

Dr. Edward E. Thomas, Jr.
Lawrence C. Wit Professor in the College of Sciences and Mathematics
Charles W. Barkley Endowed Professor
Professor of Physics

Physics Department
College Of Sciences and Mathematics
Auburn University

Curriculum Vitae
February 20, 2017

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SUMMARY OF CURRICULUM VITAE

TEACHING (30%)	
<p>Courses taught at Auburn University</p> <ul style="list-style-type: none"> • Foundations of Physics (PHYS 1000) • General Physics 1 (PHYS 1500) • Engineering Physics 1 / 2 (PHYS 1600 / 1610) • Honors Physics 1 / 2 (PHYS 1607 / 1617) • Intro. To Quantum and Relativity (PHYS 2200) • Classical Mechanics (PHYS 2100) • Complex (Dusty) Plasmas (PHYS 6500, 6600) 	<p>Student training at Auburn University</p> <ul style="list-style-type: none"> • Post-docs supervised: 4 • PhD's supervised: 6 + 1 (co-advisor) • PhD students in progress: 3 + 3 (co-advisor) • Undergraduate research advisor: 35 (2 current) <ul style="list-style-type: none"> ○ Honor's Thesis: 3 ○ Undergrad Research Fellowships: 4 ○ Dean's Medalist: 6
RESEARCH (50%)	
<p>Research grants total: > \$7M</p> <ul style="list-style-type: none"> • National Science Foundation: \$2.981M • Dept. of Energy: \$2.866M • Defense Threat Reduction Agency: \$0.653M • NASA: \$0.51M • Subcontracts and other agencies: \$0.196M <p>Proposal and Panel reviews:</p> <ul style="list-style-type: none"> • NSF, Dept. Energy, NASA, DTRA, Research Corp., National Research Council, Royal Society (UK), Max Planck Society (Germany) • Physics of Plasmas, J. Plasma Physics, Rev. Sci. Instruments, IEEE Trans. Plasma Sci., New J. Physics, Physical Review E 	<p>Publications and presentations:</p> <ul style="list-style-type: none"> • Peer-reviewed papers: 67 • Conference proceedings: 17 • Invited conference presentations: 25 • Invited talks and colloquia: 44 • Contributed conference presentations: 212 • 1153 total citations, h-index = 20, i10- index=33 (Source : Google scholar) <p>Research recognition:</p> <ul style="list-style-type: none"> • Fellow, American Physical Society • Fellow, National Society of Black Physicists • COSAM – Dean's Research Award
SERVICE AND OUTREACH (20%)	
<p>Federal service: Department of Energy – Fusion Energy Sciences Advisory Committee, Committee of Visitors National Research Council – Plasma Sciences Committee National Science Foundation – Committee of Visitors, Site Visit Panelist, Review Panels</p> <p>Professional service: American Physical Society (APS) – Committee on Minorities APS Div. of Plasma Physics – Executive committee, Fellowship committee, Nominating committee University Fusion Association – Executive committee DOE Center on Plasma Kinetics (Univ. Michigan) – External Advisory Committee Caribbean Green Technology Center (Univ. Virgin Islands) – Chair, External Advisory Committee IEEE Transactions on Plasma Science – Guest Editor Journal of Plasma Physics – Associate Editor</p> <p><i>Conference organization:</i> U. S. Workshop on Physics of Dusty Plasmas (3x); Intl. Conf. Physics of Dusty Plasmas (2x); Intl. Conf. of Plasma Physics; APS-DPP Program Committee (3x); Intl. Union of Radio Science (3x); NSF-DOE 20th Anniversary Workshop</p> <p>Service at Auburn University: Search committees: Physics (8 total, 4 as chair), COSAM (3), University (1) Faculty advisor/mentor: Society of Physics Students, Pre-Freshman PLUS program (Auburn Abroad) Promotion and Tenure: COSAM P&T committee, University P&T committee Program development: Physics Core Curriculum committee; Physics Strategic Planning committee (Chair)</p>	

1. STANDARD BIOGRAPHICAL FORM

AUBURN UNIVERSITY
Standard Biographical Data
for Submission with Promotion/Tenure Review

Name Edward E. Thomas, Jr.
 Department Physics College COSAM
 Present Rank Professor Years Completed in Present Rank 9
 Years in Faculty Service at AU 17 Years in Faculty Service Elsewhere 3.5
 Type of Current Appointment: Tenured Untenured Non-Tenure Track (NTTF)
 Pay Basis: 9 mo. 12 mo.
 Graduate Faculty Status: Member None Date Awarded: Jan., 2000

Education: Institution List most recent first.	Degree	Major	Date Awarded
<u>Auburn University</u>	<u>Ph.D.</u>	<u>Physics</u>	<u>Aug., 1996</u>
<u>Massachusetts Inst. of Tech.</u>	<u>M.S.</u>	<u>Physics</u>	<u>May, 1993</u>
<u>Florida Inst. of Tech.</u>	<u>B.S.</u>	<u>Physics</u>	<u>May, 1989</u>

Professional Experience: Institution Include AU Experience. List most recent first.	Rank	Period of Appointment
<u>Auburn University</u>	<u>Professor</u>	<u>10/2007-present</u>
<u>Auburn University</u>	<u>Asst./Assoc. Prof.</u>	<u>1/2000 - 9/2007</u>
<u>Fisk University</u>	<u>Asst. Prof.</u>	<u>8/1996-12/1999</u>

Other Credentials, if applicable (e.g. Board Certifications) _____

I have reviewed (except letters) the contents submitted in the attached dossier:

Signature: _____ Date: January 23, 2017

Breakdown of Professional Activities:

<u>Allocation of Effort:</u>	<u>Activity</u>	<u>Percent</u>
	Teaching	30
	Research	50
	Service	15
	Outreach	5

PROFESSIONAL EXPERIENCE

2007 - present	Professor, Auburn University
2015-2020	Charles W. Barkley Endowed Professor
2012-2017	Lawrence C. Wit Professor in the College of Sciences and Mathematics
2002-2007	Associate Professor, Auburn University
2000-2002	Assistant Professor, Auburn University
1996-1999	Assistant Professor, Fisk University
1993-1996	Research Assistant, Auburn University, Fusion Research Laboratory
1989-1993	Research Assistant, Massachusetts Institute of Technology, Plasma Fusion Center, Alcator C-Mod

SIGNIFICANT HONORS AND AWARDS

Charles W. Barkley Endowed Professor (2015 – 2020)

Inaugural Lawrence C. Wit Professor in the College of Sciences and Mathematics (2012 - 2017)

Elected as Fellow of the American Physical Society (2015)

Auburn University Society of Physics Students MOP (Most Outstanding Professor) Award – (Spring, 2014)

Dean's Research Award – College of Sciences and Mathematics – Auburn University (Spring, 2013)

Professional Improvement Leave – Auburn University – (Spring, 2013)

Elected as Fellow of the Alabama Academy of Sciences (2012)

Elected as Fellow of the National Society of Black Physicists (2011)

Professional Improvement Leave – Department of Physics and Astronomy, The University of Iowa (Fall, 2006)

Elected for membership, International Union of Radio Science (URSI), Commission H (2004)

Outstanding Academic Advisor – College of Science and Mathematics – Auburn University (2003)

National Society of Black Physicists - Outstanding Dissertation Award (1998)

Auburn University, Physics Department – Outstanding Graduate Research Award (1996)

Alabama / Department of Energy EPSCoR Traineeship (1994)

AT&T Bell Laboratories - Corporate Research Fellowship Program (1989)

2. TEACHING

i. Instructional Assignments at Auburn University (past 5 years)

<u>Quarter/ Semester</u>	<u>Course Number</u>	<u>Title</u>	<u>% of Course</u>	<u>Credit Hours</u>		<u>Enrollment</u>
			<u>Taught</u>	<u>Class</u>	<u>Lab</u>	
Spring, 17	PHYS1617	Honors Physics 2	100%	3	1	36
Fall, 16	PHYS1600	Engineering Physics 1	100%	3	1	190
Spring, 16	PHYS1617	Honors Physics 2	100%	3	1	35
Fall, 15	PHYS 6600	Introduction to Complex Plasmas	100%	3	0	14
Spring, 15	-	Released from Teaching	0			-
Fall, 14	PHYS 1600	Engineering Physics I	100%	3	1	140
Spring, 14	PHYS 1600	Engineering Physics I	100%	3	1	240
Fall, 13	PHYS 1600	Engineering Physics I	100%	3	1	240
Spring, 13		Sabbatical Leave				
Fall, 12	PHYS 1500	General Physics I	100%	3	1	240
Spring, 12	PHYS 1600	Engineering Physics I	100%	3	1	240

ii. Student training at Auburn University

a. Post-doctoral research scholars – Auburn University

<u>Name</u>	<u>Advisor Status</u>	<u>Starting Date</u>	<u>Completion Date</u>	<u>Current Position</u>
Ami DuBois	Major Prof.	Jan., 2014	Apr., 2014	Staff, Tri-Alpha
Ross Fisher	Major Prof.	May, 2012	Sep., 2013	Staff, Intel Corp.
Ashley Eadon	Major Prof.	Jan., 2011	Aug., 2011	Google, Inc.
Jeremiah Williams	Major Prof.	Jan., 2007	Aug., 2007	Assoc. Prof. – Wittenberg Univ., Ohio

b. Graduate students – Auburn University

<u>Name</u>	<u>Advisor Status</u>	<u>Starting Date</u>	<u>Completion Date</u>	<u>Degree</u>	<u>Current Position</u>
Mohamad Menati	Co-Advisor	Aug., 2014		Ph.D.	
Michael McKinley	Major Prof.	Aug., 2015		Ph.D.	
Csilla Czako	Major Prof.	Aug., 2014		Ph.D.	
Taylor Hall	Major Prof.	Aug., 2014		Ph.D.	
Spencer LeBlanc	Major Prof.	Jan., 2012		Ph.D.	
Brian Lynch	Co-Advisor	Jan., 2013		Ph.D.	
Ivan Arnold	Co-Advisor	May, 2011		Ph.D.	
Stephen Adams	Major Prof.	Jan., 2014	May, 2016	M.S.	Instructor, AU
Abhishek Bichal	Committee Member	-	May, 2015	Ph.D. (Aero Eng.)	
Ami DuBois	Major Prof.	Jan., 2008	Dec., 2013	Ph.D.	Staff, Tri-Alpha
Nathalia Alzate	Committee Member	Aug., 2009	Jun., 2013	M.S.	

