Honoring First Chair,  
**Dr. Joseph C. Dowdle**

In 1962, UAH was a small, one-building branch-campus of the UA main campus in Tuscaloosa and was offering a few, select engineering, math and physics courses taught by part-time faculty from local industries and government facilities. In that year Professor Joseph C. Dowdle, a member of the UA Electrical Engineering faculty in Tuscaloosa, was chosen by the Chairman of the UA EE Department to come to Huntsville and become the on-site coordinator of all UA Electrical Engineering activities in Huntsville. In that position, Dr. Dowdle not only coordinated course-offerings, registration and teaching assignments for EE-courses, he also designed and developed a series of Lab courses and related EE Laboratory facilities (in the basement of Morton Hall) to support various EE lecture courses.

In the 1963-64 period, Dr. Dowdle’s duties in Huntsville expanded to resemble those of an EE Chairman when two full-time UA EE faculty members were hired to augment the existing part-time faculty in Huntsville. A few years later, as other UA Engineering Departments increased the numbers of their faculty assigned-to the Huntsville campus, Dr. Dowdle’s duties expanded to resemble those of a Dean of Engineering when he was promoted to the position of Director of all UA Engineering activities at the Huntsville campus.

Thus, in effect, Dr. Joseph C. Dowdle can be described as the First “Chairman” of Electrical Engineering as well as First “Dean” of all Engineering at what has become the University of Alabama in Huntsville. In those two pioneering capacities, Dr. Dowdle was instrumental in establishing broad academic standards and professional ethics that were critical in laying the solid foundation of excellence which has enabled the UAH E.E. Department, as well as the entire UAH Engineering Program, to evolve into internationally known and respected programs of academic excellence.

As a lasting tribute to Dr. Joseph Dowdle the UAH Electrical and Computer Engineering Department has established a faculty award to be known as the Dr. Joseph C. Dowdle Outstanding ECE Faculty Award.

From time-to-time that award will be conferred upon an ECE faculty member whose record of service to UAH exemplifies the ideals espoused by Dr. Joseph C. Dowdle; quality programs, academic excellence, scholarly environment and high standards in promotions and professional ethics. The award will be conferred upon only one person at each award event, and no person will be eligible to receive the award more than one time. Recipients will be selected by an Awards Committee consisting of at least one member of the Dowdle family and three senior ECE faculty members appointed by the ECE Chair and the Dean of the College of Engineering.

For immediate information contact the UAH Office of Development (256-824-4438) or email bumbalj@uah.edu.

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**Dr. Yuri Shtessel Named Fall 2006 Acting Chair of ECE**

Dr. Yuri Shtessel was named Acting Chair for the 2006 Fall Semester while the Chair is on sabbatical leave. He joined the UAH ECE Department in 1993.

Dr. Shtessel received both PhD and MS degrees in Electrical Engineering with concentration in Control Systems at Chelyabinsk State Technical University (South Ural State University as of 1999), Russia in 1971 and 1979, respectively. He served as Assistant Professor and, next, as Associate Professor at the department of Applied Mathematics, Chelyabinsk State Technical University since 1979 until 1991.

Dr. Shtessel works in the area of Nonlinear Control, in particular, Sliding Mode Control. The applications include launch vehicle control, missile-interceptor guidance and control, aircraft reconfigurable control, and control of power converters.

His research has been funded by NASA, AFOSR, ARDEC, and SMDC. Dr. Shtessel has had over 200 technical papers published, including 41 journal papers and 4 patents. He is a recipient of the UAH Research and Creative Achievement Award (2004), the IEEE Third Millennium Medal for the outstanding contribution to control systems engineering (2000), and IEEE Certificate of Recognition for valued service and contributions made as a chair of the Control System Society, Huntsville Section (1997-1999). Dr. Shtessel is an Associate Fellow, AIAA, and a Senior Member, IEEE.
**Tops in National Competition: Mike and Michelle**

The Defense Intelligence Agency's NCMR Scholars Program provides promising undergraduate juniors and seniors the opportunity to receive up to $10,000 per year towards tuition, textbooks, and room & board. The NCMR Scholars Program supports education initiatives by DIA and the Office of the Director of National Intelligence (ODNI).

