Innovating Engineering and Engineering Technology Education

2011 ASEE-GSW Annual Conference
Westin Oaks at the Galleria
March 9-11, 2011
Houston, TX
We Create Opportunities All Over the World

The University of Houston’s College of Technology is leading the future of innovation through the advancements of its Department of Engineering Technology.

- Offers four B.S. degrees in Computer Engineering Technology, Electrical Power Engineering Technology, Mechanical Engineering Technology, and Biotechnology
- In the 2009 ASEE list of 50 schools that offer B.S. degrees in Engineering Technology, ET ranked 5th in the number of degrees awarded and 3rd in the number of degrees awarded to women
- Six state-of-the-art engineering technology research labs including the AT&T Technology Lab
- Offers 4 M.S. degrees in Network Communications, Systems Control Technology, Mechanical Engineering Technology, and a joint M.S. in Technology Project Management with concentration in one of the aforementioned degrees
- Over 1.5 million in expenditures from external grants and contracts
- Robotics community outreach via Coordination of Robotics Education (CORE)
- Student internships and other opportunities through the Texas Manufacturing Assistance Center (TMAC)
- Over 830 students and 27 faculty and staff

ENGINEERING TECHNOLOGY / 304 TECHNOLOGY 2 BUILDING / HOUSTON, TX 77204-4021 713-743-4100 . www.tech.uh.edu
2011 ASEE-GSW Conference Program

Innovating Engineering and Engineering Technology Education

March 9-11, 2011 – Westin Oaks
Houston, TX, USA

UNIVERSITY of HOUSTON
YOU ARE THE PRIDE
Organization Committee

Conference Chair
Dr. Farrokh Attarzadeh
Email: fattarzadeh@central.uh.edu

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Dr. Richard B. Bannerot
Email: rbb@uh.edu

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Email: tjones@uh.edu

Web Developer/Administrator
Kyle Johnson
Email: kljohnso@central.uh.edu
Dear Conference Participants:

I am delighted to welcome you to the 2011 American Society of Engineering Education Gulf Southwest Annual Meeting Conference on Engineering and Technology. The College of Technology at the University of Houston (http://www.tech.uh.edu) is a proud organizer of this event.

This is an exciting time for those of us who are engaged in science, technology and engineering education. Technology is having a transformative effect on the way nations, societies, and industries communicate, produce goods, innovate, and invest. Breakthroughs in medicine and biology offer humankind hope heretofore inconceivable. Modern communication technologies enable instant communication linking individuals and groups across the globe. New manufacturing and agricultural technologies have transformed methods of production and the workforce, increasing both productivity and efficiency. Advanced materials are impacting every sector of the economy. The conference theme, *Innovating Engineering and Technology Education* is both timely and of high interest. New approaches are being brought to the classroom and laboratory with a variety of learning modes including project based, experiential and computer based. I hope that you will have ample opportunity to share best practices and network. I look forward to the ensuing presentations and dialogue and what will come from this event.

Dr. Farrokh Attarzadeh and the Conference Committee have made every effort to insure that your time is well spent and productive. Please make sure to contact them if you have questions or need assistance. Finally, the city of Houston offers an excellent conference venue with superb museums, performing groups, theater, sporting events, entertainment, and restaurants.

With Warmest Regards,

William E. Fitzgibbon
Dean, College of Technology
Dear Conference Participants:

On behalf of the University of Houston, College of Technology, it is my pleasure to welcome you to the 2011 American Society for Engineering Education – Gulf Southwest Section Conference. Welcome to Houston, the Energy Capital of the World! We are delighted to host the conference this year and look forward to presentations and workshops discussing the theme, "Innovating Engineering and Engineering Technology Education."

Within our disciplines we are facing the challenges of preparing our students for a world of rapidly and constantly changing technology. Increasingly our students are required to apply multiple disciplines and skills to complex technology systems and solutions. It is also important to realize that their learning continues beyond the borders of our classrooms and campuses. So, we are challenged to provide them with the skills, tools and knowledge of how to maintain a lifelong approach to learning within their own field and across other disciplines as needed.

The UH College of Technology offers undergraduate and graduate degrees in Engineering Technology, Information and Logistics Technology, Human Resources and Consumer Sciences, and Construction Management. At the Master’s level every degree awarded through the College of Technology successfully augments a technological specialization with key management skills. Every graduate is thereby equipped with the knowledge, skill set and connections to find and fill vital management and supervisory roles in the technologically driven industries of his or her choosing. We are over 2,000 people who embrace the future – seeking to bring better systems, faster solutions, and smarter results. We are Technology.

I hope that you enjoy you visit to Houston and will take the opportunity to learn more about the College of Technology by visiting our web site: tech.uh.edu.

Best wishes for a pleasant, productive and successful conference.

