

# Curriculum Vitae – Gregory H. Huff

## I. Professional Preparation

<u>Institution</u>	<u>Major</u>	<u>Degree, Year</u>
University of Illinois at Urbana-Champaign	Electrical and Computer Engineering	Ph.D., 2006
University of Illinois at Urbana-Champaign	Electrical and Computer Engineering	M.S., 2003
University of Illinois at Urbana-Champaign	Electrical and Computer Engineering	B.S., 2001
Parkland Community College	Engineering Sciences	A.E.S., 1997

## II. Appointments, Fellowships, and Other Employment Activity

2012 to date	Associate Professor, Electromagnetics and Microwave Laboratory, Department of Electrical and Computer Engineering, Texas A&M University, College Station, TX
2012 to date	Member, Raven Standard LLC, Wilmington, DE
2007 to date	Consultant, Toyon Research Corporation, Goleta, CA
2006 to 2012	Assistant Professor, Electromagnetics and Microwave Laboratory, Department of Electrical and Computer Engineering, Texas A&M University, College Station, TX
2005	Lewis' Educational and Research Collaborative Internship Program, National Aeronautics and Space Administration, Glenn Research Center at Lewis Field, Cleveland, OH
2004-2006	Vodafone-U.S. Foundation Graduate Fellowship, College of Engineering, University of Illinois at Urbana-Champaign, Urbana, IL
2003-2004	Motorola Center for Communication Graduate Fellowship, College of Engineering, University of Illinois at Urbana-Champaign, Urbana, IL
2001-2006	Graduate Research Assistant, Electromagnetics Laboratory, Department of Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, Urbana, IL
1993 to 2001	Chef (apprentice, de Partie, Saucier, Pâtissier, Sous, de Cuisine)

## III. Major Funded Projects, Contracts, and Other External Support (Since 2006)

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- Smarter smart phones: Adapting to a changing digital landscape with reconfigurable antennas, Qatar National Research Fund [2012-2015]
- Smart phone undergraduate research initiative, Lockheed Martin [2012]
- Multifunctional materials for reconfigurable antennas in superconfigurable structures, AFOSR [2012-2015]
- Aperskin and Aperphores: Multifunctional surfaces for JCREW S&T, ONR [2011-2014]
- Multifunctional antennas and materials, TAMU- Boeing [2010-2012]
- PECASE: Multifunctional antenna techniques, ARO-DoD [2009-2014]
- CAREER: Biologically inspired concepts for reconfigurable antennas and multifunctional smart skins, NSF [2009-2014]
- Multi-scale modeling and characterization of electromagnetically tunable colloidal-based materials (ETCMs), AFOSR [2008-2011]
- Multifunctional materials antenna array, TAMU- NASA [2008-2010]
- DURIP: Automated electromagnetic measurement system, ARO [2008-2009]
- Microfluidic systems for reconfigurable RF surfaces and systems, DARPA [2006-2007]

## IV. Notable Honors and Awards

- Presidential Early Career Award for Scientists and Engineers (PECASE), *U.S. Dept. of Def.*, 2008
- IEEE AP-S Donald G. Dudley, Jr. Undergraduate Teaching Award, *IEEE Antennas Propagat. Soc.*, 2010
- Faculty Early Career Development (CAREER) Program, *U.S. Nat. Sci. Found.*, 2008
- Invited Participant, U.S. Frontiers of Engineering Symposium, Nat. Academy of Eng. (NAE), 2010
- IEEE AP-S H. A. Wheeler Applications Prize Paper Award (co-author), *IEEE Antennas Propagat. Soc.*, 2004

