HENRY CABRA

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EDUCATION

2014	Ph.D. in Electrical Engineering, University of South Florida, Tampa, FL. Dissertation: "Design, Simulation, Prototype, and Testing of a Notched Blade Energy Generation System" Major Professor: Silvia W. Thomas, Ph.D.
2009	M.S. in Electrical Engineering, University of South Florida, Tampa, FL Focus Area: Microelectronics Advisor: Wilfrido Moreno, Ph.D.
2007	M.A. in Communication and Technological Innovation, Instituto Latinoamericano de la Comunicación Educativa (ILCE), México. Thesis: "Evaluation of the Implementation of a Pedagogical Model, Case Study: First Year of the School of Engineering at the Universidad Autónoma de Occidente"
1994	B.S. in Electronics Engineering, Pontifical Bolivarian University.

ACADEMIC APPOINTMENTS

2024-	Texas State University, San Marcos, TX. Associate Professor of Instruction, Ingram School of Engineering.
2020-2024	Texas State University, San Marcos, TX. Lecturer Professor, Ingram School of Engineering.
2016-2021	Polk State College, Lakeland, FL. Assistant Professor, Engineering Technology Program.
2015-2016	Georgia Southern University, Statesboro, GA. Visiting Professor, Electrical and Computer Engineering.
1996-2012	Universidad Autónoma de Occidente, Cali, Colombia Engineering Faculty. Department of Automation and Electronics.
2007-2010	University of South Florida, Tampa, FL. Teaching Assistant, Department of Electrical Engineering
2010-2014	University of South Florida, Tampa, FL. Graduate Research Assistant, Department of Electrical Engineering

TECHNICAL SKILLS

Industry Knowledge: Electrical Circuits Analysis, Semiconductors, Solid State Devices, Relays, Transformers, Automation, PLC, SPICE simulation and circuit design, ANSYS Multiphysics and Ansoft Maxwell simulation, DSP, knowledge of FPGA's and FANUC Robot operations.

Technical Skills: MATLAB, Fusion 360, SolidWorks, Assembly (x86, MIPS), Microsoft Office Suite, LabVIEW, knowledge of C, C++, Python, SystemVerilog, and VHDL.

TEACHING EXPERIENCE

Associate Professor of Instruction, Texas State University, San Marcos, TX.

2024- Circuits and Devices
Circuits and Devices Lab
Digital Logic
Digital Logic Lab
Introduction to Microprocessors
Electronics 1
Microelectronics
Microelectronics Lab

Lecturer, Texas State University, San Marcos, TX.

2020-2024 Introduction to Digital Signal Processing
Circuits and Devices
Circuits and Devices Lab
Senior Design Mentoring
Digital Logic
Digital Logic Lab
Introduction to Microprocessors

Assistant Professor, Polk State College, Lakeland, Fl.

2016-2021 Introduction to Electronics and Lab
Introduction to Programmable Logic Controllers (PLCs)
Motors and Controls
Solid Modeling (Solidworks/AutoCad)
Programmable Logic Controllers (PLCs) and Industrial Robotics
Automated Process Control

Visiting Professor, Georgia Southern University, Statesboro, GA.

2015-2016 Computing for Engineers
Introduction to Computer Engineering
Microprocessor Lab

University of South Florida, Tampa, Fl.

2007-2009 Teaching & Research Assistant, University of South Florida, Tampa, Fl.
Microprocessor Lab

Advanced Materials Bio & Integration Research (AMBIR) group. Design micro-turbines for bio-physiological applications.

Engineering Faculty, Universidad Autónoma de Occidente, Cali, Colombia

1996-2012 Microprocessors
Introduction to Engineering
Digital Electronics
Programmable Digital Systems
Senior Design (Undergraduate Thesis)

RESEARCH EXPERIENCE

2020-2021 Polk State College, Lakeland, FL.
Co-Investigator in this research focused on interactive tools to develop learners' skill mastery and learn hazardous procedures before implementing them in the workplace.

