

**CURRICULUM VITAE****Monica Farmer Cox****EDUCATION**

Ph.D.	Vanderbilt University Leadership and Policy Studies	August 2005
M.S.	The University of Alabama Industrial Engineering	Aug. 2000
B.S.	Spelman College Mathematics	May 1998

**EMPLOYMENT HISTORY****Positions at The Ohio State University**

- Professor & Inaugural Department Chair, Department of Engineering Education, 2016-present
- Member of the College of Engineering's Executive Committee, 2016-present

**Positions at Purdue University**

- Assistant Professor, School of Engineering Education, 2005-2011
- Associate Professor, School of Engineering Education, 2011- 2015
- Inaugural Director, Engineering Leadership @ Purdue, Purdue University College of Engineering, 2012-2015
- Interim Statewide Director, Louis Stokes Alliance for Minority Participation (LSAMP) Indiana Program, 2011-2014
- Member of the Executive Committee of the Division of Environmental and Ecological Engineering, 2008-2015
- Faculty Affiliate, Susan Bulkeley Butler Center for Leadership Excellence, 2010-2011

**Positions at other institutions or organizations**

- Founder and Owner, STEMinent LLC, 2013-present
- Visiting Professor, Universidad de Las Americas Puebla (UDLAP), Puebla, Mexico, July 2008-present
  - Served as an advisor to students pursuing engineering education doctoral degrees at the university and an engineering education consultant to researchers and instructors in the Department of Chemical and Food Engineering at UDLAP
- Director of Assessment, Institute for P-12 Engineering Research and Learning (INSPIRE), Purdue University, 2006-2008
- Graduate Research Assistant, VaNTH Engineering Research Center, Vanderbilt University, Oct. 2000-Aug. 2005
  - Revised an electronic classroom observation system to collect biomedical engineering classroom data; created a validated index to analyze data collected with the system
- Student Leadership Council Chairperson, Aug. 2002-May 2005
  - Organized engineering outreach activities for pre-college and college students and coordinated outreach groups across 4 research universities

- Posse Foundation, New York, New York, Vanderbilt University Posse 11 Mentor, Aug. 2000-May 2002
  - Mentored seven New York City undergraduates at Vanderbilt, counseled students academically, socially, and personally; organized weekly group meetings; facilitated the entrance of the first Posse Foundation engineering students into Vanderbilt's College of Engineering
- George C. Marshall Space Flight Center (NASA), Huntsville, AL, University of Alabama/Graduate Education for Minorities (GEM) Summer Intern, Summers 1998 and 1999
  - Researched Human Error concerns in payload operations; identified and prioritized operators' needs using Quality Function Deployment
- University of Alabama, Tuscaloosa, AL, Graduate Teaching Assistant/Researcher, Aug. 1999-May 2000
  - Conducted a Safety Behavioral Index Study at Delphi-Harrison Thermal Systems; supervised a General Engineering Statistics course; tutored undergraduate Statistics students; performed research in the areas of aviation, human error and cognition related to engineering design
- George C. Marshall Space Flight Center (NASA), Huntsville, AL, Spelman/ NASA Women in Science and Engineering Intern, Summer 1995 and 1997
  - Fabricated and assembled biochemical models; performed and conducted in-house experiments for laboratory research

## PROFESSIONAL OBJECTIVES

### Honors and Awards

- Big 10 Academic Alliance Department Executive Officers Seminar Participant (2017)
- Purdue University College of Engineering Faculty Award of Excellence for Leadership (2014)
- Purdue University Entrepreneurial Leadership Academy Fellow (2013-2014)
- Purdue Black Graduate Student Association (BGSA) Engagement Award Recipient (2013)
- Higher Education Leadership Program for Women (HERS) Participant (2009-2010), Wellesley College
- Presidential Early Career Award for Scientists and Engineers (PECASE) Recipient (2008)
- *Diverse Issues in Higher Education* Emerging Scholar (2008)
- National Science Foundation Early Faculty CAREER Award Recipient (2007)
- National Academies of Engineering/Center for the Advancement of Scholarship in Engineering Education New Faculty Fellow, Frontiers in Education Conference (2006)
- Purdue University Teaching for Tomorrow Award Recipient (2006-2007)
- Vanderbilt University Department of Leadership, Policy, and Organizations Graduate Student Representative (2002-2003)
- VaNTH Engineering Research Center Student Leadership Council Chairperson (2001-2005)
- Vanderbilt University Posse Foundation/Dean's Graduate Fellow (2000-2005)
- University of Alabama Graduate Council Fellow (1999-2000)
- University of Alabama National Alumni Association Fellow (1998-1999)
- NASA/Graduate Degrees for Minorities in Engineering and Science (GEM) Scholar (1998-2000)
- Spelman College NASA/Women in Science and Engineering (WISE) Scholar (1994-1998)