Two UAH undergraduates have been awarded scholarships from the National Consortium for MASINT Research (NCMR) Scholars Program. Michael Davenport (Electrical and Computer Engineering) and Michelle Lee Johnson (Computer Engineering) both received awards for this competitive scholarship.

The program underwrites the training of future scientists and technologists to encourage them to consider the Intelligence Community as a viable technical career path. The Scholars Program works closely with the DIA and DNI intern programs. The scholarships are for students nominated by faculty as strong candidates with the potential for research innovation.

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Michael (Mike) Davenport, a junior in the Department of Electrical and Computer Engineering, won a nationwide competition to receive a National Consortium for MASINT Research (NCMR) scholarship. The scholarship provides $10,000 to pay tuition, books, room and board.

Mike was recommended for the scholarship by Prof. Junpeng Guo of the ECE department. Mike was a Summer Undergraduate Research Fellow (SURF) in the College of Engineering at UAH this summer, working under the supervision of Prof. Guo in nanophotonics and plasmonics. He developed a measurement system which can measure the resonance of surface plasmon polariton devices for biosensor applications. Mike is currently working as an undergraduate research assistant in Prof. Guo’s lab. Mike is also a recipient of the Presidential Scholarship at UAH.

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Michelle Johnson, a senior working towards a degree in Computer Engineering, was also selected to receive a National Consortium for MASINT Research (NCMR) scholarship. The scholarship provides funds to cover the costs of tuition, books, room and board.

Michelle was recommended for the scholarship by Professor Jeffrey Kulick of the CPE group in the ECE department. She is one of the excellent students in the Computer Engineering program who has interests in both hardware and software design. In addition to her work regarding MEMS based sensors, she has worked in the area of imaging processing as part of her work. She is also a member of Charger Chasers, Eta Kappa Nu, Tau Beta Pi, and Phi Kappa Phi. Michelle is employed at Polaris Sensor Technologies, Inc., working on embedded system design and software development. She also received an Academic Excellence Scholarship from UAH.

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**Optical Engineering Student Wins Poster Presentation Award**

Stephen Gordon Aiken, a student in the UAH Laser Science and Engineering Group working with Dr. Richard Fork, won an award for the best undergraduate poster presentation at the First Annual UAH-COS Student Conference (UCSC), hosted on November 2 and 3, 2006. The contest was judged on the scientific content of the work, quality of presentation delivery, graphics, knowledge and poise.

“Space positioned LIDAR system for characterization and mitigation of Near Earth Objects,” S. Gordon Aiken, Blake Anderton, and Dr. Richard Fork.

Abstract: In recent years much concern has been directed to the question of near earth objects such as asteroids or comets. To address these concerns the Laser Science and Engineering Group at UAH has been investigating a unique and versatile approach to both characterize and deflect potential near earth materials. Though still in its theoretical stages this unique concept shows excellent promise.

Continued research into this project’s feasibility is currently underway at the UAH Laser Science and Engineering Group.
**Charger IEEE Action Report:**

**Student Robotists Wanted**

Charger IEEE presses on! The Charger IEEE student branch is the on-campus organization for students interested in electronics, software programming, or robotics. Charger IEEE helps new students learn the basics of electronics and hardware programming with projects such as BumperBot and Charger Trainer. For students with more technical experience, we also compete in the Trinity Firefighter and Southeast Conference competitions. All projects sponsored by the Charger IEEE allow students to take what they have learned in the classroom and apply it in practical applications.

Each year Charger IEEE competes in two major competitions, Trinity Firefighter and Southeast Conference (SECON). Firefighter is a yearly competition held in Connecticut where teams compete to build a fully autonomous robot that can traverse a course and extinguish a candle held in a room. This year’s team has already built a robot capable of navigating down the hallways, locate a flame, and follow a flame. The team still has to finish integrating all of the components, however they are well on their way to having a competition worthy robot by the spring competition.