2017 University of South Florida, Tampa, FL.
Functional Materials Research Experience for Teachers (RET)
Using silicon carbide (SiC) nanoparticles, fiber membranes were prepared via electrospinning from PCPU polymer solutions.

2010-2014 University of South Florida, Tampa, FL.
Advisor: Sylvia W. Thomas, Ph.D.
Researched, designed, simulated, prototyped, and tested the concept of a micro/macroscopic turbine generator that can be immersed in flows of constant or variable volume and viscosity.

2004-2006 Universidad Autónoma de Occidente, Cali, Colombia.
Strategic Research Director.

PUBLICATIONS

Conference Papers (Peer-Reviewed)

2026 H. Cabra, F. Gutierrez, “Redesigning the First-Year Engineering Experience at Texas State University”. Accepted Abstract to the First Year Engineering Experience (FYEE) 2026.

2018 M. M. Ababneh, H. Cabra, S. Perez, and S. Thomas, “Design of Notched Turbine Energy Harvesting System,” in SoutheastCon 2018, pp. 1–5.

2017 H. Cabra, S. W. Thomas, S. Perez, M. Devisetty, T. Julien, and J. Harmon, “Electrospun PCPU-SiC Nanofiber Capacitor”. 8th Annual USF REU-RET Poster Symposium.

2017 H. Cabra, “The Myths and the Magic of Open-Entry Early-Exit Courses”, New Faculty Action Research Poster Presentation, Polk State College, Professional Development Day.

2017	M. M. Ababneh, S. Perez, H. Cabra, and S. Thomas, "Design of a novel mini notched turbine with optimized power management circuit," in Renewable Energy Congress (IREC), 2017 8th International, pp. 1–6.
2013	H. Cabra and S. Thomas, "Design, Theoretical Calculations, and Simulation of a Novel Cross-Flow Mini Notched Turbine". Society of Hispanic Professional Engineers, SHPE 2013. Graduate Poster Competition.
2012	H. Cabra and S. Thomas, "Design, Simulation, and Test of a Millimeter Biopower Generator". Society of Hispanic Professional Engineers (SHPE 2012 Conference. Paper Competition.
2012	H. Cabra and S. Thomas, "Design and Simulation of a Miniature Generator by Using a Spindle Motor Machine," 5th Annual Engineering Research Day. Poster Competition. College of Engineering, University of South Florida.
2012	H. Cabra, J. Headley, S. Perez, and S. Thomas, "Design and Simulation of a Millimeter Axial Flux Permanent Magnet Brushless Generator (AFPM-BG)". Nano-Bio Collaborative International Conference 2012. Tampa, Florida. Poster Awarded.
2011	H. Cabra and S. Thomas, "Design, Simulation and Prototyping Model of a Miniaturized Bioenergy Generation System," Technical Proceedings of the 22nd IASTED International Symposia on Modeling and Simulation MS 2011.
2011	H. Cabra and S. Thomas, "Design, Simulation, and Prototyping of an Impulse Turbine for Biomedical Applications," Technical Proceedings of TechConnect World 2011.
2010	H. Cabra and S. Thomas, "FABRICATION OF CROSS-FLOW BIO-MICRO-TURBINE." 10th International Workshop on Micro and Nanotechnology for Power Generation and Energy Conversion Applications, pages 183-186, Proceedings Power MEMS, 2010. Leuven, Belgium.

PATENTS

2017	H. Cabra and S. W. Thomas, "Mini Notched Turbine Generator," United States Patent, No. 9618002B1.

PROFESSIONAL TRAINING/WORKSHOP

2025	ASEE 2025 Conference Amplify Special Session, Montreal, Canada, 2025.
2024	The AMPLIFY Institute, 2024, University of Texas at El Paso, Fall 2024.
2024	Faculty Mentoring Workshop (May 3 and 17, 2024)., Texas State University.
2023	Summer Institute 2023, Office of Distance and Extended Learning, Texas State University.
2020	Teaching Online at Texas State, Office of Distance and Extended Learning, Texas State University.