## V. Other Recognition and Awards

- Featured Author and Featured Article, *EIT Electron. Lett.*, 2011, 2013
- Faculty Fellow Award, *TAMU Col. of Eng.*, 2013
- Wells Fargo Honors Faculty Mentor Award, *TAMU Honors and Undergrad. Research Prog.*, 2012, 2013
- Select Young Faculty Award, *TAMU Texas Eng. Exp. Sta.*, 2012
- Outstanding Professor Award, *TAMU Dept. of Elec. and Comp. Eng.*, 2009
- Best Paper Award in Adaptable Hardware (co-author), *NASA/ESA Conf. on Adapt. Hdwe. and Syst.*, 2009
- Young Investigator Program (YIP), *U.S. Army Research Off.*, 2008
- Young Scientist Award, *URSI Gen. Assy. of the Union*, 2008
- U.S. Delegate, *U.S. Nat. Sci. Found. US-Japan Wksp. on Bio-Insp. Sensor Networks*, 2007
- Raj Mittra Outstanding Research Award, *UIUC Dept. of Elec. and Comp. Eng.*, 2006
- Applied Research Award, *Vodafone Fellows Initiative Symp.*, 2006
- Yuen T. Lo Outstanding Research Award, *UIUC Dept. of Elec. and Comp. Eng.*, 2005

## VI. Student Awards for Research and Other Honors (while working in Huff Research Group)

- Graduate Research Fellowship Program (GRFP), Amanda M. Couch, The National Science Foundation (NSF), 2014-2017
- First Place 2013 IEEE AP-S Student Design Challenge, Amanda M. Couch, Ryan A. Brown, David T. Grayson, and Nick Brennan, *IEEE Antennas Propagat. Soc.*, 2013
- Astronaut Scholarship, Amanda M. Couch, Astronaut Scholarship Foundation (ASF), 2013
- The Science, Mathematics And Research for Transformation (SMART) Scholarship for Service Program, Dept. of Def. (DoD), Ryan A. Brown (Undergraduate), 2012-2014.
- National Defense Science and Engineering Graduate (NDSEG) Fellowship, Joel D. Barrera (M.S. and Ph.D.), American Soc. for Eng. Ed. (ASEE), 2012-2014
- The Science, Mathematics And Research for Transformation (SMART) Scholarship for Service Program, Dept. of Def. (DoD), K. Buchannan (M.S. and Ph.D.), 2011-2014

## VII. Book Chapters and Awarded Patents

- [1] G. H. Huff and M. L. VanBlaricum, "Reconfigurable antennas," in F. B. Gross (ed.), *Frontiers in Antennas: Next Generation Design & Engineering*. New York, NY: McGraw-Hill, 2010.
- [2] G. H. Huff, J. Bernhard, S. Hagness, and D. Laefer, 2009, "Material movement sensing techniques," U.S. Pat. 7 482 969, Jan. 27, 2009.
- [3] G. H. Huff and J. T. Bernhard, "Reconfigurable antennas," in C. A. Balanis (ed.), *Modern Antenna Handbook*. New York, NY: Wiley-Interscience, 2008.
- [4] S. Zhang, G. H. Huff, G. Cung, and J. T. Bernhard, "Reconfigurable, microstrip antenna apparatus, devices, systems, and methods," U.S. Pat. 7 330 152, Feb. 12, 2008.

## VIII. Refereed Papers

- [1] J. D. Barrera and G. H. Huff "Modeling and comparison of fluidic and solid state switching mechanisms in a polarization reconfigurable microstrip antenna," *in press IEEE Trans. Antennas Propag.*, accept. Apr. 2014.
- [2] T.-K. Chen and G. H. Huff, "On the constant input impedance of the Archimedean spiral antenna in free-space," *IEEE Trans. Antennas Propag.*, Vol. 62, No. 7, pp. 3869-3872, Jul. 2014.
- [3] T.-K. Chen and G. H. Huff, "Travelling wave mechanism and novel analysis of the planar Archimedean spiral antenna in free-space," *Prog. Electromag. Research M*, Vol. 145, pp. 287-298, Apr. 2014.
- [4] K. Buchanan and G. H. Huff "A Stochastic mathematical framework for the analysis of spherically-bound random arrays," *IEEE Trans. Antennas Propag.*, Vol. 62, No. 6, pp. 3003-3011, Jun. 2014.
- [5] S. A. Long, W. M. Dorsey, G. H. Huff, N. Brennan, B. Rupp, and M. A. Bevan, "Microfluidic-enabled reconfigurable patch with integrated dielectric spectrometer," *in press IEEE Antennas Wireless Propag. Lett.*, Vol. 13, pp. 1116-1119, 2014.

