

Department of
Mechanical & Aerospace Engineering

Fall 2009

www.mae.ufl.edu

Celebrating 100 Years!



MECHANIC ARTS

A curriculum in the mechanic arts, as engineering was known, began at the Florida Agricultural College in Lake City in 1884 and stressed practical knowledge (“...a graduate’s value is not based on what he knows, but what he can do.”) Later, a School of Technology was established that became the College of Engineering in 1910. The college grew to be one of the nation’s largest technical schools and a leader in innovative technologies. Advances in radio technology, hurricane tracking, solar energy and biomaterials are among the innovations made at the college. This site marks the first engineering complex on campus, which included Walker Hall and the original Benton Hall. Benton Hall, built in 1911, was demolished in 1967.

UNIVERSITY of
FLORIDA
HISTORICAL MARKER 2009

We had a fantastic Centennial Celebration of the Mechanical Engineering department this Fall. The College of Engineering celebrated its 100th year anniversary as well. The two-day event included a symposium honoring the past century, a plaque dedication, the annual fall picnic, a tailgate party and the Vandy football game (which of course we won quite easily). I want to thank all the friends, alums, faculty (current and emeritus), staff and students who made the events very memorable.

The department of Mechanical and Aerospace Engineering is continuing its strong growth. Our total undergraduate and graduate enrollments are close to 1400 and 400, making us one of the largest departments in the university.

When I joined the department in 2006 the faculty strength was 42 with several open lines. One of the goals I had set at that time was to grow the department to about 55 in five years. This was important in order to lower the student-to-faculty ratio and thereby ensure the highest quality education to our students. Furthermore, a careful look at our distinguished peers (Michigan, Penn State, Georgia Tech and the like) proves that faculty size does matter in reputation and ranking. We are currently at 51, and plan on hiring four more in the next year. Our Dean has announced 20 more interdisciplinary lines in emerging areas of nanotechnology, energy, biotechnology, computational science and engineering, IT and sustainability. Given the central role mechanical and aerospace engineering plays in these topics, I am confident that some of these lines will go our way. Thus, we are well on our way to reaching an important goal.

Another important goal I set was to make our undergraduate laboratories absolutely world class. We have taken a number of critical steps the past three years. First, we hired dedicated top-notch instructors for the laboratory courses. We have introduced a new mechanics of materials laboratory and coordinated it with the other laboratories. We are expanding the laboratory space and have invested several hundred thousand dollars in state-of-the-art equipments, such as wind tunnels and Instron machines. In fact, we are not just improving our laboratories, we are teaming up with National Instruments in revolutionizing laboratory education. The model that we are developing will be soon pursued at other outstanding institutions.

The final goal I want to talk about is the New Mechanical and Aerospace Engineering building. The new building is the key element of our future plan that will tie together the outstanding progress that we have made, and that which we are making, in teaching, research and service enterprise. The MAE building is the #1 priority for the college and it is also high up on the campus building priorities list. The status of the State's economy has somewhat slowed our progress, however, with continued support from friends and alums (see page 11) we can turn our dream to a reality.

Finally, let us enjoy the new year by rooting for our Florida Gators at the Allstate Sugar Bowl.

Go Gators.



S. "Bala" Balachandar

Cover:

The Mechanic Arts historical marker was installed on November 6, 2009. It is placed on the south side of Grinter hall, which is the site of the original Benton Hall. This marker, designated by the University of Florida History Advisory Council, is the seventh marker installed on campus with one at an IFAS location in South Florida. The historical markers program is supported financially by the UF Alumni Association and seeks to describe major research achievements, explain missions as a land-grant and flagship university, recount different aspects of campus culture, and highlight individuals and groups who made important contributions.



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1. Dean Cammy Abernathy and Mayor Pegeen Hanrahan receiving proclamation from city for Mechanic Arts Day

2. Mayor Pegeen Hanrahan and John J. Benton (son of founding Dean John R. Benton)

100th Anniversary of Mechanical Engineering at UF

Photos by Evelyn Hemp

The Department of Mechanical and Aerospace Engineering celebrated their 100-year anniversary over the weekend of November 6-7, 2009. The milestone anniversary celebration was held in conjunction with the College of Engineering's "100 Years of Gator Engineering" yearlong centennial celebration.

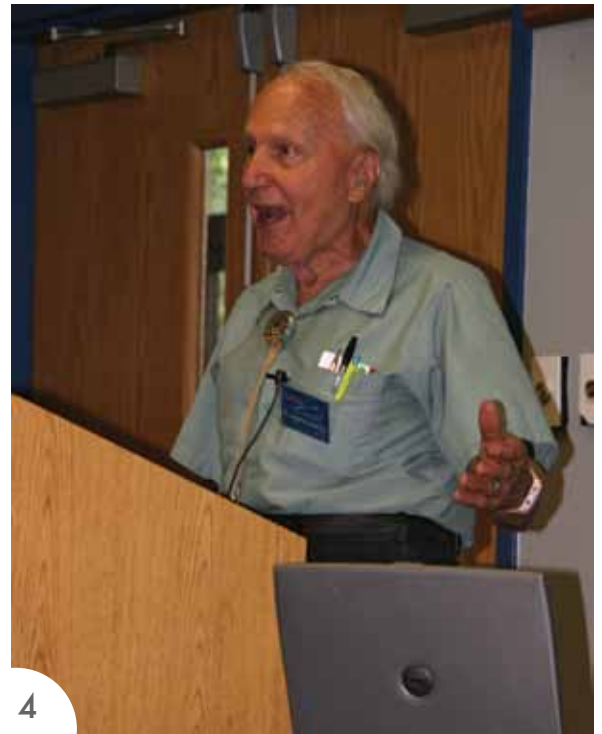


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3. Jimmy Lu, Bala, and Sung Lu (Professor Emeritus of MAE)