Sincerely,

Dr. Raymond E. Cline, Jr.
Associate Dean of Research and Graduate Studies
Message from the Conference Chair

Dear 2011 ASEE Gulf-Southwest Conference Participants:

On behalf of the Organizing Committee for the conference, it is a pleasure to welcome you to Houston for the 2011 ASEE-Gulf Southwest Section conference. I know this will be an excellent opportunity to exchange ideas on engineering and engineering technology education, to learn innovative new methods for preparing the next generation of engineers and engineering technologists, and to renew contacts and friendships with colleagues from around the region.

Conferences like this are not just a great opportunity to connect with other engineering and engineering technology educators and to interact with graduate and undergraduate students. The conference can also serve as a vehicle for you to get to know the host institution a little bit better.

The conference features two pre-conference workshops and one post-conference workshop. In addition to the workshops, we have host of quality papers presented by faculty, graduate, and undergraduate students.

The Organizing Committee wishes all of you a very good stay in Houston and a productive meeting. The Organizing Committee has worked diligently over the past few months to live up to the reputation this annual conference series has as one of the best ASEE Section Conferences. From the high level of interest in attending this conference (as demonstrated through numerous email, phone calls, etc.) to the intriguing variety of papers accepted for presentation and publication in the refereed Proceedings, the Organizers look forward to a very successful conference.

Finally, the organizing Committee thanks all who have generously contributed time, thought, effort, and/or something else of value that will produce a successful meeting for us all!

Best regards,

Farrokh Attarzadeh
Associate Professor
2011 ASEE-GSW Conference Chair
## 2011 ASEE-GSW Conference
Innovating Engineering and Engineering Technology Education
March 9-11, 2011 – Westin Oaks
Houston, TX, USA

### Program at a Glance

**Wednesday**
March 9, 2011

<table>
<thead>
<tr>
<th>Time</th>
<th>Workshop 1</th>
<th>Workshop 2</th>
</tr>
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<tbody>
<tr>
<td>1:00-5:00 pm</td>
<td>Workshop 1 by BiPOM</td>
<td>Workshop 2 by Cypress Semiconductors Inc.</td>
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<tr>
<td></td>
<td>Oak Room</td>
<td>Continental Room</td>
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<tr>
<td>5:00-7:00 pm</td>
<td>Registration</td>
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<td></td>
<td>Grand Foyer</td>
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<tr>
<td>6:30 - 8:30 pm</td>
<td>Open Reception</td>
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<td></td>
<td>Consort II Room</td>
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**Thursday**
March 10, 2011

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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</thead>
<tbody>
<tr>
<td>7:00-8:30 am</td>
<td>Executive Committee Meeting/Breakfast Directors Room (483)</td>
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<tr>
<td>8:00 - 5:00 am</td>
<td>Registration</td>
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<tr>
<td></td>
<td>Grand Foyer</td>
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<tr>
<td>7:15 - 8:15 am</td>
<td>Breakfast</td>
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<tr>
<td></td>
<td>Consort II Room</td>
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<tr>
<td>8:30 - 9:15 am</td>
<td>Welcome and Opening Remarks</td>
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<tr>
<td></td>
<td>Keynote Speaker: Dr. William Fitzgibbon</td>
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<td></td>
<td>Consort II Room</td>
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<tr>
<td>9:30 - 10:15 am</td>
<td>Coffee Break</td>
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<tr>
<td>Time</td>
<td>Room 1</td>
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<tr>
<td>10:15 - 11:45 am</td>
<td>OAK ROOM TECHNICAL SESSION T1A</td>
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<tr>
<td>12:00 - 1:30 pm</td>
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<tr>
<td>Lunch</td>
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<tr>
<td>Keynote Speaker:</td>
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<tr>
<td>Dr. Raymond Cline</td>
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<tr>
<td>Consort II Room</td>
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<tr>
<td>1:45 - 3:15 pm</td>
<td>OAK ROOM TECHNICAL SESSION T2A</td>
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<td>3:15 - 3:30 pm</td>
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<tr>
<td>Coffee Break</td>
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<td>3:30 - 5:30 pm</td>
<td>OAK ROOM TECHNICAL SESSION T3A</td>
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<td>7:00 - 9:30 pm</td>
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<tr>
<td>Dinner Banquet</td>
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<td>Music by Alfredo</td>
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<td>The Roof (21st level)</td>
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**Friday**