Ross Fisher	Major Prof.	May, 2008	May, 2012	Ph.D.	Staff, Intel Corp.
Mark Cianciosa	Major Prof.	Aug., 2006	May, 2012	Ph.D.	Post-doc ORNL
James Creel	Major Prof.	Aug., 2009	May, 2012	M.S.	
B. Adam Stevenson	Committee Member	Aug., 2006	Dec., 2011	Ph.D.	
Ashley Eadon	Major Prof.	Aug., 2003	Dec., 2010	Ph.D.	Google, Inc.
Erik Tejero	Major Prof.	Jan, 2006	May, 2011	Ph.D.	Scientist, NRL
Josh Peterson	Committee Member	Aug., 2002	Aug, 2008	Ph.D.	
John McKee	Major Prof.	Aug., 2004	May, 2007	M.S.	PhD Candidate – West Virginia U.
Jeremiah Williams	Major Prof.	Aug., 2003	Dec, 2006	PhD	Assoc. Prof. Wittenberg Univ.
Lydia Marcus	Major Prof.	Jan., 2007	Dec., 2007	M.S.	Med. School - UAB
Son Nguyen	Committee Member	Aug., 2003	May, 2007	Ph.D.	
Jon David Jackson	Major Prof.	Aug., 2002	May, 2005	MS	
Edwynn Wallace	Major Prof.	Aug. 2001	July, 2004	MS	Faculty – Middle Georgia College
Jeremy Hanna ¹	Major Prof.	Aug., 1998	Dec., 2003	PhD	NRL
Jessie Mayo	Major Prof.	Sept. 2000	-	-	Teacher in local schools
Phillip Valek	Committee member	Sept. 1994	June, 2001	PhD	Position at SWRI

¹ In the 2002 academic year I assumed the role of Major Prof. for Mr. Jeremy Hanna after the departure of his previous advisor (Dr. Christopher Watts) from the Auburn Physics Department.

c. Undergraduate students – Auburn University

<u>Name</u>	<u>Capacity</u>	<u>Dates</u>
Amy Strong	Laboratory Assistant	9/16 - present
Ayden Kish	Laboratory Assistant	1/15 - present
	Undergraduate Research Fellowship (2016)	
Andrew Parvino	Laboratory Assistant	1/15 – 6/16
Brian Bender	Laboratory Assistant	1/14 – 8/16
	Dean’s Medalist (2016)	
James Malloy	Laboratory Assistant	9/14 – 12/15
Taylor Hall	Laboratory Assistant	1/13 – 9/14
James Schloss	Laboratory Assistant	5/13 – 9/14
Christian Polka	Laboratory Assistant	1/13 – 12/14
Daniel Robinson	Laboratory Assistant	1/13 – 8/14
Shane Moorhead	Laboratory Assistant	8/13 – 10/14
Abe Schnake	Laboratory Assistant	1/12 – 12/12
Phillip Price	Laboratory Assistant	1/11 – 6/13
Kevin Gilmore	Laboratory Assistant	8/10 – 6/13
Joseph Shaw	Laboratory Assistant	1/10 – 6/13
Andrew Hill	Laboratory Assistant	12/11 – 6/12
Andrew Kiene	Laboratory Assistant / Undergraduate Research Fellowship (10-11)	3/10 – 8/11
Robert Jefferson	Laboratory Assistant	10/07 – 8/11

	Outstanding undergraduate presentation – American Physical Society – Division of Plasma Physics (2009)	
	Undergraduate Research Fellowship (08-09)	
	Dean’s Medalist (2011)	
David Nall	Laboratory Assistant	10/07 – 4/08
Barrett Bradford	Laboratory Assistant	10/07 – 4/08
Zachary Aldewereld	Laboratory Assistant / Honors Thesis (8/06) / Dean’s Medalist (2008)	9/04 – 9/07
Michael Taylor	Laboratory Assistant / Honors Thesis (6/06) / Dean’s Medalist (2007)	6/04 – 6/07
Christopher Haddock	Laboratory Assistant	1/06 – 5/06
Joseph Senne	Laboratory Assistant	1/04 – 6/06
Jennifer Silver	Laboratory Assistant / Dean’s Medalist (2006)	11/02 – 12/05
Patricia Engel	REU Participant	5/04 – 8/04
	Outstanding undergraduate presentation – American Physical Society – Division of Plasma Physics (2004)	
Lydia Johnson	Laboratory Assistant	3/01 – 6/04
John McKee	Laboratory Assistant	8/01 – 6/04
Brian Christy	Laboratory assistant / Honors Thesis (6/04) / Dean’s Medalist (2004)	1/00–6/04
Brendan McGeehan	REU participant	5/02– 8/02
Julie Tutwiler	Laboratory Assistant	8/01-9/02
J. David Jackson	Laboratory assistant / Undergraduate Research Fellowship (2001-2002)	8/01-8/02
Meridith Grimsley	Laboratory assistant	9/00-1/02
Christopher Compton	Laboratory assistant	9/00-1/02
Edwynn Wallace	REU participant	6/00-8/00
Timothy Wolf	Laboratory assistant	3/00-9/00

3. RESEARCH

i. Scholarly Activities: Publications and Presentations

Summary of research productivity

Peer-reviewed journal publications:	67
Conference proceedings:	17
Invited conference presentations (talks, tutorials, etc.):	25
Invited presentations (talks and colloquia):	44
Contributions to professional reports (for NSF, DOE, etc.):	8
Conference presentations (posters, submitted talks, etc.):*	212

Note: **Bold text** indicates activity in 2016-2017.

* Items within the last 5 years are listed

Refereed Journal Articles (67)

B. Lynch, U. Konopka, E. Thomas, Jr., "A Single Particle Dropper for Complex/Dusty Plasmas", manuscript submitted to *Review of Scientific Instruments* in Dec., 2016, under review.

1. **M. Puttscher, A. Melzer, U. Konopka, S. LeBlanc, B. Lynch, and E. Thomas Jr, "Vertical oscillations of dust particles in a strongly magnetized plasma sheath induced by horizontal laser manipulation", *Phys. Plasmas*, 24, 013701 (2017).**
2. **E. Thomas Jr, U. Konopka, R. L. Merlino, and M. Rosenberg, "Initial measurements of two- and three-dimensional ordering, waves, and plasma filamentation in the Magnetized Dusty Plasma Experiment," *Phys. Plasmas*, 23, 055701 (2016).**
3. **T. Hall and E. Thomas, Jr., "A Study of Ion Drag for Ground and Microgravity Dusty Plasma Experiments", *IEEE Trans. Plasma Sci.*, 44, 463 (2016).**
4. **B. Lynch, U. Konopka, and E. Thomas, Jr., "Real-Time Particle Tracking in Complex Plasmas", *IEEE Trans. Plasma Sci.*, 44, 553 (2016).**
5. E. Thomas, Jr., U. Konopka, B. Lynch, S. Adams, S. LeBlanc, R. L. Merlino, and M. Rosenberg, "Quasi-discrete particle motion in an externally imposed, ordered structure in a dusty plasma at high magnetic field", *Phys. Plasmas*, 22, 113708 (2015).
6. M. Kaur, S. Bose, P. K. Chattopadhyay, D. Sharma, J. Ghosh, Y. C. Saxena, and E. Thomas Jr, "Generation of multiple toroidal dust vortices by a non-monotonic density gradient in a direct current glow discharge plasma," *Phys. Plasmas* 22, 093702 (2015).
7. I. Arnold, E. Thomas, S. D. Loch, S. Abdel-Naby, and C. P. Ballance, "The dielectronic recombination of Ar," *Journal of Physics B: Atomic, Molecular and Optical Physics* 48, 1–12 (2015).
8. E. Thomas Jr, B. Lynch, U. Konopka, R. L. Merlino, and M. Rosenberg, "Observations of imposed ordered structures in a dusty plasma at high magnetic field," *Phys. Plasmas* 22, 030701 (2015).
9. E. Thomas, U. Konopka, D. Artis, B. Lynch, S. LeBlanc, S. Adams, R. L. Merlino, and M. Rosenberg, "The magnetized dusty plasma experiment (MDPX)," *J. Plasma Phys.* 81, 345810206 (2015).
10. A. M. DuBois, E. Thomas, W. E. Amatucci, and G. Ganguli, "Experimental characterization of broadband electrostatic noise due to plasma compression," *Journal of Geophysical Research (Space Physics)*, 119, 5624 (2014).
11. E. Thomas, A. M. DuBois, B. Lynch, S. Adams, R. Fisher, D. Artis, S. LeBlanc, U. Konopka, R. L. Merlino, and M. Rosenberg, "Preliminary characteristics of magnetic field and plasma performance in the Magnetized Dusty Plasma Experiment (MDPX)," *J. Plasma Phys.*, 80, 803 (2014).
12. A. M. DuBois, E. Thomas Jr, W. E. Amatucci, and G. Ganguli, "Density gradient effects on transverse shear driven lower hybrid waves," *Phys. Plasmas*, 21, 062117 (2014).

