

# Jay R. Porter, Ph.D., P.E.

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## AREAS OF RESEARCH

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- Analog and RF Electronics
- Instrumentation and Measurement
- Virtual Instrumentation Development
- Mixed Signal Integrated Circuit Test and Characterization
- Magnetic Resonance Imaging

## EDUCATIONAL RECORD

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**Ph.D. – Electrical Engineering** **December 1993**  
*Texas A&M University, College Station, TX*  
Dissertation: "Design, Analysis, and Application of an RF Multiplexing Data Acquisition System for Use With Array Coils in Magnetic Resonance Imaging"

**M.S. - Physics** **December 1989**  
*Texas A&M University, College Station, TX*

**B.S. - Electrical Engineering** **August 1987**  
*Texas A&M University, College Station, TX*

## RELEVANT EXPERIENCE

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**Assistant Professor** **August 1998 – August 2003**  
**Associate Professor** **September 2003 – August 2009**  
**Professor** **September 2009 - Present**  
**Program Coordinator** **September 2004 – August 2015**  
**Associate Department Head for Undergraduate Studies** **August 2015 - Present**  
*Texas A&M University, Engineering Technology and Industrial Distribution, College Station, TX*  
Currently working as a professor in the Department of Engineering Technology and Industrial Distribution (specifically, the Electronic Systems program) at Texas A&M University. Responsibilities include sustaining an externally funded research program, promoting undergraduate research, teaching and developing courses, and performing other scholarly duties.

### Research

Responsible for the creation of the Virtual Instrumentation and Mixed Signal Characterization Laboratory. The lab's mission is to develop virtual instrumentation-based solutions for complex instrumentation and measurement problems targeted at industrial and research applications. Lab facilities include six virtual instrumentation development stations, PXI and VXI development systems, and state-of-the-art stand-alone equipment. In addition, the lab has a multilayer printed circuit board rapid prototyping facility. Funded research projects include (a complete list of projects can be found under FUNDED RESEARCH PROJECTS):

- NSF ITEST project involving STEM outreach in the area of 3D printing and building automation.
- Developing a NASA sponsored power monitoring and control system for the deep space habitat mock-up.
- Study of sensing technologies used for surveillance and tracking of illegal activity on the US border. Development of reference designs for next generation border security systems. Funded by the Department of Homeland Security.

- Development of a frequency agile software defined radio front end for StarVision and NASA.
- Development an integrated handling/test system for use in production test of mixed-signal integrated circuits for National Instruments, Texas Instruments, and the State of Texas.
- Collaborated on the development of Nuclear Quadrapole Resonance explosive detection systems with the Department of Electrical Engineering for DuPont.

#### Student Research and Advising

Because the Engineering Technology programs are currently for undergraduates only, my focus has been on employing undergraduate students for ongoing funded research projects. However, as we move toward the development of a Masters degree, I have been successful in recruiting students into other Masters programs within the University and working with them on funded projects within Engineering Technology. Examples of undergraduate and graduate student research and advising include:

- *Undergraduate:*  
A primary source of research and development in Engineering Technology is through the employment of undergraduate student workers. The following are examples of undergraduate research projects:
  - Took a team of students to present at the 2016 ASEE GSW Conference. (2016)
  - Employed David Smith to maintain laboratories and coordinate laboratory projects (Fall 2015, Spring 2016)
  - Took a team of students to present at the 2015 ASEE GSW Conference. Two of the student papers won 1<sup>st</sup> and 2<sup>nd</sup> place Student Paper Award. (2015)
  - Employed David Smith to maintain laboratories and coordinate laboratory projects (2014-2016)
  - Co-supervised Gonzalo Canton, a student in the CANIETI Summer Research Program (2014)
  - Took a team of students to present at the 2014 ASEE GSW Conference. One of the student papers (Tanner Perkins, “The Modular Integrated Stackable Layers System: A NASA Development Partnership”) the 1<sup>st</sup> place Student Paper Award. (2014)
  - Employed Lauren Porter to electronically document curriculum for ENTC 355 course. (2011)
  - Employed Jason Washington to develop electronics demonstration systems for use in ENTC 350, Electronics. (2009)
  - Advised Alex Smith and Richard Harper on the development of analog motor controller systems. (2009)
  - Employed Brian Eaton in the MISL Laboratory. (2007)
  - Employed Chris Campbell in the MISL Laboratory. (2007)
  - Employed Matt Lyssy in the MISL Laboratory to repair and maintain the computers used for student checkout and manage the MISL Laboratory resources. Matt is responsible for working with senior project teams that need access to microcontroller embedded development environments, SMT soldering equipment, etc. (2006)
  - Employed Nathan McCrory in the MISL Laboratory to repair and maintain the computers used for student checkout, manage the MISL Laboratory resources, and work on the crystal radio demonstration. (2006)
  - Employed Troy Perales to work on the IF RIO software defined radio project for National Instruments. (2006)
  - Employed Chad Stone to work on the IF RIO software defined radio project for National Instruments. (2006)
  - Employed Evan Gooch to work on the development and maintenance of the LIVE lecture archiving system. Evan also works on assorted mobile computing projects for the MISL laboratory. (2005)
  - Employed Eric Pesek to clean, test equipment, and maintain the EET/TET laboratories. (2005)
  - Employed Benjamin Brannaka to work on the development and maintenance of the LIVE lecture archiving system. (2005)
  - Employed Matt Tilleman to work on microcontroller-based 802.11b data acquisition systems. (2004)
  - Employed Anthony Allison to work on an undergraduate research project in the area of Nuclear Quadrapole Resonance. (2004)

- Employed and advising Sara Barnard. Sara worked on the development of virtual instrumentation systems for mixed signal circuit analysis. Sara recently transferred to the Electrical Engineering department. (2002-Present)
- Employed and advised Anthony Allison. Anthony worked on hardware development for NQR. (2004-Present)
- Employed and advised Chris Wilson. Chris worked on the development of software for the Handspring Visor PDA. The software is part of a project to develop a low-cost device for sobriety testing. (2000 – 2001)
- Employed and advised John LaViolette. John was responsible for the development of a PLL-based clock source to be used by Texas Instruments to synchronize individual pieces of test equipment. (2000 – 2001)
- Employed and advised Tim Flanary. Tim was responsible for the developing hardware solutions for mixed signal testing. (2001)
- Advised and employed Michael Warren as an undergraduate student research assistant. Michael worked on several projects including the development of virtual instrumentation mixed-signal test techniques, high-current power supplies for use with magnetic resonance gradient and shimming systems, and the development of a PDA-based fingerprinting unit. (2000)
- Advised Craig Pierce and Michael Warren in a funded effort with the Telecommunications program to develop a web-based laboratory for teaching telecommunication testing techniques. The students developed web-based instrument simulations. (2000)

Responsible for working with industry to develop relevant funded senior design projects. These projects can be stand-alone or part of a larger funded project. Examples of past and present projects include:

- Development of an autonomous tracking go-kart scale vehicle. Concept is to instrument a driven car so that a second, autonomous vehicle can track the drive kart, General Motors. (Spring 16-Fall 16)
- Development of a gesture controlled mobile robotic platform, Internally sponsored. (Spring 16-Fall 16)
- Development of an IoT-based demonstration system for introducing K-12 students to STEM careers, Internally sponsored. This project served as the basis for a recently funded NSF ITEST proposal. (Spring 2015-Fall 2016)
- Development of a mesh network communication system for aerial drones (Freeflight). \*\* (2014)
- Development of in situ monitoring system for blood pressure during exercise (Baker Hughes). \*\* (2014) - Students won 2015 ASEE GSW Best Paper Award, 1<sup>st</sup> Place
- Development of a wireless coverage mapping system with SDR capability (Lockard & White). (2014)
- Development of an HVAC simulation unit for use in training and demonstrations (Schneider Electric). (2014)
- Development of an android based data acquisition system. The student team has won various awards including the IDEAS Challenge, the COE Engineering Showcase Industry Choice Award, and the TEES Product Development Award (2013)
- Development of an autonomous robot navigation system. (2012)
- Development of a power monitoring and control system for the NASA deep space habitat mock-up (NASA Sponsorship). (2012)
- Development of a power monitoring and control system for commercial applications. (2012)
- Development of a wireless ECG system for use on the ISS (NASA sponsorship). (2011)
- Development of an 802.11 based wireless control system for mobile robot. (2011)
- Development of a wireless pricing system for retail stores. (2011)
- Development of a residential power usage monitoring system based on X10 home automation technology. (2010)
- Development of an RFID based laboratory security system. (2009)
- Conversion of an existing system for monitoring Freon gas emissions into a system for monitoring CO2 gas levels. Sponsored by OI Analytical. (2009)

- Development of variable speed controller with feedback for oil pumping systems. Sponsored by Enersys and Russel Treat. (2009)
- Development of an educational robotics platform that supports wireless and autonomous control, video feedback, and environmental monitoring. (2008)
- Development of an easily deployable, wireless remote monitor controller that can be used for advertising and emergency notification. The controller allows the remote upload of images which are then automatically displayed in succession. (2008)
- Development of a system to monitor and track the health of equipment in natural gas pumping stations. The system has the ability to generate alarms based on data trends. Sponsored by Russel Treat. (2008)
- System for creating grocery lists over the web based on store inventory. The system includes hardware that can be used in the grocery store to aid shoppers in finding items and to notify shoppers of sale items. Sponsored by OI Analytic. (2008)
- System for tracking passengers on public transit systems using RFID. Can be used by schools to track children. (2008)
- Development of an RFID-based gaming board that can be used to display card game tournaments remotely. (2008)
- Implementation of an RFID-based system to track greenhouse flowers such as orchids. System involves multiplexed RFID antenna systems. (2007)
- System to track fleet vehicle health, location, and emissions in real time. (2007)
- System to control entertainment systems via infrared. The device is controllable over the web using BPL. (2007)
- Implementation of a low-cost downhole pressure and temperature monitoring system. Sponsored by Well Dynamics. (2007)
- System to partially automate the medication process for herds of cattle. System used Bluetooth and RFID to identify a particular animal, connect to a cattle scale, measure animal weight, calculate medication dosage, and track animal health. Sponsor by Animal Innovations. (2007)
- Development of an RFID-based system for tracking firefighters during a first-responder event (2007)
- Development of an after-market intelligent automotive wiring harness that incorporates modern vehicle features and self-diagnostic capabilities – two teams (2007)
- Development of a residential power meter upgrade that allows the power meter to broadcast power consumption data through a Broadband over Powerline interface to a computer server. (2006)
- Development of a wall plug-in module data acquisition system that acquires data from various sensors and relays the data back to a server through BPL. (2006)
- Design and implementation of a mesh network-based sensor system for monitoring soil moisture and ground tilt. This project was done in conjunction with the Civil and Agriculture Engineering Departments. (2006)
- Implementation of a motorcycle heads-up display that wirelessly projects speed, tach, and gear information onto the visor of a motorcycle helmet. (2006)
- Implementation of an armband device for use by joggers/walkers that monitors the individual's health (pulse, temperature), records GPS information, and plays MP3 files. (2006)
- Development of a retrofit kit for electric guitars that allows guitar auto-tuning through a single button press. (2006)
- Implementation of an 802.11-based system that monitors video game playing time and controls when/how long a child can play. (2006)
- Energy monitoring system that plugs into the wall between the wall plug and an electrical device, monitors instantaneous power usage, and relays information to a server through 802.11. (2006)
- Development of a remote tracking system for the A&M campus bus system. (2005)
- Upgrade and automation of a heat conduction measurement system. Sponsored by the Department of Mechanical Engineering. (2005)
- Study of integrated cellular phone and IP telephony systems. Sponsored by A&M's Director for Telecommunications. (2005)
- Development of the air interface for a Software Defined Radio. Sponsored by a NASA SBIR. (2005)

- Phase II of a project to develop a system to allow a cell phone to be used to provide the line for home telephone systems. (2005)
- Phase II of a project to modernize a thermal conductivity measurement system. Sponsored by Mechanical Engineering. (2005)
- Development of a wireless linked video platform and feedback control system for use on an autonomous airplane. Sponsored by Aerospace Engineering. (2005)
- Phase I of a project to develop a system to allow a cell phone to be used to provide the line for home telephone systems. (2004)
- Development of an RFID-based library management and security system to track incoming and outgoing books. (2004)
- Development of a Bluetooth-based ECG heart monitoring system. (2004)
- Development of a DSP-based guitar effects box. (2004)
- Development of a wireless monitoring system for tracking wildlife (squirrel) activity. (2004)
- Development of a direct digitization software defined radio for detecting AM, FM, ASK, and FSK modulations. (2004)
- Development of a location dependent information system (wireless tour guide). The system uses and RF link to acquire information from building and landmarks; and delivers this information to a mobile PDA. (2004)
- Development of a wireless animal tracking system. System uses four Doppler antenna systems to track location of RF tagged animals. The project is sponsored by the Dept. of Parks and Wildlife. (2004)
- Development of an in-car, RFID system for monitoring auto insurance, registration, and inspection. The system can alert the police through a wireless link. (2003)
- Development of digital-audio, wireless speaker system. The system involves the development of an all-digital receiver. (2003)
- Creation of a wireless monitoring system for fleet management. (2003)
- Development of a physical test system for commercial LCD displays. The system is being developed for Texas Digital Systems. (2003)
- Development of a mobile, wireless Ethernet connection. The system will be based on a system by Marconi and will have a minimum range of 1 mile. (2003)
- Development of a DSP-based software radio. The final product will be a software transceiver for AM signals. (2003)
- A Compaq IPAQ-based heart monitoring system. By monitoring a patient's EKG and transmitting it back in real time to a web server, the system will give physicians the ability to remotely monitor a patient's heart. (2002)
- A virtual instrumentation-based ultrasonic test system. The tester is being developed for National Instruments to be used in non-destructive testing of plastics. The tool will ultimately be used for demonstration and marketing purposes. (2002)
- A PXI-based parallel test system. The tester will be used to enhance the throughput of production-level integrated circuit test systems. This project is part of a larger project funded by the state of Texas. (2002)
- A PXI-based tester for analog-to-digital converters. The tester will be used by National Instruments as a demonstration unit and marketing tool. Funded by National Instruments. (2001)
- An embedded-controller-based mixed signal tester. The unit is capable of performing basic mixed signal tests on 8-bit ADC and DAC devices. This project was funded by Texas Instruments. (2000)
- A virtual instrumentation-based mixed signal circuit characterization system for academic lab use. The students are using LabVIEW with data acquisition hardware to develop a tester that can be used in the classroom. This project was funded by Texas Instruments. (2000)
- A low cost PC data acquisition card based on a PIC microcontroller. (2000)
- Internet controlled laboratory experiments. The students used a temperature controlled curing chamber as a test case. (1999)