**March 11, 2011**

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<tr>
<th>Time</th>
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<tbody>
<tr>
<td>7:00-8:15 am</td>
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<tr>
<td>7:15-8:15 am</td>
<td>Breakfast</td>
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<tr>
<td></td>
<td>Consort II Room</td>
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<tr>
<td></td>
<td>Texas Instruments Inc. presentation</td>
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<tr>
<td>8:00 - 10:00 am</td>
<td>Registration</td>
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<td>Grand Foyer</td>
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<td>OAK ROOM TECHNICAL SESSION F1A</td>
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<td>CONTINENTAL ROOM TECHNICAL SESSION F1B</td>
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<td>CONSULATE ROOM TECHNICAL SESSION F1C</td>
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<tr>
<td>10:00- 10:15 am</td>
<td>Coffee Break</td>
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<td>10:15 - 11:45 am</td>
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<td></td>
<td>OAK ROOM TECHNICAL SESSION F2A</td>
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<td>CONTINENTAL ROOM TECHNICAL SESSION F2B</td>
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<td>CONSULATE ROOM TECHNICAL SESSION F2C</td>
</tr>
<tr>
<td>12:00-2:30 pm</td>
<td>Lunch, Awards, Election, Conference Ends</td>
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<td></td>
<td>Consort II Room</td>
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<td></td>
<td>National Instruments Presentation</td>
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<tr>
<td>1:00 – 4:30 pm</td>
<td>Post-Conference Workshop</td>
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<td>Dr. Sheryl Sorby</td>
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<td>The Robert Noyce Teacher Scholarship Program</td>
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<td>Consulate Room</td>
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</table>
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Conference Program

Thursday
March 10, 2011

<table>
<thead>
<tr>
<th>9:30 – 10:15 am</th>
<th>Coffee Break</th>
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<tbody>
<tr>
<td>OAK ROOM TECHNICAL SESSION T1A</td>
<td>CONTINENTAL ROOM TECHNICAL SESSION T1B</td>
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10:15 - 11:45 am

T1A: Design I:

Session Chair: Phillip R. Foster;  Session Co-Chair: J. R. Morgan

Time and Place: Thursday - March 10 - 10:15AM - 11:45AM, Oak Room

T1A-1
Title: Enhancing Engineering Education via Fostering Creativity in Student Learning Environment
Author: Zhengmao Ye, Habib Mohamadian and Patrick Carriere
School: Southern University

T1A-2
Title: Interdisciplinary Approach to Capstone Research: Preliminary Results
Author: Farrokh Attarzadeh and Eunsook Kwon
School: University of Houston

T1A-3
Title: Incorporating Technical Peer Review Of Student Capstone Projects
Author: J. R. Morgan and L. R. Barroso
School: Texas A&M University

T1A-4
Title: Structuring the Capstone Course Sequence to Demonstrate Unquestionable Achievement of All ABET and Lead Technical Society Program Outcomes
Author: Phillip R. Foster
School: University of North Texas

T1A-5
Title: Bridge Senior Design into Contemporary Issues#
Author: Suxia Cui, Pamela Obiomon and Penrose Cofie
School: Prairie View A & M University
T1B: Students Issues I:

Session Chair: Amir Karimi; Session Co-Chair: Randal Manteufel

Time and Place: Thursday - March 10 - 10:15AM - 11:45AM, Continental Room

T1B-1
Title: Freshman Engineering Student Surveys on Professional Topics
Author: Ronald E. Barr
School: University of Texas at Austin

T1B-2
Title: Relationship Between Class Absenteeism And Grade Performance: A Pattern Recognition Using Artificial Neural Networks
Author: Mohammed E. Haque
School: Texas A&M

T1B-3
Title: Breaking the Barrier: Engaging Students through Faculty Interaction
Author: Matthew T. Balhoff
School: The University of Texas at Austin

T1B-4
Title: Influence of Student Access to Solution Manual on Grades
Author: Amir Karimi and Randal Manteufel
School: University of Texas at San Antonio

T1B-5
Title: A Meaningful Grade Point Average that Counteracts Grade Inflation
Author: Randall D. Manteufel and Amir Karimi
School: University of Texas at San Antonio

T1C: Non-Education Graduate Student Papers I

Session Chair: Heather J. Shipley; Session Co-Chair: Malur Srinivasan

Time and Place: Thursday - March 10 - 10:15AM - 11:45AM, Consulate Room

T1C-1
Title: Characterization of Zinc Powder Compactions*
Author: Ben J. Rael and Tariq A. Khraishi
School: University of New Mexico

T1C-2
Title: Anthropometric Robotic Arm with DC Motor Control System Analysis*
Author: Mihirkumar Sanghadia and Jiang Zhou
School: Lamar University
T1C-3
Title: Experimental Validation of Mathematical Model of Pressure Losses in Two-Phase Flow*
Author: Juan Hincapic and Jerry K. Keska
School: University of Louisiana at Lafayette

T1C-4
Title: Stability and Mobility of Metal Oxide Nanoparticles in Porous Media*
Author: Carolina Contreras, Krista Paredes, Jessica George and Heather J. Shipley
School: University of Texas at San Antonio

T1C-5
Title: Ultrasonic and Metallographic Studies of AISI 4140 Steel Exposed to Hydrogen at High Pressure and Temperature*
Author: Malavika Oruganti and Malur Srinivasan
School: Lamar University