2019	The Learning and Study Strategies Inventory (LASSI), Polk State College
2018	FLATE-MSSC CPT+Workshop, The Florida Advanced Technological Education Center-FLATE and the Manufacturing Skill Standards Council (MSSC).
2017	Advanced Manufacturing Careers Institute for Robotics FANUC Robot Training, The Florida Advanced Technological Education Center-FLATE.
2017	The SHPE Faculty Development Institute, Travel Grant Award, National Science Foundation (Grant #EEC-1548322)
2016	Engineering Early-Faculty Career Development Symposium at the HENAAC Conference. NSF Assist Travel Grant.
2016	Recipient of the NSF ASSIST Travel grant for the Early-Faculty Development Symposium at the 28th Annual HENAAC Conference.
2016	SHPE conference and the Faculty Development Institute. NSF Assist Travel Grant.

HONORS AND AWARDS

2017-2021	NSF ATE Excelsior grant, Award #1700513
2018	Recipient of the NSF ASSIST Travel grant for the MAES Faculty Development Symposium (FDS), Grant #EEC-1548214.
2018	Recipient of the NSF ASSIST Travel grant for the SHPE Faculty Development Symposium 2018 - Grant #EEC-1548322.
2017	USF Functional Materials Research Experience for Teachers (RET)
2016	Recipient of the NSF ASSIST Travel grant for the Early-Faculty Development Symposium at the 28th Annual HENAAC Conference.
2013-2014	Dissertation Completion Fellowship, University of South Florida
2011-2014	College of Engineering GSS Diversity Fellowship
2012	USF Status of Latinos (SOL) Successful Latina/o Student Award
2012	FL Delores Auzenne Fellowship, University of South Florida

PROFESSIONAL AFFILIATIONS

2010-Present	Society of Hispanic Professional Engineers (SHPE)
2010-Present	Institute of Electrical and Electronics Engineers (IEEE),
2025-Present	American Society for Engineering Education (ASEE)

PROFESSIONAL SERVICE

Research Mentorship

Research Experience for Undergraduates (SEAM-REU)

2014	Graduate Student Coordinator Mentor: Design Modification and Preliminary Testing of an Implantable Bio-Generator.
2013	Mentor: Analysis and Simulation of a Millimeter-Scale Permanent Magnet Generator
2012	Mentor: Twin Rotor Microturbine Research Project.

Peer-Reviewed Articles for:

2026	Paper reviewer for the 2026 First-Year Engineering Experience (FYEE) Conference
2019-2020	IEEE Transactions on Power Electronics Name of Journal

University Service

2026	First Year Engineering Experience Exploration Taskforce
2025-2026	Rising Doctoral Institute (RDI) - Workshop for new Ph.D. students
2025-2026	Presidential Award Nomination Committee
2026	Professional and Career Advising | Electrical Engineering
2024 -	SHPE Student Organization Academic Advisor
2023	Spring 2023 Ring Celebration, Alumni Association.
2020	Polk State College, Screening Committee for the ET Faculty position.
2019	Polk State College, Screening Committee of COL Teacher PE Position.
2019	Polk State College, Screening Committee for Director of Instructional Technology.
2018	University of South Florida, Electrical Engineering Department, Doctoral Dissertation Committee Member.
2017	Polk State College, Screening Committee for a Teaching Lab Assistant.

Public Service

2022	Dripping Springs High School, Tx, The FIRST Robotics Competition, Judge.
2018	SHPE Engineering Science Symposium: Session 5: Applied Physics / Electrical and Computer Engineering. Chair and Judge.
2017	SHPE Engineering Science Symposia Faculty and Student Podium

	Presentations, Judge.
2016	28th HENAAC Conference, Research Posters Competition. Judge.
2016	SHPE Engineering Science Symposium, ESS (Papers and Posters Presentations), Judge.

LANGUAGES

English: Speak fluently and read/write with proficiency

Spanish native speaker.