Apart from Firefighter, Charger IEEE also competes in SECON which is a yearly competition sponsored by the IEEE for college students in the southeast. SECON has hardware, software, technical paper, website, and t-shirt competitions. Charger IEEE has plans to compete in all of these categories and work has started in many of them. This year’s hardware competition is a simulated basketball game and a working prototype has already been developed. Over the summer, both projects made significant progress and have working prototypes demonstrating the major robotic systems needed for the competitions.

Apart from the yearly competitions, Charger IEEE is also a club that helps promote engineering and teamwork to the students of UAH. Each semester we hold an Open House / Open Lab in which all students are welcome to come in and learn about the projects that we sponsor and what the club offers students.

For the fall semester, Charger IEEE had forty people attending the Open House and many of the students were interested in the projects we demonstrated. One of the projects, BumperBot, was started last year as an introductory teaching tool for students new to engineering. It allows the students to meet club members and build a small robot from a schematic. This helps the new members to understand the basics of robotic system design, which they will implement on later projects.

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ECE Graduate Teaching Assistants

**Jing Cai**
Degree: Ph.D. student  
Major: Electrical Engineering  
Advisor: Dr. Pan

**Farshad Khieri**
Degree: Ph.D. student  
Major: Electrical Engineering  
Advisor: Dr. Joiner

**Sivaranjini Govindan**
Degree: MSE student  
Major: Electrical Engineering  
Advisor: Dr. Shen

**Dylan McSweeney**
Degree: MSE student  
Major: Computer Engineering  
Advisor: Dr. Jovanov

**Swathi Gurumani**
Degree: Ph.D. student  
Major: Computer Engineering  
Advisor: Dr. Wells

**Jun Namkung**
Degree: Ph.D. student  
Major: Electrical Engineering  
Advisor: Dr. Lindquist

**Ashley Hunt**
Degree: MSE student  
Major: Electrical Engineering  
Advisor: Dr. Johnson

**Vladimir Uzelac**
Degree: Ph.D. student  
Major: Computer Engineering  
Advisor: Dr. Milenkovic

**Parisa Kaveh**
Degree: Ph.D. student  
Major: Electrical Engineering  
Advisor: Dr. Shtessel

**Joel Wilder**
Degree: Ph.D.  
Major: Electrical Engineering  
Advisor: Dr. Milenkovic

Other GTA information was unavailable before press time.

*(See [www.ece.uah.edu](http://www.ece.uah.edu) for a complete GTA listing)*
Welcome new and returning students to UAH’s ECE Department Laboratories for the 2006/2007 Spring Semester.

In keeping with our department's continuing efforts to maintain computer laboratory computers up-to-date, we have completed computer upgrades to The Microcomputers Laboratory (EB106), The Microcontrollers Laboratory (EB205), The Rapid Prototyping Laboratory (EB226) and The Computer Systems - Senior Design Laboratory (EB248). I'm sure that some of you will agree, especially those who have already worked with the new computers, that the computer upgrades are a welcome sight. These new computers boast processor speeds of 3.4 gigahertz, and with a gigabyte of ram they are going to feel very fast!

These are some examples of classes taught in the four labs:

**EB106 - Microcomputers Laboratory - Microcomputers (CPE 421L/521L)**

**EB205 - Microcontrollers laboratory - Ubiquitous Computing (CPE 647)**

**EB226 - Rapid Prototyping Laboratory - Advanced Logic Design (CPE 422L/522L)**

**EB248 - Computer Engineering Senior Design Laboratory (CPE 495/496)**

**Laser Science and Engineering Experimental Lab**

This is currently the Laser Science and Engineering Group's ultrafast laser facility. Various experiments are performed using a setup of a RegA 9000 laser, Innova 200 Argon Ion laser, and Mira 900 Ti:Sapphire modelocked ultrafast laser.

The Laser Science and Engineering Group at UAH has been investigating a unique and versatile approach to both characterize and deflect potential near earth materials such as comets or asteroids.
Dr. Fat Duen Ho 25-Year Service Award Recipient

Dr. Fat Duen Ho, Professor, received a UAH 25-year Service Award at the Spring 2006 awards luncheon.