Thursday
March 10, 2011

<table>
<thead>
<tr>
<th>Time and Place</th>
<th>Lunch</th>
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<tbody>
<tr>
<td>12:00 - 1:30 pm</td>
<td>Keynote Speaker: Dr. Raymond Cline</td>
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<td>Consort II Room</td>
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<tr>
<td>1:45 - 3:15 pm</td>
<td>OAK ROOM TECHNICAL SESSION T2A</td>
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<td>CONTINENTAL ROOM TECHNICAL SESSION T2B</td>
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<td>CONSULATE ROOM TECHNICAL SESSION T2C</td>
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</tbody>
</table>

T2A: Design II

Session Chair: Driss Benhaddou;  Session Co-Chair: Bryan Hill

Time and Place: Thursday - March 10 - 1:45PM - 3:15PM, Oak Room

T2A-1
Title: Introducing and Teaching a New Course on Process Design and Operation in an ET Program
Author: Vassilios Tzouanas, Joseph Alvarado, and Scott Cadena
School: University of Houston - Downtown

T2A-2
Title: PSoC-Based Alternative Project Design Solutions for Undergraduate ET Laboratories
Author: Mequanint Moges, Driss Benhaddou, Victor Gallardo and Farrokh Attarzadeh
School: University of Houston
T2A-3
Title: Helping Students Build: Prototyping Kit of Student Design*
Author: Austin Talley
School: University of Texas at Austin

T2A-4
Title: Research-Based Enhancements of Computer Engineering Technology Programs
Author: D. Benhaddou, M. Moges, M. Ramos, B. Bakach, J. Naranjo, F. Attarzadeh and D. Gurkan
School: University of Houston

T2B: Student Issues II

Session Chair: Session Chair: Tariq Khraishi; Session Co-Chair: Roman Taraban

Time and Place: Thursday - March 10 - 1:45PM - 3:15PM, Continental Room

T2B-1
Title: Differences in U.S. and Indian Engineering Undergraduates' Epistemic Beliefs and Use of Comprehension Strategies
Author: Roman Taraban and Kristin Oliver
School: Texas Tech University

T2B-2
Title: Centering Resonance Analysis: A Tool for Assessment
Author: Cheryl L. Willis and Susan L. Miertschin
School: University of Houston

T2B-3
Title: What Motivates Engineering Students at the Hashemite University in Jordan to Join Intercollegiate Sports?
Author: Aiman Kuzmar and Abdelbasit Abdelhafez
School: Sam Houston State University and The Hashemite University

T2B-4
Title: Using Forward Inferencing as an Indictor of Problem Solving Skill in U.S. and Indian Engineering Undergraduates
Author: Roman Taraban
School: Texas Tech University

T2B-5
Title: The Ideal Group Number is e.
Author: Tariq Khraishi
School: University of New Mexico
T2C: Non-Education Graduate Student Papers II

Session Chair: Neha Gondkar; Session Co-Chair: Hrishikesh Sankpal

Time and Place: Thursday - March 10 - 1:45PM - 3:15PM, Consulate Room

T2C-1
Title: Finding Critical Path Of Construction Activities Using Ant Colony Optimization*
Author: Hrishikesh C. Pethkar and Mohammed E. Haque
School: Texas A & M University

T2C-2
Title: Nonlinear Digital Control of Continuous Uncertain Systems*
Author: Jeff Langston, Chunjiang Qian and Michael Frye
School: University of Texas at San Antonio

T2C-3
Title: Fast Discrete Fourier Transform in FPGA by Using the Method of Paired Transform*
Author: Tilak Nagaraju and Artyom M. Grigoryan
School: University of Texas at San Antonio

T2C-4
Title: Hydraulic Performance of the Bridge Deck Drain*
Author: Santosh V. Khone and Qin Qian
School: Lamar University

T2C-5
Title: Selection of Glass as a Building Element: A Sustainable Approach*
Author: Swapnil Jori, Mohammed E. Haque and Liliana Beltran
School: Texas A & M University

Thursday
March 10, 2011

<table>
<thead>
<tr>
<th>3:15 - 3:30 pm</th>
<th>Coffee Break</th>
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<tr>
<td>OAK ROOM TECHNICAL SESSION T3A</td>
<td>CONTINENTAL ROOM TECHNICAL SESSION T3B</td>
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<tr>
<td>3:30 - 5:30 pm</td>
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</tbody>
</table>
T3A: Recruiting

Session Chair: Brent L. Donham; Session Co-chair: Gholam H. Massiha

Time and Place: Thursday - March 10 - 3:30PM - 5:30PM, Oak Room

T3A-1
Title: Recruitment of K-12 Students to ET Programs through Applied Alternative Energy Educational Workshops
Author: Faruk Yildiz, Douglas Kingman, Keith Coogler and Hayrettin Bora Karayaka
School: Sam Houston State University and Texas A&M - Corpus Christi