4. Erich Farber Professor Emeritus of MAE

5. Carl Van Ness (Official University of Florida Historian), Gene Hemp (Vice Provost Emeritus and Emeritus Professor of MAE), Mayor Pegeen Hanrahan, John J. Benton



4



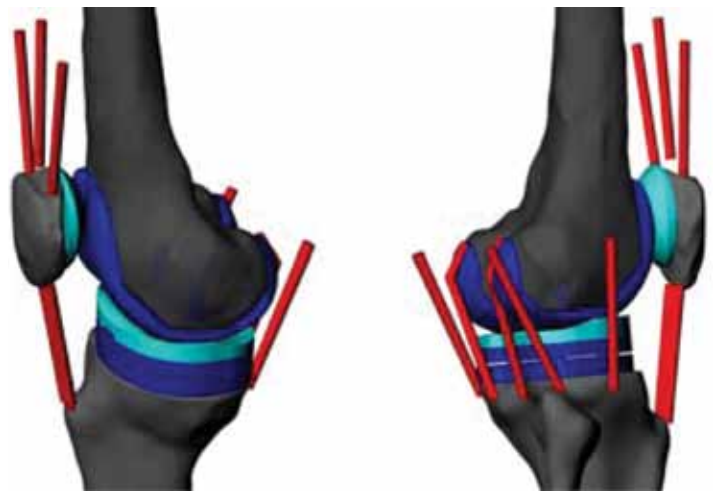
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Faculty News

Professor **Z. Hugh Fan** won the E. T. S. Walton Award from Science Foundation Ireland in Aug. 2009. The award enables him to take a two-semester sabbatical, assuming Walton Visiting Professorship in the Biomedical Diagnostics Institute (BDI) at Dublin City University in Ireland. BDI is comprised of more than 100 scientists, developing diagnostic platforms through integration of clinical, industrial and academic expertise. Professor Fan's work at BDI will focus on device design and testing for sorting and concentration of rare circulating tumor cells.

Professor **B.J. Fregly** is spearheading a research effort to critically evaluate the ability of musculoskeletal models to predict muscle and joint contact forces in the knee reliably during walking. Knowledge of these internal loads could improve the diagnosis and treatment of neuromusculoskeletal disorders that affect walking ability (e.g., stroke, cerebral palsy, osteoarthritis). Fregly and his collaborators Dr. Darryl D'Lima of Scripps Clinic and Dr. Thor Besier of Stanford University are organizing a "grand challenge" competition at the 2010 ASME Summer Bioengineering Conference in Florida. Competitors will use experimental

movement data released by D'Lima to attempt to predict contact forces in the knee during walking without knowing the measured values in advance. Blinded predictions will be submitted to the research team, and the best predictions will be presented in a special session at the conference next June. Fregly and Besier have developed a web site to disseminate information about and data for the competition (<https://simtk.org/home/kneeloads>). In the three months it has been up, the web site has received over 3,900 page hits by over 280 unique visitors, with over 275 downloads of competition data and documentation by 55 interested researchers on 6 continents, indicating strong international interest in this novel approach to model validation. Funding for this project is currently pending with the National Institutes of Health and the National Science Foundation.



Combined muscle, articular contact, and dynamic knee model used to estimate muscle and contact forces simultaneously .

Professor **Gloria Wiens** attended the Advanced Robotics and Mechatronics Symposium in South Africa, Nov 9-10, 2009, where last year she was the keynote speaker. This year she brought two Italian researchers from the National Research Council-ITIA of Milan, Italy: Professors Irene Fassi and Giacomo Bianchi. Fassi presented "Handling and Manipulation of Meso/Micro Components." Bianchi presented, "Virtual Prototyping of Machine Tools." Wiens presented, "Folding Mechanisms as a Robotic Solution for Small Satellite Rendezvous and Docking Missions."



Professors Gloria Wiens and Hitomi Greenslet are pictured as part of the Women of the USA Manufacturing Science and Engineering Research Community. This photo was taken at the NSF WIRES in Barcelona, Spain, June 2009.



Professor **John Schueller** and German colleagues organized a special event in northern Germany for 22 leading agricultural machinery engineering experts from ten countries in early November. They visited the main factories of five leading equipment manufacturers, participated in the Landtechnik AgEng 2009 conference, and were among the over 350,000 attendees at the Agritechnica show in Hannover. The visit was sponsored by Section III of the International Commission of Agricultural and Biosystems Engineering (CIGR), which Schueller chairs. (Professor Schueller is pictured in the center of the photo).

TWO MACHINE TOOL RESEARCH CENTER FACULTY RECEIVE FOUR NEW NSF GRANTS

Hitomi Greenslet and **Tony Schmitz**, MTRC director, were awarded a grant entitled “Surface Functionalization by Magnetic Field Assisted Finishing”. The goal of the study is to produce surfaces with characteristics in the nanometer to micrometer range that enable desired functionality for complex-shaped components. Surface generation will be realized using a magnetic field to locally manipulate abrasives, which cause material removal and surface deformation.