- [6] S. Kumar, J.-F. Chamberland, and G. H. Huff, "Reconfigurable antennas, preemptive switching and virtual channel management," *IEEE Trans. Comm.*, Vol. 62, No. 4, pp. 1272-1282, Apr. 2014.
- [7] T.-K. Chen and G. H. Huff, "Development and analysis of a stripline Archimedean snail antenna for disc-shaped unmanned aerial vehicle applications," *J. Electromag. Waves. Appl.*, Vol. 28, No. 6, pp. 685-699, Jan. 2014.
- [8] J. Jensen, G. H. Huff, and J.-F. Chamberland-Tremblay, "Cognitive motion-dynamic tethering of a phased array to an android smartphone" (Special Issue on Antenna Systems and Propagation for Cognitive Radio), *IEEE Trans. Antennas Propag.*, Vol. 62, No. 3, pp. 1093-1101, Mar. 2014.
- [9] [Featured Author] M. Kelley, C. Koo, H. McQuilken, B. Lawrence, S. Li, A. Han, and G. H. Huff, "Frequency reconfigurable patch antenna using liquid metal as switching mechanism," *IET Electron. Lett.*, Vol. 49, No. 22, pp. 1370-1371, Oct. 2013.
- [10] A. J. King, J. F. Patrick, N. R. Sottos, S. R. White, G. H. Huff, and J. T. Bernhard, "Microfluidically switched frequency-reconfigurable slot antennas," *IEEE Antennas Wireless Propag. Lett.*, Vol. 12, pp. 828-831, 2013.
- [11] D. L. Rolando and G. H. Huff, "A geometrically-appropriate cavity model for a spherical inverted-F antenna (SIFA)," *IEEE Trans. Antennas Propag.*, Vol. 61, No. 5, pp. 2404-2410, May 2013.
- [12] T.-K. Chen and G. H. Huff, "Modal resistance of spiral antenna," *SCRIP J. Electromag. Analy. Applicat.*, Vol. 5 No. 5, pp. 223-228, 2013.
- [13] T.-K. Chen and G. H. Huff, "Analytical investigation of periodic coplanar waveguides," *Prog. Electromag. Research M*, Vol. 30, 167-181, 2013.
- [14] J. D. Barrera and G. H. Huff, "Analysis of a variable SIW resonator enabled by dielectric material perturbations and applications," *IEEE Trans. Microw. Theory Techn.*, Vol. 61, No. 1, pp. 225-233, Jan. 2013.
- [15] A. S. Long and G. H. Huff, "A fluidic loading mechanism for phase reconfigurable reflectarray elements," *IEEE Antennas Wireless Propag. Lett.*, vol. 10, pp. 876-879, Jun. 2011.
- [16] [Featured Author] G. H. Huff and S. Goldberger, "A biologically inspired vascular antenna reconfiguration mechanism," *IET Electron. Lett.*, vol. 47, pp. 637-638, Aug. 2011.
- [17] T.-K. Chen and G. H. Huff, "A stripline-fed spiral antenna," *IEEE Antennas Wireless Propag. Lett.*, vol. 10, pp. 346-349, May 2011.
- [18] N. Gunaseelan, L. Liu, J.-F. Chamberland, and G. H. Huff, "Performance analysis of wireless hybrid-ARQ systems with delay-sensitive traffic," *IEEE Trans. Comm.*, Vol. 58, No. 4, pp. 1262-1272, Apr. 2010.
- [19] G. H. Huff, P. Walters, J. McDonald, and D. L. Rolando, "A reconfigurable colloidal dispersion dielectric resonator antenna," *IEEE Antennas Wireless Propag. Lett.*, vol. 9, pp. 288-290, Mar. 2010.
- [20] G. H. Huff and S. Goldberger, "A coaxial stub microfluidic impedance transformer (COSMIX)," *IEEE Microw. Wireless Compon. Lett.*, vol. 20, pp. 154-156, Mar. 2010.
- [21] N. Gunaseelan, L. Liu, J.-F. Chamberland, and G. H. Huff, "Performance analysis of wireless hybrid-ARQ systems with delay sensitive traffic," *IEEE Trans. Comm.*, vol. 58, pp. 1262-1272, Apr. 2010.
- [22] G. H. Huff and J. McDonald, "A spherically integrated inverted F-antenna (SIFA)," *IEEE Antennas Wireless Propag. Lett.*, vol. 8, pp. 649- 652, May 2009.
- [23] P. Bahukudumbi, W. N. Everett, A. Beskok, M. A. Bevan, G. H. Huff, D. Lagoudas, and Z. Ounaies, "Colloidal microstructures, transport, and impedance properties within interfacial microelectrodes," *Appl. Physics Lett.*, vol. 90, 224102, May 2007.
- [24] T. L. Roach, G. H. Huff, J. T. Bernhard, "A comparative study of diversity gain and spatial coverage: Fixed versus reconfigurable antennas for portable devices," *Microw. and Opt. Tech. Lett.*, vol. 49, pp. 335-339, Mar. 2007.
- [25] G. H. Huff and J. T. Bernhard, "Integration of packaged RF MEMS switches with radiation pattern reconfigurable square spiral microstrip antennas," *IEEE Trans. Antennas Propag.*, vol. 54, pp. 464-469, Feb. 2006.
- [26] S. Zhang, G. H. Huff, G. Cung, and J. T. Bernhard, "Three variations of a pattern-reconfigurable microstrip parasitic array," *Microw. Opt. Tech. Lett.*, vol. 45, pp. 369-372, Jun. 2005.