T3A-2
Title: Renewable Energy Challenge with Hands-on Activities for a New Introduction to STEM
Author: H. Vasquez and A. Fuentes
School: The University of Texas - Pan American

T3A-3
Title: Strengthen Computer Discipline Recruitment with Educators' Collaboration
Author: Suxia Cui, Yonggao Yang, Akhtar Lodgher and Kenyatta Phelps
School: Prairie View A&M University

T3A-4
Title: A Program For High School Students To Achieve Higher Education Aspirations and Overcome Competition
Author: Rohitha Goonatilake, Rafic A. Bachnak, David K. Milovich, Jr. and Firooz Khosraviyani
School: Texas A&M International University

T3A-5
Title: Gear Up Engineering And Technology Camp: "Designing Young Students' Future #
Author: Gholam H. Massiha
School: University of Louisiana at Lafayette

T3A-6
Title: Impact Of Engineering Summer Camps On Rural Students
Author: Brent L. Donham
School: Texas A&M University- Commerce

T3A-7
Title: Applications of Computer Visualization in K-12 Math-Science-Engineering Modules
Author: Ronald C. Anderson and Mary C. Baker
School: Texas Tech University
T3B: Curriculum Issues I

Session Chair: Muhammad Zafrul Hasan; Session Co-Chair: Mary C. Baker

Time and Place: Thursday - March 10 - 3:30PM - 5:00PM, Continental Room

T3B-1
Title: Incorporation of NI MyDAQ Exercises in Electric Circuits*
Author: Catherine Chesnutt and Mary C. Baker
School: Texas Tech University

T3B-2
Title: Learning Software Development Using a Publication Describing the Spinning Ball Trajectory
Author: Jorge Antonio Tito-Izquierdo
School: University of Houston - Downtown

T3B-3
Title: Computation and Stereographic Visualization of Molecular Dynamics in Undergraduate Education#
Author: Sanjay Kodiyala and Amitava Jana
School: Southern University

T3B-4
Title: Template-Based Education in Mobile Application Development
Author: Abhinav Kumar, Moosa Esfahanian, Arsen Melkonyan and David Akopian
School: University of Texas at San Antonio

T3B-5
Title: Development and Incorporation of Digital Systems Testing Course for Engineering and Technology Curriculum
Author: Muhammad Zafrul Hasan
School: Texas A&M University

T3C: Undergraduate Papers I

Session Chair: Shunmugham R. Pandian; Session Co-Chair: George Wright

Time and Place: Thursday - March 10 - 3:30PM - 5:30PM, Consulate Room

T3C-1
Title: Smart ePants - Advanced Diaper Monitoring System*
Author: Jessie Streater, Christine Luong, Daniel Tudder II, Oscar Rodriguez, Addie Ballentine, Leo E. H. Chen, Erica Pena, Farrokh Attarzadeh, Eunsook Kwon, Neha Gondkar and Hrishikesh Sankpal
School: University of Houston
T3C-2
Title: Saturation Controlled Oxygen Regulator*
Author: Nicholas Zuchlewski, Kristopher Hokanson, Jose Martinez, Jr., Jerry Wayne Buckner II, Jared Thorn, Mariel Pina, Chukwunonso Ofili, Farrokh Attarzadeh, Eunsook Kwon, Neha Gondkar and Hrishikesh Sankpal
School: University of Houston

T3C-3
Title: AUREOLE: A Capstone Project Integrating Hardware and Software to Build an Omnidirectional Mobile Videoconferencing Camera*
Author: William Reading, Sejun Song, Troy Kensinger, Kyle Mays and George Wright
School: Texas A&M University

T3C-4
Title: A Low-Cost Microcontroller-Based System for Computer Interfacing and Control System Education*
Author: Camilo Martinez and Shunmugham R. Pandian
School: Southeastern Louisiana University

T3C-5
Title: Wireless Motion Tracking and Laser Guidance
Author: Bryan Hill, John Amstadt and Mequanint Moges
School: University of Houston

Thursday,
March 10, 2011

| 7:00 - 9:30 pm | Dinner Banquet
Music by Alfredo
The Roof (21st level) |
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Friday
March 11, 2011

| 7:00 - 8:15 am | Executive Committee Meeting/Breakfast
Directors Room (483) |
---|---|
| 7:15 - 8:15 am | Breakfast
Consort II Room
Texas Instruments Inc. Presentation |
| 8:00 - 10:00 am | Registration
Grand Foyer |
| 8:30 - 10:00 am | OAK ROOM
TECHNICAL SESSION
F1A | CONTINENTAL ROOM
TECHNICAL SESSION
F1B | CONSULATE ROOM
TECHNICAL SESSION
F1C |
F1A: Web-based Learning I: Web-Based Learning for Engineering and Engineering Technology