Tony Schmitz and **Burak Ozdoganlar**, Carnegie Mellon University, received a grant entitled “Collaborative Research: Unified Three-Dimensional Dynamic Modeling for Drilling and Milling Tool Assemblies (STaRC-3D)”. The objective of this study is to advance the drilling/milling modeling community by making available a new analytical framework for predicting the coupled torsional/axial and non-axisymmetric bending dynamics of drilling/milling tool-holder-spindle-machine assemblies in an accurate and numerically efficient fashion.

Tony Schmitz and **Ali Abbas**, University of Illinois at Urbana-Champaign, received the grant “Collaborative Research: Applying Bayesian Predictive Modeling and Decision Theory to

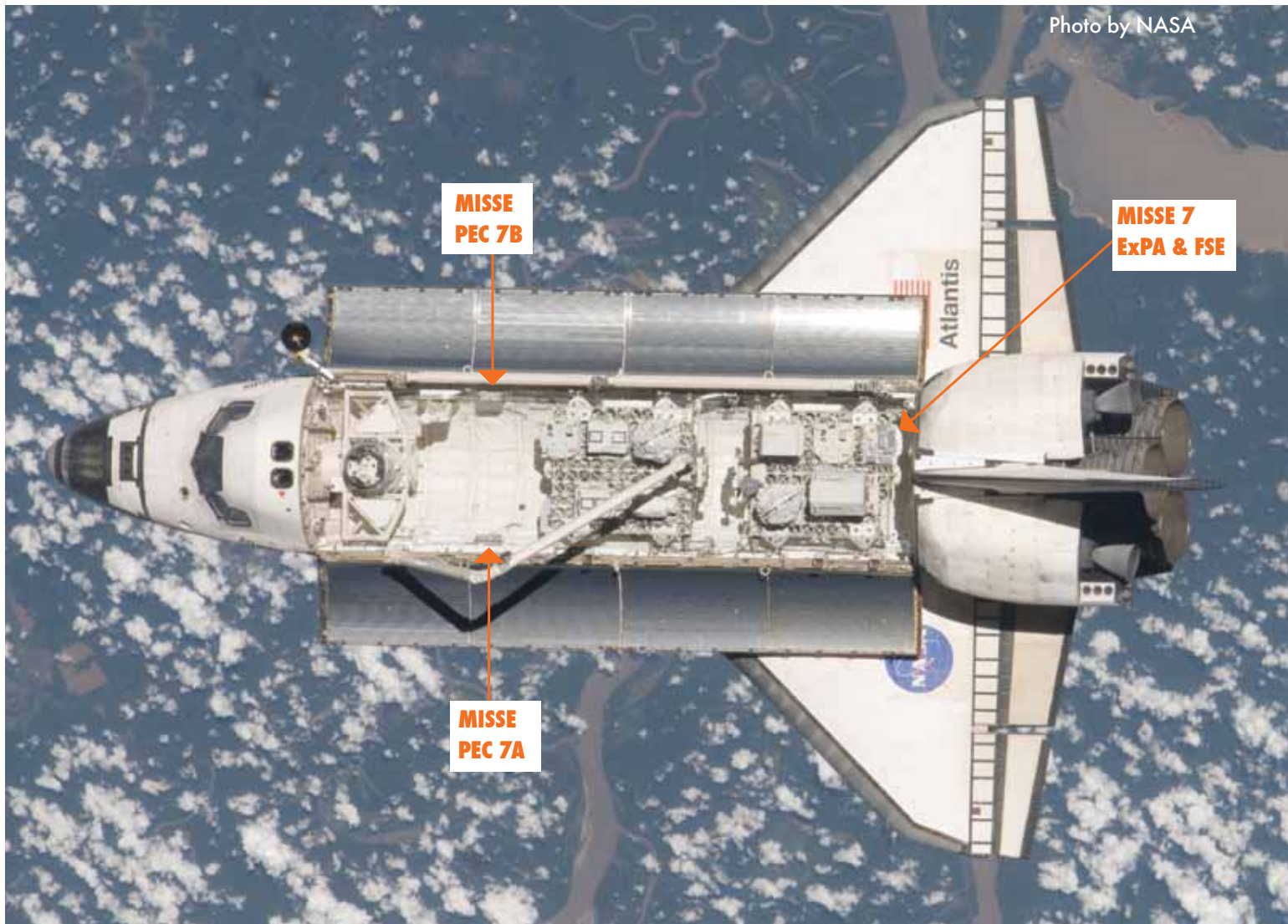


L to R: Alfred C. Loos, President of ASC; Sankar; and Anthony Deraco of DEStech Publishing Co.

Bhavani V. Sankar is the recipient of the 2009 ASC/DEStech Award given by the American society for Composites. The award is sponsored by Destech Publishing Co., a major publisher of books and conference proceedings in the area of composites.

Milling Profit Optimization under Uncertainty”. The objective of this research is to establish a new paradigm for the selection of optimal milling parameters under uncertainty. The new approach combines Bayesian predictive modeling and decision theory from mathematics, economics, and operations research with modeling

capabilities from machining science research and represents a fundamental departure from deterministic, model-based selection of milling parameters to a more realistic approach that incorporates the inherent uncertainty in model predictions.



