen and F. Mistree

41. EPAS/AIS Collaborative Research: Adaptive Design for Controllability of a System of Plug-in-Hybrid Electric Vehicle Charging Stations
    Sponsor: NSF
    Funding Level: $144,743
    Period of Performance: 8/30/2011-8/31/2014
    PI's J.K. Allen and F. Mistree

42. EAGER: Identifying Challenges in the Integrated Design of Materials and Products
    Sponsor: NSF
    Funding Level: $87,499
    Period of Performance: 1/1/2013-12/31/2013
    PI's J.K. Allen and F. Mistree

43. Dream Course: Understanding and Engineering Systems
    Sponsor: President Boren, The University of Oklahoma
    Funding Level: $20,000
    Period of Performance: 8/2012-5/2013
    PI's J.K. Allen and R.L. Shahab

As an investigator.
Dr. Allen has not kept a record of those grants in which she participated but was not a PI or Co-PI. Some of the faculty/projects she has been involved with at Georgia Tech include:

- The EduTech Institute with Professor Janet Kolodner (CoC). (From 1995-2000, about six months time and effort.) Dr. Allen developed and enhanced the ME3110 web facilities and studied how students used this material. She was part of a team teaching courses aimed at understanding how students could use the computer to facilitate design learning.
- The Manufacturing Research Center with Dr. Mike Kelly (approximately 2 months time and effort, 1995). Participated in writing and editing the report *Motorola 2010* in which we proposed developing a site for educating a cadre of Motorola employees at Georgia Tech.
- The Institute for Sustainable Technology and Development with Carol Carmichael (1999-2000, overall about 33.3% time and effort although time commitment varied). Responsible for assessing and assisting with the development of Georgia Tech's curriculum in sustainability and obtaining an overview of Georgia Tech's research in sustainable development.

Consultant

- Conoco, Inc., Houston, 1986-1987.
- D. M. & A, Inc., Houston, Texas, 1989-90.
- NASA Johnson Space Center, Houston, Texas, February/March 1991.
- NASA Langley Research Center, Hampton, Virginia, 1984 to 1985, 1987.
- Tata Consultancy Services, Pune, India, 2012, 2013

HONORS AND AWARDS

- National Institutes of Health Pre-Doctoral and Post Doctoral Fellowships (see Grants and Contracts.)
- Fellow of the American Heart Association 2001and Fellow of the AHA Council on Arteriosclerosis 1986; resigned in 2005.
- Fellow of the American Society of Mechanical Engineers; Member 1993; Fellow 2005.
- Senior Member, American Institute of Aeronautics and Astronautics. Member 1995; Senior Member 2003.
- Honorary Member, Pi Tau Sigma National Mechanical Engineering Honor Society 2000.
- R.E. Fulton Best Paper Award. Engineering Information Management Committee. ASME Computers and Information in Engineering Division. 2004.
- Professor Emerita, The George W. Woodruff School of Mechanical Engineering, Georgia Tech, 2009.