Session Chair: Walter W. Buchanan; Session Co-Chair: Daniel F. Jennings

**Time and Place:** Friday - March 11 - 8:30AM - 10:00AM, Oak Room

**F1A-1**
*Title: Web-Based Experimentation for Efficient Learning*
*Author: Sarat Paluri, Kazim Sekeroglu, Mustafa Harun Yılmaz and Amitava Jana*
*School: Southern University*

**F1A-2**
*Title: Development of Web-Based Graphical User Interface for the Response of Dynamic Systems*
*Author: Harish Kale, Milind Ranade and Jiang Zhou*
*School: Lamar University*

**F1A-3**
*Title: A Web-Based Master's Program At Texas A&M University*
*Author: Daniel F. Jennings and Walter W. Buchanan*
*School: Texas A&M University*

**F1A-4**
*Title: Decision Matrices for Offering Courses On-Line*
*Author: Ali Mehrabian, Walter W. Buchanan and Alireza Rahrooh*
*School: Daytona State College and Texas A&M University*

F1B: Curriculum Issues II

Session Chair: Kenneth W. Van Treuren; Session Co-Chair: Daniel S. Cohan

**Time and Place:** Friday - March 11 - 8:30AM - 10:00AM, Continental Room

**F1B-1**
*Title: A Multi-disciplinary Approach to Teaching "Energy Conversion" Course*
*Author: Hayrettin Bora Karayaka, Ruby Mehrubeoglu and John Fernandez*
*School: Texas A&M University - Corpus Christi*

**F1B-2**
*Title: An Engaged Learning Group to Address Energy Education: Helping Students Understand Energy Issues and their Impact on Society*
*Author: Kenneth W. Van Treuren and Ian A. Gravagne*
*School: Baylor University*
F1B-3  
Title: An Energy And Environment Course At Rice University  
Author: Daniel S. Cohan  
School: Rice University

F1B-4  
Title: Lean Manufacturing - A Boon to the Environment  
Author: Farzin Heidari and Anudeep Kambhampati  
School: Texas A&M University - Kingsville

F1B-5  
Title: An Interdisciplinary Engineering Education Model  
Author: Jan Brink, Salim Azzouz, Dale McDonald, Sheldon Wang and Idir Azouz  
School: Midwestern State University

F1C: Undergraduate Papers II

Session Chair: Mohammad Obadat; Session Co-Chair: Amitava Jana

Time and Place: Friday - March 11 - 8:30AM - 10:00AM, Consulate Room

F1C-1  
Title: From Virtual to Laboratory Robots*  
Author: Duane Driggs, Sakawa Baylor, B. Maruti S. Kuppala, Sanjay Kodiyalam, Kazim Sekeroglu and Amitava Jana  
School: Southern University

F1C-2  
Title: Time-Based Bounding Values for Blower Door Infiltration Measurements in Buildings with Compromized Envelope Tightness*.  
Author: Schean Lombard, Matthew Recsnik, Matthew Reynolds and John Toland  
School: University of North Texas

F1C-3  
Title: Design and Fabrication of a High Counting Rate Uni-Polar Frisch Grid Ionization Chamber for Synchrotron Radiation X-Ray Beam*  
Author: Daphne Meza, E. H. Shaban, D P, Siddons and G. Smith  
School: University of New Orleans, Southern University and Brookhaven National Lab

F1C-4  
Title: Students' Solutions for Traffic Problems at UT Martin Campus and Surroundings*  
Author: Stephanie Kissell, Mohammad Obadat, William Anderson and Matt Kee  
School: The University of Tennessee at Martin
Friday
March 11, 2011

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00 - 10:15 am</td>
<td>OAK ROOM TECHNICAL SESSION F2A</td>
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<td>10:15 - 11:45 am</td>
<td>CONTINENTAL ROOM TECHNICAL SESSION F2B</td>
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<tr>
<td>12:00-2:30 pm</td>
<td>CONSULATE ROOM TECHNICAL SESSION F2C</td>
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<tr>
<td>10:00 - 10:15 am</td>
<td>Coffee Break</td>
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<tr>
<td>10:15 - 11:45 am</td>
<td>TECHNICAL SESSION F2A</td>
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<td>12:00-2:30 pm</td>
<td>TECHNICAL SESSION F2B</td>
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<tr>
<td>12:00-2:30 pm</td>
<td>TECHNICAL SESSION F2C</td>
</tr>
<tr>
<td>12:00-2:30 pm</td>
<td>Lunch, Awards, Election, Conference Ends</td>
</tr>
<tr>
<td>12:00-2:30 pm</td>
<td>Consort II Room National Instruments Presentation</td>
</tr>
</tbody>
</table>