Responsible for working with undergraduate students participating in university undergraduate research fellowship programs. Examples include:

- Worked with Neal Mansfield on the development of an 802.11b remote control system for a mobile platform. The system will use a PDA to drive the platform remotely over the internet. (2002)
- Advised two students from Texas State Technical College participating in a summer research program. The students were responsible for the development of a magnetic shimming system that is currently in use in Electrical Engineering. (2000)
- *Masters:*
  - Served as a committee member for Clayton Bridge (MS, EE: 2015 – 2016)
  - Served as a committee member for Michael Kelley, changed from PhD to MS. (MS, EE: 2013-2015)
  - Served as a committee member for Yanjie Sun. Mr. Sun changed to a non-thesis option and graduated Fall 2012 (ME, EE: 2012)
  - Served as a committee member for Hongbo Chen. (MS, EE: 2011)
  - Served as a committee member for Venkata Veera Satya Sair Gadde. (MS, EE: 2009)
  - Served as a committee member for Richard Kamprath. (MS, EE: Graduated Fall 2006)
  - Employed and supervised Abhishek Deb as a Graduate Teaching Assistant for ENTC 355, 9/2016-Present.
  - Employed and supervised Hari Srikonda as a Graduate Teaching Assistant for ENTC 355, 2015.
  - Employed and supervised Arash Torkan as a Graduate Teaching Assistant for ENTC 350, 9/2014- 12/2016.
  - Employed Anand Kumar (MS, ELEN) to develop laboratory experiments using Crossbow mesh networking technology for the ENTC 359 Lab – Computer Instrumentation (Spring 2006)
  - Employed Andreas Larsson (MS, ELEN) to develop laboratory experiments for the ENTC 355 Lab – Applied Electromagnetics. (Fall 2005, Spring 2006)
  - Employed Sanjay Tumati to evaluate a National Instruments software package and to develop student labs based on the package, 5/2004 – 8/2004.
  - Served as a committee member for Sanjay Tumati. (MS, EE: Graduated Fall 2004)
  - Employed Nate Moehring (MS, INFO) to develop software and hardware as part of a research project in the area of mixed signal semiconductor device testing and to develop PDA software and systems for law enforcement applications. Nate was a former ETID undergraduate student. (2002, 2003)
  - Employed David Beck (M.E., ENG) to work on the development of a parallel semiconductor test platform for enhancing throughput of the production testing of mixed signal integrated circuits. (2002)
  - Served as a committee member for Mark Gallina. (MS, ME: Graduated Spring 2002)
  - Employed Michael Warren (MS, INFO) on funded research. Michael was responsible for the development of mixed-signal characterization methodologies for use in the classroom and in industry. Mike was a former ETID undergraduate student and a commissioned officer in the US Air Force. (2001-2002)
  - Employed Pavan Singh (MS, EE) on a funded project. Pavan worked on the development of a low cost digital pattern source and generator for use in integrated circuit testing. (2000)
  - Employed Mark Gallina (MS, ME) on a funded project. Mark worked on the continued development of a virtual instrumentation-based MR imaging system. (2000)
  - Employed Shuolin Zha (M. Eng.) on a funded project. Shuolin worked on the design of virtual instrumentation-based magnetic resonance imaging consoles. (1998-2000)
  - Served as a committee member for Yichun Zhou through Lamar University. (MS, EE, Lamar University: Graduated Spring 2001)
- *Doctorate:*
  - Serving as a committee member for Elif Kaya. (PhD, EE: 2015 – Present)
  - Serving as a committee member for Dheyaa Alkandari (PhD, EE: 2014 – Present)
  - Employed and supervised Reza Ebrahimi Ghiri. as a Graduate Teaching Assistant for ENTC 350, 1/2017-Present)
  - Serving as a committee member for Naderi Mohammad Hossein. (PhD, EE: 2013- Present)
  - Employed and supervised Kevin Hong as a Graduate Teaching Assistant for ENTC 359, 9/2013- 5/2014.

- Employed and supervised Negar Rashidi as a Graduate Assistant Lecturer, prior to this she was a Graduate Teaching Assistant, 9/2013 – 5/2014.
- Served as a committee member for Qiyuan Liu. (PhD, EE: 2016)
- Serving as a committee member for Suraj Prakash. (PhD, EE: 2011-Present)
- Serving as a committee member for Hemsundar Mohan Geddada. (PhD, EE: 2013)
- Employed and supervised Sriram Sridharan as a Graduate Assistant Lecturer for ENTC 355, prior to this he was a Graduate Teaching Assistant, 1/2013 – 12/2014.
- Served as a committee member for Chang Joon Park. (PhD, EE; 2008)
- Employed and advised Vijayakumar Dhanasekaran (EE) on the development of a low-cost semiconductor test system as part of a research project with the State of Texas, National Instruments, and Texas Instruments. (2003–2005)
- Employed and advised David Hernandez (EE) on the development of a low-cost semiconductor test system as part of a research project with the State of Texas, National Instruments, and Texas Instruments. (2003)
- Donna S. Tiller, Educational Human Resource Development, GCR. (2003)
- Wenfang Lei, Atmospheric Sciences, GCR. (2003)

Course and Educational Development

- Developed new course materials for eight separate courses. These include:
  - *ENTC 210 Circuit Analysis I:* Developed and taught a course on DC analog circuits for sophomore level students.
  - *ENTC 211 Circuit Analysis II:* Developed and taught a course on AC analog circuits for sophomore level students.
  - *ENTC 250 Introduction to Engineering Technology:* Developed and taught a course on the fundamentals of electronics engineering technology. The course included an introduction to virtual instrumentation development environments and basic electronics concepts.
  - *ENTC 330 Industrial Electronics:* Developed and taught a new overview course on electrical engineering concepts for non-electronics majors.
  - *ENTC 333 Product Development:* Developed a new course on product development to introduce students to best practices from both a business and engineering perspective. Redeveloped the labs in 2012.
  - *ENTC 350 Electronic Devices:* Currently teaching basic electronics concepts including diodes, transistors, and operational amplifiers. Also developed the lab manual for the course.
  - *ENTC 355 Electromagnetics and High Frequency Systems:* Developed a new course on applied electromagnetics and high frequency circuits and systems.
  - *ENTC 359 Computer Instrumentation:* Developed and taught a course on the fundamentals of instrumentation, signal conditioning and sensors. Redeveloped the labs for the course in 2013
  - *ENTC 420 Engineering Technology Projects:* Serving as a formal advisor to senior project teams (over 45 teams since 1998).
  - *ENTC 452 Advanced Mixed Signal Test:* Responsible for teaching approximately one third of the course on advanced mixed signal testing concepts. Topics include instrumentation networking and automated measurement concepts.
  - *ENTC 489 Communication Electronics:* Developed and taught a new technical elective that focuses on the component and system level design of communication systems.
  - *ENGR 489 Innovative Product Development and the Lean Startup Method:* Worked with a team of faculty to develop and deliver an interdisciplinary course on product development and entrepreneurship.
- The following is a summary of student evaluations. Scores are based on a maximum of five points:

<b>Course Number</b>	<b>Course Name</b>	<b>Semester</b>	<b>Score (5.0)</b>
<u>Year 2017-2016</u>			
ENTC 350	Electronic Devices	Spring 2017	N/A
ENTC 355	Electromagnetics & High Freq Sys	Spring 2017	N/A

ENTC 355	Electromagnetics & High Freq Sys	Fall 2016	N/A
ENTC 350	Electronic Devices	Fall 2016	N/A

Year 2016-2015

ESET 211	Power Systems and Circuit Apps	Summer 2016	4.84
ENTC 489	Communication Electronics	Spring 2016	4.75
ESET 355	Electromagnetics & High Freq Sys	Spring 2016	4.23
ENGR 489	Innovative Product Development	Fall 2015	NG
ESET 355	Electromagnetics & High Freq Sys	Fall 2015	4.40
ESET 350	Electronic Devices	Fall 2015	4.35

Year 2015-2014

ENTC 210	Circuits I	Summer 2015	4.65
ENGR 489	Innovative Product Development	Spring 2015	NG
ENTC 355	Electromagnetics & High Freq Sys	Spring 2015	4.79
ENTC 350	Electronic Devices	Spring 2015	4.71
ENGR 489	Innovative Product Development	Fall 2014	NG
ENTC 359	Instrumentation	Fall 2014	4.57
ENTC 350	Electronic Devices	Fall 2014	4.41

Year 2015-2014

ENGR 489	Innovative Product Development	Spring 2015	NG
ENTC 355	Electromagnetics & High Freq Sys	Spring 2015	4.77
ENTC 350	Electronic Devices	Spring 2015	4.71
ENGR 489	Innovative Product Development	Fall 2014	NG
ENTC 359	Instrumentation	Fall 2014	N/A
ENTC 350	Electronic Devices	Fall 2014	N/A

Year 2014-2013

ENTC 489	Communication Electronics	Spring 2014	4.77
ENTC 359	Instrumentation	Spring 2014	4.78
ENTC 489	Communication Electronics	Fall 2013	4.37
ENTC 359	Instrumentation	Fall 2013	4.40

Year 2013-2012

ENTC 350	Electronic Devices	Spring 2013	4.67
ENTC 333	Product Development	Spring 2013	4.10
ENTC 355	Electromagnetics & High Freq Sys	Fall 2012	4.62
ENTC 350	Electronic Devices	Fall 2012	4.39

Year 2012-2011

ENTC 355	Electromagnetics & High Freq Sys	Spring 2012	4.51
ENTC 350	Electronic Devices	Spring 2012	4.53
ENTC 355	Electromagnetics & High Freq Sys	Fall 2011	4.73
ENTC 350	Electronic Devices	Fall 2011	4.80

Year 2011-2010

ENTC 355	Electromagnetics & High Freq Sys	Spring 2011	4.67
ENTC 350	Electronic Devices	Spring 2011	4.63
ENTC 355	Electromagnetics & High Freq Sys	Fall 2010	4.57
ENTC 350	Electronic Devices	Fall 2010	4.47

Year 2010-2009

ENTC 355	Electromagnetics & High Freq Sys	Spring 2010	4.53
ENTC 350	Electronic Devices	Spring 2010	3.78
ENTC 355	Electromagnetics & High Freq Sys	Fall 2009	4.27
ENTC 350	Electronic Devices	Fall 2009	4.31

Year 2009-2008

ENTC 355	Electromagnetics & High Freq Sys	Spring 2009	4.70
ENTC 350	Electronic Devices	Spring 2009	4.38
ENTC 355	Electromagnetics & High Freq Sys	Fall 2008	4.46
ENTC 350	Electronic Devices	Fall 2008	4.75



<u>Year 2008-2007</u>			
ENTC 355	Electromagnetics & High Freq Sys	Spring 2008	4.69
ENTC 350	Electronic Devices	Spring 2008	5.00
ENTC 355	Electromagnetics & High Freq Sys	Fall 2007	4.94
ENTC 350	Electronic Devices	Fall 2007	4.74
<u>Year 2007-2006</u>			
ENTC 355	Electromagnetics & High Freq Sys	Spring 2007	4.41
ENTC 350	Electronic Devices	Spring 2007	4.55
ENTC 355	Electromagnetics & High Freq Sys	Fall 2006	4.61
ENTC 350	Electronic Devices	Fall 2006	4.34
<u>Year 2006-2005</u>			
ENTC 359	Computer Instrumentation	Spring 2006	4.49
ENTC 355	Electromagnetics & High Freq Sys	Spring 2006	4.54
ENTC 359	Computer Instrumentation	Fall 2005	4.24
ENTC 355	Electromagnetics & High Freq Sys	Fall 2005	4.57
ENTC 345 (485)	Telecom Testing	Fall 2005	4.41
<u>Year 2005-2004</u>			
ENTC 489	Electromagnetics & High Freq Sys	Spring 2005	4.52
ENTC 359	Computer Instrumentation	Spring 2005	4.65
ENTC 489	Electromagnetics & High Freq Sys	Fall 2004	4.74
ENTC 359	Computer Instrumentation	Fall 2004	4.58
ENTC 350	Electronic Devices	Fall 2004	4.23
<u>Year 2004-2003</u>			
ENTC 489	Electromagnetics & High Freq Sys	Spring 2004	4.46
ENTC 350	Electronic Devices	Spring 2004	4.30
ENTC 489	Electromagnetics & High Freq Sys	Fall 2003	4.48
ENTC 350	Electronic Devices	Fall 2003	4.58
<u>Year 2003-2002</u>			
ENTC 489	Electromagnetics & High Freq Sys	Spring 2003	4.81
ENTC 350	Electronic Devices	Spring 2003	4.33
ENTC 489	Electromagnetics & High Freq Sys	Fall 2002	4.76
ENTC 350	Electronic Devices	Fall 2002	4.42
<u>Year 2002-2001</u>			
ENTC 350	Electronic Devices	Spring 2002	4.57
ENTC 350	Electronic Devices	Fall 2001	4.45
ENTC 211	Circuit Analysis II	Fall 2001	4.38
<u>Year 2001-2000</u>			
ENTC 489 (**)	Advanced Mixed Signal Testing	Spring 2001	NG
ENTC 350	Electronic Devices	Spring 2001	4.24
ENTC 211	Circuit Analysis II	Spring 2001	4.38
ENTC 250 (*)	Introduction to Engineering Tech	Summer 2001	4.28
ENTC 489 (**)	Advanced Mixed Signal Testing	Fall 2000	NG
ENTC 350	Electronic Devices	Fall 2000	4.42
ENTC 330 (*)	Industrial Electronics	Fall 2000	4.21
ENTC 211	Circuit Analysis II	Fall 2000	4.34
<u>Year 2000-1999</u>			
ENTC 489 (**)	Advanced Mixed Signal Testing	Spring 2000	NG
ENTC 350 (*)	Electronic Devices	Spring 2000	4.50
ENTC 211	Circuit Analysis II	Spring 2000	4.71
ENTC 485 (*,**)	Advanced Mixed Signal Testing	Fall 1999	NG
ENTC 211	Circuit Analysis II	Fall 1999	4.47
ENTC 211 Lab	Circuit Analysis II	Fall 1999	4.53
ENTC 210	Circuit Analysis I	Fall 1999	4.32
<u>Year 1999-1998</u>			
ENTC 211	Circuit Analysis II	Spring 1999	4.57

ENTC 210	Circuit Analysis I	Spring 1999	4.55
ENTC 211 (*)	Circuit Analysis II	Fall 1998	4.26
ENTC 210 (*)	Circuit Analysis I	Fall 1998	4.34

- (\*) This was the first offering of this course by Dr. Porter.  
(\*\*) Dr. Porter is responsible for teaching the last third (five weeks) of this course.  
NG This course was not evaluated for Dr. Porter.  
NA Not available yet.