- [27] G. H. Huff, J. Feng, S. Zhang, and J. T. Bernhard, "Directional reconfigurable antennas on laptop computers: Simulation, measurement and evaluation of candidate integration positions," *IEEE Trans. Antennas Propag.*, vol. 52, pp. 3220-3227, Dec. 2004.
- [28] S. Zhang, G. H. Huff, and J. T. Bernhard, "A pattern reconfigurable microstrip monoarray antenna," *IEEE Trans. Antennas Propag.*, vol. 52, pp. 2773-2776, Oct. 2004.
- [29] G. Cung, G. H. Huff, and J. T. Bernhard, "Microstrip ground plane edge serrations for improved performance of active reflect-array elements," *IEEE Microw. Wireless Compon. Lett.*, vol. 2, pp. 334-336, Feb. 2003.
- [30] G. H. Huff, J. Feng, S. Zhang, and J. T. Bernhard, "A novel radiation pattern and frequency reconfigurable single turn square microstrip spiral antenna," *IEEE Microw. Wireless Compon. Lett.*, vol. 13, pp.57-59, Feb. 2003.
- [31] R. Clark, G. H. Huff, and J. T. Bernhard, "An integrated active microstrip reflect-array element with an internal amplifier," *IEEE Trans. Antennas Propag.*, vol. 51, pp. 993-999, May 2003.
- [32] [H. A. Wheeler Applications Prize Paper Award] S. Weigand, G. H. Huff, K. H. Pan, and J. T. Bernhard, "Analysis and design of broad-band single layer rectangular U-slot microstrip patch antennas," *IEEE Trans. Antennas Propag.*, vol. 51, pp. 457-468, Mar. 2003.
- [33] G. H. Huff and J. T. Bernhard, "Improvements in the performance of microstrip antennas on finite ground planes through ground plane edge serrations," *IEEE Microw. Wireless Compon. Lett.*, vol. 12, pp. 308-310, Aug. 2002.

