DAVID P. ARNOLD

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EDUCATION

Ph.D.	Electrical and Computer Engineering	Georgia Institute of Technology	Dec. 2004
M.S.	Electrical and Computer Engineering	University of Florida	Dec. 2001
B.S.	Electrical Engineering	University of Florida	May 1999
B.S.	Computer Engineering	University of Florida	May 1999

ACADEMIC APPOINTMENTS

George Kirkland Engineering Leadership Professor, Dept. Electrical and Computer Eng., University of Florida	8/2016-present
Affiliate Professor, Dept. Materials Science and Eng., University of Florida	3/2010–12/2020
Professor, Dept. Electrical and Computer Eng., University of Florida	8/2014–8/2016
Visiting Scientist, FRIAS/IMTEK, University of Freiburg, Germany	10/2011–11/2011
Visiting Professor, G2ELab/INPG/Institut Néel, Grenoble, France	9/2011–10/2011
Associate Professor (tenure), Dept. Electrical and Computer Eng., University of Florida	8/2010–8/2014
Assistant Professor, Dept. Electrical and Computer Eng., University of Florida	6/2005–8/2010
Postdoctoral Fellow, School of Electrical and Comp. Eng., Georgia Tech	1/2005–6/2005

LEADERSHIP

UF Site Director and University/Industry Partnerships Director, NSF Engineering Research Center for the Internet of Things for Precision Agriculture (IoT4Ag), University of Florida	9/2020-present
Associate Chair for Research, Dept. of Electrical and Computer Engineering	8/2019-present
Deputy Director, NSF I/UCRC on Multi-functional Integrated System Technology (MIST Center), University of Florida	8/2014-3/2021
Inaugural Director, Interdisciplinary Microsystems Group (IMG), University of Florida	4/2016-4/2019
Interim Director, Nanoscience Institute for Medical and Engineering Technology (NIMET), University of Florida	1/2012–6/2013

RESEARCH INTERESTS

Micro/nanostructured magnetic materials
Magnetic microsystems and electromechanical transducers
Biomedical applications of magnetic systems
Compact (<100 W) power/energy systems (wireless power, energy harvesting, interface circuits)

HONORS & AWARDS

AIP Advances in Magnetism Award (Best Paper) Finalist (2019)
UF ECE Excellence Award for Teaching (2019)
Best Poster, 2018 Fall MIST Center Meeting (2018)
Anderson Scholar Faculty Honoree (2018, 2019)
Best Demo, 2018 Spring MIST Center Meeting (2018)
Best Poster, 2017 Fall MIST Center Meeting (2017)
Best Demo, 2017 Fall MIST Center Meeting (2017)

UF Term Professorship (2017-2020)
Best Application Paper, 2017 MARSS Conference (2017)
UF ECE Excellence Award for Service (2017)
George Kirkland Engineering Leadership Professorship (2016-present)
Best Paper, SPIE 'Smart Biomedical and Physiological Sensor Technology XIII' Conference (2016)
UF Research Foundation Professorship (2016-2019)
Best Poster, Frontiers in Biomagnetic Particles Conf. (2015)
UF Technology Innovator (2013, 2014, 2015, 2016)
UF Engineering Doctoral Dissertation Advisor/Mentoring Award (2013)
UF Engineering Pramod P. Khargonekar Junior Faculty Award for Excellence (2011)
DARPA Young Faculty Award (2009)
Presidential Early Career Award for Scientists and Engineers (PECASE) - DoD (2008)
UF Dean's Honor Roll of Teaching (2007)
Southeastern Center for Electrical Engineering Education (SCEEE) Young Investigator Grant (2007)
UF ECE Teacher of the Year, Runner-Up (2005-06)
Georgia Tech Presidential Fellowship (2002-04)
National Science Foundation Graduate Research Fellowship (2000-03)
Trainer of the Year, Honorable Mention, MiRC Cleanroom, Georgia Tech (2003)
Best Paper, AIAA Aerodynamic Measurement Technical Committee (2002)
Tau Beta Pi Fellowship (1999-2000)
UF ECE "Electric E" Award (1999)