He has been doing research in the areas of microelectronic devices, circuits, and materials. His present research interests focus on microelectronic device modeling for integrated circuit design, nonvolatile semiconductor memories, metal-ferroelectricelectric-semiconductor field effect transistors, and RF (radio frequency) MOSFET modeling for wireless communications. Dr. Ho was awarded NASA/ASEE Summer Faculty Fellowships in 1985, 1986, and 1987.

Dr. Ho has introduced and taught the graduate and undergraduate courses in Device Modeling for Integrated Circuit Design, Microelectronic Devices and Integrated Circuits, VLSI Devices, VLSI Circuits, Laser Electronics, CMOS Analog Integrated Circuits Design, and Solid State Fundamentals.

Dr. Jennifer English 5-Year Service Award Recipient

Dr. Jennifer English, Assistant Professor, received a UAH 5-year Service Award at the Spring 2006 awards luncheon.

Dr. English's research interests include the design and fabrication development of MEMS devices using silicon and ceramic-based materials, the integration of CMOS and MEMs fabrication, MEMs packaging, implementing control schemes for MEMS and wireless operation of MEMs devices. Her recent research focused on wireless ceramic MEMs pressure sensors for use in high temperature environments, where she developed a design and fabrication technology for the manufacture of ceramic pressure sensors for aircraft turbine engines. She also developed a testbed for the wireless operation of these devices in high temperature and high pressure conditions.

Dr. Dashen Shen 15-Year Service Award Recipient

Dr. Dashen Shen, Professor, received a UAH 15-year Service Award at the Spring 2006 awards luncheon.

His current research interests include thin film materials such as amorphous silicon and polycrystalline silicon, SiN, SiO2 and a-C:H (diamond-like coating); devices such as thin film transistors, imaging sensors, solar cells and hybrid devices of amorphous silicon and crystalline silicon. Dr. Shen is directing a research project on new concepts on active matrix liquid crystal display (AMLCD) fabrication with DARPA support.
Spring 2007 Advanced CPE Classes

CPE 612 Parallel Algorithms
3:50-6:50 PM, Tuesday and Thursday
Introduction to metrics describing the performance and scalability of parallel algorithms. Performance analysis of parallel algorithms for performing sorting, matrix multiplication, solving linear equations, and FFT. The prerequisite for this course is CPE 512 or equivalent. For more information contact Dr. Wells at 824-6647 (wells@ece.uah.edu).

CPE 631 Advanced Computer Systems Architecture
5:30-6:50 PM, Monday and Wednesday
This course surveys the architecture and organization of modern computing systems including: CPU design, instruction sets, memory hierarchy, pipelined machines, and multiprocessors. The emphasis is on the major component subsystems of high performance computers: pipelining, instruction level parallelism, memory hierarchies, input/output, and network-oriented interconnections. The course focuses on the techniques of quantitative analysis and evaluation of modern computing systems, such as the selection of appropriate benchmarks to reveal and compare the performance of alternative design choices in system design. The prerequisite for this course is CPE 531 or equivalent. For more information contact Dr. Milenkovic at 824-6830 (milenka@ece.uah.edu).

CPE 641/EE 642 Data and Digital Communications
3:55-5:15 PM, Tuesday and Thursday
This course introduces students to the basic concepts of digital and data communications such as baseband and bandpass data transmission; modulation techniques, error analysis, maximum likelihood signal detection, carrier phase, timing recovery and channel models for communication systems. The prerequisite for this course is EE 500/420 or equivalent. For more information contact Dr. Joiner at 824-6126 (ljumper@ece.uah.edu).

CPE 647 Ubiquitous Computing
3:55-5:15 PM, Monday and Wednesday
The new anytime, anywhere, computing paradigm, also known as ubiquitous computing, significantly changes the way we work and live. This course is project based, and explores issues of mobile, wireless, and distributed computing in the Internet environment, advanced human-computer interfaces, and power efficient computing. The prerequisite for this course is the approval of the course instructor. For more information and to gain approval contact Dr. Jovanov at 824-5094 (jovanov@ece.uah.edu).