13. A. M. DuBois, E. Thomas, W. E. Amatucci, and G. Ganguli, "Plasma Response to a Varying Degree of Stress," *Phys. Rev. Lett.*, 111, 145002, (2013).
14. R. Fisher, K. Avinash, E. Thomas, R. Merlino, and V. Gupta, "Thermal energy density of dust in dusty plasmas: Experiment and theory," *Phys. Rev. E*, 88, 031101, (2013).
15. R. K. Fisher and E. E. Thomas, "Weakly Coupled Dusty Plasma With a High Dust Temperature and Low Thermal Energy Density," *IEEE Trans. Plasma Sci.*, 41, 784 (2013).
16. E. Thomas, R. L. Merlino, and M. Rosenberg, "Design Criteria for the Magnetized Dusty Plasma eXperiment," *IEEE Trans. Plasma Sci.*, 41, 811 (2013).
17. A. M. DuBois, I. Arnold, E. Thomas, E. Tejero, and W. E. Amatucci, "Electron-ion hybrid instability experiment upgrades to the Auburn Linear Experiment for Instability Studies," *Rev. Sci. Instrum.*, 84, 043503 (2013).
18. E. Thomas, Jr., R. L. Merlino, and M. Rosenberg, *Magnetized dusty plasmas: the next frontier for complex plasma research*, *Plasma Phys. Control. Fusion*, 54, 124034 (2012).
19. Ross Fisher and Edward Thomas, Jr., Quantitative comparison of the isotropic and anisotropic Maxwellian velocity space distribution function models in a dusty plasma, *Phys. Rev. E*, 86, 066403 (2012).
20. Jeremiah Williams, Edward Thomas, Jr., Lenaic Couëdel, Alexei Ivlev, Sergey Zhdanov, Vladimir Nosenko, Hubertus Thomas, and Gregor Morfill, *Kinetics of the melting front in two-dimensional plasma crystals: Complementary analysis with the particle image and particle tracking velocimetries*, *Phys. Rev. E*, 86, 046401 (2012).
21. A. M. DuBois, A. C. Eadon and E. Thomas, Jr., *Suppression of drift waves in a linear magnetized plasma column*, *Phys. Plasmas*, 19, 072102 (2012).
22. E. M. Tejero, W. E. Amatucci, G. Ganguli, C. D. Cothran, C. Crabtree and E. Thomas, Jr., *Spontaneous Electromagnetic Emission from a strongly localized plasma flow*, *Phys. Rev. Lett.*, 106, 185001 (2011).
23. A. C. Eadon, E. Tejero, A. DuBois, and, Edward Thomas, Jr., *Upgrades to the Auburn Linear Experiment for Instability Studies*, *Rev. Sci. Instrum.* 82, 063511 (2011).
24. Ross Fisher and Edward Thomas, Jr., Observation and model of an ellipsoidally symmetric velocity space distribution in a weakly-coupled dusty plasma, *Phys. Plasmas* 18, 113701 (2011).
25. Edward Thomas, Jr., *Driven dust acoustic waves with thermal effects – comparison of experiment to fluid theory*, *Phys. Plasmas*, 17, 043701 (2010).
26. Edward Thomas, Jr., Christoph R ath, and Jeremiah Williams, *Benchmarking particle image velocimetry (PIV) measurements applied to dusty plasmas*, *IEEE Trans. Plasma Sci.*, 38, 892 (2010).
27. Robert Jefferson, Mark Cianciosa, and Edward Thomas, Jr., *Development of a two-dimensional simulation of a complex plasma*, *Phys. Plasmas*, 17, 113704 (2010).
28. Ross Fisher and Edward Thomas, Jr., *Thermal properties of a dusty plasma in the presence of driven dust acoustic waves*, *IEEE Trans. Plasma Sci.*, 38, 833 (2010).
29. E. Thomas, Jr., *Dust clouds in dc-generated dusty plasmas: Transport, Waves, and Three-Dimensional Effects*, *Contrib. Plasma Phys.*, 49, 316 (2009).
30. Marlene Rosenberg, Edward Thomas, Jr., and Robert L. Merlino, *A note on dust wave excitation in a plasma with warm dust: Comparison with experiment*, *Phys. Plasmas* 15, 073701 (2008).
31. Jeremiah Williams, Edward Thomas, Jr., and Lydia Marcus, *Observations of vertically propagating driven dust acoustic waves: finite temperature effects*, *Phys. Plasmas* 15, 043704 (2008).
32. Edward Thomas, Jr., Ross Fisher, and Robert L. Merlino, *Observations of dust acoustic waves driven at high frequencies: Finite dust temperature effects and wave interference*, *Phys. Plasmas*, 14, 123701 (2007).
33. Jeremiah Williams and Edward Thomas, Jr., *Measurement of the kinetic dust temperature of a weakly coupled dusty plasma*, *Phys. Plasmas*, 14, 063702 (2007).
34. Zachary Aldewereld and Edward Thomas, Jr., *Observation of one-dimensional flows in a DC glow discharge dusty plasma*, *IEEE Trans. Plasma Sci.*, 35, 309 (2007).
35. Jeremiah Williams and Edward Thomas, Jr., *Measurement of the kinetic dust temperature of a weakly coupled dusty plasma*, *IEEE Trans. Plasma Sci.*, 35, 303 (2007).
36. W. E. Amatucci, W. Scales, E. Thomas, G. Lapenta, *Dusty Plasmas in Colonial Williamsburg [Guest editorial]*, *IEEE Trans. Plasma Sci.*, 35, 253 (2007).
37. E. Thomas, Jr., Measurements of a spatially growing dust acoustic wave in a dc glow discharge plasma, *Phys. Plasmas*, 13, 042105 (2006).

38. E. Thomas, Jr. and J. Williams*, Applications of stereoscopic particle image velocimetry: dust acoustic waves and velocity space distribution functions, *Phys. Plasmas*, 13 055702 (2006).
39. J. Williams* and E. Thomas, Jr., *Initial measurement of the kinetic dust temperature of a weakly-coupled dusty plasma*, *Phys. Plasmas*, 13, 063509 (2006).
40. E. Thomas, Jr., and J. Williams, Experimental measurements of velocity dissipation and neutral drag effects during the formation of a dusty plasma, *Phys. Rev. Lett.*, 95, 055001 (2005).
41. E. Thomas, Jr., A. Eadon, E. Wallace, Suppression of low frequency plasma instabilities in a magnetized plasma column, *Phys. Plasmas*, 12, 042109 (2005).
42. E. Thomas, Jr. A. Ivlev, A. Melzer, and W. Scales, *Guest Editorial: Dusty Plasmas in the Light of the Caribbean Sun*, *IEEE Trans. Plasma Sci.*, 32, 534 (2004).
43. E. Thomas, Jr., G. Morales, M. Brown, T. Carter, D. Correll, K. Gentle, A. Post-Zwicker, K. Schultz, D. Steiner, and E. Scime, *Fusion in the Era of Burning Plasma Studies: Workforce Planning for 2004-2014*, *Journal of Fusion Energy*, 22, 139 (2004).
44. E. Thomas, Jr., J. Williams, and J. Silver, Application of stereoscopic particle image velocimetry to studies of transport in a dusty (complex) plasma, *Phys. Plasmas*, 11, L37 (2004).
45. E. Thomas, Jr., K. Avinash, and R. L. Merlino, *Probe induced voids in a dusty plasma*, *Phys. Plasmas*, 11, 1770 (2004).
46. E. Wallace, J. D. Jackson, and E. Thomas, Jr., *Design and operation of the Auburn Linear Experiment for Instability Studies (ALEXIS): A new plasma experiment for studying shear driven flows*, *Rev. Sci. Instrum.*, 75, 5160 (2004).
47. E. Thomas, Jr., Controlled interactions of two microparticle clouds in a dc glow discharge dusty (complex) plasma, *New Journal of Physics*, 5, 45 (2003).
48. E. Thomas, Jr., J. D. Jackson, E. Wallace, and G. Ganguli, *Observations of low frequency oscillations due to transverse sheared flows*, *Phys. Plasmas* 10, 1191 (2003).
49. E. Thomas, Jr., W. E. Amatucci, C. Compton, B. Christy, and J. D. Jackson, *Periodic long range transport in a large volume dc glow discharge dusty plasma*, *Phy. Plasma*, 10, 1159 (2003).
50. M. M. Abbas, P. D. Craven, J. F. Spann, D. Tankosic, W. K. Withrow, A. LeClair, E. West, R. Sheldon, D. L. Gallagher, M. L. Adrian, and E. Thomas, Jr., *Radiation Pressure Measurements on Micron Size Individual Dust Grains*, *J. Geophysical Research - Space Physics*, 108 (A6), 1229 (2003).
51. E. Thomas, Jr., B. M. Annaratone, G. E. Morfill, and H. Rothermel, *“Measurements of forces acting on suspended microparticles in the void region of a complex plasma”*, *Phys. Rev. E*, 66, 016405 (2002)
52. Edward Thomas, Jr., William E. Amatucci, Christopher Compton, Brian Christy, *“Observations of structured and long-range transport in a large volume dusty (complex) plasma experiment”*, *Phys. Plasmas*, 9, 3154 (2002).
53. E. Thomas, Jr., Potential profiles obtained from applied dust cloud perturbations, *Phys. Plasmas*, 9, 17 (2002).
54. E. Thomas, Jr., *“Visualization of dust particle transport in dc glow discharge plasmas”*, *IEEE Trans. Plasma Sci.*, 30, 88, (2002).
55. E. Thomas, Jr., *“Direct measurements of particle transport in dc glow discharge dusty plasmas”*, *Physica Scripta*, T89, 20 (2001).
56. E. Thomas, Jr., *“Observations of high speed flows in dc glow discharge dusty plasmas”*, *Phys. Plasmas*, 8, 329 (2001).
57. E. Thomas, Jr. and R. L. Merlino, *“Particle motion in the vicinity to dust acoustic waves”*, *IEEE Trans. Plasma Sci.*, 29, 152 (2001).
58. E. Thomas, Jr. and M. Watson, *“Charging of silica particles in an argon dusty plasma”*, *Phys. Plasmas*, 7, 3194 (2000).
59. R. Nachtrieb, B. LaBombard and E. Thomas, Jr., *Omegatron Ion Mass Spectrometer for the Alcator C-Mod Tokamak*, *Rev. Sci. Instrum.*, 71, 4107 (2000).
60. E. Thomas, Jr. and M. Watson, First experiments in the Dusty Plasma Experiment (DPX) device, *Phys. Plasmas*, 6, 4111 (1999).
61. E. Thomas, Jr., Direct measurements of two-dimensional velocity profiles in direct current glow discharge dusty plasmas, *Phys. Plasmas*, 6, 2672 (1999).
62. E. Thomas, Jr., S. Knowlton, R. Gandy, J. Cooney, and T. Pruitt, *Driven plasma rotation in the Compact Auburn Torsatron*, *Phys. Plasmas*, 5, 3991 (1998).