Our Spring 2009 newsletter featured a pictorial of Professor Greg Sawyer and his students working to install their tribometers on the Materials International Space Station Experiments 7 (MISSE 7). On November 16, 2009, the MISSE 7 was successfully launched aboard Space Shuttle Atlantis STS 129. Sawyer, his family and some of his students attended the launch at Kennedy Space Center in Cape Canaveral, FL. [continue page 8](#)

Space Shuttle Atlantis STS 129 as viewed from the International Space Station prior to docking. The MISSE PEC Experiments 7a and 7b are in the front of the cargo bay and the Express Logistics Carrier (ExPa).

Tony Schmitz was awarded a grant to organize a workshop entitled "Uncertainty in Machining". The aim of the workshop is to assemble experts from machining science, mathematics, economics, and operations research to identify areas of opportunity for the multi-disciplinary treatment of uncertainty in machining and other manufacturing operations. It will be held in Arlington, VA from February 24-26, 2010.

Professor **Hitomi Greenslet** received the certificate of Merit for Excellent Paper of the Conference, 3rd JSME/ASME International Conference on Materials and Processing, September 14, 2009. The award was given by the Japan Society of Mechanical Engineers for the paper entitled, "Study of magnetic field assisted finishing of quartz wafers." Authors: Hitomi Yamaguchi (Greenslet), Kazuki Yumoto, Takeo Shinmura, and Takahiko Okazaki.



STS-129 Astronauts on a space walk. During the third space walk the MISSE 7 experiments were installed and turned on. All 8 tribometers successfully turned on and began making measurements in space. On the top right of the image the Express Logistics Carrier can be seen attached to the ISS.

THE *Curie* LECTURE SERIES

The Curie Lecture was established in honor of Marie Curie. She was both a physicist and chemist and the first female winner (1903) of the Nobel Prize. Marie Curie is still the only person who has been awarded the prize in two different areas of science.

Christine Ortiz

*Associate Professor
Materials Science and Engineering
Massachusetts Institute of
Technology*



Dr. Christine Ortiz presented “Natural Armor: An Encyclopedia of Protective Engineering Designs” for the 2009 Curie Lecture, held December 10. This annual series brings prominent women engineers to visit the department. Ortiz holds a B.S. from Rensselaer Polytechnic Institute and an M.S. and Ph.D. from Cornell University all in the field of materials science and engineering. She has 100+ scientific publications in more than 20 different academic Journals and has given more than 100 invited national and international lectures. For a detailed look at Dr. Ortiz’s research please visit: <http://dmse.mit.edu/faculty/faculty/cortiz>

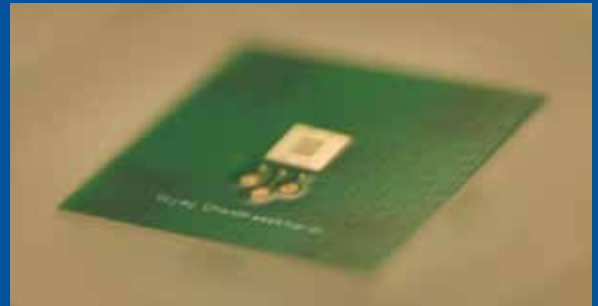
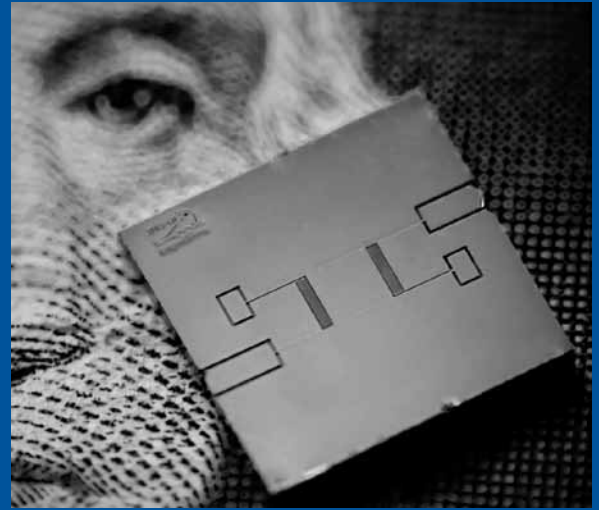
Student News



Vijay Chandrasekharan, a Ph.D. student of Professor Mark Sheplak, developed a microelectronic systems (MEMS)-based capacitive wall shear stress sensor for turbulence measurements as part of his dissertation. Chandrasekharan graduated in May 2009 and is now a postdoctoral research associate at UF. The sensor consists of a tethered floating element structure with

comb fingers for electromechanical transduction. The device employs silicon-micromachining techniques to develop a metal-plated, differential capacitive floating-element based design. A simple fabrication process with two lithography steps is used with deep reactive ion etching on silicon on insulator wafer. Chandrasekharan's current research focuses on further development to transition the shear stress sensor to wind tunnel facilities at NASA with an ultimate goal to conceive a commercially viable product.