## IX. Professional Memberships

- *Senior Member*, IEEE [Elected 2011]
- *Member*, URSI Commission D (Electronics and Photonics) [Elected 2013]
- *Member*, URSI Commission C (Radio Communication and Signal Processing Systems) [Elected 2008]
- *Member*, URSI Commission B (Fields and Waves) [Elected 2007]
- *Member*, Int. Soc. for Optics and Photonics (SPIE)
- *Member*, Int. of Eng. and Tech. (EIT)
- *Member* of IEEE Dielectr. Electr. Insul. Soc. (DEIS)
- *Member* of Soc. of Eng. Sci. (SES)
- *Member* of IEEE Microw. Theory and Tech. Soc. (MTTS)
- *Member* of IEEE Antennas and Propag. Soc. (APS)

## X. Major Service Activities

- *Co-Organizer* of "Microfluidic technology for flexible and reconfigurable antennas," *Special Session in Europ. Conf. on Antennas and Propag., The Hague, Netherlands, 2014*
- *Vice-Chair*, URSI Commission C [Elected triennium beginning 2011, and Chair for following triennium]
- *Co-Organizer* of "Biomimetics and biologically inspired systems in electromagnetics," *Special Session in IEEE Int. Symp. on Antennas and Propag. and USNC/URSI Nat. Radio Sci. Mtg., Spokane, WA, 2011*
- *Associate Editor*, IEEE Antennas Wireless Propagat. Lett. [Since 2010]
- *Secretary*, URSI Commission C [Elected 2010]
- *Chair*, TAMU joint section of IEEE AP-S/MTT-S/GRS-S/LEO-S [Since 2007]
- *Reviewer*, Int. J. Numer. Model Electron. Network Dev. Fields
- *Reviewer*, IEEE Trans. Antennas and Propag., Trans. Microw. Theory and Tech., and Antennas Wireless Propagat. Lett.
- *Reviewer*, Appl. Phys. Lett.
- *Faculty Sponsor*, TAMU IEEE Student Chapter [Since 2008]

## XI. Academic Activities

### Courses

- ECEN 322: *Electric and Magnetic Fields*
- ECEN 351: *Applied Electromagnetics*

- ECEN 403/404/405: *Electrical Design Laboratory*
- ECEN 451: *Antenna Engineering*
- ECEN 452: *Ultra-High Frequency Techniques*
- ECEN 489: (Special Topics) *RF/Microwave Measurements and Applications*
- ECEN 489: (Special Topics) *Innovation Lab I – Sensors and Microcontrollers*
- ECEN 489: (Special Topics) *Innovation Lab II – Networks and Visualization*
- ENGR 489: (Special Topics) *Aggie Challenge*
- ECEN 485: Directed Studies
- ECEN 491: Undergraduate Research
- ECEN 638: *Antennas and Propagation*
- ECEN 681: Graduate Seminar in Electromagnetics
- ECEN 689: (Special Topics) *Antenna Theory and Technique*
- ECEN 691: Graduate Research

### Major Outreach and Committee Work

- Research Working Group, Institute of Autonomous and Robotic Systems, [2014-present]
- Steering Committee, Center for Autonomous Vehicles and Sensor Systems (CANVASS), [2013-present]
- Graduate Studies Committee, TAMU ECE, [2010-present]
- Engineering Living Learning Community (ELLC) Faculty Associate Prog., TAMU [2010-2012]
- Strengthen Graduate Programs Imperative Study Group, TAMU [2010-2011]
- ECE Unplugged: Summer Engineering Camp (for high school students), TAMU [Since 2009]
- Learning to Excel in Engineering through Preparation (LEEP), TAMU [2009-2012]
- Physics 208: Electricity and Optics, Course Assessment Committee, TAMU [2008]
- Houston Hispanic Forum - Career and Education Day, TAMU-TEES [2008]
- Co-Organizer, Americas Region (Texas) for EIT Present Around the World, EIT [Since 2009]