63. E. Thomas, Jr., G. E. Sasser, S. F. Knowlton, J. D. Hanson, R. F. Gandy, A new technique for calculating toroidal harmonic coefficients for curl-free magnetic fields in helical toroidal devices, *Comp. Phys. Comm.*, **100**, No. 1-2, 31 (1997).
64. D. C. Pritchard, R. F. Gandy, J. D. Hanson, S. F. Knowlton, H. Lin, G. E. Sasser, E. Thomas, Jr., and J. Cooney, “Effects of applied rotating magnetic perturbations on ion drift orbits in the Compact Auburn Torsatron”, *Phys. Plasmas*, **4**, 162 (1997).
65. H. Lin, R.F. Gandy, B.M. Hart, G.J. Hartwell, S.F. Knowlton, M. Owens, G. Sasser, T.A. Schneider, E. Thomas, and S.B. Voorhees *New Technique of Magnetic Surface Measurement on the Compact Auburn Torsatron*, *Rev. Sci. Instrum.*, **66**, 464 (1995).
66. G. E. Sasser, S. F. Knowlton, R. F. Gandy, H. Lin, E. E. Thomas, and M. A. Owens, *An ion gun and detector system for ion drift surface studies on toroidal devices*, *Rev. Sci. Instrum.*, **66**, 324 (1995).
67. H. Lin, R.F. Gandy, S.F. Knowlton, G.J. Hartwell, D. Pritchard, G. Sasser, and E. Thomas, Jr., *Electron transport studies in stochastic magnetic fields on the Compact Auburn Torsatron*, *Phys. Plasmas*, **2**, 2026 (1995).

Conference Proceedings (17)

1. E. Thomas, Jr., R. Fisher, J. Shaw, R. Jefferson, M. Cianciosa, and J. Williams, *New Developments in Particle Image Velocimetry (PIV) for the study of Complex Plasmas*, in Dusty/Complex Plasmas: Basic and Interdisciplinary Research: Sixth International Conference on the Physics of Dusty Plasmas, eds. V. Yu. Nosenko, P. K. Shukla, M. H. Thoma, and H. M. Thomas, *AIP Conf. Proc.* 1397, pp. 122-125; doi:10.1063/1.3659752 (2011).
2. M. Chaudhuri, U. Konopka, Ed. Thomas, Jr., H. M. Thomas, C. Knapek, A. V. Ivlev, G. E. Morfill, A. M. Lipaev, V. I. Molotkov, O. F. Petrov, and V. E. Fortov, *Experimental analysis of surface wave in complex plasmas under microgravity condition* in Dusty/Complex Plasmas: Basic and Interdisciplinary Research: Sixth International Conference on the Physics of Dusty Plasmas, eds. V. Yu. Nosenko, P. K. Shukla, M. H. Thoma, and H. M. Thomas, *AIP Conf. Proc.* 1397, pp. 122-125; doi:10.1063/1.3659752 (2011).
3. E. Thomas, Jr. and J. Williams, *Applying PIV analysis techniques to complex plasmas: reduced gravity phase transition and wave experiments*, *Europhysics Conference Abstracts*, 37th EPS Conference on Plasma Physics – Four Page Papers, Vol. 34A, Paper O3.309, (2010).
4. E. Thomas, Jr. and J. Williams, *Analysis of the neutral drag force in a dc glow discharge dusty plasma*, NEW VISTAS IN DUSTY PLASMAS: Fourth International Conference on the Physics of Dusty Plasmas, Orleans, France, eds. L. Boufendi, M. Mikikian, and P. Shukla, *AIP Conference Proceedings 799* (American Institute of Physics, Woodbury, NY, 2005).
5. V. Land*, E. Thomas, Jr. and J. Williams, *Dust Transport and Force Equilibria in Magnetized Dusty DC Discharges*, in NEW VISTAS IN DUSTY PLASMAS: Fourth International Conference on the Physics of Dusty Plasmas, Orleans, France, eds. L. Boufendi, M. Mikikian, and P. Shukla, *AIP Conference Proceedings 799* (American Institute of Physics, Woodbury, NY, 2005).
6. J. Williams and E. Thomas, Jr., *Measurement of the Kinetic Dust Temperature of a Weakly-Coupled Dusty Plasmas*, in NEW VISTAS IN DUSTY PLASMAS: Fourth International Conference on the Physics of Dusty Plasmas, Orleans, France, eds. L. Boufendi, M. Mikikian, and P. Shukla, *AIP Conference Proceedings 799* (American Institute of Physics, Woodbury, NY, 2005).
7. E. Thomas, Jr., J. David Jackson, C. Compton, and G. Ganguli, *Asymmetric response of a magnetized plasma to applied $E \times B$ drifts*, *Proceedings of the URSI General Assembly Meeting*, Maastricht, The Netherlands, August, 2002.
8. E. Thomas, Jr., B. Christy, C. Compton, W. Amatucci, G. Morfill, H. Thomas, and H. Rothermel, *Comparison of particle transport in rf and dc glow discharge complex plasmas*, *Proceedings of the URSI General Assembly Meeting*, Maastricht, The Netherlands, August, 2002.
9. R. Sheldon, E. Thomas, Jr., M. Abbas, D. Gallagher, M. Adrian, and P. Craven, *Dynamic and optical characterization of dusty plasmas for use as solar sails*, Proceedings of Space Technology and Applications International Forum – STAIF, 2002, *AIP Conference Proceedings CP608*, (American Institute of Physics, Woodbury, NY, 2002).

10. E. Thomas, Jr., W. E. Amatucci, and G. E. Morfill, *Boundary phenomena in rf and dc glow discharge dusty plasmas*, Proceedings of the Third International Conference on the Physics of Dusty Plasmas, Durban, South Africa, eds. R. Bharuthram, M. A. Helberg, P. K. Shukla, and F. Verheest, AIP Conference Proceedings CP649, (American Institute of Physics, Woodbury, NY, 2002).
11. Edward Thomas, Jr., *Transport in dusty plasmas*, in Proceedings of the 23rd Meeting of the National Society of Black Physicists, Greensboro, NC (2001).
12. Shanthi Mogali, E. Thomas, Jr., M. Gunasekaran, in Proceedings of the 14th National Conference on Undergraduate Research, Missoula, MO (2000).
13. E. Thomas, Jr. and M. Watson, *The vertical confinement of a dusty plasma in the Fisk Plasma Source*, in Physics of Dusty Plasmas, 7th Workshop, eds. M. Morayni, S. Robertson, and B. Walch, AIP Conference Proceedings 446, (American Institute of Physics, Woodbury, NY, 1998).
14. G. Lampkin, E. Thomas, Jr., M. Watson, K. Wallace, H. Chen, and A. Burger, *Plasma Processing of Metallic and Dielectric thin films in the Fisk Plasma Source*, in Proceedings of the NASA University Research Centers Technical Conference, Huntsville, AL (1998).
15. E. Thomas, Jr., K. Wallace, G. Lampkin, and M. Watson, *Measurements of the Plasma Parameters and Low Frequency Oscillations in the Fisk Plasma Source*, in Proceedings of the NASA University Research Centers Technical Conference, Huntsville, AL (1998).
16. T. George, M. Hayes, H. Chen, K. Chattopadhyay, E. Thomas, Jr., S. Morgan, and A. Burger, *Surface Morphology of Undoped and Doped ZnSe Films*, in Proceedings of the NASA University Research Centers Technical Conference, Huntsville, AL (1998).
17. E. Thomas, Jr., S. Knowlton, R. Gandy, D. Pritchard and T. Schneider, *An investigation of helically trapped ion orbits in the Compact Auburn Torsatron*, in Proceedings of the 19th Meeting of the National Society of Black Physicists, Nashville, TN (1996).

Invited Conference Presentations (talks, tutorials, etc.) (25)

1. **E. Thomas, Jr., *Complex Plasmas – How the 4th state of matter represents all four states of matter*, This is Auburn presentation, Auburn, AL, Sept. 2016.**
2. **E. Thomas, Jr., *Tutorial talk on complex/dusty plasmas*, Complex plasma summer school, Kiel University, Kiel, Germany, Aug., 2016.**
3. **E. Thomas, Jr., *Using high magnetic fields to explore the properties of plasmas and complex plasmas*, Quo Vadis Complex Plasmas workshop, Hamburg, Germany, Aug., 2016**
4. **Edward Thomas, Jr., Uwe Konopka, Robert L. Merlino, Marlene Rosenberg, and the MDPX research team, *Studies of particle ordering and instabilities in the Magnetized Dusty Plasma Experiment (MDPX)*, International Conference on Plasma Physics, Kaosiung, Taiwan, Jul, 2016.**
5. **E. Thomas, Jr., *Tutorial lecture on the physics dusty plasmas*, SULI Program, Princeton Plasma Physics Laboratory, Jun., 2016.**
6. **E. Thomas, Jr., *The Magnetized Dusty Plasma Experiment (MDPX) device as a platform for basic and applied plasma physics research*, Exploratory Plasma Research Workshop, Auburn, AL, Feb., 2016.**
7. E. Thomas, Jr., *Summary of initial results from the Magnetized Dusty Plasma Experiment (MDPX) device*, American Physical Society – Division of Plasma Physics, Savannah, GA, Nov., 2015.
8. E. Thomas, Jr., *Tutorial lecture on the physics dusty plasmas*, SULI Program, Princeton Plasma Physics Laboratory, June, 2015.
9. E. Thomas, Jr., *Tutorial lectures on Dusty Plasmas* at the 4th Complex Plasma Summer School at Seton Hall University, South Orange, NJ, Aug., 2014.
10. Edward Thomas, Jr., Ross Fisher, Uwe Konopka, Robert L. Merlino, Marlene Rosenberg, and the MDPX team, *Status of the Magnetized Dusty Plasma Experiment (MDPX)*, International Conference on the Physics of Dusty Plasmas, New Delhi, India, March, 2014.
11. Edward Thomas, Jr., Ross Fisher, Uwe Konopka, Robert L. Merlino, Marlene Rosenberg, and the MDPX team, *The Magnetized Dusty Plasma Experiment (MDPX) device: first observations*, URSI-International Union of Radio Science, U. S. Assembly Meeting, Boulder, CO, January, 2014.