Chandrasekharan recently also received one of the thirteen national post doctoral entrepreneurial fellowships awarded by the Kauffman Foundation. The award, given by the Ewing Marion Kauffman, is a yearlong fellowship program that uses entrepreneurship education and mentorship to equip the Fellows to commercialize their scientific discoveries. In addition to providing a salary and benefits to support the Fellows' research, the Kauffman Foundation has matched each Fellow with an academic advisor to mentor him/her on matters beyond research, and an experienced investor or corporate leader to serve as a business mentor. During the Fellowship year, each Fellow also will undertake an industry internship suited to his or her research interests and objectives. Stemming



from his inclination towards MEMS technology, Chandrasekharan's research interests include MEMS sensor and actuator design, modeling, fabrication, and characterization. Chandrasekharan envisions a viable startup company in pursuit of his entrepreneurial ambitions by commercializing his work in the emerging market for MEMS products with applications in various fields such as aerospace, environment and medical sciences.

Tyler Holley, Mechanical Engineering, has been named a UF Honorable Mention for Outstanding Student Leadership, to be presented at Fall 09 graduation.

Hyo Soo Kim, a Ph.D. student supervised by Tony Schmitz, was awarded the 2009 Korean Graduate Student Research Award from UF's Korean Scholastic Excellence Fund. The award included a cash prize of \$500.

Baron Johnson received the AIAA Best Student Paper Award for Atmospheric Flight Mechanics at the 2009 AIAA Atmospheric Flight Mechanics Conference held in Chicago in August 2009. His paper was entitled "Characterizing Wing Rock as a Function of Size and Configuration of Vertical Tail". Johnson is a 3rd-year PhD student working with Professor Rick Lind. His email is vertguy@ufl.edu



Personnel from the **Machine Tool Research Center** (<http://mtrc.mae.ufl.edu>) participated in a group service project through the Rebuilding Together North Central Florida, Inc. program on December 12, 2009. Faculty and students worked together to complete internal and external home repairs at a site north of Gainesville. The group leader was Andrew Riggs, an M.S. student supervised by Dr. Tony Schmitz. The MTRC group was featured on the local CBS six o'clock news for their work

Rebuilding Together NCF (RTNCF) is a home repair organization dedicated to addressing substandard housing needs in north central Florida. RTNCF strives to increase safety, security, and well-being for low income residents by providing a mechanism for volunteers to get involved in rebuilding efforts. Volunteers of all skill levels are trained to help meet significant housing requirements throughout Alachua County. Home repair enables low-income residents to remain in their homes and communities, giving them a firm foundation for continuing a successful life. For more information, visit the RTNCF website at: www.rebuildingtogetherncf.org.

JOINT PH.D. PROGRAM

The department is graduating the second and third students with joint Ph.D. degrees between UF and the School of Mines at St. Etienne in France (EMSE). The School of Mines is one of the prestigious "grands ecoles" in France and was founded by Napoleon. The two students, Victor Picheny and Christian Gogu, spent approximately two years at UF and two years at the EMSE. They had each a chair and co-chair of their committee at UF (Rafi Haftka and Nam-Ho Kim for Picheny and Rafi Haftka and Bhavani Sankar for Gogu). In addition each had a chair and co-chair in France.

It might seem that having so many professors to answer to would be hard on the students. However, the benefits far outweighed any strife. Picheny and Gogu worked and published papers with additional professors both at UF and in France (see their publications on the Structural and Multidisciplinary Optimization at www.mae.ufl.edu/~mdo). Picheny has, in addition, spent a summer in Venezuela, and has been collaborating with Professor Nestor Queipo from the University of Zulia in Venezuela (who is in active collaboration with Professors Haftka, Kim, and B.J. Fregly in MAE).

The joint PHD program graduated its first student in 2006, and while the first three students to complete it so far are French, the next student in the program, Diane Villanueva, obtained her BSAE in the department and has been a graduate student at UF since June 2008. She will go to France next August to complete the French part of the program.

Besides the obvious benefit to the students of getting a degree with international cachet, this unique program has strengthened the research done for the degree. The French professors provided more rigorous mathematical foundations for the research, while the UF advisors provided more engineering know how and algorithmic creativity.

AIAA PARTICIPATING IN THREE COMPETITIONS FOR SPRING 2010

The first competition, Design Build Fly, requires students to build an airplane that can demonstrate an ability to transport a variety of loads (softballs and bats this year). Students are studying design optimization for geometry and structures and propulsion for this project and then are actually building the vehicle for flight-testing.

For the second competition, the Hybrid Rocket Team is competing in a maximum-altitude competition to build and fly a rocket with a class-g motor (typically altitudes around 2000 ft are reached by this size of motor). This team received \$1000 from NASA to support their activities. They are optimizing their design based on material/geometry for tail fins and nose cone.

In the third competition, another UF rocket team is competing in the University Student Launch Initiative that will build a large rocket to carry a scientific payload to 5280 ft altitude. The rocket is considerable larger so the team must formulate reports for design reviews and safety plans. The payload will be various types of strain gages to evaluate their behavior under high-g loading impulses. Rick Lind is the faculty advisor for AIAA.