- Piloting open laboratory teaching methodologies in ESET 350 to test new teaching paradigms prior to the opening of the new Zachry EEC. (2016)
- Oversaw upgrades in the Thompson 121 and 122 classrooms to support increasing class sizes. (2016)
- Taught the ENGR 489 – Innovative Product Development course as an overload as part of a faculty team. Was the primary faculty member from the College of Engineering. (Fall 2015)
- Finalized the paperwork with the State and finished the catalog entry for the new Multidisciplinary Engineering Technology degree in ETID. (2015)
- Continued to pursue avenues for offering a K-12 Engineering Teaching degree, minor or certificate within the Department of Engineering Technology and Industrial Distribution. This has recently developed into a partnership with the College of Education. (2015)
- Continued to support the Multidisciplinary Engineering Technology curriculum that that is to be offered at Texas A&M’s new branch campus in McAllen, TX. (2014-Present)
- Taught the ENGR 489 – Innovative Product Development course as an overload as part of a faculty team. Was the primary faculty member from the College of Engineering. (Fall 2014, Spring 2015)
- Worked with a team of faculty to develop a new program in Mechatronics to be offered on Texas A&M’s main campus. The curriculum has since be retitled as Multidisciplinary Engineering Technology with an emphasis in Mechatronics as requested by the College. (2014 -2015)
- Worked with Dr. Michael Johnson to develop a proposal for offering an Engineering Teaching Certificate within the Department of Engineering Technology and Industrial Distribution. The proposal was given to the ETID Development Officer in order to solicit funds from potential donors. (2015)
- Worked with Dr. Michael Johnson to create a Multidisciplinary Engineering Technology curriculum that could be offered at Texas A&M’s new branch campus in McAllen, TX. (2014)
- Worked with Dr. Gang Sun, Dr. Joe Morgan and team of undergraduate students to design a new educational platform for teaching embedded systems (ENTC 269, 349, 369). (Summer 2014)
- Worked with a team of faculty and students to teach summer workshops on robotics for recruiting purposes: Women in Engineering, E12, and the Summer Transfer Workshop. Personally responsible for delivering mini-lectures on inductive sensors and LED lighting. (Summer 2014)
- Participated in the first offering of ENGR 489 – Innovative Product Development. The course is cross-listed with the Mays School of Business and the College of Architecture. This first offering is being taught to 25 students from across the University. (Spring 2014)
- Developed a new technical elective for the ESET program as a way to replace ENTC 435 due to the sudden departure of Dr. Sejun Song. ENTC 489, Communication Electronics, focuses the implementation aspects of electronics used inside of general communication systems. The course first introduces topics such as high frequency amplifier, filter, mixer design and then uses these components to develop system level designs for typical communication system architectures. In addition, I created interactive experiences where the students use RF test and measurement equipment to explore communication concepts. Finally, I created a project where the students design and implement a simple direct conversion receiver for AM radio. (Fall 2013, Spring 2014)
- Taught ENTC 359, Instrumentation, for the first time in approximately six years due to the departure of Dr. Ryan Beasley. Revised my lecture notes for this course based on the new program emphasis on product developed and completely redeveloped the laboratory experiments. In addition, I added a course project where the students design and implement the hardware signal conditioning for a suite of three sensors and then use LabVIEW to acquire and transmit sensor data to a remote location. Due to an identified need by the ESET faculty to have student learn about communication protocol

development, the project also included a requirement for the ENTC 359 students to develop their own robust communication protocol to ensure error-free data delivery to a remote node. (Fall 2013, Spring 2014)

- Participated in a multidisciplinary team including Drs. Joe Morgan, Adam Steele, Dick Lester, Rodney Hill, and Jorge Venegas to develop a new University-level course. ENGR 489, Innovative Product Development (cross-listed in the College of Architecture and the Mays School of Business), introduces students to product development in a startup environment. The course contains business, innovation, and engineering educational components. Worked with Dr. Joe Morgan to develop the outline for the engineering aspects of the course. (Summer 2013)
- Worked with a team of faculty and students to teach summer workshops on robotics for recruiting purposes: Women in Engineering, Youth Adventure Program, E12. (Summer 2013)
- Taught ENTC 333, Product Development, due to the departure of Professor Leonard. As part of this offering, I redeveloped the lectures augmenting the course material. In addition, I worked with other faculty to completely redesign the laboratory. The lab now includes the business aspects of product development as well as a multi-week project in product reverse engineering. To this end, a commercial product was identified and acquired (garage door opener) and the students were required to completely reverse engineer the device in order to understand the design, its features and the trade-offs made by engineers in order to create a viable product. (Spring 2013)
- Led a team of faculty to oversee the construction and implementation of the new Product Innovation Cellar. Work included overseeing the contractors, identifying/purchasing furniture, finding new funds to support the PIC, and identifying/purchasing equipment. Wrote a proposal and received \$200k in differential tuition funds to seed this effort. The PIC was finished in the Spring of 2013 and became operational in February. It currently supports ENTC 333 and ENTC 420 as well several other course projects. (Fall 2012, Spring 2013)
- Worked with a team of faculty to create the curriculum for a new course, ENTC 333 – Product Development. The course is an integral part of our new product development focused curriculum. Curriculum development process included meeting with key industry sectors (Cisco, 3M, National Instruments) to aggregate best practices, meeting weekly as a team to distill the best practices into teaching topics, and creating an e-textbook for the course. (Summer 2012)
- Acquired the space, resources, and equipment for the new Product Innovation Cellar, a new laboratory to support undergraduate product development projects. The new lab will be in the “cellar” of Thompson Hall, combining the old 009, 011 laboratories into a 3400 sq ft facility that will be divided into a student work area, an electronics shop, a mechanical shop, a CAD facility, and a conference room. This is an ongoing project and renovations are slated for Fall 2012 with a projected opening date of January 2013. (Fall 2011 and Spring 2012)
- Worked with a team of faculty and students to teach summer workshops on robotics for recruiting purposes: Houston Works, Women in Engineering, Youth Adventure Program, E12. (Summer 2012)
- Worked with Program Directors to write a proposal for Activity 1 funds to support a product development and innovation “institute” within ETID. The proposal was awarded \$200k/year for three years and currently supports an interdisciplinary team of faculty to create the facilities and mechanisms for this initiative. \$50k of these funds directly support the Product Innovation Cellar. (2011 –Present)
- Led an initiative to merge the Electronics and Telecommunications Engineering Technology programs into a single program focused on electronics product development. Paperwork was submitted to the university and the new program was approved for Fall 2012 (2010-2012)
- Leading initiative to create a new engineering technology program in the area of power generation, transmission, and distribution. The development of this program was initially requested by the nuclear power industry based on the projection of 29 new units going online over the next seven years across the United States. However, the traditional power industry is also projected to have a shortage of engineers over the next ten years due to the aging workforce. Dr. Porter is also part of a larger team (Nuclear Power Institute) designed to also address the need for Associate degree individuals. Funding supplied by TWC and ARRA currently totals \$400k. (2007-2011)
- Currently working to incorporate entrepreneurship education into the curriculum. Students now develop commercializable prototypes as part of their capstone design sequence. Have written proposals to the NSF and the NCIIA for seed funding so that students can pursue IP protection and new start-up ventures based on their capstone project. Currently working with the Mays School of

Business to create interdisciplinary teams with both technology and marketing/business expertise. (2006-Present)

- In order to keep up with the latest instrumentation technology in instrumentation, I have introduced the use of mesh network technology in the ENTC 359 – Computer Instrumentation course. The Crossbow mesh network technology allows the creation of dynamic wireless networks of distributed sensors. The students used the technology to develop sensing nodes (including sensor identification, signal conditioning, and physical housing) that could measure light, sound, temperature and carbon monoxide levels. The groups then created a mesh network with their nodes and tested the system. This system led to collaborative opportunities with both Civil Engineering and Agriculture Engineering, see section on senior projects. (2006)
- Worked with Dr. Joe Morgan and Lockard & White to create the Ethics, Leadership, and Entrepreneurship Lecture Series as part of ENTC 419. The series is run by student groups that identify a guest speaker from industry, host the guest for a roundtable discussion in ENTC 419, and develop a lasting relationship with their guest. The seminar series has run for two semesters and has hosted guests such as Texas A&M's President Gates. (2006)
- Developed a crystal radio demonstration for use at high-school events to introduce students to engineering and engineering technology. The demonstration was used at Aggieland Saturday. (2006)
- Hired students to refurbish the 204 and 205 labs in Thompson Hall. This included painting the labs, putting in new carpet, purchasing new chairs, and acquiring new equipment through EAAF/IEF funds. (2005)
- Worked on the renovation and development of the new Freescale Digital Systems Laboratory. The laboratory was supported through donations from Freescale Semiconductor and Teradyne. (2004)
- Responsible for the donation of a WaveCrest jitter analysis instrument and training. Donation is valued at \$70,000. (2002)
- Incorporated WebCT into engineering technology courses. The new web-based environment has added new email capabilities, online discussion groups, online grade access, and online testing to the class. Online testing is designed to encourage the students to read the class text and work the homework problems. (2002)
- Worked with Dr. Joe Morgan to upgrade ENTC 359 (Computer based Data Acquisition and Instrumentation). Have added a new course project that uses a distributed data acquisition system and wireless networking to create a mobile instrumentation platform. The new project is remotely accessible through the Internet so that it can be used for distance learning. (2001)
- Worked with the Telecommunications Engineering Technology program and developed methodologies for offering laboratory-based courses via distance learning. (2000)
- Worked to develop a new lab for teaching the software tools that are a part of ENTC 250 (Introduction to Electronics Technology). Also negotiated with National Instruments for a \$6200 discount and wrote a funded proposal for additional EAAF funds to provide data acquisition cards at each of the 18 workstations. (2000)
- Acquired a donation of a one hundred-unit site license for LabVIEW and additional data acquisition hardware valued at over \$200,000. (1998)

#### **Assistant Professor**

**August 1995 – August 1998**

*Lamar University, Department of Electrical Engineering, Beaumont, TX*

Assistant professor in the Department of Electrical Engineering at Lamar University. Responsibilities included teaching and developing courses, promoting graduate and undergraduate research, and performing other scholarly functions.

#### Research

- *Development of Low-Cost, Desktop MR Imaging Systems:* Funded through a State of Texas Advanced Technology Program contract to research the design of inexpensive virtual instrument-based imaging systems. This project was transferred to Texas A&M in the fall of 1998. (1/1998 – 8/1998)
- *Direct Digitization Receiver Design for MRI:* Worked with undergraduate and graduate students on the design of direct digitization receivers using fast analog-to-digital converters for NMR. (1/1996 – 5/1997)

- *Virtual and Network Instrumentation Development*: Managed graduate students in the development of remote virtual instruments that use the internet for data communication and control. (1/1997 – 8/1998)
- Worked at NASA Johnson Space Center to develop biomedical instrumentation for space flight. Projects included a skin impedance imaging system and a non-contact ECG device. (5/1997-8/1997)

#### Course Development

- *EE 318 Electronics Laboratory*: Responsible for teaching analog electronics to junior level students. Wrote a formal lab manual for the course. Updated the equipment for the lab.
- *EE 3201 Digital Electronics Laboratory*: Responsible for teaching digital electronics. Course included discrete digital electronics, FPGA developmental tools (Xilinx), learning to program and use micro controllers/processors (Motorola 6811).
- *EE 333 Electronics I*: Taught basic electronics concepts including diodes, transistors, and operational amplifiers.
- *EE 426/427 Senior Projects Laboratory*: Responsible for organizing senior projects labs. Required a very broad engineering background in order to help students with their chosen projects.
- *EE 431 Electronics II*: Taught advanced electronics concepts such as amplifier stability, feedback, and oscillators.
- *EE 438/EGR 532 Instrumentation*: Taught measurements, sensors, and instrumentation concepts. Course included learning National Instruments LabView, a virtual instrumentation tool.
- *EE 5301 Fiber Optic Communications*: Taught theoretical and hardware concepts in fiber optics. Course included learning about media, transmitters, receivers, and signal encoding methods.
- *EE 5360 VLSI*: General course on VLSI fabrication, processing, and design techniques.

#### Educational Development

- Worked to update the analog circuits and electronics laboratories. Work included revising the curriculum and updating the laboratory equipment.
- Created a new virtual instrumentation laboratory through donations from National Instruments. The laboratory was used to service three electrical engineering courses.
- Worked to increase student enrollment by serving on the COE Recruiting Committee and through participation in:
  - Lamar's Annual High School – College Fair
  - A distance education course with the local high school to discuss engineering career opportunities.
  - Lamar's Annual Summer Education Camp for junior high school students.

#### University Service

- Served on the College of Engineering Recruiting Committee.
- Maintained the departmental Novell Network.
- Maintained all departmental Web pages.