CPE 648 Advanced Computer Networks
7:05-8:25 PM, Monday and Wednesday
Introduction to the advanced principles and concepts of computer networks. Topics covered include network protocols and the TCP/IP suite, high-speed networks, performance modeling and estimation, congestion and traffic management, compression, quality of service in IP networks, and network security issues. The prerequisite for this course is Introduction to Computer Networks (CPE 548 or equivalent). For more information, contact Dr. Pan at 824-6642 (dwpan@ece.uah.edu).

CPE 649 Advanced Information Assurance Engineering
5:30 AM-6:50 PM, Tuesday and Thursday
This course provides an introduction to topics ranging from how to attack computer systems and networks to how to protect and recover from such attacks. It explores the basic processes that are utilized by computer attackers in order to develop a complete understanding and appreciation of the threat to information assurance. Course discusses the process of detecting, preventing, and recovering from information assurance attacks. Intrusion detection and prevention systems, auditing, security vulnerability assessments, and the incident response process are covered in some detail. The prerequisite for this course is CPE 549 (Introduction to Information Assurance). For more information on this course contact Dr. Adhami at 824-6316 (adhami@ece.uah.edu).

Dr. Alex Poularikas
20-Year Service Award Recipient

Professor Alexander Poularikas received a 20-Year Service Award at the 2006 UAH Service Award luncheon.

Dr. Poularikas joined the UAH ECE Department in the fall of 1985. He served as ECE Chair in the first four years. He has been involved for many years in research related to space applications.

He was a Faculty Fellow at NASA two consecutive times, doing research on wave propagation in random media, radio-wave scintillations due to ionosphere, and the effect of ionosphere on the accuracy of satellite orbit determination.

Dr. Poularikas has also been involved in image science, image detection and prevention systems, auditing, and adaptive filtering for signal processing and system identification.

Dr. Richard Fork
10-Year Service Award Recipient

Dr. Richard Fork, Professor, received a UAH 10-year Service Award at the Spring 2006 awards luncheon.

He is Principal investigator for the Laser Science and Engineering Laboratory at University of Alabama in Huntsville. Current funding is from NASA, NSF, AFOSR and USRA/BMDO. A current theme is design of lasers for beaming power at multi-megawatt levels from space to earth. One goal is to design lasers capable of handling this level of power for non-military applications that cannot be converted to military use. An experimental theme is examination of the influence of one-dimensional photonic band structures on short optical pulses (100 femtoseconds duration). Applications to optical beam steering are being explored. Experimental work is being carried out using a femtosecond modelocked Ti:sapphire laser and a regenerative amplifier for white light optical pulse generation. The white light optical pulses are used for the measurement of the dynamics of photonic band edge materials.

We are also developing simulations of the group delay and phase delay of short pulses propagating through layered semiconductor structures and comparing the experimental observations of the photonic band edge materials with favorable results. We are developing designs for thin disk laser amplifiers intended to intensity ultrashort optical pulses at high repetition rate. Work has also been done on harmonically modelocked optical fiber lasers, nonlinear loop modelocked optical fiber lasers, four wave mixing, and pairs of colliding pulse modelocked lasers synchronized and phase locked by nonlinear coupling.

www.ece.uah.edu
Good educational practice dictates that electrical, computer, and optical engineering programs seek feedback from experienced practitioners on programs objectives, strategies, and assessment methods. ABET Engineering Criteria, for example, calls for accredited programs to base their programs objectives on “the needs of the program’s various constituencies.”

The department’s goals include providing education excellence to its students and maintaining ABET accreditation of the electrical, computer, and optical engineering programs, and enhancing its research activities. The leadership, wisdom, experience, and teamwork skills of the board members will have a great influence on the attainment of these goals. The department intends to provide a relevant, disciplined, challenging and responsive educational experience to its students. The guidance provided by the board will help to achieve these goals.