PAPERS PRESENTED AT ANNUAL AMERICAN SOCIETY FOR PRECISION ENGINEERING CONFERENCE

Tony Schmitz, his students, and co-authors from UF, Agilent Technologies, the University of Illinois at Urbana-Champaign, and the National Institute of Standards and Technology presented seven papers at the annual ASPE conference in Monterey, CA, October 4-9, 2009. The papers were entitled:

Kumanchik, L., Schmitz, T., and Pratt, J., *Validation of Cantilever Shape Analysis for Force Measurement*

Schluchter, C., Chu, D., **Ganguly, V.**, and Schmitz, T., *Real-time Periodic Error Compensation with Low/Zero Velocity Parameter Updates*

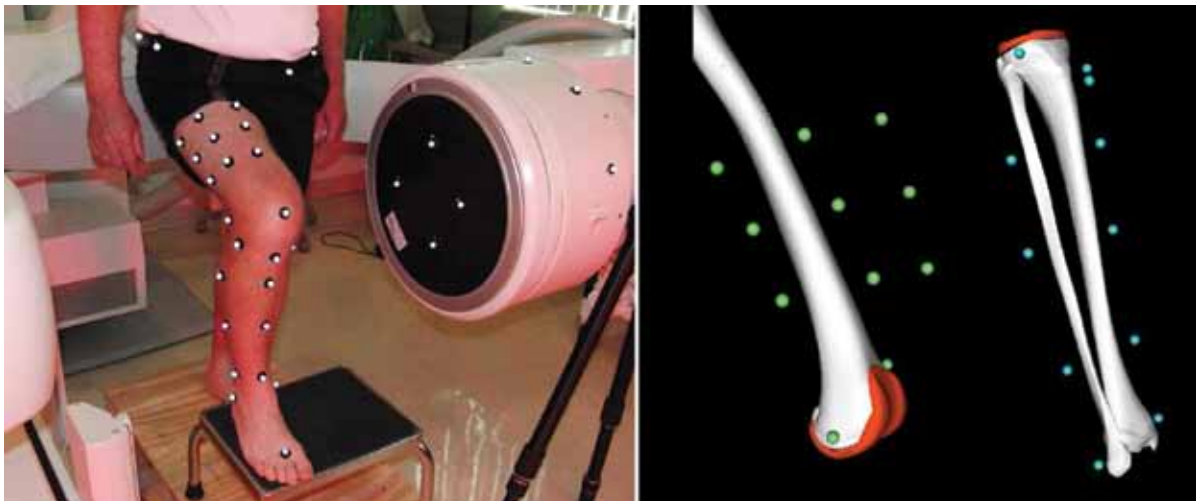
Kim, H.S., Schmitz, T., and **Rueff, M.**, *Size Reduction of Acousto-optic Modulator-based Heterodyne Displacement Measuring Interferometer (AOM DMI)*

Traverso, M., **Zapata, R.**, Schmitz, T., and Abbas, A., *Developing a Predictive Model for Milling Stability*

Mauntler, N., **Mukras, S.**, Kim, N.H., Sawyer, W.G., and **Schmitz, T.**, *Kinematic and Dynamic Behavior of a Wearing Joint in a Crank-slider Mechanism*

Karandikar, J., **Zapata, R.**, and Schmitz, T., *The Milling Dynamics "Super Diagram": Combining Stability, Surface Location Error, Tool Wear, and Uncertainty*

Schmitz, T. and **Graziano, A.**, *Application of Receptance Coupling to Torsional and Axial Frequency Response Prediction.*



Bo Gao, a PhD student working with Professors Scott Banks (MAE), Nigel Zheng (Orthopaedics) and Peter Gearen (Orthopaedics), developed new techniques to accurately measure bone and joint motion by compensating for motion of the overlying layers of skin and muscle (Left). Study subjects were examined simultaneously using x-ray video and optical motion capture to validate methods for soft-tissue motion compensation (Right). These new methods will permit more accurate non-invasive measures of knee motions, with a particular emphasis on diagnosing sports injuries like anterior cruciate ligament (ACL) injuries.

DR. ROBERT B. GAITHER — in his own words

Chairman of Mechanical Engineering, University of Florida 1965-1992

as told to Patricia Gaither, daughter



“With a PhD in Physics and Mechanical Engineering from the University of Illinois, I headed to teach rocket engine design and plasma physics in south Florida’s West Palm Beach area near Pratt & Whitney. At that time, there was no one in Florida who could help NASA reach the goal of landing a man on the moon within the decade. Two years later, I ended up in the middle of the state, at the University of Florida in Gainesville, as Chairman of the Mechanical Engineering Department.

When I arrived at the University of Florida, all engineering was housed in one building, across from the stadium. There were also a few offices dispersed across the campus, I believe. Of about five or six faculty, only one understood the concepts of plasma physics, Dr. Erich Farber. Dr. Farber, a premier solar energy expert, was one of several key individuals helping me shape the department with an eye toward aerospace and new mechanical engineering applications. There was no PhD program. I hired in Dick Irely and Doug Hsieh, whose doctoral specialties were machine design, fluid mechanics, and heat transfer, to develop one. We ended up with several students winning medals from NASA.

We had some great people. Dr. Vernon Roan was one of the smartest guys around. He got his Master’s in ME from the University of Florida, and went to Illinois to get his PhD in Aerospace before he came back to us to teach.