12. E. Thomas, Jr., M. Rosenberg, and R. L. Merlino, *Development of the Magnetized Dusty Plasma Experiments (MDPX)*, 13th Workshop on Fine Particle Plasmas, National Institute for Fusion Research (NIFS), Toki, Japan, Dec., 2012.
13. E. Thomas, Jr., *Two tutorial lectures on Dusty Plasmas* at the Complex Plasma Summer School at Seton Hall University, South Orange, NJ, Aug., 2012.
14. E. Thomas, Jr., M. Rosenberg, and R. L. Merlino, and the MDPX Research Team, *Magnetized Complex (Dusty) Plasmas – the next frontier for complex plasma research*, European Physical Society – Plasma Physics Meeting, Stockholm, Sweden, Jul., 2012.
15. E. Thomas, Jr., R. Fisher, J. Shaw, U. Konopka, and M. Chaudhuri, *Laboratory and microgravity studies of density waves in dusty plasmas*, 10th Inter-relationship between Plasma Experiments in Laboratory and Space (IPELS) workshop, Whistler, Canada, Jul., 2011.
16. E. Thomas, Jr., Invited Tutorial lecture - *Dust density waves: ion flows and finite temperature effects*, Diagnostics and Simulations of Dusty Plasmas (DSDP-II), Kiel, Germany, September 3, 2009.
17. E. Thomas, Jr., Stereoscopic particle image velocimetry studies of transport in dusty plasmas, American Physical Society, Division of Plasma Physics Annual Meeting, Denver, CO (October, 2005).
18. E. Thomas, Jr., J. Williams, and J. Silver, Measurements of microparticle transport in dc glow discharge dusty plasmas using stereoscopic particle image velocimetry, National Society of Black Physicists Annual Meeting, Washington, DC, Feb., 2004.
19. E. Thomas, Jr., *Growth and suppression of low frequency instabilities in a magnetized plasma column*, URSI-International Union of Radio Science, U. S. Assembly Meeting, Boulder, CO, January, 2004.
20. E. Thomas, Jr., *First report on measurements of microparticle transport using stereoscopic particle image velocimetry*, URSI-International Union of Radio Science, U. S. Assembly Meeting, Boulder, CO, January, 2004.
21. E. Thomas, Jr., J. David Jackson, C. Compton, and G. Ganguli, *Asymmetric response of a magnetized plasma to applied E x B drifts*, URSI-International Union of Radio Science, General Assembly Meeting, Maastricht, The Netherlands, August, 2002.
22. E. Thomas, Jr., *Particle transport in rf and dc glow discharge complex plasmas – implications for laboratory and microgravity studies*, URSI-International Union of Radio Science, U. S. Assembly Meeting, Boulder, CO, January, 2002.
23. E. Thomas, Jr., *Measurements of closed particle transport in dc glow discharge dusty plasmas*, International Topical Conference on Plasma Physics: Colloidal Plasma Science (ITCPP:CPS), Abdus Salam Center for Theoretical Physics, Trieste, Italy, (July, 2000).
24. E. Thomas, Jr., *Measurements of three-dimensional structures and transport in dc glow discharge dusty plasmas*, APS-Division of Plasma Physics Annual Meeting, Dusty Plasma Mini-Conference, Seattle, WA (November, 1999).
25. E. Thomas, Jr., *Recent studies of dusty plasmas and ionization instabilities in the Fisk Plasma Source*, 21st Meeting of the National Society of Black Physicists, March, Lexington, KY (March, 1998).

Invited Talks and Colloquia (44)

1. **E. Thomas, Jr., *The Magnetized Dusty Plasma Experiment (MDPX) as a platform for basic and applied plasma physics research*, Institute for Plasma Research (IPR), Ahmedabad, India, Jun. 22, 2016.**
2. **E. Thomas, Jr., *Recent magnetic field results and plans for PK-4*, DLR (German Space Agency), Oberpfaffenhofen, Germany, Jun. 17, 2016.**
3. **E. Thomas, Jr., *Initial measurements of particle transport and self-ordering in the Magnetized Dusty Plasma Experiment (MDPX)*, University of Wisconsin – Madison, Feb. 29, 2016.**
4. E. Thomas, Jr., *Complex plasmas – as all four states of matter*, Alabama State University, Montgomery, AL, Nov., 10, 2015.
5. E. Thomas, Jr., *Ordered structures in highly magnetized plasmas - operating status and first results from the Magnetized Dusty Plasma Experiment (MDPX)*, Office of Fusion Energy Sciences, Department of Energy, Germantown, MD, Apr. 9, 2015.
6. E. Thomas, Jr., - *Magnetized Dusty Plasma Experiment – First Results*, Ohio University, Athens, OH, Mar. 20, 2015.

7. E. Thomas, Jr., - *Magnetized Dusty Plasma Experiment – First Results*, Wittenberg University, Springfield, OH, Mar. 19, 2015.
8. E. Thomas, Jr., - *Magnetized Dusty Plasma Experiment – First Results*, University of Mississippi, Oxford, MS, Jan. 27, 2015.
9. E. Thomas, Jr. – *Magnetized Dusty Plasma Experiment: design, installation, and initial operations*, CNRS – Marseilles, France, July 7, 2014.
10. E. Thomas, Jr. - *Magnetized Dusty Plasma Experiment: design, installation, and initial operations*, Kiel University (joint Kiel/Greifswald plasma groups), Germany, June 30, 2014.
11. E. Thomas, Jr., - *Magnetized Dusty Plasma Experiment: A user facility for complex plasma research*, Institute for Plasma Research (IPR), Ahmedabad, India, March 11, 2014.
12. E. Thomas, Jr. – *Magnetized Dusty Plasma Experiment: A user facility for complex plasma research*, Tuskegee University, Tuskegee, AL, October 29, 2013.
13. E. Thomas, Jr. – *Magnetized Dusty Plasma Experiment: A user facility for complex plasma research*, Michigan Institute for Plasma Science and Engineering, University of Michigan, Ann Arbor, MI, September 25, 2013.
14. E. Thomas, Jr., *Magnetized Dusty Plasmas: The next frontier for dusty plasma research*, Princeton Plasma Physics Laboratory, Princeton, NJ, February 7, 2013.
15. E. Thomas, Jr., *Overview of the Plasma Sciences Laboratory*, Yokohama National University, Yokohama, Japan, December 10, 2012.
16. E. Thomas, Jr., Dynamics of solids and liquids in reduced gravity and hypergravity – or an excuse to fly on the Weightless Wonder – Auburn University, Auburn, AL, September, 23, 2011.
17. E. Thomas, Jr., Taming the Plasma State of Matter, Tuskegee University, Tuskegee, AL, November 1, 2010.
18. E. Thomas, Jr., Plasmas – The Fourth State of Matter, Middle Georgia College, Cochran, GA, October 22, 2010.
19. E. Thomas, Jr., and J. Williams, Application of *PIV techniques to PK-4 data*, PK-4 Facility Science Team Meeting #2, Max Planck Institute for Extraterrestrial Physics, Garching, Germany, September 8, 2009.
20. E. Thomas, Jr., *PIV measurements in dusty plasmas: waves transport, and thermodynamics*, Garching, Germany, June 3, 2009.
21. E. Thomas, Jr., *Ion triggered instabilities in magnetized plasmas and dusty plasmas*, FOM-Institute for Plasmaphysics 'Rijnhuizen', Nieuwegein, The Netherlands, December 10, 2007.
22. E. Thomas, Jr., *Ion triggered instabilities in magnetized plasmas and dusty plasmas*, Physics Department, University of Greifswald, Germany, December 6, 2007.
23. E. Thomas, Jr., *Ion triggered instabilities in magnetized plasmas and dusty plasmas*, Department of Physics and Space Sciences, Florida Institute of Technology, Melbourne, FL, November 9, 2007.
24. E. Thomas, Jr., *Plasmas – the “original” state of matter!*, Physics Department, Rhodes College, Memphis, TN, September 20, 2007.
25. E. Thomas, Jr., *Dusty Plasmas – A new sandbox for plasma physics*, Department of Physics, University of Wisconsin - Madison, November 30, 2006
26. E. Thomas, Jr., *Dusty Plasmas – A new sandbox for plasma physics*, Department of Physics and Astronomy (Department Colloquium), University of Iowa, October 9, 2006
27. E. Thomas, Jr., *Using Particle Image Velocimetry for dusty plasma measurements*, , Department of Physics and Astronomy (Plasma Physics Seminar), University of Iowa, September 25, 2006
28. E. Thomas, Jr., *From stellar nurseries to microchips: the ubiquitous plasma state of matter*, World Year of Physics Colloquium series, Physics Department, University of West Georgia, October 7, 2005.
29. E. Thomas, Jr., *Dusty Plasmas – the dirty side of plasma physics*, Department of Physics, University of Southern Mississippi , April 30, 2004.
30. E. Thomas, Jr., *Dusty Plasmas – A new sandbox for plasma physics*, Department of Physics and Astronomy, University of Alabama, March 26, 2003.
31. E. Thomas, Jr., *Dusty Plasmas – A new sandbox for plasma physics*, Physics and Space Sciences Department, Florida Institute of Technology, November 13, 2002.
32. E. Thomas, Jr., *Dusty Plasmas – A new sandbox for plasma physics*, University of the Virgin Islands, October 3, 2002.
33. E. Thomas, Jr., *Dusty Plasmas – A new sandbox for plasma physics*, Physics Department, Georgia Institute of Technology, September 18, 2002.