1. Dr. Jon Bendickson, Senior Engineer
   Dynetics, Inc.

2. Dr. Bob Berinato, Senior Engineer
   Dynetics, Inc.

3. Dr. William Bishop, Sr., Senior Project Manager
   Systems Studies & Simulation, Inc.

4. Dr. Mervin C. Budge, Jr., Chief Scientist
   Dynetics, Inc.

5. Dr. William Craig, Director
   Software Engineering Directorate
   US Army Aviation & Missile Command

6. Dr. Dan Fleetwood, Professor & Chair
   Vanderbilt University

7. Mr. Daniel M. Joffe, Senior Staff Scientist/Mixed
   Signal Design Manager
   ADTRAN

8. Dr. Bob McMilan, Senior Research Scientist
   SMDC-RD-TC-MS

9. Dr. Marshall Molen, DTI-Ergon Distinguished
   Professor
   Mississippi State University

10. Dr. Jerry Moore, VP Emeritus
    ADTRAN

11. Dr. George O’Reilly,
    Phase IV Systems, Inc.

12. Dr. Claudette Owens, Acting Chief of the Information
    & Computational Engineering
    USASMDC

13. Mr. Jim Pepper,
    DCS Corporation

14. Ms. Janice Rock, Research Engineer
    US Army

15. Dr. Terry D. Rolin, Electronics Engineer
    NASA-MSFC

16. Mr. Rick Schansman, VP for Engineering
    Adtran

17. Dr. Brian J. Smith, Research Electronics Engineer
    US Army

18. Mr. Joel Thomas, Director, Corporate Relations
    Aerospace & Defense Group, Inc.

19. Dr. Glenn Weathers, Chief Technical Officer
    Applied Data Trends, Inc.

20. Dr. Charles Corsetti, ABET Program Coordinator
    Electrical & Computer Engineering (EE)
    University of Alabama in Huntsville

21. Dr. Rhonda Gaede, ABET Program Coordinator
    Computer Engineering (CPE)
    University of Alabama in Huntsville

22. Dr. Robert Lindquist, ABET Program Coordinator
    Optical Engineering (OPE)
    University of Alabama in Huntsville

23. Mr. William Bonner, Program Chair
    National Society of Black Engineers (NSBE)
    University of Alabama in Huntsville

24. Ms. Elizabeth Taylor, Incoming President
    Society of Women Engineers (SWE)
    University of Alabama in Huntsville

25. Mr. Joshua Eliser, President
    Charger Institute of Electrical & Electronics
    Engineers (IEEE), University of Alabama in
    Huntsville
ECE Faculty Publications, Presentations and Awards

Dr. Richard Fork
Professor

Presentations
Talk:

Abstract: Conclusions drawn from a recent NASA workshop that addressed detecting, tracking, cataloguing, and characterizing near-Earth asteroids as well as mitigating potential hazards are discussed in relation to ultrafast phenomena and technology.

Talk:

Abstract: Design of solar powered modelocked lasers applicable to deflecting Earth threatening asteroids.

Participants in both workshops are from: Laser Science and Engineering Group, ECE Department, University of Alabama Huntsville, AL 35899

“Space positioned LIDAR system for characterization and mitigation of Near Earth Objects,” S. Gordon Aiken, Blake Anderton, and Dr. Richard Fork, First Annual UAH-COS Student Conference (UCSC), November 2-3, 2006. (Poster Presentation Award to S. Gordon Aiken.)

Dr. Junpeng Guo
Associate Professor

Journal Articles

Patent

Conference Presentations


J. Guo and R. Adato, “Surface plasmon waves in multiple dielectric and metal layer structures,” Optics in the Southeast, Sept. 6-7, 2006, Charlotte, NC, USA


Dr. Nagendra Singh
Professor

Journal Articles


Conference Presentations


“Particle-in-cell Simulations of Solitary Sheet Alfven Waves in Auroral Plasma, Nagendra Singh and Igor Khazanov, 2006 Huntsville Workshop Outstanding Problems in Geospace Connections Modeling, October 2-6, 2006, Nashville, Tennessee.”
Dr. Emil Jovanov  
Associate Professor

**Journal Articles**


**Invited Talks & Presentations**


**Book Chapters**


**Conference Papers**


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Dr. Alex Milenkovic  
Assistant Professor

**Conference Paper**


**Sponsored Activities**

D. Raskovic (PI), A. Milenkovic (Co-PI), E. Jovanov (Co-PI), D. Thorsen (Co-PI), "Energy-Efficiency In Distributed Sensor Networks," NSF Award no. IIS: 0434156. Grant extended through 07/31/07.