#### **Assistant Research Scientist**

**February 1994 - August 1995**

*Texas A&M University, Department of Electrical Engineering, EM Lab, College Station, TX*

Worked as an assistant research scientist in the Electromagnetics and Microwave Laboratory for Dr. Steven Wright. Research included development of large arrays and receivers for magnetic resonance imaging, construction of a high field microscopy system, and sensitive antenna measurements. Other responsibilities included:

- Managing lab facilities and research projects.
- Advising graduate students in their areas of research.
- Writing grant proposals and reports.
- Acquiring bids and purchasing major equipment.

#### **Postdoctoral Research Assistant**

**August 1993 - February 1994**

*Texas A&M University, Department of Chemistry, Solid State NMR Lab, College Station, TX*

Worked as a Postdoctoral Assistant in the Solid State NMR Spectroscopy Lab for Dr. Jim Haw. Primary research included the development and construction of a high field microscopy, pulsed field gradient, and imaging system for use in imaging solids. Other responsibilities included magnetic resonance probe design for various applications such as pulsed field gradient experiments and multi-nuclear experiments.

**Lab Manager and Research Assistant**

**December 1990 - August 1993**

*Texas A&M University, Department of Electrical Engineering, EM Lab, College Station, TX*

Worked both as a lab manager and a research assistant in the Electromagnetics and Microwave Lab for Dr. Steven Wright. Primary work was in the area of magnetic resonance imaging (MRI). Responsible for the research and design of innovative hardware concepts for use in MRI. The work required a strong knowledge of RF circuit design and both theoretical and applied electromagnetics, as well as a strong background in magnetic resonance.

- Designed methods for multiplexing multiple MR signals through a single channel receiver system.
- Submitted a patent disclosure involving work done in multiplexing.
- Designed and constructed multiple receiver coil arrays for magnetic resonance imaging.
- Responsible for maintaining the lab and for supervising new workers.

**Intern Engineer**

**August 1990 - December 1990**

*Medical Advances, Inc., Milwaukee, WI*

Worked as an intern engineer in Medical Advance's research and development group. Designed and aided in the design of new MRI radio frequency receiver coils. Examples of these coils include linear and quadrature shoulder coils, quadrature spine coil, and a birdcage knee coil. Aided in outlining production procedures for coil manufacturing. Applied computational electromagnetics to the area of antenna design.

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**PROFESSIONAL AFFILIATIONS AND ACTIVITIES**

***Professional Affiliations***

- Licensed Professional Engineer, Texas Board of Professional Engineers, 93081, Inactive. (2004-Present)
- Senior member of the IEEE. (M:1998-2001, S:2002-Present)
- Member of ASEE. (1995, 2000- Present)
- Member of Engineering Technology Division, ASEE. (2000- Present)
- Member of the IEEE Engineering in Instrumentation and Measurement subgroup. (2000-2006)
- Member of the IEEE Engineering in Medicine and Biology subgroup. (1998-2001)
- Member of the Society for Magnetic Resonance in Medicine. (1989-1995,1997)

***Activities***

- IEEE Committee on Engineering Technology Accreditation Activities (CETAA) Alternate, Appointed. (2017-Present)
- Texas Engineering Technology Forum, Member. Have participated in four of the five meetings to date. (2013-16)
- Session Chair, 2015 IEEE Frontiers in Education Conference. (2015)
- 2015 ASEE National Conference Moderator – Session: M523B – Curriculum and New Course Development in ET, 2015.
- Vice Chair, Communications, Engineering Technology Division (ASEE), Elected. (2006 – Present)
- ABET Evaluator (ASEE), ABET, Inc, Appointed. Make approximately one visit per year. (2006 – Present)
- Treasurer, ECETDHA (ASEE), Elected. (2011 – Present)
- ASEE Quinn Award Committee. (2010-2012, 2013 – Present)
- Reviewer for ASEE GSW (2014-Present)
- Reviewer for JET (2007-Present)
- Moderator and reviewer for the ASEE Annual Conference, ETD Division. (2002 - Present)
- ASEE Berger Award Committee. 2011-2013.

- Moderator, 2010 NCIIA Conference. (2010)
- Reviewer for 2010 Capstone Design Conference. (2010)
- Member, Board of Directors, Tau Alpha Pi ET Honor Society, Elected. Organizing Tau Alpha Pi national student paper competition. (2006 – 2010)
- Industrial Advisory Board Member, Prairie View A&M University, appointed. (2006 – 2010)
- Reviewer for IJEE (2003-2010)
- Member of the Teradyne Users Group Steering Committee – Chair, RF and Wireless. (2004-2005)
- Reviewer for NSF RISE Program. (2004)
- Reviewer for NSF SBIR Program. (2004)
- Currently serving as editor of a special edition for the International Journal of Engineering Education on virtual instrumentation. (2002-2004)
- Reviewer for NSF HBCU-RISE Program. (2004)
- Member of the Teradyne Users Group Steering Committee. (2004)
- Reviewer for IEEE Sensors Journal (2001-2003)
- Reviewer for ISMRM Journal of Magnetic Resonance in Medicine. (1997-2002)
- Moderator and reviewer for the ASEE Gulf Southwest Conference. (2002)
- Fundraising and workshop committees member for organizing the 2001 ASEE Gulf Southwest Conference hosted at Texas A&M. (2001)
- Reviewer for Concepts in Magnetic Resonance. (2001)
- Co-Chair of the Student Activities Committee for the IEEE Engineering in Medicine and Biology Society. (World Congress 2000)
- Co-Chair of the Student Paper Competition for the World Congress on Medical Physics and Biomedical Engineering. (2000)
- Reviewer for World Congress on Medical Physics and Biomedical Engineering 2000 Conference (2000).
- Reviewer for Virtual Instrumentation in Practice Conference. (2000)
- Reviewer for Prentice Hall College Textbooks. (2000)
- Vice Chair of the Student Activities Committee for the IEEE Engineering in Medicine and Biology Society. (1999)
- Co-organizer for the Annual Little Rock Workshop on Advances in Engineering for MRI. (1997)
- Secretary for the Annual Little Rock Workshop on Advances in Engineering for MRI. (1992-1994)

### **INTERNAL SERVICE**

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- ETID, Associate Department Head for Undergraduate Studies, Appointed. (2015 – Present)  
Overseeing the three undergraduate programs in Engineering Technology. Responsibilities include:
  - Managing the advising staff
  - Managing the impact of enrollment increases across the department
  - Scheduling and managing space issues for the department
  - Leading recruiting efforts for the department
  - Creating new undergraduate programs (Interdisciplinary Engineering Technology)
  - 2015 - 2016 Major Activities
    - o Developed new scheduling processes
    - o Developed new probation processes
    - o Finished the initial paperwork for the approval of MXET.
- ETID Electronic Systems, Appointed, Program Coordinator. (2004-2015)  
Serving as program director requires an extensive investment of my time and includes many responsibilities such as:
  - Coordinating course schedules and assigning faculty/teaching assistant loading during the Fall, Spring, and Summer Semesters
  - Maintaining an ongoing assessment/continuous improvement process
  - Hiring new faculty and staff
  - Counseling and advising probation students in the programs

- Leading the ABET accreditation process
  - Leading program recruiting efforts
  - Mentoring new tenure-track faculty
- 2015 Major Activities
- Coordinated catalog changes including change of all course acronyms from ENTC to ESET.
  - Coordinated efforts to grow the ESET enrollment. The growth rate is between 10-20% per year. Enrollment has gone from a low of 110 students to a current enrollment of 213 students.
  - Created a new ESET minor in Embedded Systems Integration. Paperwork has been approved by College and University.
  - Coordinated the hiring and supervising of multiple temporary faculty members
  - Responsible for coordinating the ESET assessment and continuous improvement program for both ABET and WEAVE.
  - Supported the advising for over 200 students as well as all ESET probation students.
  - Oversaw the ESET scholarship and entry-to-major review process.
- 2014 Major Activities
- Coordinated catalog changes including change of all course acronyms from ENTC to ESET.
  - Coordinated efforts to grow the ESET enrollment. The growth rate is between 10-20% per year. Enrollment has gone from a low of 110 students to a current enrollment of 215 students.
  - Created a new ESET minor in Embedded Systems Integration. Paperwork has been approved by College and University.
  - Oversaw the expansion of lab facilities to accommodate the expected growth in ESET student body due to 25x25 Initiative. Most labs now accommodate between 10% - 20% more students.
  - Coordinated the hiring and supervising of multiple temporary faculty members
  - Responsible for coordinating the ESET assessment and continuous improvement program for both ABET and WEAVE.
  - Supported the advising for over 200 students as well as all ESET probation students.
- 2013 Major Activities
- Wrote and submitted the ABET ESET Self Study with assistance from the ESET faculty.
  - Coordinated the paperwork to change the name of the EET program to ESET. Also coordinated student transitions to the new program.
  - Successfully led the 2013 ESET accreditation visit.
  - Coordinated the hiring and supervising of multiple temporary faculty members
  - Responsible for coordinating the ESET assessment and continuous improvement program.
  - Supported the advising for over 60 new students as well as all ESET probation students.
- 2012 Major Activities
- Leading initiative to change the name of the program to Electronic Systems Engineering Technology
  - Leading the 2013 cycle for ABET accreditation and maintaining the ongoing Weave Online assessment for the program
  - Responsible for coordinating hiring of adjunct faculty and lecturers. This has been a particularly big issue with the recent loss of faculty positions.
- 2011 Major Activities
- Provided oversight for the merger of the two existing programs. Coordinated all curricular changes, university paperwork and catalog changes for the merger.
  - Worked with the department head and the Operations Committee to create a budget reduction plan in response to University and State budget cuts.
  - Coordinated the Fall 2010 Industrial Advisory Committee meeting.
  - Responsible for the Weave Online University assessment paperwork for our programs.



- COE ITDE Committee (2016 – Present)
- COE McAllen Committee (2015 – Present)
- TAMU University Level Association of Former Students Awards Committee (2015-2016)
- Look College of Engineering Centralization Committee (2016)
- Look College of Engineering EEC Shared Laboratories Committee – 3<sup>rd</sup> Floor Electrical Labs (2014 – Present)
- Look College of Engineering EEC Shared Laboratories Executive Committee (2014 – Present)
- Look College of Engineering 111/112 Oversight Committee (2015-Present)
- Look College of Engineering 111/112 Improvement Committee (2015)
- Look College of Engineering Innovation and Entrepreneurship Committee (2014-Present)
- Look College of Engineering Awards Committee, Member. (2006 – 2008, 2010 – 2012, 2014 – 2016)
- ETID Facilities and Laboratories Committee, Member (2015-2016)
- ETID Student Recruitment Committee, Chair (2015-Present)
- ETID Faculty Loading Exploration Committee, Chair (2015-2016)
- ETID Doctoral Exploration Committee (2015-Present)
- ETID Tenure and Promotion Committee, Appointed, Departmental Committee. Currently chair. (2004-Present)
- ETID Strategic Planning Committee (2014 – 2015)
- ETID Academic Administration Committee (2013 – Present)
- ETID Operations Committee (2013 – 2014)
- ETID GAT Safety Training Committee, Chair (2014-2015)
- ETID Mechatronics Committee (2014 – 2016)
- ETID Faculty Search Committee (2014 – 2016)
- ETID Tenure Track Mentor Committee for Dr. Xingyong Song (2016 – Present)
- ESET Scholarship Committee, Chair (2006-Present)
- ESET Academic Oversight Committee (2016-Present)
- Faculty advisor for the IEEE TECH Student Chapter of IEEE (2001-2017)
- ETID Post Tenure Review Committee, Chair (2012 - 2013)
- Look College of Engineering ETID Department Head Search Committee (2012- 2014)
- Look College of Engineering Tenure and Promotion Advisory Committee (2012 – 2014)
- Institute for Engineering Education and Innovation, Member. (2011-2012)
- Tenure Track Faculty Mentor Committee for Dr. Sejun Song. Chair. (2009 – 2013)
- Tenure Track Faculty Mentor Committee for Dr. Beasley, Chair. (2006 – 2013)
- Tenure Track Faculty Mentor Committee for Dr. Zhan, Chair. (2006 – 2012)
- Tenure Track Faculty Mentor Committee for Dr. Goulart, Chair. (2006 – 2012)
- Tenure Track Faculty Mentor Committee for Dr. Hasan. Chair. (2008 – 2011)
- Volunteer judge for the Brazos BEST Robotics Competition. (2005-2011)
- Texas A&M University Grievance Committee, Member (2008- 2011)
- Look College of Engineering Scholarship Committee, Member. (2006 – 2007, 2010 - 2012)
- Tenure Track Faculty Mentor Committee for Dr. Jung, Chair. (2004 – 2007)
- EET/TET ABET Coordinator. (2004-2006)
- ETID Social Committee Member. (2003)
- Participated in planning meetings with industry to develop a five-year strategic plan for Electronics Engineering Technology. (2001)
- ETID Building Renovation Committee. (2000)
- Prepared ABET review materials and participated in the ABET review of the Electronics Engineering Technology program. (2000)
- Served on the Industrial Communications Initiative Committee. (1999-2000)
- Hosted a faculty workshop with National Instruments on LabVIEW. (1999)

## **AWARDS**

- Received Eugene Webb Faculty Fellow Service Award, Look College of Engineering. (2016)

- 2015 ASEE Gulf Southwest 1<sup>st</sup> Place Student Paper Award, “The Integration of IoT Devices for STEM Outreach.” Participated as faculty advisor to team. (2015)
- 2014 ASEE Gulf Southwest 3<sup>rd</sup> Place Paper Award, “The Product Innovation Cellar: A Resource to Support Product Development in Engineering Technology”. (2014)
- ASEE National Berger Award for contributions to Engineering Technology. (2014)
- Nominated by the Department and the College for the Presidential Professor for Teaching Excellence. (2010, 2011)
- Received the national ASEE Robert G. Quinn Award for Excellence in Engineering Experimentation and Laboratory Instruction. (2009)
- Received one of twelve University Professorships for Undergraduate Teaching Excellence (UPUTE). (2008)
- Received the Distinguished Achievement Award in Teaching from the Association of Former Students of Texas A&M, University Level. (2007)
- Teradyne Users Group Meeting Best Paper Award. (2004, 2005)
- Received the BP Teaching Excellence Award. (2004)
- Received the Cisco Systems Faculty Fellow Award through the Texas A&M Faculty Fellows Program. (2004)
- Finalist in the National ASEE Paper Competition - ETD Division. (2002)
- Received the Tenneco Oil Exploration and Production Award for Meritorious Teaching of Engineering. (2002)
- Received the Outstanding Teaching Award in Engineering Technology. (2002)
- Received the Best Paper Award at the ASEE Gulf Southwest Annual Conference. (2002)
- Received the Distinguished Achievement Award in Teaching from the Association of Former Students of Texas A&M, College Level. (2001)
- Received the TEES Special Research Fellow Award. (2001)
- Received runner up for NI Week Best Application Award, Academic Category for “A PXI-Based Mixed Signal Test System,” National Instruments NI Week. (2001)
- Received the NI Week Best Academic Application Award for work done developing a laboratory curriculum in mixed signal test, National Instruments NI Week. (2000)
- Nominated for the Lamar University Merit Award. (1998)
- Received a NASA Summer Faculty Fellow - worked in the biomedical hardware division. (1997)
- Received the Society for Magnetic Resonance in Medicine Student Travel Stipend - was awarded a stipend to travel to New York, New York to attend the SMRM Conference. (1993)
- Received the Society for Magnetic Resonance in Medicine Student Travel Stipend - was awarded a stipend to travel to Berlin, Germany to attend the SMRM Conference. (1992)

## **OTHER**

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- Operating Systems: UNIX, WINDOWS.
- Virtual Instrumentation Development Environments: LabVIEW and HP VEE.
- Computer Languages: BASIC, FORTRAN, C.
- Familiar with HTML and Windows NT/Novell Network Administration.
- Familiar with spoken and written French.
- US Citizen.