## XII. Advising and Mentoring

### Ph.D. Dissertations

- [1] J. Jensen, "*Tracking and control of structurally-integrated UAX antenna arrays,*" est. May 2016.
- [2] S. Li, "*A mechanically deformable and electromagnetically reconfigurable antenna system,*" est. May 2015.
- [3] M. Kelley, "*Electromagnetic windowing using fluidic reconfiguration mechanisms,*" est. May 2015.
- [4] F. J. Drummond, "*Aerodynamic functionalization of a flying-wing UAX antenna,*" est. Dec. 2014.
- [5] J. D. Barrera, "*Design and operation of a fluidic-enabled multi-scale UAV scanning antenna array,*" est. Aug. 2013.
- [6] D. L. Rolando, "*A lattice model for multi-layer frequency selective surfaces (FSSs),*" est. Aug 2013.
- [7] K. Buchanan, "*Characteristic functions and analysis of spherically bound random arrays,*" est. Aug 2013.
- [8] Z. Xia, "*Volumetric arrays of reconfigurable antennas in recursive DOA estimation,*" Dec. 2012.
- [9] A. Barhoumi, "*Optimization of polymer-based nanocomposites for high energy density applications,*" (co-advised w/ Z. Ounasis) May 2012.
- [10] T.-K. Chen, "*A multifunctional spiral antenna,*" May. 2012.
- [11] S. A. Long, "*Bio-inspired framework for phase-reconfigurable microstrip reflectarray elements,*" Aug. 2011.

### M.S. Theses

- [1] D. Grayson, "*Particle mediation and control for reconfiguration using smart devices,*" est. May 2015.
- [2] T. Ahmed, "*Synchronization and network management in beamforming UAX clusters,*" est. May 2014.
- [3] J. Harms, "*Synthetic aperture strategies for interference mitigation in GPS systems,*" est. May 2014.
- [4] N. Brennen, "*Automation and thermoregulation of a distributed ballistic antenna system,*" est. May 2014.
- [5] J. Jensen, "*Android smart phone enabled cognitive control of a phased array system,*" May 2012.
- [6] J. D. Barrera, "*A reconfigurable substrate integrated waveguide resonator using vertically-orientated vascular networks,*" Dec. 2011.

- [7] K. Buchanan, "Closed-form analysis of spherically bound random arrays," May 2011.
- [8] E. C. Hames, M.S., "A reconfigurable frequency selective surface and multi-layer fluidic network based on the cuttlefish," May 2011.
- [9] D. L. Rolando, "Improved analytical techniques and operational perspectives for a spherical inverted F antenna," May. 2010.
- [10] L. Loizos, "A non-pyramidal rectangular-to-trough waveguide transition and pattern reconfigurable trough waveguide antenna," Dec. 2010.
- [11] J. J. McDonald, "Analysis, design, and operation of a spherical inverted-F antenna," May 2009.
- [12] S. A. Goldberger, "A study of microfluidic reconfiguration mechanisms enabled by functionalized dispersions of colloidal material for radio frequency applications," Dec. 2008.
- [13] S. A. Long, "Adaptive microfluidic reconfiguration mechanism for polymorphic structures," Dec. 2008.

### **Undergraduate Research Thesis**

- [1] J. McKnight, "Disturbance localization using integrated antenna-buoy platforms," 2012-2013.
- [2] A. M. Couch, "Electric mediation and control of metallic nanoparticles in coaxial structures," 2012-2013.
- [3] N. Mai, "Analytical and numerical modeling of effective medium properties," 2011-2012.
- [4] D. L. Revier, "An Android smartphone interface for a dynamic direction of arrival system," 2011-2012.
- [5] H. Waterman, "An android controlled antenna array: Electromagnetic design," 2010-2011.
- [6] B. Ajayi, "Antenna diversity techniques for wideband antennas," 2007-2008.
- [7] J. McDonald, "A Spherically inverted F-antenna for biomedical applications," 2007-2008.