TEACHING HISTORY

			Instructor Evaluation*			Instructor Overall†		
Term	**Course**	**Title**	**Instr.**	**Dept.**	**Coll.**	**Instr.**	**Dept.**	**Coll.**
Spr 2021	EEL 3008	Physics of EE	4.82	4.36	4.25	--	--	--
Spr 2021	EGN 6933	Eng. Faculty Development	4.82	4.78	4.25	--	--	--
Fall 2020	EEL 3008	Physics of EE	4.69	4.30	4.25	--	--	--
Spr 2020	EGN 6933	Eng. Faculty Development	4.73	4.54	4.26	--	--	--
Spr 2020	EEL 4412	Appl. Magn. & Magn. Mtls.	4.71	4.34	4.26	--	--	--
Spr 2020	EEL 5417	Appl. Magn. & Magn. Mtls.	4.88	4.53	4.26	--	--	--
Fall 2019	EEL 3008	Physics of EE	4.63	4.32	4.19	--	--	--
Fall 2018	EEL 3008	Physics of EE	4.80	4.38	4.27	4.82	4.35	4.22
Spr 2018	EGN 6933	Eng. Faculty Development	4.80	4.54	4.51	4.88	4.58	4.50
Spr 2018	EEE 6465	Design MEMS Transducers	4.94	4.56	4.51	5.00	4.54	4.50
Fall 2017	EEL 3008	Physics of EE	4.57	4.25	4.17	4.62	4.21	4.11
Fall 2017	EEL 4412	Appl. Magn. & Magn. Mtls.	4.93	4.25	4.17	5.00	4.21	4.11
Fall 2017	EEL 5417	Appl. Magn. & Magn. Mtls.	4.81	4.39	4.41	4.75	4.34	4.40
Spr 2017	EEL 3008	Physics of EE	4.50	4.30	4.21	4.55	4.26	4.16
Spr 2017	EMA6936	Eng. Faculty Development	4.69	4.40	4.45	4.69	4.39	4.43
Fall 2016	EEL 3008	Physics of EE	4.42	4.30	4.20	4.46	4.28	4.15
Spr 2016	EEE 6465	Design MEMS Transducers	4.73	4.45	4.45	4.71	4.46	4.45
Fall 2015	EEL 5225	Prin. MEMS Transducers	4.75	4.30	4.20	4.75	4.29	4.16
Spr 2015	EEL 4930	Appl. Magn. & Magn. Mtls.	4.44	4.30	4.17	4.33	4.30	4.14
Spr 2015	EEL 5934	Appl. Magn. & Magn. Mtls.	4.93	4.30	4.17	5.00	4.30	4.14
Fall 2014	EEL 3111	Circuits 1	4.46	4.20	4.16	4.65	4.17	4.13
Fall 2013	EEL 5225	Prin. MEMS Transducers	4.78	4.29	4.18	5.00	4.27	4.17

Spr 2013	EEL 5934	Appl. Magn. & Magn. Mtls.	4.24	4.27	4.15	4.29	4.30	4.15
Spr 2011	EEL 5934	Appl. Magn. & Magn. Mtls.	4.77	4.18	4.10	4.85	4.19	4.11
Spr 2011	EEE 6465	Design MEMS Transducers	4.80	4.18	4.10	4.86	4.19	4.11
Fall 2010	EEL 5225	Prin. MEMS Transducers	4.33	4.40	4.34	4.29	4.41	4.39
Spr 2010	EEE 6465	Design MEMS Transducers	4.55	4.47	4.36	4.44	4.50	4.41
Fall 2009	EEL 3211	Basic Electr. Energy Eng.	4.48	4.09	4.06	4.67	4.14	4.10
Spr 2009	EEL 5934	Appl. Magn. & Magn. Mtls.	4.50	4.50	4.36	4.69	4.56	4.40
Fall 2008	EEE 4331	Microelectronic Fab. Tech.	4.60	4.13	4.07	4.67	4.19	4.11
Fall 2008	EEE 5405	Microelectronic Fab. Tech.	4.37	4.38	4.33	4.40	4.45	4.40
Spr 2008	EEE 6465	Design MEMS Transducers	4.57	4.48	4.35	4.78	4.60	4.43
Fall 2007	EEL 4331	Microelectronic Fab. Tech.	4.74	4.02	4.17	4.82	4.07	4.22
Fall 2007	EEE 5405	Microelectronic Fab. Tech.	4.93	4.31	4.32	5.00	4.37	4.38
Spr 2007	EEE 6465	Design MEMS Transducers	4.82	4.37	4.37	4.79	4.39	4.42
Fall 2006	EEL 5225	Prin. MEMS Transducers	4.07	4.18	4.29	4.00	4.19	4.35
Spr 2006	EEL 4331	Solid-State Technology	4.57	4.12	4.00	4.75	4.18	4.04
Spr 2006	EEL 5934	Microelectronic Fab. Tech.	4.85	4.30	4.25	5.00	4.36	4.29
Fall 2005	EEL 5225	Prin. MEMS Transducers	4.62	4.26	4.22	4.71	4.28	4.26
		AVERAGES	***4.65***	***4.32***	***4.25***	***4.69***	***4.32***	***4.26***

Numerical evaluations based on 5.0 scale. Semesterly undergraduate or graduate department (Dept.) and college (Coll.) averages are shown for comparison. *Average of N specific questions relating to the instructor (N=9 for 2005–2018; N=6 for 2019–present). †Overall evaluation based on a single question (this question eliminated in 2019).