F2A: Web-based Learning II: Remote and On-Line Learning for Engineering Students

Session Chair: Walter W. Buchanan; Session Co-Chair: Daniel F. Jennings

**Time and Place:** Friday - March 11 - 10:15AM - 11:45AM, Oak Room

**F2A-1**

*Title:* eComLab: Remote Laboratory Architecture of Radio-Communications
*Author:* Arsen Melkonyan, Murillo Pontual, Grant Huang, Andreas Gampe and David Akopian
*School:* University of Texas at San Antonio

**F2A-2**

*Title:* Wiki as an Instructional Technique for Construction Safety
*Author:* Althea Arnold
*School:* University of North Texas

**F2A-3**

*Title:* Work in Progress - A Hybrid Course in Random Process for Master Students
*Author:* Hector A. Ochoa
*School:* University of Texas at Tyler

**F2A-4**

*Title:* Developing an On-Line Environmental Issues Course for An American Council For Construction Education Accredited Program
*Author:* George Ford and Walter Buchanan
*School:* Western Carolina University and Texas A&M University
F2B: Curriculum Issues III

Session Chair: Ronald E. Barr; Session Co-Chair: Hrishikesh Sankpal

Time and Place: Friday - March 11 - 10:15AM - 11:45AM, Continental Room

F2B-1
Title: Addressing ABET Criterion 3C in Engineering Communication Courses
Author: Andrea Dean Fontenot
School: Texas Tech University

F2B-2
Title: Reverse Engineering the ABET Process
Author: Ronald E. Barr
School: University of Texas at Austin

F2B-3
Title: A Tale of Two Careers: Differences in Educational Goals within the Field of Electrical Engineering*
Author: Diana de la Rosa-Pohl
School: University of Houston

F2B-4
Title: Reduced Credit Hours and Engineering Licensure - A Proposal to Break the Impasse
Author: Terrence L. Chambers
School: University of Louisiana at Lafayette

F2B-5
Title: The Effect of Watching Video Clips on Student Performance in Construction Science Course at a Graduate Level
Author: Ifte Choudhury
School: Texas A & M

F2C: Laboratory Instruction

Session Chair: Rupa Iyer; Session Co-Chair: Amitava Jana

Time and Place: Friday - March 11 - 10:15AM - 11:45AM, Consulate Room

F2C-1
Title: Enhancing Bioreactor Functionality in Bio-processing Courses*
Author: Ali Givmanesh, Rupa Iyer and Kevin Smith
School: University of Houston
F2C-2
Title: ME Laboratories with Mechatronics Component #
Author: Amitava Jana, Kazim Sekeroglu, Dwayne Jerro, Patrick Mensah, Samuel Ibekwe, and Sanjay Kodiyalam
School: Southern University

F2C-3
Title: Physical Experimentation in Engineering Laboratory
Author: Jerry K. Keska
School: University of Louisiana at Lafayette

F2C-4
Title: How to Reduce the Cost of Teaching Physical Experimentation
Author: Jerry K. Keska
School: University of Louisiana at Lafayette

F2C-5
Title: Cooking an Egg with a Cell Phone: Hoax or Reality?
Author: Jerry K. Keska
School: University of Louisiana at Lafayette

* Student paper
# Abstract only

Friday
March 11, 2011

<table>
<thead>
<tr>
<th>1:00 – 4:30 pm</th>
<th>Post-Conference Workshop</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dr. Sheryl Sorby</td>
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<td>The Robert Noyce Teacher Scholarship Program</td>
</tr>
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<td></td>
<td>Consulate Room</td>
</tr>
</tbody>
</table>
Keynote Speakers Biographies

Dr. William Fitzgibbon

Dean and Professor
Department: Administration
Office Location: 367 T2
Phone: 713-743-3465
Email: fitz@uh.edu

William E. Fitzgibbon, III earned both his BA and PhD degrees from Vanderbilt University in 1968 and 1972 respectively. He is currently serving as Dean of the College of Technology of University of Houston and holds professorial rank in both the Department of Mathematics and the Department of Engineering Technology of the University of Houston. Previously he served as Chair of the Department of the Mathematics, co-Head of the Department of Computer Science and President of the University of Houston Faculty Senate. Over the course of his career he has held faculty positions at the University of California, San Diego and the University of Bordeaux I and the University of Bordeaux II as well as a research position at Argonne National Laboratory in Illinois. His academic discipline is applied mathematics with specialization in mathematical biology (mathematical models in epidemiology and ecology), reactive flow, nonlinear partial differential equations and integro-differential equations. He has well over 130 research articles plus numerous articles, reviews, and reports and has lectured extensively in North America, Europe and Asia.

Dr. Raymond E. Cline, Jr.