## **JOURNAL ARTICLES (PEER REVIEWED)**

**\* indicates a student author**

Zhan, W., **Porter, J.R.**, Morgan, J.A., “Experiential Learning of Digital Communications Using LabVIEW,” *IEEE Transactions on Education*, 57(1), 2014, pp. 34-41.

Zhan, W., Goulart, A., Morgan, J. A., and **Porter, J. R.**, “Vertical and horizontal integration of laboratory curricula and course projects across the electronics Engineering Technology program,” *American Journal of Engineering Education*, Vol. 2, No. 2, Fall 2011, pp. 67-80.

Zhan, W. and **Porter, J.R.**, “Using Project-based Learning to Teach Six Sigma Principles,” *International Journal of Engineering Education*, Vol.26, 3, 2010, pp. 655-666.

**Porter, J.R.**, “Linking Simulation Tools to Laboratory Experiments using LabVIEW,” *International Journal of Engineering Education*, Vol. 21, 1, January 2005.

Warren, M.R.\* and **Porter, J.R.**, "Teaching Mixed Signal Test Concepts in a Traditional Electronics Laboratory," *International Journal of Engineering Education*, Vol. 21, 1, January 2005.

**Porter, J.R.**, "Guest Editorial: Virtual Instrumentation in Education," *International Journal of Engineering Education*, Vol. 21, 1, January 2005.

**J.R. Porter** and J. Ochoa, "Semiconductor Test: Current Issues and Emerging Trends," *IEEE Instrumentation and Measurement Magazine*, invited paper, Vol. 6, No. 1, 20-25, March 2003.

**Porter, J.R.** and Morgan, J.A., "Wireless Mobile Platform: A Tool to Implement a Distance Learning Laboratory for Teaching Computer-based Instrumentation and Control," *International Journal of Engineering Education*, 19, 3, 468-477, 2003.

S.M. Wright, D.G. Brown\*, **J.R. Porter**, D.C. Spence, E. Esparza, D.C. Cole, F.R. Huson, "A Desktop Magnetic Resonance Imaging System," *MAGMA*, Vol. 13, 177-185, 2002.

**J.R. Porter**, S.M. Wright, "A Sixteen-Channel Multiplexing Upgrade for Single Channel Receivers," *Magnetic Resonance Imaging*, Vol. 19, No. 7, 1009-1016, 2001.

**J.R. Porter**, S. M. Wright, A. Reykowski, "A Sixteen Element Phased Array Head Coil," *Magnetic Resonance in Medicine*, 40, 272-279, 1998.

J. Boyer\*, **J.R. Porter**, S. M. Wright, "An Automated Measurement System for Characterization of RF and Gradient Coil Parameters," *Journal of Magnetic Resonance Imaging*, 8, 740-747, 1998.

Y. Zhou\*, S. Ramachandran\*, and **J.R. Porter**, "Implementation of a Networked Virtual Nuclear Magnetic Resonance Spectrometer," *Lab Robotics and Automation*, 10, 2, 115-118, 1998.

A. Reykowski\*, S.M. Wright, and **J.R. Porter**, "Design of Matching Networks for Low Noise Preamplifiers," *Magnetic Resonance in Medicine*, Vol. 33, pp. 848-852, June, 1995.

**J.R. Porter**, S.M. Wright, and N. Famili, "A Four Channel Time Domain Multiplexer: A Cost-Effective Alternative to Multiple Receivers," *Magnetic Resonance in Medicine*, Vol. 32, No. 1, pp. 499-504, October, 1994.

N. Famili, S.M. Wright, and **J.R. Porter**, "MR Flow Measurement using RF Phase Gradients in Receiver Coil Arrays," *IEEE Transactions on Medical Imaging*, April, 1993.

S.M. Wright and **J.R. Porter**, "Parallel Acquisition of MR Images using Time Multiplexed Coils," *IEEE Electronics Letters*, Vol. 28, No. 1, pp.71-2, January, 1992.

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#### CONFERENCE PROCEEDINGS (PEER REVIEWED)

\* indicates a student author

**Porter, J.R.**, Morgan, J., Zhan, W., Johnson, M., "Multidisciplinary Engineering Technology: Addressing the Change in Industry Workforce Needs," 2016 American Society for Engineering Education Annual Conference, New Orleans, LA, 2016.

Morgan, J., Karrer, D.\*, Rodriguez, V.\*, **Porter, J.R.**, "STRATA-1: A Public/Private/Academic Partnership for Undergraduate Applied Research," 2016 American Society for Engineering Education Annual Conference, New Orleans, LA, 2016.

Cramer, J. \*, Joya, O. \*, Bocanegra, C. \*, Walters, S. \*, **Porter, J.R.**, "The Integration of IoT Devices for STEM Outreach," 2016 American Society for Engineering Education Gulf Southwest Conference, Fort Worth, TX, 2016. (accepted)

**Porter, J.R.** and Morgan, J., "Small Business Support for New Product Development," 2016 ASEE Conference for Industry and Education Collaboration, Austin, TX, 2016.

**Porter, J.R.**, Morgan, J., Hill, R., Vanegas, J., Lester, R., Steele, A., "A Course in Innovative Product Design: A Collaboration Between Architecture, Business, and Engineering," 2015 IEEE Frontiers in Education Conference, El Paso, TX, 2015.

**Porter, J.R.**, "A New Interactive Course in Communication Electronics," 2015 American Society for Engineering Education Annual Conference, Seattle, WA, 2015.

Morgan, J., **Porter, J.R.**, "Modular Integrated Stackable Layer (MISL): An Academic-Public Sector Partnership for Rapid Prototyping and Development," 2015 American Society for Engineering Education Annual Conference, Seattle, WA, 2015.

Russell, G.\*, Moore, M. \*, Gaston, Z\*., Acosta, L. \*, **Porter, J.R.**, "An In-Situ Blood Pressure Monitoring System: A Customer Driven Capstone Design Project," 2015 American Society for Engineering Education Gulf Southwest Conference, San Antonio, TX, 2015. (Student Best Paper, 1<sup>st</sup>)

Morgan, J., **Porter, J.R.**, " NASA Wireless Smart Plug: A Successful ESET Capstone Design," 2014 American Society for Engineering Education Annual Conference, Indianapolis, IN, 2014.

**Porter, J.R.**, Morgan, J., " The Product Innovation Cellar: A Resource to Support Product Development in Engineering Technology," 2014 American Society for Engineering Education Gulf Southwest Conference, New Orleans, LA, 2014.

Leonard, M., **Porter, J.R.**, Morgan, J., " Utilizing Commercially Available Products to Demonstrate Reverse Engineering Concepts in Electronic Systems Product Development Courses," 2014 American Society for Engineering Education Gulf Southwest Conference, New Orleans, LA, 2014.

**Porter, J.R.**, Morgan, J., Leonard, M.\*, "Electronic Product Development Experiences For Undergraduate Students: A Nasa Sponsored Example," 2013 American Society for Engineering Education Annual Conference, Atlanta, GA, 2013.

**Porter, J.R.**, Morgan, J., Zhan, W., "A New Course On Product Development For Electronics Engineering Technology," 2013 American Society for Engineering Education Annual Conference, Atlanta, GA, 2013.

Twigge, D.\*, Block, J.\*, Byrd, M.\*, Morgan J., **Porter, J.R.**, " E-CLOCK: A Wiki-based Outreach and Recruitment Tool," 2012 American Society for Engineering Education Annual Conference, San Antonio, TX, 2012.

**Porter, J.R.**, Zoghi, B., Morgan, J., Zhan, W., " Product and System Development: Creating a New Focus for an Electronics Engineering Technology Program," 2012 American Society for Engineering Education Annual Conference, San Antonio, TX, 2012.

Morgan J., **Porter, J.R.**, Zhan, W. "Teaching Digital Communication using LabVIEW," 2012 American Society for Engineering Education Annual Conference, San Antonio, TX, 2012.

Zhan, W., Goulart, A., Morgan, J., **Porter, J.R.**, "Integrated Laboratory Curricula and Course Projects across the Electronics Engineering Technology Program," 2011 American Society for Engineering Education Annual Conference, San Antonio, TX, 2011.

Morgan J., **Porter, J.R.**, Zhan, W., "Krisys: A Low-Cost, High-Impact Recruiting and Outreach Tool," 2011 American Society for Engineering Education Annual Conference, San Antonio, TX, 2011.

Morgan J. and **Porter, J.R.**, "KRISYS: A Novel Tool for Recruiting High School Students," 2011 ASEE Conference for Industry and Education Collaboration, San Antonio, TX, 2011.

**Porter, J.** and Morgan J., "Developing, Protecting, and Transferring Intellectual Property in Undergraduate Capstone Courses," 2010 NCIIA Conference, Washington, DC, March 2010.

**Porter, J.R.**, Morgan, J.A., Zhan, W., "Development Of A "Smart" Sensor: An Integrated Instrumentation Course Project," 2009 American Society for Engineering Education Annual Conference, Austin, TX, June, 2009.

**Porter, J.R.**, Morgan, J.A., Zhan, W., Wright, G., "Supporting An Emphasis In Product Development: Integrating Electronics Cad Tools Across The Curriculum," 2009 American Society for Engineering Education Annual Conference, Austin, TX, June, 2009.

Morgan, J., Perales, T.\*, **Porter, J.R.**, "A Labview FPGA Toolkit To Teach Digital Logic Design," 2009 American Society for Engineering Education Annual Conference, Austin, TX, June, 2009.

Zhan, W., Beasley, R., **Porter, J.R.**, Morgan, J., "Circuit Analysis And Electrical Power System Curricular Development For Power Engineering Technology Program," 2009 American Society for Engineering Education Annual Conference, Austin, TX, June, 2009.

Morgan, J., **Porter, J.**, Wright, G., Buchanan, W., "E4 Initiative: EET/TET Combines Innovation and Entrepreneurship," ICECE'2009 – International Congress on Engineering and Computer Education Annual Conference, Buenos Aires, Argentina, March 2009.

**Porter, J.** and Morgan J., "Transitioning from Prototype to Commercialized Product," 2009 NCIIA Conference, Washington, DC, March 2009.

Zhan, W., **Porter, J.R.**, "Teaching Six Sigma in a Course Project," 2008 American Society for Engineering Education Annual Conference, Pittsburgh, PA, June, 2008.

Morgan, J.A., **Porter, J.R.**, "Embedding Business Students into Engineering Entrepreneurship Educational Experience," 2008 American Society for Engineering Education Annual Conference, Pittsburgh, PA, June, 2008.

**Porter, J.R.**, Zhan, W., Alvarado, J., Peddicord, L., Poston, J., Morgan, J.A., Crenshaw, J., "Power Engineering Technology: A New Program Targeted at the Nuclear Power Industry," 2008 American Society for Engineering Education Annual Conference, Pittsburgh, PA, June, 2008.

**Porter, J.R.**, Morgan, J.A., "Engineering Entrepreneurship Educational Experience (E4) Initiative: A New Model For Success," 2007 American Society for Engineering Education Annual Conference, Honolulu, HI, June, 2007.

Morgan, J.A., **Porter, J.R.**, and Lockard, M., "The Ethics, Leadership And Entrepreneurship Seminar: Helping Students To Become Leaders," 2007 American Society for Engineering Education Annual Conference, Honolulu, HI, June, 2007.

Zoghi, B., Buchanan, W.W., **Porter, J.R.**, "RFID/Sensors: Emerging Technologies in Engineering Technology," "International Conference on Engineering and Computer Education 2007 (COPEC), March, 2007.

Fink, R., **Porter, J.R.**, Jung, Y., Zoghi, B., "Mixed-Signal Test Emphasis in ET," 2007 Conference for Industry and Education Collaboration, Palm Springs, CA, February, 2007.

**Porter, J.**, Wright, G., Morgan, J., Zoghi, B., Fink, R., Jung, Y., "Project EVIS: An Example of an Innovative Capstone Process," 2006 IJME-InterTech Conference, Union, NJ, October, 2006.

Zoghi, B., **Porter, J.R.**, Jung, Y., Thompson, S., Fink, R., "Wireless Sensor Monitoring Combined with RFID Networks," 2006 IJME-InterTech Conference, Union, NJ, October, 2006.