SPONSORED RESEARCH HISTORY

Summary: 49 distinct projects from 20 different sponsors
$46M in total funding ($7M as PI), $10M my portion
$409k/year average research expenditures (FY2018-20)

Title	Role	Sponsor	Dates	Amount*
NSF Engineering Research Center for the Internet of Things for Precision Agriculture (IoT4Ag)	CoPI	NSF	9/1/20-8/31/25	$31,014,717 (7%)
Magnetic Nanoparticles and Symbiosis	CoPI	Moore Foundation	9/1/20-8/30/23	$549,426 (17%)
Phase II IUCRC University of Florida: Center for Multi-functional Integrated System Technology (MIST)	CoPI	NSF	4/1/20-3/31/25	$750,000 (50%)
Planning Grant: Engineering Research Center for Ubiquitous Wireless Power for a Healthy World (POWERHEALTH)	CoPI	NSF	9/1/19-8/31/20	$100,000 (0%)
Development of Wirelessly Rechargeable Battery Technology	PI	UF	7/9/18-12/31/19	$24,850 (100%)
Collaborative: Single-Input Control of Large Microrobot Swarms using Serial Addressing for Microassembly and Biomedical Applications	PI	NSF	6/1/17-5/30/21	$295,191 (100%)
Electromagnetic and Magnetic Penetration for High-Resolution Image Reconstruction	CoPI	DARPA	12/6/17-5/30/20	$1,070,000 (14%)
Rapid, Portable Detection of Coliforms and *E. coli.* in Drinking Water	PI	Innovative Space	8/15/17-7/14/18	$49,759 (85%)

		Tech. (DHA)		
SNM: Large-area Manufacturing of Integrated Devices with Nanocomposite Magnetic Cores	CoPI	NSF	7/1/17-6/30/22	$1,396,666 (28%)
Magnetic Thick Films for Integrated Microwave Devices	PI	DARPA	2/1/17-1/31/22	$1,119,928 (72%)
Miniaturization of Resonant Wireless Power Transfer System Components	CoPI	MIST Center	1/1/17-12/31/17	$25,000 (50%)
Chip-Scale MEMS Receivers for Low-Power Wireless Charging	CoPI	MIST Center	1/1/17-6/30/18	$75,000 (50%)
Electrodynamic Wireless Power Transmission Prototype	PI	UF	6/15/16-6/30/18	$25,526 (100%)
Zero-Power Magnetic Field Sensors Using Magnetoelectric Nanowires	CoPI	MIST Center	1/1/16-12/31/19	$195,000 (49%)
Levitated Microfactories for High-speed Adaptive Microassembly	PI	SRI (DARPA)	6/15/15-5/31/17	$170,000 (100%)
Biological and Fluidic Measurements using Magnetic Microdiscs	PI	UF	6/1/15-8/31/16	$22,005 (100%)
Modeling of the Magnetic Particle Imaging Signal Due to Magnetic Nanoparticles	CoI	NIH	3/1/15-1/31/18	$386,844 (29%)
Directed Nanoparticle Assembly by Electrophoretic Deposition	PI	MIST Center	1/1/15-12/31/15	$47,000 (100%)
High-Performance CoPt Micromagnets	PI	MIST Center	1/1/15-12/31/15	$47,000 (100%)
Development of Integrated Magnetic Sensors: Phase 2	PI	Allegro Microsyst.	10/1/14-6/30/15	$50,000 (100%)
EAGER: Processes for Manufacturing High-Performance Magnetic Materials in Electronic Systems	PI	NSF	9/1/14-4/30/16	$120,000 (64%)
I/UCRC Phase I: Multi-functional Integrated System Technology (MIST)	CoPI	NSF	9/1/14-8/31/20	$957,012 (50%)
Development of Nanocomposite Micro-Inductor Prototypes	PI	UF	7/11/14-12/31/15	$22,986 (100%)
Distributed Wireless Power Transmission to Compact Electronic Devices	PI	GTS (US Army)	12/1/13-12/31/15	$200,000 (100%)
Magnetic Collection of Joint-Level Osteoarthritis Biomarkers	Invest.	NIH	9/16/13-8/31/15	$335,070 (37%)
Development of Integrated Magnetic Sensors	PI	Allegro Microsyst.	9/1/13-5/31/14	$84,143 (100%)
Planning Grant: I/UCRC for Multi-functional Integrated System Technology	CoPI	NSF	7/1/13-6/30/15	$55,971 (50%)
Collaborative Research: Tailoring Energy Flow in Magnetic Oscillator Arrays	PI	NSF	6/1/13-12/31/16	$250,000 (100%)
Magnetic Nanoparticle/Biomarker Harvesting Technologies for the Early Diagnosis and Treatment of Osteoarthritis	CoPI	UF	5/1/13-4/30/15	$87,792 (17%)
Magnetic Characterization of Leadframe Materials	PI	Allegro Microsyst.	3/15/13-5/15/13	$4,700 (100%)
Interdisciplinary Research Group on Magnetic	CoPI	UF	9/1/12-8/31/14	$222,000