34. E. Thomas, Jr., *Dusty Plasmas – A new sandbox for plasma physics*, Princeton Plasma Physics Laboratory, June 12, 2002.
35. E. Thomas, Jr., *Experiments in dc glow discharge dusty plasmas*, Christian-Albrechts-University of Kiel, Kiel, Germany, July 9, 2001.
36. E. Thomas, Jr., *Experiments in dc glow discharge dusty plasmas*, Center of Interdisciplinary Plasma Sciences (CIPS) – Max Planck Institute, Garching, Germany, July 6, 2001.
37. E. Thomas, Jr., *Transport of dust particles in a dc glow discharge plasma*, NASA - Marshall Space Flight Center - Space Science Laboratory, June 11, 1999.
38. E. Thomas, Jr., *Measurements of 2-D velocity profiles in dusty plasmas*, presented to the Institute for Plasma Research, University of Maryland – College Park, April 28, 1999.
39. E. Thomas, Jr., *Dusty plasma research at Fisk University*, presented to the Natural Sciences Division, University of the Virgin Islands, February 4, 1999.
40. E. Thomas, Jr., *Transport and confinement of dust particles in a DC glow discharge plasma*, presented to the Physics Department, Auburn University, January 28, 1999.
41. E. Thomas, Jr., *Transport and confinement of dust particles in a DC glow discharge plasma*, presented to the Naval Research Laboratory, Plasma Physics Division, January 21, 1999.
42. E. Thomas, Jr., *Application of Optics to Plasma Physics and Plasma Chemistry*, presented to the Chemistry Department, Fisk University, December 7, 1998.
43. E. Thomas, Jr., *Recent studies of ionization instabilities and dusty plasmas in the Fisk Plasma Source*, presented to the NASA - Florida A&M University Research Center for Nonequilibrium Nonlinear Aeronautical Studies (CENNAS), January 30, 1998.
44. E. Thomas, Jr., *An investigation of driven plasma rotation in the Compact Auburn Torsatron*, presented to the NASA - Florida A&M University Research Center for Nonequilibrium Nonlinear Aeronautical Studies (CENNAS), March 21, 1997.

Contributions to External Reports (8)

1. *Report on Assessment of Workforce Needs for the Office of Fusion Energy Sciences*, 2014 (Vice-Chair of FESAC sub-panel on Workforce Needs), Department of Energy report.
2. *Report on the Workshop on Opportunities in Laboratory Plasma Astrophysics*, 2010 (Chair of the Dusty Plasma working group)
3. *Committee of Visitors Report*, Department of Energy Report, 2010 (Chair, Tokamaks subgroup).
4. *Committee of Visitors Report*, Physics Directorate, National Science Foundation report, 2009, (Member, Atomic, Molecular, Optical and Plasma Physics division).
5. *Report of the FESAC Toroidal Alternates Panel*, Department of Energy Report, 2008 (Member of TAP and Stellarator TAP working group)
6. *Low Temperature Plasma Science: Not Only the Fourth State of Matter, But all of Them*, Department of Energy Report, 2008 (Member of LTPS panel and Plasmas in Multiphase Media working group).
7. *Compilation of Reports from the First Round of Committees of Visitors' Reviews of the Fusion Energy Sciences Program*, Department of Energy Report DOE/SC-0098, 2006 (Member of ICC, General Plasma Physics, and Inertial Confinement COV team).
8. *Fusion in the Era of Burning Plasma Studies: Workforce Planning for 2004-2014*, Department of Energy Report DOE/SC-0086, 2004 (Chair of FESAC sub-panel on Workforce Development).

Conference Papers Presented (212)

(*212 total papers; 64 papers 2012-2017 are shown)

1. **E. Thomas, Jr., U. Konopka, R. L. Merlino, and M. Rosenberg, Laboratory studies of dusty plasmas in unmagnetized and magnetized plasmas, Plasmas in Laboratory, Astrophysics, Space and Manufacturing – 20th Anniversary Workshop, Jan., 2017.**

2. E. Thomas, Jr., T. Hall, J. Williams, U. Konopka, T. Antonva, C. A. Knapek, M. Pustyl'nik, H. M. Thomas, Ground and ISS applications of Particle Image Velocimetry for the PK-4 and PlasmaLab/EkoPlasma Microgravity Complex Plasma Experiments, URSI-National Radio Science Meeting, Jan., 2017.
3. E. Thomas, Jr., U. Konopka, T. Hall, B. Lynch, J. Williams, C. Knapek, T. Antonova, M. Pustyl'nik, and H. Thomas, Ground and ISS applications of Particle Image Velocimetry Diagnostics for the PK-4 and EkoPlasma Microgravity Complex Plasma Experiments, 1st PK4 symposium, DLR (German Space Agency), Oberpfaffenhofen, Germany, Nov., 2016.
4. N. I. Arnold, S. Loch, C. Ballance, and E. Thomas, Jr., New level-resolved collision data for neutral argon, benchmarked against the ALEXIS plasma experiment, Paper CP10.00174, *Bull. Am. Phys. Soc.*, 61, APS Div. Plasma Physics, 2016.
5. S. LeBlanc, E. Thomas, Jr., U. Konopka, R. L. Merlino, M. Rosenberg, Ion-dust interactions at high magnetic field, Paper , *Bull. Am. Phys. Soc.*, 61, APS Div. Plasma Physics, 2016.
6. B. Lynch, U. Konopka, E. Thomas, Jr., R. L. Merlino, and M. Rosenberg, Dust Particle Dynamics in The Presence of Highly Magnetized Plasmas, Paper PP10.00137, *Bull. Am. Phys. Soc.*, 61, APS Div. Plasma Physics, 2016.
7. T. Hall, E. Thomas, Jr., U. Konopka, R. L. Merlino, M. Rosenberg, Characterization of Imposed Ordered Structures in MDPX, Paper PP10.00138, *Bull. Am. Phys. Soc.*, 61, APS Div. Plasma Physics, 2016.
8. A. Kish and E. Thomas, Jr., Dust particle circulation and vortices in a dc glow discharge dusty plasma, Paper JP10.00034, *Bull. Am. Phys. Soc.*, 61, APS Div. Plasma Physics, 2016.
9. E. Thomas, Jr., U. Konopka, R. L. Merlino, M. Rosenberg, Properties of ordered structures with and without magnetic fields in the Magnetized Dusty Plasma Experiment, Paper PP10.00136, *Bull. Am. Phys. Soc.*, 61, APS Div. Plasma Physics, 2016.
10. E. Thomas, Jr., Exploring microparticle transport in high magnetic fields using the Magnetized Dusty Plasma Experiment, National Technical Association conference, Washington, DC, Sept., 2016
11. E. Thomas, Jr., J. Williams, U. Konopka, S. LeBlanc, T. Hall, B. Lynch, M. Thoma, C. A. Knapek, M. Pustyl'nik, M. Fink, and H. M. Thomas, Ground based and ISS applications of particle image velocimetry diagnostics for the PK-4 and PlasmaLab Microgravity Complex Plasma Experiments, NASA Fundamental Physics Workshop, Apr., 2016.
12. E. Thomas, Jr., J. Williams, U. Konopka, S. LeBlanc, T. Hall, B. Lynch, M. Thoma, C. A. Knapek, M. Pustyl'nik, M. Fink, and H. M. Thomas, Ground based and microgravity studies of dusty plasma instabilities using particle image velocimetry (PIV), URSI-National Radio Science Meeting, Jan., 2016.
13. N. I. Arnold, S. Loch, C. Ballance, and E. Thomas, Jr., New level-resolved collision data for neutral argon, benchmarked against the ALEXIS and CTH plasma experiments, Paper BP12.00084, *Bull. Am. Phys. Soc.*, 60, APS Div. Plasma Physics, 2015.
14. C. Czako, I. Arnold, A. DuBois, M. Cianciosa, and E. Thomas, Jr., Development of Triple Probe Diagnostic for the Auburn Linear Experiment of Instability Studies (ALEXIS), Paper BP12.00085, *Bull. Am. Phys. Soc.*, 60, APS Div. Plasma Physics, 2015.
15. B. Bender and E. Thomas, Jr., Analysis of particle trajectories in a simulated, magnetized dusty plasma in a radially-increasing electric field, Paper JP12.00034, *Bull. Am. Phys. Soc.*, 60, APS Div. Plasma Physics, 2015.
16. B. Lynch, U. Konopka, and E. Thomas, Jr., A Single Particle Deflection Experiment for MDPX, Paper UP12.00057, *Bull. Am. Phys. Soc.*, 60, APS Div. Plasma Physics, 2015.
17. T. Hall and E. Thomas, Jr., A Study of Ion Drag for Ground and Microgravity Dusty Plasma Experiments, Paper UP12.00058, *Bull. Am. Phys. Soc.*, 60, APS Div. Plasma Physics, 2015.
18. S. LeBlanc and E. Thomas, Jr., Probe induced voids at high magnetic field, Paper UP12.00059, *Bull. Am. Phys. Soc.*, 60, APS Div. Plasma Physics, 2015.
19. E. Thomas, Jr., S. LeBlanc, B. Lynch, U. Konopka, R. L. Merlino, M. Rosenberg, Imposed, ordered dust structures and other plasma features in a strongly magnetized plasma, Paper UP12.00060, *Bull. Am. Phys. Soc.*, 60, APS Div. Plasma Physics, 2015.
20. A. DuBois, E. Thomas, Jr., W. E. Amatucci, and G. Ganguli, Experimental characterization of broadband electrostatic noise due to plasma compression, Paper GM10.00007, *Bull. Am. Phys. Soc.*, 60, APS Div. Plasma Physics, 2015.