**Porter, J.R.**, Morgan, J.A., Wright, G., "Engineering Entrepreneurship Educational Experience (E4) Initiative: Bringing Entrepreneurship to the Undergraduate Classroom," 2006 American Society for Engineering Education Annual Conference, Chicago, IL, June, 2006.

Eberth, J.\*, Marrota, E., **Porter, J.R.**, Fletcher, L., "Integration of Heat Conduction Measurement Systems Into Engineering Technology Education," 2005 ASME Mechanical Engineering Congress and Exposition, Orlando, FL, November, 2005.

Brannaka, B.D.\*, **Porter, J.R.**, "Using Signal Express to Automate Analog Electronics Experiments," 2005 American Society for Engineering Education Annual Conference, Portland, OR, June, 2005.

Morgan, J.A., Wright, G., **Porter, J.R.**, "Managing Senior Design Projects to Maximize Success: The TAT Team," 2005 American Society for Engineering Education Annual Conference, Portland, OR, June, 2005.

**Porter, J.R.**, "Teaching Applied Electromagnetics to Engineering Technology Students," 2004 American Society for Engineering Education Annual Conference, Salt Lake City, UT, June, 2004.

**Porter, J.R.**, Morgan J.A., Ochoa, J.A., "Project LIVE: A Classroom for Students on the Go," 2004 American Society for Engineering Education Annual Conference, Salt Lake City, UT, June, 2004.

S. Aghara, R. Fink, J.A. Ochoa, **J.R. Porter**, "Comparison of Performance Degradation of Commercially Available DAC ICs in Mixed-Radiation Environment" 14th Pacific Basin Nuclear Conference, Honolulu, HI, March 21 - 25, 2004.

S. Aghara, R.J. Fink, W.S. Charlton, B. Bhuva, M.R. Samadi, J.A. Ochoa, **J.R. Porter**, "Degradation of Commercially Available DAC ICs in Mixed-Radiation Environment" 2003 IEEE NSREC, Monterey, California.

S.K. Aghara, W.S. Charlton, R. Fink, J.A. Ochoa, **J.R. Porter**, "Fast Neutron Damage to Digital-to-Analog Converters in a Mixed Radiation Environment," ANS Meeting, San Diego, CA, June 4-10, 2003.

**Porter, J.R.** and Morgan, J.A., "A Web based Instrumentation Platform for Use in Distance Learning," 2003 American Society for Engineering Education Annual Conference, invited as part of a national competition, Nashville, TN, June, 2003.

Morgan, J.A. and **Porter, J.R.**, "Mobile Education Through Competition: Mobile Platform Technology," 2003 American Society for Engineering Education Annual Conference, Nashville, TN, June, 2003.

**J.R. Porter** and J. A. Morgan, "A Web based Instrumentation Platform for Use in Distance Learning," 2002 American Society For Engineering Education Gulf Southwest Annual Conference, Lafayette, LA, March 20-22, 2002.

M. R. Warren\*, D. M. Burnett\*, **J.R. Porter**, R. J. Fink, "Teaching the Importance of Data Correlation in Engineering Technology," 2002 American Society for Engineering Education Annual Conference, Montreal, Canada, June 16-19, 2002.

**J.R. Porter**, J. Ochoa, S. Tumati, "Linking Simulation Tools to Laboratory Experiments: Teaching Design Verification in Engineering Technology," 2002 American Society for Engineering Education Annual Conference, Montreal, Canada, June 16-19, 2002.

**J.R. Porter**, J. A. Morgan, B. Zoghi, "Integrating Project Management in to the Capstone Senior Design Course," 2002 American Society for Engineering Education Annual Conference, Montreal, Canada, June 16-19, 2002.

C. Barbee\*, B. Lenahan\*, M.R. Warren\*, **J.R. Porter**, J.A. Morgan, "Implementing a Wireless Networking Infrastructure to Enhance ET Curriculum," *2002 American Society for Engineering Education Annual Conference*, Montreal, Canada, June 16-19, 2002.

**J.R. Porter**, M. Warren, "A New Laboratory Curriculum Focused on Teaching Mixed-Signal Testing Concepts Using Low-Cost Test Equipment," *2001 American Society of Engineering Education Annual Conference*, Albuquerque, NM, June 24-27, 2001.

A. Vaughan\*, T. Abe\*, K. Kurpad\*, **J.R. Porter**, J. Morgan, "Protein Titration Control and Monitoring System: A Collaborative, Real-world Course Project," *2001 American Society of Engineering Education Annual Conference*, Albuquerque, NM, June 24-27, 2001.

**J.R. Porter**, R. Fink, J. Ochoa, "Balancing Tenure Requirements with Family Life: Perspectives from Three Tenure-Track Faculty Members," *2001 American Society of Engineering Education Annual Conference*, Albuquerque, NM, June 24-27, 2001.

J. Ochoa, R. Fink, **J.R. Porter**, "Collaboration Leads to Benefits for Tenure-Track Faculty," *2001 American Society of Engineering Education Annual Conference*, Albuquerque, NM, June 24-27, 2001.

R. Fink, **J.R. Porter**, J. Ochoa, R. Alexander, "Synergy of Applied Research and Education in Engineering Technology," *2001 American Society of Engineering Education Annual Conference*, Albuquerque, NM, June 24-27, 2001.

M. Warren\*, B. Fletcher\*, J. Kemp\*, **J.R. Porter**, B. Zoghi, "A Low-cost Embedded Control Tester for Teaching Mixed-Signal Test Concepts," *2001 ASEE Gulf Southwest Annual Conference*, College Station, TX, March 28-30, 2001.

D. G. Brown\*, D. C. Spence\*, S. M. Wright, and **J. R. Porter**, "An Inexpensive 0.2T Desktop MR Scanner," *Proceedings of the ISMRM Ninth Scientific Meeting*, Glasgow, Scotland, April. 21-27, 2001.

N. Moehring\*, C. Vogel\*, **J.R. Porter**, J. Morgan, "Development of a Discrete PID Control Laboratory for Undergraduate EET Curriculum: Modeling, Analytical, and Empirical Data Collection Tool," *2001 ASEE Gulf Southwest Annual Conference*, College Station, TX, March 28-30, 2001.

R. Fink, **J.R. Porter**, J. Ochoa, "Development of Targeted Education-Industry Impact in Mixed-Signal Testing," *2001 ASEE Conference for Industry and Education Collaboration*, San Diego, CA, Jan. 30, 2001.

J. Ochoa, R. Fink, **J.R. Porter**, "Building A Digital Test Curriculum At Texas A&M University: An Industry – Academic Partnership," *2001 ASEE Conference for Industry and Education Collaboration*, San Diego, CA, Jan. 30, 2001.

**J.R. Porter**, R. Fink, J. Ochoa, "Enhancing Core Curriculum Concepts Through Industry Collaborations," *2001 ASEE Conference for Industry and Education Collaboration*, San Diego, CA, Jan. 30, 2001.

M. Warren\*, **J.R. Porter**, "A Low-Cost Virtual Instrumentation Tester for Teaching Mixed Signal Characterization Concepts," National Instruments NIWeek 2000, Austin, TX, Aug. 15-18, 2000.

J. Ewing\*, **J.R. Porter**, J. Morgan, "Simulation of Proportional Integral Derivative Control of a Second Order Plant," National Instruments NIWeek 2000, Austin, TX, Aug. 15-18, 2000.

**J.R. Porter**, S. Zha, "A LabVIEW Based Magnetic Resonance Imaging Console," *Proceedings of the First Joint BMES/EMBS Conference*, Atlanta, GA, October 13 - 16, 1999.

**J.R. Porter**, R. Fink, "Modernizing the Traditional Analog Sequence in Engineering Technology," *ASEE Society of Engineering Education Gulf Southwest Annual Conference*, March 7-9, 1999.

R. Fink, **J.R. Porter**, "Mixed Signal Test Emphasis in Engineering Technology," *ASEE Society of Engineering Education Gulf Southwest Annual Conference*, March 7-9, 1999.

Y. Zhou\*, S. Ramachandran\*, and **J.R. Porter**, "A Networked Virtual Nuclear Magnetic Resonance Spectrometer," *Virtual Instrumentation in Education Conference*, MIT, Cambridge, MA, June 12, 1997.

**J.R. Porter** and S.M. Wright, "A Sixteen Channel Multiplexer for MR Imaging," *Proceedings of the Fifth Annual Meeting, Society of Magnetic Resonance*, Vancouver, Canada, April 12-18, 1997, p. 978.

S.M. Wright, **J.R. Porter**, J.A. Bankson, J. Spadea, "Magnetic Resonance Imaging with Large Sensor Arrays," (Invited Talk) *Biomedical Engineering Society*, State College, PA, October, 1996.

S.M. Wright, **J.R. Porter**, J.A. Bankson, J. Spadea, "Phased Array Coils for Functional MR Imaging," *Fourteenth Annual Houston Conference on Biomedical Engineering Research*, February 8-9, 1996.

M. Finkenstaedt, L.G. Naul, S.M. Wright, and **J.R. Porter**, "Preoperative Functional MR Imaging of the Motor Cortex in Patients with Cerebral Tumors," *Proceedings of Annual Meeting, Western Neuroradiological Society*, (Western Neuro '95), Oct. 5-8, 1995.

S.M. Wright, **J.R. Porter**, A. Reykowski, M. Finkenstaedt, L. Naul, "A 16 Channel Time-Multiplexed Head Coil Array for Functional MR Imaging," *Proceedings of the 17th Annual Meeting of the IEEE Engineering in Medicine and Biology Society*, September, 1995, pp.473-474.

**J.R. Porter**, A. Reykowski, and S.M. Wright, "A Sixteen Channel Multiplexed MRI Receiver," *Proceedings of the Third Annual Meeting, Society of Magnetic Resonance*, Nice, France, August 19-25, 1995, p. 978. (Formerly the Society of Magnetic Resonance in Medicine).

**J.R. Porter**, A. Reykowski, and S.M. Wright, "A Sixteen Channel Head Array for Functional and High Resolution MRI," *Proceedings of the Third Annual Meeting of the Society of Magnetic Resonance*, Nice, France, August 19-25, 1995, p.181.

**J.R. Porter** and S. M. Wright, "An Enhanced Time Domain Multiplexer for Large Array Magnetic Resonance Imaging," *Proceedings of the IEEE Engineering in Medicine and Biology Society, Sixteenth Annual International Conference*, Baltimore, MD, November 3-6, 1994.

S.M. Wright, **J.R. Porter**, J. Boyer, and J.Bankson, "Characterization of Coupling in Planar Array Coils with Arbitrary Element Geometries," *Proceedings of the IEEE Engineering in Medicine and Biology Society, Sixteenth Annual International Conference*, Baltimore, MD, November 3-6, 1994.

**J.R. Porter** and S.M. Wright, "Limitations on the Maximum Number of Available Channels Using Time Domain Multiplexing," *Proceedings of the 13th Meeting of the SMRM*, San Francisco, California, August, 1994.

S.M. Wright and **J.R. Porter**, "An Enhanced Biot-Savart Law Modeling Technique for RF Coils With Unknown Current Distributions and Shields," *Proceedings of the 13th Meeting of the SMRM*, San Francisco, California, August, 1994.

J. Boyer, J. Bankson, A. Reykowski, **J.R. Porter**, and S.M. Wright, "Automated Measurement System For Characterization of RF Coils," *Proceedings of the 13th Meeting of the SMRM*, San Francisco, California, August, 1994.

D.B. Ferguson\*, **J.R. Porter**, P.W. Goguen, and J.F. Haw, "Probe Designs for Spectroscopic, Diffusion and Imaging Studies of Catalysis," *Proceedings of the 35th Experimental NMR Conference (ENC)*, p.288, Pacific Grove, CA, April, 1994.

Y. Wu, S.M. Wright, and **J.R. Porter**, "Measurement of Current Distribution on RF Coils Using MR Imaging," *Proceedings of the 12th Meeting of the SMRM*, p. 1326, New York, New York, August, 1993.

A. Reykowski, **J.R. Porter**, and S.M. Wright, "A Design Tool for Decoupling RF Coils with Isolating Preamplifiers," *Proceedings of the 12th Meeting of the SMRM*, p. 1322, New York, New York, August, 1993.

S.M. Wright and **J.R. Porter**, "MR Microscopy Using Surface Coil Arrays," *Proceedings of the 12th Meeting of the SMRM*, p. 933, New York, New York, August, 1993.

**J.R. Porter** and S.M. Wright, "Noise Filtering Using RF Band-Pass Filters," *Proceedings of the 11th Meeting of the SMRM*, p. 4007, Berlin, Germany, August, 1992.

**J.R. Porter** and S.M. Wright, "A Four Channel Time Multiplexer For RF Coils," *Proceedings of the 11th Meeting of the SMRM*, p. 4009, Berlin, Germany, August, 1992.

**J.R. Porter** and S.M. Wright, "Time Multiplexed RF Coils," *Proceedings of the SMRI '92 Conference*, p. 154, New York, New York, April, 1992.

#### CONFERENCE PROCEEDINGS (NON PEER REVIEWED)

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**J.R. Porter**, R. Fink, "Current Status of the ENTC Semiconductor Test Initiative," *Texas Instruments Day*, College Station, TX, February 21, 2002.

S. M. Wright, D. G. Brown, D. C. Spence, and **J.R. Porter**, "Desktop MRI," ISMRM Workshop on MR Engineering, Cleveland, OH, Feb. 23-25, 2001.

**J.R. Porter**, M.R. Warren, "Enhancing Mixed Signal Circuit Characterization Using Virtual Instrumentation," *Texas Instruments Day*, College Station, TX, February 9, 2000.

S.M. Wright, **J.R. Porter**, D.G. Brown "Progress in Desktop MRI," *Proceedings of the 3<sup>rd</sup> Symposium on Medical Physics*, University of Guanauato (IFUG), Leon, Mexico, February 27, 1999.

#### TECHNICAL REPORTS

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Morgan, J.A. and **Porter, J.R.**, "Closeout Report for Creating Business/Engineering Multidisciplinary E-Teams", provided to NCHIA, Washington, DC, September 2013.