Associate Dean of Research in the College of Technology
Special Assistant to the Vice Chancellor/Vice President of Research at the University of Houston

Raymond E. Cline, Jr. is the Associate Dean of Research in the College of Technology and a Special Assistant to the Vice Chancellor/Vice President of Research at the University of Houston. He is responsible for the coordination and development of university-wide technology and energy programs for the College of Technology and the Division of Research. Dr. Cline is the principle investigator and program manager for the Smart Grid Energy Training Coalition, a $3.8 million workforce training program for the electric power sector which includes partnerships with CenterPoint Energy, SkillsNET, Power Technology Institute, San Jacinto College, and the Texas Business and Education Coalition. He serves as the Chairperson of the
Cluster Development Committee of the Greater Houston Partnership Energy Collaborative, serves on the board of The Wind Alliance; serves on the Engineering Leadership Board for the Cullen College of Engineering, University of Houston; and is a technical advisor to Advanced Green Computing Machines.

Prior to joining the University of Houston Cline held several positions at EDS, that was acquired by HP in August 2008. These roles included Vice President and Global Industry Executive for the EDS/HP Shell account, where he oversaw the innovation, demand generation, and sales activities for the Shell account on a global basis; VP of Infrastructure Service Line, where he led the product development and engineering for EDS IT infrastructure including Data Center, Workplace, and Security services; and VP of EDS Innovation Integration, Portfolio Management, where he led the functional integration and coordination of advanced innovation initiatives with the company's global accounts, regional CTO network, EDS Fellows and Agility Alliance members to deliver innovative solutions for clients based on new and emerging technologies. Dr. Cline was a member of the EDS Technology Governance Board.

Before joining EDS, Cline served as chief technology officer of energy sector practice of Science Applications International Corporation (SAIC), a leading technology research and engineering company based in San Diego. While there, he was responsible for developing and defining technology solutions for energy customers, including the development of solutions in the areas of digital oil field and electric utility services.

Cline was the Director of Information Systems at the American Petroleum Institute in Washington, D.C. He spent eight years at Sandia National Laboratories as department manager for distributed computing research and development. While at Sandia he was the chairman of a multi-laboratory coordinating board, overseeing a $20.5 million gas and oil national information infrastructure program designed to develop distributed applications for the petroleum industry.

Cline earned a Ph.D. in chemical physics from the University of Illinois and a Bachelor of Science degree from Kent State University.

Igor Alvarado

Business Development Manager for Academic Research

National Instruments

Mr. Alvarado is a Mechanical Engineer (Kansas State University, 1984) and currently works with National Instruments (NI) as the Business Development Manager for Academic Research. He has been with NI for more than 12 years, and has more than 20 years practical experience in the design, development and deployment of real-time, distributed control systems, embedded systems that involve high-performance numerical methods in C, C++, FORTRAN and LabVIEW using PC-based and embedded technologies. He has also been heavily involved in the design and implementation of novel approaches for teaching/learning/discovering in science and engineering, with a special emphasis on hands-on learning and experimental research. He’s an active member of different professional and scientific associations among others, the IEEE Nuclear and Plasma Sciences Society, the IEEE Control Systems Society, the IEEE Signal Processing Society, the Society of Industrial and Applied Mathematics (SIAM), the International Society of Automation (ISA), and the Ibero-American Science and Technology Education Consortium (ISTEC). Mr. Alvarado has taught courses to engineers and scientists involved in instrumentation, control and automation applications in a wide spectrum of industries, including the nuclear energy industry. He has being an invited speaker to a wide spectrum of scientific and technical conferences and meetings. He was a Vice- Chair of the IEEE 7th International Caribbean Conference on Devices, Circuits and Systems (ICCDCS) 2008.
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<table>
<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Ronald Anderson</td>
<td>Mequanint Moges</td>
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<td>Matthew Balhoff</td>
<td>James Morgan</td>
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<td>Enrique Barbieri</td>
<td>Mohammad Obadat</td>
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<td>Ronald Barr</td>
<td>S R Pandian</td>
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<td>Driss Benhaddou</td>
<td>J R Rao</td>
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<td>Walter Buchanan</td>
<td>Francisco Robles</td>
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<td>Heather Shipley</td>
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<td>Catherine Chesnutt</td>
<td>Wajiha Shireen</td>
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<td>Roman Taraban</td>
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<td>Vassiliou Tzouanas</td>
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<td>Cheryl Willis</td>
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<td>Susan Miertschin</td>
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Special Thanks

The Organizing Committee of the 2011 ASEE-GSW Conference would like to thank the following graduate assistants and staff in the College of Technology, University of Houston for their diligent work assisting the committee.

- Neha Gondkar
- Hrishikesh Sankpal
- Anju Joseph
- Kuntal Ray
- Susmi Das
- Santosh Ramu
- Shabnam Kousha
- David Iglesias
- Deepika Dendi
- Tushar Ambre
- Sofia Shahid
- Fatema Dalal
- Preetham Goli
- Adarsh Nagarajan
- Fabiana Manzo
- Cesar Felizzola
- Ruba Shaikh
Notes:
Notes:
Performer at Reception on the Roof Thursday, March 10th:

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Music

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