Biomaterials				(33%)
Micromachining of Permanent Magnet Undulator Structures for Compact X-ray Sources	PI	DARPA	9/13/11-12/12/13	$1,078,701 (51%)
High Energy Density 3-D Electrodes for Energy Storage Applications	CoPI	Encell Technology	7/15/11-11/14/11	$44,000 (50%)
Faculty Enhancement Opportunity Fund	PI	UF	8/1/11-12/31/11	$7,549 (100%)
Development of Fully-Integrated Micromagnetic Actuator Technologies (PECASE)	PI	ARO	10/1/09-3/31/15	$1,000,000 (100%)
Microelectromechanical Inductors for Switch-Mode Power Converters	PI	DARPA	9/16/09-9/15/11	$300,000 (100%)
Alternative Energy Technologies	PI	Vertical Partners	9/1/09-1/31/10	$26,250 (100%)
Femtosecond Laser for 3D Micromachining (DURIP)	PI	ARO	5/1/09-10/31/10	$175,000 (100%)
Demonstration of a Wingless Electromagnetic Air Vehicle	CoPI	AFOSR	3/1/09-10/31/11	$453,459 (21%)
Magnetic Induction Power Generation for Wireless Sensor Systems Embedded in Gas Turbines	PI	Siemens-FHTCC	12/1/08-3/9/10	$92,666 (100%)
Ultra-Miniature Power Management for Microsystem Platforms	PI	ARL	7/1/08-8/27/12	$665,000 (50%)
Vibrational Energy Scavenging Technology to Power Remote Wireless Sensors	PI	Siemens	1/1/08-12/31/08	$125,000 (100%)
Progress in MEMS Sensor Technology toward Suitability for Aeroacoustic Phased Array Measurement Applications: Phase IV	CoPI	Boeing	12/1/07-4/1/09	$310,000 (6%)
Optimization and Experimental Validation of an Electromagnetic Vibrational Energy Scavenger	PI	SCEEE	7/1/07-6/30/08	$36,000 (100%)
SGER: Microfabrication Approaches for Microscale Permanent Magnets	PI	NSF	5/1/07-10/31/08	$74,860 (100%)
Development of Advanced Zero-Net Mass-Flux Actuators for Active Flow Control Applications	CoPI	NASA	3/19/07-3/18/11	$695,869 (34%)
Shear-Stress Sensor Array Measurement Technology for the Support of Turbulence Model Development for Flow Separation	CoPI	NASA	12/1/06-11/30/10	$644,202 (18%)
Magnetic Self-Assembly of Small Parts	PI	NSF	5/1/06-4/30/10	$226,000 (100%)
Micromachined Thermoelectric Generators for Waste Heat Power Generation	PI	ARL	1/1/06-6/30/08	$362,259 (100%)

*Total award values and percentages attributed to D. P. Arnold are indicated

PRIMARY STUDENT/POSTDOC SUPERVISION

Role	Student	Research Topic	Home Dept.	Completion Date
Chair, 20 Ph.D. Dissertation	Sai Amirisetti*	Magnetic nanocomposites	CHE	current
	Connor Smith	Electro-infiltrated magnetic composites	ECE	current
	Yuzheng Wang	Electroplated CoPt /FePt micromagnets	ECE	current

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