Morgan, J.A. and **Porter, J.R.**, "NASA Smart Plug Close Out Report", NASA Johnson Space Center, Houston, TX, August 2013.

Morgan, J.A. and **Porter, J.R.**, "Final Report on SATT", provided to Homeland Security, El Paso, TX, August 2010.

Morgan, J.A. and **Porter, J.R.**, "Interim Report on SATT", provided to Homeland Security, El Paso, TX, October 2009.

**Porter, J.R.**, "Final Report on Mixed Signal Characterization Grant," provided to Texas Instruments, Dallas, TX, December 2003.

**Porter, J.R.**, "Progress Report on Mixed Signal Characterization Grant," provided to Texas Instruments, Dallas, TX, December 2003.

**J. R. Porter**, M. Warren, "Characterization of the R&S AMIQ Signal Source," provided to Texas Instruments, Dallas, TX, September 2001.

**J. R. Porter**, J. Laviolette, M. Warren, "A PLL-Based Synthesizer for Synchronizing the UPD05", provide to Texas Instruments, Dallas, TX, March 2001.

S.M. Wright and **J.R. Porter**, "Time Multiplexed Coils for Magnetic Resonance Imaging and Spectroscopy: Final Report," Annual Progress Report for Medical Advances, Inc., January, 1993.

S.M. Wright and **J.R. Porter**, "Time Multiplexed Coils for Magnetic Resonance Imaging and Spectroscopy: Annual Report," Annual Progress Report for Medical Advances, Inc., January, 1992.

## **PRESENTATIONS**

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**Porter, J.** and Morgan J., Wang, J., Naryanan, C., "Incorporating Entrepreneurship, Innovation, and the Global Market in Engineering Technology Education," 2011 ETLI Conference, College Station, TX, November 2011.

**Porter, J.** and Morgan, J., Joint Keynote Address, 9th International Conference and Workshop on Ambient Intelligence and Embedded Systems (AmiEs-2010), Geel, Belgium, September 2010.

**Porter, J.** and Morgan J., "Establishing a Product-Oriented Entrepreneurial Capstone Experience," 2010 Capstone Design Conference, Boulder, CO, June 2010.

**Porter, J.** and Morgan J., "Developing, Protecting, and Transferring Intellectual Property in Undergraduate Capstone Courses," 2010 NCIIA Conference, San Francisco, CA, March 2010.

Morgan, J.A. and **Porter, J.R.**, "Surveillance and Tracking Technologies on the US Border", Homeland Security Conference, El Paso, TX, December 2009.

**Porter, J.R.**, Morgan, J., Zhan, W., "Embedded Systems and Product Development," presented to FUMEC and Consortium of Mexican Industries and Colleges, Querretero, Mexico, November 2008

**Porter, J.R.**, "Power Engineering Technology at Texas A&M," presented to regional junior colleges (Wharton, Victoria, Brazosport, TSTC Waco), College Station, TX, April 2008.

**Porter, J.R.**, "RF Concepts for Test Engineers," presented to Freescale, Austin, TX, August 2006.

**Porter, J.R.**, "Real-World Engineering Education: Engineering/Industry Collaborations," presented to College of Engineering, Northern Arizona University, Flagstaff, AZ, May 2006.

**Porter, J.R.**, "RF Tutorial", presented to Teradyne Users Group Meeting, Sawgrass, FL, May 2006.

**Porter, J.R.**, "RF Tutorial", presented to Teradyne Users Group Meeting, Scottsdale, AZ, May 2005.

**Porter, J.R.**, "Teaching Laboratory-based Courses at Texas A&M," presented to the US Air Force Academy, Colorado Springs, CO, November 2004.

**Porter, J.R.**, Fink, R, "Basics of Converter Testing", presented to Teradyne Users Group Meeting, San Jose, CA, May 2004.

**Porter, J.R.**, Ochoa, J.A., Morgan, J.A., "Semiconductor Test at Texas A&M University," presented to Tianjin University, Microelectronics Department, Tianjin, China, October 2003.

Ochoa, J.A., Morgan, J.A., **Porter, J.R.**, "Structure for a Three-Way Partnership: Texas A&M, Motorola, Tianjin University," presented to Motorola China, Semiconductor Test Group, Tianjin, China, October 2003.

**Porter, J.R.**, Morgan, J.A., "Location Independent Video Education," presented to Hewlett Packard, Mobility Consortium, Palo Alto, CA, October 2003.

**J. Porter**, "Virtual Instrumentation in Education and Research," Invited Talk at Lamar University, Beaumont, TX, June, 2001.

**J.R. Porter**, "A Low-Cost Virtual Instrumentation Tester for Teaching Mixed Signal Characterization Concepts," *Featured Academic Speaker for National Instruments NI Educator's Day 2000*, Austin, TX, Aug. 15-18, 2000.



**J.R. Porter**, G. Wright, "A Low-Cost Virtual Instrumentation Tester for Teaching Mixed Signal Characterization Concepts," *Invited Talk at University of North Texas*, Department of Engineering Technology, Dallas, TX, April, 2000.

**J.R. Porter**, "Using LabVIEW in the Engineering Technology Education," *Featured Academic Speaker for NI Education Day*, College Station, TX, March, 2000.

**J.R. Porter** and R. Fink, "Mixed Signal and Characterization in Engineering Technology," *Texas Instruments Day*, College Station, TX, February 9, 2000.

R. Fink, T. Hsieh, J. Ochoa, **J.R. Porter**, B. Zoghi, "Industry/Academia Joint Ventures: A Partnership for Education, Applied Research and Professional Development," *Texas Association of Schools of Engineering Technology*, San Marcos, TX, October 1, 1999.

**J.R. Porter**, "Applications of LabVIEW in Engineering Technology at Texas A&M University," *presented to National Instruments in Education Day*, Austin, TX, August 19, 1999.

T. Hsieh, **J.R. Porter**, B. Zoghi "Siemens Automation Center for Education and Research," *presented to Siemens*, College Station, TX, May 17, 1999.

**J.R. Porter**, "IDB Automotive Network Standard," *presented to the Industrial Communications Committee*, College Station, TX, March 24, 1999.

**J.R. Porter**, "Research and Educational Applications of LabVIEW", *presented to the LabVIEW Workshop for TAMU Engineering Faculty*, College Station, TX, February, 1999.

**J.R. Porter**, "Virtual Instrumentation in Education", *presented to the TAMU Engineering Technology Faculty*, College Station, TX, August, 1998.

**J.R. Porter**, "Phased Array Receivers and Antenna for MRI," *presented to Schlumberger*, Sugarland, TX, August 1997.

**J.R. Porter**, "HTML and the World Wide Web," *presented to the Golden Triangle IEEE Chapter*, Beaumont, TX, April 1997.

**J.R. Porter**, "Applications of Nuclear Magnetic Resonance," *presented to Lamar Student IEEE Chapter*, Beaumont, TX, March 1996.

**J.R. Porter** and S.M. Wright, "A Modular Time Domain Multiplexer For Large Array Magnetic Resonance Imaging," *IEEE EMBS, 16th Annual International Conference*, Baltimore, Maryland, November 1994.

**J.R. Porter**, "MR Receiver Systems on Spectroscopy Systems," *presented to the Solid State NMR Spectroscopy Lab Meeting*, Texas A&M University, 1993.

**J.R. Porter**, "Micro Array Coils for Use in MR," *Second Little Rock Workshop on Advances in Engineering for MRI*, Hot Springs, AR, 1993.

**J.R. Porter**, "Final Report on Time Multiplexing For Use in MRI," *Medical Advances, Inc. Seminar*, Milwaukee, WI, 1993.

**J.R. Porter**, "RF Multiplexing Data Acquisition Systems for Use in MRI," *Doctoral Preliminary Exam*, Texas A&M University, 1992.

**J.R. Porter**, "Time Multiplexed Coils: Methods and Applications," *First Little Rock Workshop on Advances in Engineering for MRI*, Hot Springs, AR, 1992.

**J.R. Porter**, "Update on Time Multiplexing Research Project," *Medical Advances, Inc. Update Meeting*, Texas A&M University, 1992.

**J.R. Porter**, "Review of Coil Optimization for MRI by Conjugate Gradient Descent," *Electromagnetic Imaging Lab Meeting*, Texas A&M University, 1991.

**J.R. Porter**, "The Bird Cage Resonator: A Unique MR Coil Design," *Baylor Magnetic Resonance Imaging Center Seminar*, The Woodlands, TX, 1990.

**J.R. Porter**, "Passive Shielding of Superconducting Magnets," *Masters Defense*, Texas A&M University, 1989.

## **FUNDED PROJECTS**

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Morgan, J., Porter, J., "Autonomous Vehicle Track and Follow," GM (\$5000, External, 50%, Co-PI)

Johnson, M., Kuttolamadom, M., Morgan, **J., Porter**, J., Whitfield, J., "Connected STEM - Promoting STEM Education through Connected Devices and Building Automation," NSF iTEST Program (\$834,654, External, 20%, Competitive, Co-PI)

**Porter, J.R.** "In-situ Blood Pressure Monitoring System: Undergraduate Capstone Research Project," Baker Hughes Foundation (\$10,000, External, 100%, Solicited Capstone Grant, PI)

**Porter, J.R.** “Mesh Network System for UAVs: Undergraduate Capstone Research Project,” Freeflight (\$10,000, External, 100%, Solicited Capstone Grant, PI)

**Porter, J.R.** “Radio Coverage Mapping System: Undergraduate Capstone Research Project,” Lockard and White (\$10,000, External, 100%, Solicited Capstone Grant, PI)

**Porter, J.R.** and Johnson, M., “HVAC Simulation System: Undergraduate Capstone Research Project,” Schneider Electric (\$10,000, External, 50%, Solicited Capstone Grant, Co-PI)

**Porter, J., Morgan, J.,** “2012 AGILE Conference Grant,” Agile Alliance, August 2012 (\$1,000, External, 50%, Invited)

Morgan, J., **Porter, J.R.,** “NASA Wireless Smart Plug,” submitted to NASA, March 2012 (\$50,000, External, 30%, Competitive, Co-Investigator)

Peddicord, L., Poston, **J., Porter, J.,** et al., “Nuclear Power Institute: Nuclear Workforce Development,” multi-institution collaborative proposal submitted to the State of Texas: ARRA Funds, January 2010 (\$2,000,000, External, 10%, Invited, Co-Principal Investigator)

Peddicord, L., Poston, **J., Porter, J.,** et al., “Nuclear Power Institute: Year 2,” multi-institution collaborative proposal submitted to the Texas Workforce Commission, August 2008 (\$1,000,000, External, 10%, Invited, Co-Principal Investigator)

Morgan, J., **Porter, J.R.,** Stockton, W., Villa, Juan, et al., “DHS Center for Excellence Proposal: Border and Immigration Security,” submitted to Department of Homeland Security, December 2008 (\$645,000, External, 15%, Competitive, Co-Investigator)

Wright, S.M., **Porter, J.R.,** McDougall, M., “MRI Parallel Excitation for Neuroimaging Applications,” submitted to NIH BRP Program in collaboration with Dr. Doug Noll, University of Michigan, January 2008 (\$858,570 total funding, External, 7.5%, Competitive, Co-Investigator)

Peddicord, L., Poston, **J., Porter, J.,** et al., “Nuclear Power Institute,” multi-institution collaborative proposal submitted to the Texas Workforce Commission, August 2007 (\$2,000,000, External, 10%, Invited, Co-Principal Investigator)

Lawrence, B., Leon, J., **Porter, J.,** Wang, J., Narayanan, A., “Texas A&M University Global Research Center in Monterrey,” submitted to the Texas A&M Vice President for Research, April, 2007 (\$335,559, Internal, 10%, Competitive, Co-Investigator)

**Porter, J.R.,** Morgan, J.A., “Creating Business/Engineering Multidisciplinary E-Teams,” submitted to NCIIA, December 2006 (\$47,400, External, 50%, Principal Investigator)

Zoghi, B., **Porter, J.R.,** “Streamlining Integrated Circuit Design Process: Verification and Testing,” submitted to Integrated Devices Technology, Inc., July 2006 (\$276,000, External, 20%, Co-Investigator)

**Porter, J.R.,** “Software Defined Radio Subcontract” submitted to StarVision and NASA, December 2004. (\$20,000, External, 100%, Principal Investigator)

Wright, S.M, **Porter, J.R.,** “Array Sensors for Nuclear Quadrupole Resonance,” submitted to DuPont, May 2004 (\$86,000, External, 30%, Co-Principal Investigator)

**Porter, J.R.,** “Freescale Digital Systems Laboratory,” submitted to Freescale Semiconductor, assumed lead from Dr. Ochoa in January 2004 (\$650,000, External, 100%, Principal Investigator, \$500,000 is equipment donations)

**Porter, J.R.,** Morgan, J.A., “Extension to Applied Mobile Technology Solutions in Learning Environments: The Remote Classroom,” submitted to the Hewlett Packard Applied Mobile Technology Solutions in Learning Environments 2004 Grant Initiative, March 2004. (\$30,000, External, 50%, Co-Principal Investigator, \$20,000 is funding for equipment)

Morgan, J.A., **Porter, J.R.,** Catala, P., “Middle Rio Grande Development Council Interoperability Study,” submitted to the Middle Rio Grande Development Council, January 2004. (\$29,521, External, 33%, Co-Principal Investigator)

Ochoa, J.A., **Porter, J.R.,** Morgan, J.A., “Applied Mobile Technology Solutions in Learning Environments: The Remote Classroom,” submitted to the Hewlett Packard Applied Mobile Technology Solutions in Learning Environments 2003 Grant Initiative, March 2003. (\$200,000, External 33%, Co-Principal Investigator, \$180,00 is funding for equipment)

R. Fink and **J. R. Porter,** “A Low-Cost Parallel Tester for Increasing Mixed Signal Semiconductor Test Time Efficiency,” funded by the THECB TDT Program, August, 2001. (\$142,800, 50%, Co-Principal Investigator) TEES #32197-72860

**J. R. Porter** and R. Fink, Matching to “A Low-Cost Parallel Tester for Increasing Mixed Signal Semiconductor Test Time Efficiency,” funded by National Instruments, August, 2001. (\$136,400, 50%, Principal Investigator, \$90,000 is in-kind matching) TEES #32197-7286M. Currently negotiating IP

agreement.