**Journal Articles**


Journal Articles


Conference Papers


Conference Papers


Journal Articles


About the Annual Remote Sensing Calibration Conference, CALCON

The Remote Sensing Calibration Conference, CALCON, has been organized with Professor David Pollock as a member of the committee for the 15th year. In October 2006 he also co-chaired the session Solar, Lunar, and Stellar Radiometric Measurements with Dr. T. Stone, USGS, Flagstaff, AZ. This conference has grown into an international symposium, as calibration has become an increasing challenge. Measurement requirements for many of today’s remote sensing applications, Global Climate Data Records, for example, have become more stringent. This Annual Conference on Characterization and Radiometric Calibration for Remote Sensing serves the calibration community by providing a presentation style forum for scientists, engineers, and managers to present, discuss, learn, and obtain suggestions from experts in the community about calibration, characterization, and radiometric issues within the Microwave, IR, visible, and UV spectrums.

Individuals developing measurement requirements for current and future sensor systems participate and help close the gap between expectations and real world experiences. An advanced state-of-the-art for calibration has been realized by the continued participation of the engineers, scientists and managers who have an interest in the multiple dimensions of the physical world that have to be addressed to realize an accurate calibration whose uncertainty can be traced to the International System of Units.

ECE Dept., UAH 11 Real Time, Fall 2006
MSE/Concentration in Information Assurance Engineering

Information Assurance Engineering (IAE) is about developing computer networks, wired and wireless communication systems to remain dependable in the face of malice, error, and mischance.

As a discipline, IAE focuses on tools, processes, and methods needed to design, implement, and test systems and to adapt existing systems to survive in a hostile environment.

Students graduating with concentration in Information Assurance Engineering are expected to:

- Gain hands-on experience within the computer/network protection.
- Learn how to design and develop future trusted systems.
- Be well educated in the Cyber Trust area.
- Have ethical responsibilities to those who will manage, configure, and operate such systems, and to provide fundamental cyber security education for all citizens to secure systems of the future.

Students will learn about Information Assurance Engineering through hands-on courses in the Cyber Chargers Laboratory at UAH. The laboratory is a replica of the real world wired and wireless computer networks infrastructure.

This laboratory is considered to be among the top facilities in the nation giving UAH students many opportunities to learn through hands-on education and research in information assurance engineering.

Admission Requirements

For unconditional admission to the Master of Science in Engineering program with a concentration in Information Assurance Engineering, the requirements are:

1. A Bachelor’s degree from an ABET or CSAB accredited program with a minimum of 3.0 average on a 4.0 scale, and
2. Minimum GRE score of 1500, or 5 or more years experience, or passed FE Exam
3. For international students, a TOEFL score of 550.

Conditional admission may be granted to individuals who fail to meet the requirements for unconditional admission.

The program consists of 36 semester hours and may include courses from the following list:

- Introduction to Computer Networks
- Advanced Computer Networks
- Introduction to Information Assurance Engineering
- Wireless Computer Network Security
- Advance Information Assurance Engineering
- Real Time Operating Systems
- Introduction to Data Communication Networks
- Engineering mathematics courses
- Management courses
- Engineering Management
- Engineering Project Management
- Financial Methods for Engineering
- Electrical Engineering Capstone courses

We want to hear from you!

The ECE Department looks forward to hearing your views and your success stories. Contact us to share your news and comments about your career and interests. Your story should be sent to realtime@ece.uah.edu

UAH
The University of Alabama in Huntsville

Real-Time
Electrical and Computer Engineering
The University of Alabama in Huntsville
Huntsville, AL 35899

Address Service Requested