Benton Hall and Annex circa 1918



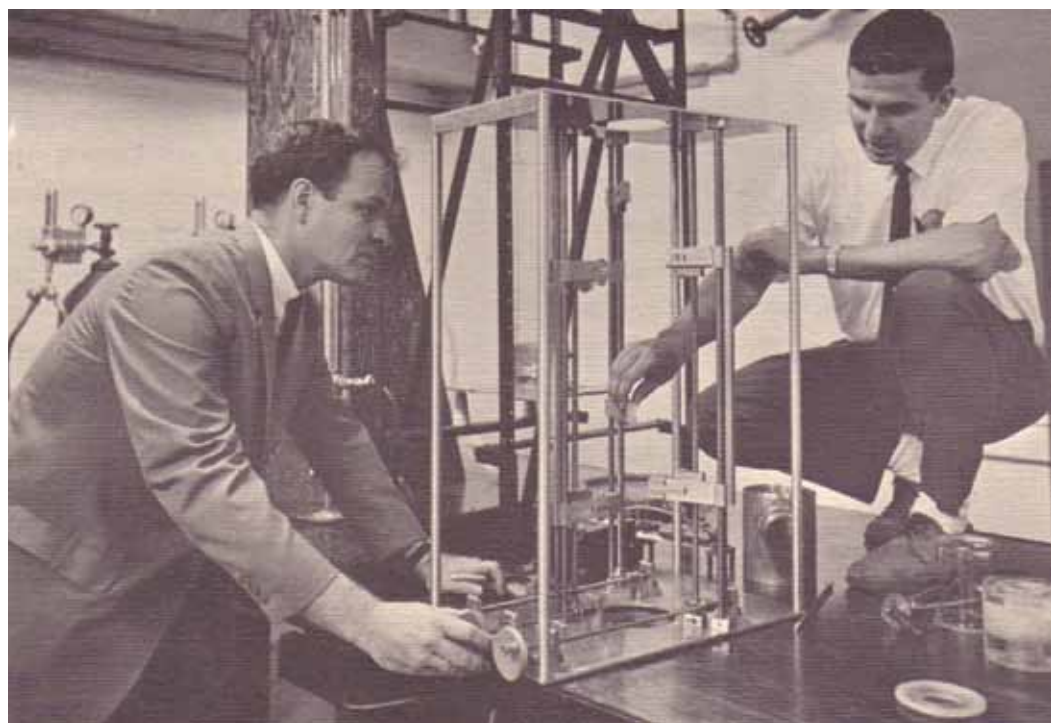
Roan was also known for building one of the first electric buses. There were many others who contributed to the excellence of the department. Everyone appreciated the beautiful and accurate glassblowing skills of Ed Logsdon in the lab, for example. I recall Alex Green, who (still) contributes to research in alternative applications of coal technology, Hal Ingman in thermodynamics and fluid mechanics (and athlete who helped us faculty immeasurably in the student-faculty games), and Jacunski in graphics. The first person to get his PhD in our program was Ken Soderstrom, a visiting professor from the University of Puerto Rico. I also remember Linda Volpi, and outstanding mechanical engineer at a time when there were few women in engineering.

After a time, we moved into a much-needed new building. The last half of the century was an amazing time. We had engineering fairs that began in the early days with students inside foil-covered cardboard boxes pretending to be robots, and ended up with plasma experiments, turbine engine designs, lasers, and real robotics. We linked up with other departments to take advantage of growing synergies in industry. As we realized the importance of the interconnectedness of the various engineering disciplines, we reached out to other groups and included emphasis on newer applications such as biomechanical engineering and ceramic materials design. Dr. Betty Abbot, also with the University, although not in the ME department) joined me in promoting and partnering with the Florida Foundation for Future Scientists, an organization formed by the state of Florida to encourage careers in science and engineering.

I am grateful to each and every one of the people who contributed to making our Mechanical Engineering Department a world-class institution. One of the things that meant most to me over the years was the strong loyalty and dedication of the faculty and administrative personnel to the University and to our department goals of fostering an equitable balance of education and research. ”



Benton Hall looking north with Peabody Hall in the background



Bob Gaither and graduate student Charles W. Greene (PhD 1968)

2009-2010 MAE Outstanding Alumnus Award

For the academic year 2009-2010 we encourage nominations for both the MAE Outstanding Young Alumnus Award and the MAE Outstanding Alumnus Award. These awards are the highest honor the department bestows upon an alumnus/a, and are in recognition of a particular achievement of noteworthy value, a series of such achievements, or a career of noteworthy accomplishments.

The Outstanding Young Alumnus Award recognizes the budding accomplishments of young alumni under the age of 40 on April 1st of the year they will be bestowed the award. The Outstanding Alumnus Award is established to recognize the significant accomplishments of senior alumni.

Nomination forms are due by January 31, 2010 and will be evaluated by an award committee. Decisions will be reached by February 19, 2010, and the awards will be bestowed on the awardees at the MAE Annual Awards Banquet on April 9, 2010. We request the nomination process to be discreet and without the involvement of the nominee.

Nominations can be done over the web at www.mae.ufl.edu/MAE-OAA or mailed to
MAE Outstanding Alumnus Award
Department of Mechanical & Aerospace Engineering
231 MAE-A, PO Box 116250
Gainesville, FL, 32611.

Alumni Updates

We would like to extend thanks to our most recent alumni who updated their profiles via our new on-line form. If you have not had a chance to check out our new MAE web page, which includes our on-line alumni update form, please do so. The web page is at www.mae.ufl.edu, and the form can be accessed directly at www.mae.ufl.edu/alumni/request/index.php

Donald R. Baker, BSME 1961, resides in Lawndale, CA. He retired in 1980.