21. E. Thomas, Jr., J. Williams, U. Konopka, T. Hall, B. Lynch, M. Thoma, C. A. Knapek, M. Pustyl'nik, and H. M. Thomas, Design of Particle Image Velocimetry (PIV) Diagnostics for the PK-4 and Plasmalab Microgravity Complex Plasma Experiments, American Society for Gravitation and Space Research Annual Meeting, Alexandria, VA, Nov., 2015.
22. E. Thomas, Jr., *The Magnetized Dusty Plasma Experiment (MDPX) – first results: transport and instabilities*, IPELS2015, Pitlochry, Scotland, UK, Aug., 2015.
23. T. Hall, E. Thomas, Jr., U. Konopka, *Investigating ion drag in ground and microgravity dusty plasma studies using PIV*, 14th Workshop on the Physics of Dusty Plasmas, Auburn, AL, May, 2015.
24. B. Lynch, U. Konopka, and E. Thomas, Jr., *Particle tracking in complex plasmas*, 14th Workshop on the Physics of Dusty Plasmas, Auburn, AL, May, 2015.
25. S. Adams, B. Lynch, S. Moorhead, E. Thomas, Jr., U. Konopka, M. Kaur, P. Chattopadhyay, and D. Sharma, *Resolution of forces in poloidal rotations in dusty plasmas*, 14th Workshop on the Physics of Dusty Plasmas, Auburn, AL, May, 2015.
26. S. LeBlanc and E. Thomas, Jr., *Probe-induced voids at high magnetic field*, 14th Workshop on the Physics of Dusty Plasmas, Auburn, AL, May, 2015.
27. B. Bender and E. Thomas, Jr., *Trajectory analysis of a simulated, magnetized dusty plasma in a radially-increasing electric field*, 14th Workshop on the Physics of Dusty Plasmas, Auburn, AL, May, 2015.
28. U. Konopka, C. Knapek, D. Mohr, B. Lynch, H. Thomas, E. Thomas, Jr., D. Funk and B. Doyle, *A Dodecahedron Plasma Chamber for Future Complex Plasmas Research in Microgravity Environments*, 14th Workshop on the Physics of Dusty Plasmas, Auburn, AL, May, 2015.
29. E. Thomas, Jr., U. Konopka, B. Lynch, S. LeBlanc, S. Adams, R. L. Merlino, and M. Rosenberg, *A summary of initial studies of ordered structures and collective modes using the Magnetized Dusty Plasma Experiment (MDPX) device*, 14th Workshop on the Physics of Dusty Plasmas, Auburn, AL, May, 2015.
30. Edward Thomas, Jr., Brian Lynch, Spencer LeBlanc, Uwe Konopka, *Magnetized dusty plasma experiment (MDPX) – initial results*, Alabama Academy of Science, Livingston, AL, Mar., 2015.
31. E. Thomas, Jr., T. Hall, B. Lynch, U. Konopka, *Investigating ion drag effects in ground and microgravity complex plasma experiments*, NASA Fundamental Physics PI Workshop, Pasadena, CA, Nov., 2014.
32. E. Thomas, Jr., U. Konopka, A. DuBois, B. Lynch, S. Adams, S. LeBlanc, D. Artis, R. L. Merlino, M. Rosenberg, *Initial Results from the Magnetized Dusty Plasma Experiment (MDPX)*, Paper CP8.00098, *Bull. Am. Phys. Soc.*, 59, APS Div. Plasma Physics, 2014.
33. U. Konopka, B. Lynch, P. Bandyopadhyay, D. Sharma, E. Thomas, Jr., *Filamentation of a Magnetized, Radio Frequency Discharge*, Paper CP8.00099, *Bull. Am. Phys. Soc.*, 59, APS Div. Plasma Physics, 2014.
34. B. Lynch, U. Konopka, E. Thomas, Jr., *Real-Time 2-Dimensional Particle Tracking in Magnetized Plasmas*, Paper CP8.00100, *Bull. Am. Phys. Soc.*, 59, APS Div. Plasma Physics, 2014.
35. S. Adams, S. Moorhead, C. Polka, D. Robinson, U. Konopka, E. Thomas, M. Kaur, P. Chattopadhyay, D. Sharma, *Observations and analysis of poloidal flows in dusty plasmas*, Paper CP8.00101, *Bull. Am. Phys. Soc.*, 59, APS Div. Plasma Physics, 2014.
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E. Thomas, Jr., *The Development on an Omegatron Plasma Ion Mass Spectrometer for Alcator C-Mod*, M.I.T. Plasma Fusion Center Research Report, PFC/RR-93-03, June, 1993.

Electronic/World Wide Web

Edward Thomas, Jr., Web Page: <http://psl.physics.auburn.edu/etjr/>

Edward Thomas, Jr., *Basic Plasma Sciences Laboratory*, laboratory web site: <http://psl.physics.auburn.edu>

ii. Scholarly Activities: Research proposals / contracts

a. External Support (Current or Pending)

External Research Support Summary (rounded values):

<u>Agency (awarded only)</u>	<u>1998-present</u>
National Science Foundation	\$2,981,000
Department of Energy	\$2,886,000
Defense Threat Reduction Agency	\$653,000
NASA	\$510,000
Other Federal Agencies (NRL, etc.)	\$ 22,000
Subcontracts	\$174,000
Total Awarded Support:	\$7,226,000

Proposals (Pending and awarded are shown from 2011-2017):

<u>Title</u>	<u>Agency</u>	<u>Pi/Co Pi</u>	<u>Period or Submitted</u>	<u>Award</u>
EPSCOR: RII Track-1: CPU2AL: Connecting the Plasma Universe to Plasma Technology in AL: the Science and Technology of Low-Temperature Plasma	NSF	G. Zank (UAH); E. Thomas (AU); R. Branam (UA), Y. Vohra (UAB), V. Rangari (Tuskegee)	8/16	\$20,000,000 Pending
Complex Plasma under Microgravity, Utilizing the International Space Station Experiment “PK-4” and Beyond	NASA/NSF	U. Konopka (AU); E. Thomas (AU), J. Williams (Wittenberg)		\$1,064,654 Pending
PLASMALAB: Measurement	NASA/JPL	E. Thomas, Jr	1/16 – 3/17	\$80,000
Collaborative Research: Advancing the Physics of Magnetized Dusty Plasmas (main award)	DOE	E. Thomas, U. Konopka (AU), R. Merlino (Iowa), M. Rosenberg (UCSD)	9/16 – 8/19	\$850,000

Collaborative Research: Advancing the Physics of Magnetized Dusty Plasmas (student support)	NSF	E. Thomas, U. Konopka (AU)	9/16 – 8/19	\$15,000
Support for the 14th Workshop on the Physics of Dusty Plasmas	DOE	E. Thomas, Jr., U. Konopka	6/15 – 6/16	\$5,000
PLASMALAB: Measurements	NASA	E. Thomas, Jr.	12/12 – 12/15	\$240,000
Collaborative Research: Physics of Magnetized Dusty Plasmas (main award)	DOE	E. Thomas, U. Konopka (AU), R. Merlino (Iowa), M. Rosenberg (UCSD)	9/13 – 8/17	\$750,000 (no cost extension)
Collaborative Research: Physics of Magnetized Dusty Plasmas (undergraduate support)	NSF	E. Thomas, U. Konopka (AU), R. Merlino (Iowa), M. Rosenberg (UCSD)	9/13 – 8/16	\$15,000
Laboratory Investigation of Radiation Belt Electron Pitch-Angle Scattering by Electromagnetic Ion Cyclotron Waves (no cost extension through 3/14)	DTRA	E. Thomas, Jr., W. Amatucci (NRL)	4/10 – 4/14	\$653,000
MRI: Development of a Magnetized Dusty Plasma Experiment (no cost extension through 6/15)	NSF	E. Thomas (AU), R. Merlino (Iowa), M. Rosenberg (UCSD)	9/11 – 6/15	\$1,560,000
Multi-scale investigation of sheared flows in magnetized plasmas – (No Cost Extension through 11/13)	DOE	E. Thomas, Jr.	11/07 – 11/13	\$541,000
PLASMALAB: Measurements (No cost extension through 12/13)	NASA	E. Thomas, Jr.	9/10 – 12/13	\$140,000
Effect of ion flows on heating and instabilities in weakly coupled dusty plasmas	NSF	E. Thomas, Jr.	9/08 – 8/12	\$448,000

b. Internal Support

<u>Title</u>	<u>Agency</u>	<u>Pi/Co Pi</u>	<u>Period or Submitted</u>	<u>Award</u>
Intramural Grant Program (IGP) - SPIRIT - Storing Petabytes of Information for Research Into Tomorrow's science	VP-Research	J.J. Dong (PI), and co-PI's from COSAM, HSOP, and CHS	2/12 – 2/13	\$150,000
Faculty Outreach Grant - Improving public understanding and teacher training in the plasma sciences for Alabama and the Southern United States	VP – Outreach	E. Thomas, Jr.	Submitted – 2/2007	unfunded
Faculty Mentoring Grant	OVPR	Brian Thurow (Mentee) E. Thomas, Jr. (Mentor)	5/06 – 4/07	\$3,000
Dean's Research Initiative - Laboratory simulation of planetary ring formation using dusty plasmas	COSAM	E. Thomas, Jr.	11/00 - 10/01	\$9,000
Laser induced fluorescence system upgrade	OVPR	E. Thomas, Jr., C. Watts, S. Knowlton	5/00	unfunded

iii. External research activities

International

<u>Project</u>	<u>Institution</u>	<u>Location</u>	<u>Duration</u>	<u>Participants</u>
Using PIV techniques for analyzing microgravity complex plasma experiments	Max-Planck Institut für extraterrestrische Physik (MPE) / German Space Agency (DLR)	Garching, Germany	On-going	E. Thomas, Jr. (AU); J. Williams (Wittenberg)
Applications of PIV diagnostics to RF complex plasma experiments	Max-Planck Institut für extraterrestrische Physik (MPE)	Garching, Germany	6/01 – 7/01 (5 weeks)	E. Thomas, Jr.