### **Research-Related Capstone Senior Design and Undergraduate Project-Based Learning Activities**

- [1] D. Alfano, A. Bennett, J. Casto, A. Couch, T. Darden, I. deVlaming, J. McKnight, D. Sessions, L. Smith, and C. Williams, "A Squid-based bio-inspired design of an autonomous underwater vehicle for infrastructure assessment," 2013-2014.
- [2] R. A. Brown, R. B. Abifaraj, R. Hofstra, "Design Competition: Field mapping and mission planning in RF landscapes using Autonomous UAVs and reconfigurable antennas– Team 1," 2013-2014.
- [3] M. T. Foreman, J. Chen, and M. Bartling, "Design Competition: Field mapping and mission planning in RF landscapes using Autonomous UAVs and reconfigurable antennas– Team 2," 2013-2014.
- [4] H. Pan, S. Sundaresan, and T. W. Chen, "Design Competition: Field mapping and mission planning in RF landscapes using Autonomous UAVs and reconfigurable antennas– Team 3," 2013-2014.
- [5] J. Terrell, J. McCleery, and R. Hung, "Interrogation of passive RFID water-quality sensors using autonomous UAVs," 2013-2014.
- [6] D. T. Grayson, A. M. Raccasi, and M. C. Spencer, "Android particle controller" 2012-2013.
- [7] A. Gonzolez, R. Silva, B. Lawrence, and H. McQuilken, "A liquid metal frequency-reconfigurable of a microstrip patch antenna for GPS and ISM bands," 2012-2013.
- [8] C. Breeding, A. Cho, S. Iqbal, and N. Larson, "One-key smart ID," 2012-2013.
- [9] C. Carter, M. Rios, A. Olubeko, and S. Rodriguez, "Mighty mouse: Cross-platform file transfer using computer vision," 2012-2013.
- [10] M. Coffman, N. Oborny, U. Brindis, and A. Osterhage, "Distributer Sensing Network (DISH)," 2012-2013.
- [11] E. Foster, R. Haley, Q. Manley and R. Moore, "Android smartphone control and cloud processing for an automated direction of arrival system using polarization-reconfigurable antennas," 2012-2013.
- [12] J. Weaver, J. Joachim, and D. Bell, "Maestro glove: Virtual screen projection and motion-based control of android phones," 2011-2012.
- [13] M. Mullins, K. Goehegan, C. McKnight, and D. White, "Blue mesh (Ad hoc Android Bluetooth mesh networks)," 2010-2011.
- [14] A. Aldrich, L. J. C. Saenz, D. Heffner, H. Li, and E. Meza, "Fourier wear (Motion-driven music selection and spectral visualization on Android devices)," 2010-2011.
- [15] A. Gurecky, J. Bartholomew, B. Weil, K. Ball, and C. Perry, "Park place (Remote space detection and smartphone notification system for parking garages)," 2010-2011.

- [16] T. Barth, B. Clay, T. Hill, M. Johnson, E. Noonan, "Phase based RF directional tracking: "The smart football," 2010-2011.
- [17] S. Lee, E. Estes, and R. Burgess, "A Dynamometer for Polymorphic Antennas," 2010-2011.
- [18] J. P. Erskine and J. B. Yang, "Channel-based wireless encryption using polarization reconfigurable antennas," 2010-2011.
- [19] J. Hansen-Daisa, A. McDonald, and N. M. Morales, "An android controlled antenna array: System and application design," 2010-2011.
- [20] R. Anderson, J. D. Barrera, A. Bolon, S. Davis, J. Edelen, J. Marshall, C. Peters, and D. Umana, "Multifunctional materials array antenna," 2010-2011.
- [21] J. G. Alaniz, A. White, M. Rios, and Y. Judie, "An acoustic antensor," 2009-2010.
- [22] E. Valdespino, J. Barrera, R. Oyler, and S. Cureton, "Two-channel tuning of wireless link using fluidically tuned polarization reconfigurable antennas," 2009-2010.
- [23] J. Jensen, T. Matthews, and A. Rizqi, "Software reconfigurable antennas and data retention system," 2009-2010.
- [24] A. Taylor, C. Bryson, and R. Kila, "A structurally-integrated RFID shopping cart antenna," 2008-2009.