David Goshorn, BSME 1995, resides in Hamilton, OH. He is a Senior Engineer at GE Aviation.

Kathik Srinivasan, SMDM 2008, resides in Orange Park, FL. He is a Senior Design Engineer at Sandvik Mining and Construction.

Elizabeth (Santana) Mariano, BSAE 1992, resides in Boca Raton, FL. She is a Senior Equipment Manager at CIT Aerospace, an aircraft leasing company that specializes in the worldwide leasing of Airbus and Boeing aircraft. Mariano is pursuing an MBA at Nova Southeastern

University, Ft. Lauderdale, FL. She and her husband Vincent Mariano have a 19-month old boy and are expecting a baby girl in April 2010.

Dustin McLarty, BSAE 2009 resides in Irvine, CA. He is attending graduate school at the University of California Irvine and is working as a lifeguard at Huntington Beach, CA.

Bob North, BSAE 1991, resides in State College, PA. He is a Research and Design Engineer at the Applied Research Lab at Penn State University.

Greg Nott, BSAE 1986, resides in Avondale Estates, GA. He works as a

Residential Architect for Park Heydt and Associates.

Paul L. Nunez, BSAE 1962 & MSAE 1963, resides in Covington, LA. Nunez received his Ph.D in Engineering Physics at the University of California at San Diego in 1969 and continued postdoctoral training in the neurosciences at UCSD Medical School from 1971-73. He is currently an Emeritus Professor of Biomedical Engineering at Tulane University and the head of Cognitive Dissonance, LLC, a small consulting firm. His fourth book, entitled *Brain, Mind and the Structure of Reality* is his first book aimed at a general audience and will be published by Oxford Press at the end of 2009.

MAE Annual Honor Roll 2008–2009

The Department would like to extend a very special thank you to our contributors. In fiscal year 2008-2009, we received 101 gifts totaling \$411,855 from alumni, friends and corporations. These gifts have a significant impact on the quality of our academic program and the resources we can provide to our students and faculty. Your generous contributions are deeply appreciated. The listings in this Honor Roll reflect gifts received between July 1, 2008 and June 30, 2009. If you would like to know how you can help, please contact Rebecca M. Hoover, Director of Development, at 352-392-6795 or bhoov@eng.ufl.edu.

Engineering Alumni

Gabriel L. Auriolles
Robert T. & Patricia E. Bailey
Gregory C. Bessette
William J. & Jamie C. Bierbower
David C. & Amy A. Bock
Marshall L. Buhl, Jr.
Joseph A. Clements
Gary D. & Carol G. Cook
John R. Cusick
Gerald E. & April Doddington
Edward M. & Laura M. Duran
Paul C. Flury
Paul L. & Beth Friedman
Kelly L. Furlong
Carlos E. Galliano
Adalys R. & Ramon N. Genemaras
Frank C. & Jane C. Gillette
Paul J. & Quinn H. Guariglia
Gary L. Guenther
Brian D. Hamilton
Richard C. & Dee A. Hardy
Michael S. & Sharon D. Hartman
William T. & Peggy Hartman
Michael S. & Marianne C. Hawkins
Kenneth A. & Dolly A. Head
Philip W. & Carol A. Hendrickson
James W. & Elaine P. Herrington
Daniel A. & Diane C. Honig
Paul L. & Margaret W. Jacobs
Jishan Jin & Qianhong Wu
Robert A. & Carol Kellert
Robert C. Kerr
Chi-Wook Lee
Joseph A. & Susan M. Limpert
Gilbert H. Lovell III
Andrew J. McDonald
Knox T. Millsaps, Jr.
Charles D. & Peggy H. Myers
John & Judi O'Steen
Linda M. & Charles M. Perrygo
Joseph M. & Joy S. Plaia
Daniel W. Plonk
Domingo C. & Liliana L. Ramos
Linn J. & Jo Ann V. Raney
William H. & Martha B. Reuter
Ronald L. & Patricia S. Shelton

Bruce & Kathy B. Shockley
Jack W. & Cheri Lynn Sparks
Alicia M. & Michael D. Steinberg
Judith A. Sullivan
Frank M. & Doris E. Travassos
Richard S. & Patricia J. Traverse
Kellie A. Watson
James M. & Barbara A. Wheeler
Thomas P. Vu

Friends

Barbara J. Allgood
Billy D. & Madelyn B. Fraser
William W. & Eloise D. Gay
Hitomi Greenslet
Raphael T. Haftka
J. Michael Hartenstine
Frank W. Hartman
Elizabeth K. & Robert J. Hughes
Gene & Evelyn Hemp
Pamela K. & William E. Lear, Jr.
Denis J. Mercier
David W. Mikolaitis
Khalil E. Mohmed
Marie J. Moore
Sean R. Niemi
Eduardo J. Rondon

Corporate

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Alstom Power, Inc.
Avago Technologies US, Inc.
Boeing Co.
BP Foundation, Inc.
ChevronTexaco
Citgo Petroleum Corp.
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WHAT HAPPENED!

Members of the UF Tribology Laboratory traveled to Neuchatel, Switzerland to confer and collaborate with CSM Instruments on next-generation tribometer designs. The new designs will be implemented in future UF research efforts such as nanoscale friction and wear, space tribology, and biological tribology.



Professor Greg Sawyer and Tribology Lab members try their hand at the Swiss Alpenhorn