R. Fink and **J. R. Porter**, Matching to “A Low-Cost Parallel Tester for Increasing Mixed Signal Semiconductor Test Time Efficiency,” funded by Texas Instruments, August, 2001. (\$135,000, 50%, Co-Principal Investigator, \$75,000 is in-kind matching) TEES #32197-7286M. Currently negotiating IP agreement.

**J.R. Porter**, J. Ochoa, R. Fink, J. Leon, “2002 PUF Equipment Funds Proposal: A Multi-Layer Printed Circuit Board Manufacturing System,” funded by TAMU College of Engineering and TEES, August, 2001. (\$62,660, 100%, Principal Investigator) TEES # 32206-96578

**J.R. Porter**, "Development of a PXI-based IC Characterization System," funded by National Instruments, Dec. 2000, (\$20,000, Equipment Donation)

R. Fink, **J. Porter**, J. Ochoa, M. Yeary, "Task Order #1 with Texas Instruments," This task order consists of the development of four separate devices: Pulse Power Module , Mixed Signal Arbitrary Waveform Generator, Coherent Undersampling Digitizer, and Intelligent Sequence Controller. funded by Texas Instruments, Sept. 2000 (\$126,457, 17%, Co-Principal Investigator). TEES #32525-63120.

**J.R. Porter**, J. Morgan, "Low Cost, Mass Market, Technology-Enhanced Sobriety Testing," funded by College of Engineering and Ronnie Ward, Sept. 2000, (\$20,000, 25%, Co-Principal Investigator) TEES #32522-15062.

**J.R. Porter**, “Study and Design of Characterization Test Systems for Mixed Signal Circuits,” funded by *Texas Instruments*, September 1999 – September 2002. (\$271,652, 100%, Principal Investigator) TEES #32525-59550. Approximately \$90,000 of this award was to fund curriculum development.

**J.R. Porter**, “Texas Instruments Summer Faculty Research Project,” funded by *Texas Instruments*, May 1999 – August 1999. (\$28,760, 100%, Principal Investigator) TEES #32525-58270.

**J.R. Porter**, “Implementation a prototype network based on the IDB standard,” (ALERT project) funded by Texas Transportation Institute, January 1999 – May 1999. (\$12,144, 100%, Principal Investigator)

S. M. Wright, **J. R Porter**, and J. Wosik, “Low-Cost Laboratory MRI Instruments Using High-Temperature Superconducting Sensors”, funded by *Advanced Technology Program, Texas Higher Education Coordinating Board*, January 1998 - December 1999. (\$199,840, 30%, Co-Principal Investigator) TEES #32192-7230A. This proposal was submitted as a consortium proposal with Dr. Porter as Principal Investigator at Lamar University.

**J.R. Porter**, Development of Novel Hardware Concepts in Biomedical Instrumentation, submitted to *Summer Faculty Fellowship Program, ASEE/ NASA - Johnson Space Center*, 1997. (\$15,000, 100%, Principal Investigator)

**J.R. Porter**, Investigation of Direct Digitization Reception for Use in Magnetic Resonance Phased Array Imaging, submitted to *Research Enhancement Grant, Lamar University - Beaumont*, 1995. (\$5000, 100%, Principal Investigator)

## **INTERNAL PROPOSALS**

**Porter, J.R.**, “2014 IEF Funds Proposal: Embedded Systems and Communications Lab Upgrades,” funded by TAMU College of Engineering and TEES, March 2014. Internal, 100% (\$28,000)

**Porter, J.R.**, “2013 CAF Funds Proposal: Virtual Computer Laboratory,” funded by TAMU, January 2014. Internal, 100% (\$35,000)

Leon, J., **Porter, J.R.**, “2012 Differential Tuition Proposal: Interactive Classroom,” funded by TAMU College of Engineering, September 2013. Internal, 50% (\$100,000)

**Porter, J.R.**, “2013 IEF Funds Proposal: ESET Laboratory Upgrades,” funded by TAMU College of Engineering and TEES, March 2013. Internal, 100% (\$30,000)

Goulart, A., **Porter, J.R.**, “2012 IEF Funds Proposal: New Communications and Networking Laboratory,” funded by TAMU College of Engineering and TEES, March 2012. Internal, 50% (\$40,000)

**Porter, J.R., Morgan, J.** “2011 Differential Tuition Proposal: Product Innovation Cellar,” funded by TAMU College of Engineering, September 2011. Internal, 50% (\$200,000)

Leon, J., **Porter, J.**, Lawrence, B., “2011 Activity 1 Funds Proposal: Product Development and Manufacturing Institute,” funded by Texas A&M University, September 2011. Internal, 10% (\$600,000)

**Porter, J.R.**, “2011 IEF Funds Proposal: Laboratory Computer Update,” funded by TAMU College of Engineering and TEES, March, 2011. Internal, 100% (\$47400).

Zhan, W., **Porter, J.R.**, “2009 IEF Funds Proposal: LabVolt Power Stations for Education,” funded by TAMU College of Engineering and TEES, May, 2009. Internal, 50% (\$27000).

Lawrence, B., Leon, J., **Porter, J.**, Wang, J., Narayanan, A., "Texas A&M University Global Research Center in Monterrey," submitted to the Texas A&M Vice President for Research, April, 2007 Internal, 17% (\$250,000)

**Porter, J.R.**, Ochoa, J.A., Fink, R.J. and Leon, J., "2002 PUF Equipment Funds Proposal: A Multi-Layer Printed Circuit Board Manufacturing System," funded by TAMU College of Engineering and TEES, August, 2001. Internal, 100% (\$62,660) TEES # 32206-96578.

**Porter, J.R.** and Morgan, J.A., "Low Cost, Mass Market, Technology-Enhanced Sobriety Testing," funded by College of Engineering and Ronnie Ward, Sept. 2000. Internal, 50% (\$20000) TEES #32125-96516 (Internal), TEES #32522-15062 (External).

**Porter, J.R.**, "Implementation a prototype network based on the IDB standard," (ALERT project) funded by Texas Transportation Institute, January 1999 – May 1999. \$12,144, Internal, 100% (12,144)

## **UNFUNDED PROPOSALS**

**Porter, J.**, Wright, S., "Using Software Defined Radio for the Development of Low-Cost MRI Systems," National Instruments, June 2015, (\$38,000, 50%, External, Not funded, Competitive)

Johnson, Wang, J., M., **Porter, J.**, Morgan, J., "Honda Foundation Proposal: STEM Education for Junior High Students and Teachers Using 3D Printing Activities," American Honda Foundation, August 2015 (\$65,249, 25%, External, Not funded, Competitive)

Johnson, M., **Porter, J.**, Morgan, J., Streobel, J., "An Authentic Product Development Experience," TIER One Program, April 2014 (\$50,000, 25%, Internal, Not funded, Competitive)

**Porter, J.**, "Electromagnetic Compatibility Study," National Instruments, May 2012 (\$29,300, 100%, External, Not Funded, Invited).

**Porter, J.**, Morgan, J., "Cost-Effective Distribution Transformer V,I , and P Monitoring System," TAMU/CIDESI collaborative proposal submitted to Prolec-GE in Monterrey, Mexico, January 2008 (\$40,000, External, Not funded)

Wright, S.M., **Porter, J.R.**, McDougall, M., "Development of Parallel Excitation in MRI for Neuroimaging Applications," submitted to NIH BRP Program in collaboration with University of Michigan, May 2006 (\$984,606 total funding, Competitive, Not funded-resubmitted)

**Porter, J.R.**, Morgan, J.A., et al., "E4: Engineering Entrepreneurship Education Experience Initiative," submitted to NSF Partnerships for Innovation, August 2006. (\$600,000, Competitive, Not Funded)

Jung, Y. and **Porter, J.R.**, "Development of Remote Instrumentation and Control Laboratories," submitted to NSF CCLI Program in collaboration with the University of Houston, 2006. (\$54,000, Competitive, Not Funded)

Askew, R., Combs, N., Little, F. Schuller, M., Fink, R., Jung, Y., **Porter, J.R.**, "Design and Development of the Total Organic Carbon Analyzer System for the ISS," submitted to NASA Johnson Space Center, November 2005 (\$7,995,398, Competitive, Not funded)

**Porter, J.R.**, "Space SDR: An FPGA-Based Software Defined Radio," submitted to NASA SBIR Phase II in collaboration with StarVision, August 2005 (\$164,000, Competitive, Not funded)

Lopez, R.R., Torres, C.C., Porter, **J.R.**, Silvy, N.J., "Enhancing Undergraduate Education in Natural Resources: Integrating Research into the Classroom," submitted to the USDA, January 2005. (\$150,000, Not funded)

Bryant, R.M., Attia, J.O., Wilkins, R., Kundur, D., Lacovara, R.C., Akujuobi, C.M., Ali, W.H., Lian, J., Sadiku, M., Obiomon, P., Qian, L., Vaman, D.R., Koay, S.T., **Porter, J.R.**, "CREST: Center for Robust and Secure Networks," submitted to NSF, January, 2004. (\$5,000,000, Competitive, Peer Reviewed, Not Funded)

Wright, S.M., **Porter, J.R.**, "Actively Controlled Sensor Systems for NQR Explosive Detection," submitted to the THECB 2003 ARP/ATP/TDT Program, August 2003. (\$180,000, Competitive, Peer Reviewed, Not Funded)

R. Fink and **J. R. Porter**, "A Low-Cost Parallel Tester for Increasing Mixed Signal Semiconductor Test Time Efficiency," submitted to the THECB ARP/ATP/TDT Program, August, 2001. (\$414,200, Funded)

**J.R. Porter**, J. Ochoa, R. Fink, J. Leon, "2002 PUF Equipment Funds Proposal: A Multi-Layer Printed Circuit Board Manufacturing System," submitted to TAMU College of Engineering and TEES, August, 2001. (\$62660, Funded)

S. Searcy, **J. R. Porter**, J. Ochoa, "Development of a White Paper on the Design of a Spatially Distributed Sensor Array for Natural Resource Applications," submitted to the Telecommunications and Informatics Task Force, Texas A&M University, May 2001, (\$89,856, Not Funded)

J. Morgan, W. R. Magnussen, **J. R. Porter**, B. Zoghi, D. Lund, "Intelligent Airports: Establishing a Test Bed for Research and Development of Intelligent Systems for the Nation's Small and Medium-Sized Airports," submitted to the Telecommunications and Informatics Task Force, Texas A&M University, May 2001, (\$497,100, Not funded)

C. Quiroga, J. Ochoa, G. Ford, **J.R. Porter**, "A Real-Time Teaching/Monitoring Tool to Assist in Aggressive Driving Prevention Programs," submitted to AAA Foundation for Traffic Safety, October 2000, (\$109,000, Not funded)

S.M. Wright, P.N. Morgan, V. L. Wilson, A.G. Stricker, **J.R. Porter**, "A Design-Based Curriculum in Magnetic Resonance Engineering," submitted to NSF (#0088121, TEES #00-522), June 2000, (\$500,000, Not Funded)

**J.R. Porter**, J. Morgan, "School Bus Detection, Identification, and Location System," submitted to *Texas Logging Association*, November, 1999. (\$275,000, Not funded)

**J.R. Porter**, "Virtual Instrumentation Based Power Supply Tester," submitted to Integrated Power Systems Corp., Fall 1999. (\$21,000, Not Funded)

T. Hsieh, **J.R. Porter**, B. Zoghi, "Siemens Automation Center," submitted to *Siemens*, May, 1999. (\$1,067,365, Not funded)

**J.R. Porter**, "National Instruments Summer Research Internship," submitted to *National Instruments*, January, 1999. (\$24,460, Not funded)

**J.R. Porter**, Evaluating the Use of LEGO Teaching Tools in K-12 Engineering Education, submitted to *Faculty Mini-Grant Program, Vice President for Research and Associate Provost for Graduate Studies – Texas A&M University*, Oct. 1998. (\$1200, Not Funded)

**J.R. Porter**, Investigation of a Non-Contact Electrocardiogram Probe, submitted to *Summer Faculty Fellowship Grant Program, NASA - Johnson Space Center*, 1997. (\$15,000, Not funded)

S. M. Wright and **J.R. Porter**, Multiplexed Receiver Systems for Enhancing Functional Imaging through Multi-nuclear Spectroscopy, submitted to *Advanced Technology Program, Texas Higher Education Coordinating Board*, 1995. (Not funded)

**J.R. Porter** and J. Wasser, Comparative Animal Models of Ischemic Heart Disease: Application of Magnetic Resonance Microimaging and Localized Spectroscopy, submitted to *Advanced Research Program, Texas Higher Education Coordinating Board*, 1995. (Not funded)

## PATENTS AND DISCLOSURES

Patent Application #: 20110190652 – Fink, R., McCrary, J., **Porter, J.**, Burns, M., "System And Method For Acquiring And Displaying Uterine EMG Signals" (June 2011)

Pending in the US, EU, Britain, Canada, India and Japan

1. *US Patent Application #12/696,936*,
2. *Canadian Patent Application # not yet assigned*
3. *European Patent Application #11737773.9 (to be broken into up to 38 individual country patents)*
4. *Indian Patent Number Application #7409/DELNP/2012*
5. *Japan Patent Application #2012-600064*
6. *British Patent Application #11 2012 019802 5*

Patent Disclosure: S. Wright, J. Porter, "Actively Controlled Sensor Systems for NQR Explosive Detection", December 2003.

Patent Disclosure: J. Bankson, S. Wright, **J.R. Porter**, Invention 1673TEES01 - "A Frequency Independent, Time Multiplexed Receiver for Magnetic Resonance", December, 2000.

Patent Disclosure: **J.R. Porter**, J. Morgan, Invention 1670TEES01 - "Sobriety Tester", December, 2000.

Patent Disclosure: S.M. Wright, **J.R. Porter**, TEES – "Time Domain Multiplexed MRI Receiver", 1993.