### **Other Undergraduate Advising and/or Mentoring**

- Android Smartphone Laboratory, TAMU [Since 2010]
- Multidisciplinary Experiences for Undergraduates (MEU), TAMU [Since 2010]
- University Undergraduate Research Fellows Program, TAMU [Since 2006]
- Research Experiences for Undergraduates (REU) , NSF [Since 2009]
- Louis Stokes Alliances for Minority Participation (LSAMP) , NSF [Since 2009]
- Space Engineering Institute (SEI) , TEES [2007-2009]
- AggieSat2 and AggieSat3 (micro-satellite program) , TAMU [Since 2008]
- Undergraduate Summer Research Grants (USRG) , TAMU [Since 2006]

### **XIII. Conferences Papers, Symposia Proceedings, and Presentations**

#### **• 2014**

- [1] J. Jensen, J.-F. Chamberland, and G. H. Huff, "Breaking down wireless, the hard-ware way," *accept. to Solid Conf.*, San Diego, CA, May 2014.
- [2] *[Invited]* D. L. Rolando and G. H. Huff, "A synthesis method for frequency-reconfigurable frequency selective surfaces," *accept. to European Conf. on Antennas and Propag.*, The Hague, Netherlands, Apr. 2014.
- [3] *[Invited]* J. D. Barrera, A. S. Griffin, S. R. White, N. R. Sottos, J. T. Bernhard, and G. H. Huff, "A novel fluidic switch for high power applications," *accept. to European Conf. on Antennas and Propag.*, The Hague, Netherlands, Apr. 2014.
- [4] K. Buchanan, A. M. Couch, D. T. Grayson, R. A. Brown, and G. H. Huff, "Investigation of sum-difference beam generation using interior and perimeter elements of planar random array topologies," *pres. at USNC/URSI Nat. Radio Sci. Mtg.*, Boulder, CO, Jan. 2014.
- [5] M. Kelley and G. H. Huff, "Design, Analysis, and Reconfiguration of a Multi-arm Spiral Frequency Selective Surface," *pres. at USNC/URSI Nat. Radio Sci. Mtg.*, Boulder, CO, Jan. 2014.
- [6] R. Moore, Q. Manley, E. Foster, R. Haley, J. D. Barrera, J.-F. Chamberland, and G. H. Huff, "Using polarization-reconfigurable antennas in a smartphone-enabled direction of arrival system," *pres. at USNC/URSI Nat. Radio Sci. Mtg.*, Boulder, CO, Jan. 2014.
- [7] T. Taghavi, J.-F. Chamberland, and G. H. Huff, "Antenna design for graph inference: Striking a balance between quality and quantity," *pres. at USNC/URSI Nat. Radio Sci. Mtg.*, Boulder, CO, Jan. 2014.
- [8] D. Tunon, T. Taghavi, J.-F. Chamberland, and G. H. Huff, "On the design and analysis of antenna patterns for localization with smart devices," *pres. at USNC/URSI Nat. Radio Sci. Mtg.*, Boulder, CO, Jan. 2014.
- [9] N. Brennan and G. H. Huff, "A microfluidically-controlled, polarization & frequency reconfigurable antenna on a hexagonal substrate tile," *pres. at USNC/URSI Nat. Radio Sci. Mtg.*, Boulder, CO, Jan. 2014.

• 2013

- [10] T.-K. Chen and G. H. Huff, "Re-visitation on the input impedance of two-arm frequency-independent antennas in free space," *pres. at IEEE Int. Symp. on Antennas and Propag. and USNC/URSI Nat. Radio Sci. Mtg.*, Orlando, FL, Jul. 2013.
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