Domestic

<u>Project</u>	<u>Institution</u>	<u>Location</u>	<u>Duration</u>	<u>Participants</u>
Collaboration on thermal effects and magnetic properties of dusty plasmas	Univ. of Iowa UC – San Diego	Iowa City, IA and Auburn, AL	On-going	E. Thomas (AU) R. Merlino (Iowa) M. Rosenberg (UCSD)
Collaborative studies on DUPLEX and NRL Space Chamber	Naval Research Laboratory	Auburn, AL and Washington, DC	On-going	E. Thomas (AU), E. Tejero (AU/NRL) W. Amatucci, G. Ganguli (NRL)
Support for the implementation of Laser Induced Fluorescence (LIF) studies	West Virginia University	Morgantown, WV	On-going	E. Scime (WVU)
Conceptual development of dusty plasma – mini-magnetosphere sail project	MSFC – NSSTC	Huntsville, AL	6 months	E. Thomas (AU), M. Abbas, J. Spann (NSSTC)
Studies of probe-induced voids in dusty plasmas	Univ. of Iowa Auburn Univ.	Iowa City, IA Auburn, AL	6 months	R. Merlino (Iowa) E. Thomas (AU)
Measurements in the NRL Dusty Plasma Experiment using AU PIV diagnostics	Naval Research Laboratory	Washington, DC	6/01 – 7/01 (6 weeks)	B. Christy (UG) C. Compton (UG)

4. SERVICE AND OUTREACH

i. Service and outreach outside of Auburn University

Associate Editor – Journal of Plasma Physics – Cambridge University Press	Jan., 2015 – Jan., 2018
Co-Chair, Low Temperature and Dusty Plasmas, International Conference on Plasma Physics (ICPP)	Nov., 2015 – Jun., 2016
Elected – American Physical Society – Division of Plasma Physics, Executive Committee	Nov., 2013 – Nov., 2016
Member – International Advisory Board for the International Conference on the Physics of Dusty Plasmas (ICPDP)	Feb., 2014 - present
Member and Chair – Advisory Board - University of the Virgin Islands' Caribbean Center for Green Technology	Dec., 2010 - present
Presenter – American Physical Society – Division of Plasma Physics at the Plasma Expo and Teacher's Day education and outreach events	Oct., 2007 - present
Member – Advisory Board – University of Michigan / DOE - Plasma Science Center on Control of Plasma Kinetics (Chair, 2013)	Mar., 2011 – present
Member – National Science Foundation - Physics Frontier Center Review Panel	Mar., 2014
Program Committee – American Physical Society – Division of Plasma Physics (2014) Chair – Low Temperature Plasmas Subcommittee	Nov., 2013 – Nov., 2014
Member - Dept. of Energy – Fusion Energy Sciences Advisory Committee (FESAC)	Nov., 2002-Mar., 2013
Member – External Review Committee for NSF Physics Frontier Center – Center for Magnetic Self-Organization (CMSO) at University of Wisconsin	Feb., 2011
Selection committee for Senior Scientist for Intense Beams and Plasma Processes for the Naval Research Laboratory	Nov. – Dec., 2010
Member – Executive Committee – University Fusion Association	Nov., 2009 – Nov., 2011
Dept. of Energy – Office of Fusion Energy Sciences – Committee of Visitors (COV) – Chair of the Tokamak subcommittee	Aug., 2009 – Sep., 2009
National Science Foundation – Physics Division – Committee of Visitors (COV) – Panel Member	Feb., 2009
Program Committee – American Physical Society – Division of Plasma Physics (2009) Chair – Basic Plasmas Subcommittee	Nov., 2008 – Nov., 2009
Member – FESAC subpanel on Alternative Toroidal Concepts	Apr., 2008 – Oct., 2008
Participant – Dept. of Energy Workshop on Low Temperature Plasma Physics	Mar. – Apr., 2008
DOE – ORISE Fellowship Committee – Fusion Energy Sciences Fellowship	Mar., 2002-May, 2008
Guest Editor – IEEE Transactions on Plasma Science – Special Issue on Dusty Plasmas – April, 2007	Jun, 2006 – Apr., 2007
American Physical Society – Committee on Minorities (COM)	Jan., 2005 – Dec., 2007
National Research Council – Plasma Sciences Committee (PLSC)	Aug., 2004 – Jun., 2008
Member – External Review Committee for NSF Physics Frontier Center – Center for Magnetic Self-Organization (CMSO) at University of Wisconsin	May, 2006
Program Committee – 11 th Workshop on the Physics of Dusty Plasmas (NRL)	Jan., 2006 – May, 2006
Dept. of Energy – Office of Fusion Energy Sciences – Innovative Confinement / Basic Plasma Sciences – Committee of Visitors (COV)	Jan., 2005 – Mar., 2005
Chairperson – FESAC Panel on Workforce Development for Fusion Energy	Jul., 2003 – Mar., 2004
Guest Editor – IEEE Transactions on Plasma Science – Special Issue on Dusty Plasmas – April, 2004	Jun, 2003 – Apr., 2004
Organizer – 10 th Workshop on the Physics of Dusty Plasmas – Auburn University (held in St. Thomas, US Virgin Islands)	Jan., 2002 – May, 2003
Program Committee – 3 rd International Conference on the Physics of Dusty Plasmas (ICPDP3)	Jan., 2002 – May, 2002
Program Committee - American Physical Society - Division of Plasma Physics (2001)	Oct. 2000 - Oct. 2001
National Steering Committee – 3 rd National Oceanographic and Atmospheric Administration	Nov., 2000 – Mar., 2001

(NOAA) conference on Expanding Opportunities in Oceanic and Atmospheric Sciences
 National Science Foundation – Physics Division – Committee of Visitors (COV) – Panel member Feb., 2000
 Joint National Science Foundation / Department of Energy Plasma Science and Engineering Panel Feb., 1999

In addition to the aforementioned activities, have also done proposal / journal paper reviews for:

Journals: Physics of Plasmas, IEEE Transactions in Plasma Science, Physics Letters A, Journal of Physics A, Journal of Physics D, New Journal of Physics, Review of Scientific Instruments, Physical Review E, Journal of Plasma Physics,
 Agencies: National Science Foundation, Department of Energy, National Research Council, U.S. Civilian Research and Defense Foundation, Research Corporation, Royal Society of the United Kingdom, Max Planck Society, Defense Threat Reduction Agency

ii. Service and outreach at Auburn University

Department

Chair, new faculty search committee, Biophysics	2016-2017
Member, new faculty search committee, Experimental solid state physics	2015-2016
Member, new faculty search committee, Experimental solid state physics	2014-2015
Chair, Physics Department Strategic Planning Committee	2013-2014
Member, new faculty search committee, Computational plasma physics	2013-2014
Member, new faculty search committee, Experimental Fusion plasma physics	2012-2013
Chair, new faculty search committee, Experimental Basic plasma physics (dusty plasmas)	2011-2012
Chair, new faculty search committee, Experimental Fusion plasma physics	2010-2011
New faculty search committee – Plasma Theory faculty position	2007-2009
Faculty Advisor - Society of Physics Students (SPS)	2000-2007
Engineering Physics 1 – Textbook / Planning Committee	2000-2006
High school Internships and Teaching Opportunities in Physical Science (HI-TOPS) coordinator	2002
Faculty search committee – Plasma Physics faculty member	2001
High school Internships and Teaching Opportunities in Physical Science (HI-TOPS) coordinator	2001
High school Internships and Teaching Opportunities in Physical Science (HI-TOPS) coordinator	2000

* In addition to the specific activities noted above, my laboratory regularly participates in department-organized lab tours for various public groups (e.g., regional schools, student groups, etc.) that visit the university.

College

Member: Search Committee for COSAM Director of Diversity Programs	2015-2016
Member: COSAM Promotion and Tenure Committee	2014-2015
Presenter: COSAM Summer Bridge Program	2002-2015
Member, COSAM Dean Search Committee	2012-2013
Presenter: AU Explore (COSAM outreach activities)	2006-present
Coordinator: Flying Tigers microgravity flight experience for K-12 teachers	2011-2012
COSAM search committee for Associate Dean for Research	Aug. 2010 – Oct. 2010
Presenter: COSAM Backyard Bash	Apr., 2010
Presenter: TALONS day activities – Physics Department presentation	2005-2009
Science Olympiad	2000-2003

University

Faculty Mentor – Pre-Freshman PLUS Program in US and British Virgin Islands with Office of Diversity and Multi-Cultural Affairs (ODMA) and Auburn Abroad Program	2014-present
Member: Search committee for AU Associate Provost & Associate Vice President for Research	2013
Alliance for Graduate Education and the Professoriate (AGEP) planning committee (on behalf of Office of Diversity and Multicultural Affairs)	2011-2014
Auburn University Promotion and Tenure committee	2009 - 2012
President’s Graduate Opportunity Program (PGOP) selection committee (on behalf of Office of Diversity and Multicultural Affairs)	2010 - 2012
Ad-hoc committee on Promotion and Tenure guidelines	Dec. 2010 – May, 2011
Alabama Public Universities Task Force for Recruitment and Retention committee (on behalf of Office of Diversity and Multicultural Affairs)	2005-2006
Major Research Instrumentation – Internal Review Committee	Dec., 2003

In addition to the items listed above, my group regularly participates in hosting departmental tours for guests and student groups that visit the Physics Department and assisting the COSAM outreach office in a variety of activities throughout the academic year and summer.

5. MEMBERSHIP AND SERVICE IN PROFESSIONAL ORGANIZATIONS

University Fusion Association (since 2007)

Member of the Executive Committee (2009 – 2011)

American Physical Society (APS) (since 1992)

Elected as Fellow of the APS in 2015

Division of Plasma Physics (DPP)

Forum on Education (FED)

National Society of Black Physicists (NSBP) (since 1996)

Elected as Fellow of NSBP in 2011

Membership in Alabama Academy of Sciences

Selected as Fellow of AAS in 2012

Membership in International Union of Radio Science (URSI) – Commission H (Waves in Plasmas)