### **Memberships in academic, professional and scholarly societies**

- Tau Beta Pi (Engineering Honor Society)
- Alpha Pi Mu (Industrial Engineering Honor Society)
- Alpha Epsilon Lambda (Graduate School Honor Society)
- Pi Mu Epsilon (Mathematics Honor Society)
- Mortar Board (Senior National Honor Society)
- Golden Key (Junior/Senior National Honor Society)
- American Society for Engineering Education, Member
- National Society of Black Engineers, Member
- American Education Research Association, Member

### **TEACHING**

#### **New courses introduced at Purdue**

##### *ENE 595G– Effective Teaching of Engineering: Linking Theory and Practice*

- Date Introduced: Fall 2007, Date Taught: Fall 2007, Fall 2008, Fall 2009, Fall 2010
- Team effort: Monica Cox, Heidi Diefes-Dux
- Enrollment History: 30
- Preparation of Instructional Materials: Worked with other instructor to develop course materials that would assist engineering graduate teaching assistants as they taught students within Engineering Problem Solving and Computer Tools (ENGR 126)

##### *ENE 695A– Seminar in Engineering Education*

- Date Introduced: Fall 2005, Date Taught: Fall 2005, Fall 2006, Fall 2007, Fall 2008
- Enrollment History: 38
- Preparation of Instructional Materials: Created the syllabus and all aspects of the course curriculum that connected students to the engineering education community

##### *ENE 695C – Problem Solving and Design for Diverse Learners*

- Date Introduced: Spring 2006, Date Taught: Spring 2006
- Team effort: Robin Adams, Cordelia Brown, Monica Cox, Heidi Diefes-Dux, Deborah Follman
- Enrollment History: 4
- Preparation of Instructional Materials: Worked with faculty colleagues in the creation of the syllabus and course curriculum that incorporated diversity, model-eliciting activities, and problem solving and design

##### *ENE 695I – Leadership, Policy, and Change in Science, Technology, Engineering, and Mathematics (STEM) Education*

- Date Introduced: Spring 2007, Date Taught: Spring 2007, Spring 2008, Spring 2009, Spring 2010, Spring 2011, Spring 2012, Spring 2013
- Team effort: Cordelia Brown, Karl Smith
- Enrollment History: ~100

- Preparation of Instructional Materials: Worked with faculty colleagues in the creation of the syllabus and course curriculum that incorporated an exploration of leadership, policy, and organizational change in STEM education

*ENE 695 – Harnessing Engineering Expertise*

- Date Introduced: Fall 2011, Date Taught: Fall 2011, Fall 2012
- Team effort: Rick Zadoks
- Enrollment History: 10
- Preparation of Instructional Materials: Worked with an industry practitioner in the creation of the syllabus and course curriculum that focuses on ways to harness engineering expertise in industry

*ENGR 195 – Planning for Engineering Leadership Development*

- Date Introduced: Fall 2013, Date Taught: Fall 2013
- Enrollment History: 7
- Preparation of Instructional Materials: Created a one-credit Engineering Leadership core course for engineering undergraduates with an emphasis on leadership plan development

*ENGR 195 – E-Portfolio: Experiential Engineering Leadership*

- Date Introduced: spring 2014
- Enrollment History: 6
- Preparation of Instructional Materials: Created a two-credit Engineering Leadership course for engineering undergraduates with an emphasis on electronic platform development

**Courses Taught at Purdue**

Semester	Course	Course Title	Enrollment	Percentage of Responsibility
F05	ENE 695A	Seminar in Engineering Education	11	100
F05	ENGR 104	Introduction to Engineering and Purdue <sup>a</sup>	385	50
F05	ENGR 404	Instruction, Mentorship, and Leadership	22	100
S06	ENE 695C	Problem Solving & Design for Diverse Learners	4	20
F06	ENGR 404	Instruction, Mentorship, and Leadership	26	100
F06	ENE 695A	Seminar in Engineering Education	8	100
F06	ENGR 104	Introduction to Engineering and Purdue <sup>a</sup>	390	50
F06	ENGR 126	Engineering Problem Solving and Computer Tools	458	20
S07	ENE 695I	Leadership, Policy, and Change in STEM Education	14	30
F07	ENGR 104	Introduction to Engineering and Purdue <sup>a</sup>	~400	100
F07	ENGR 404	Instruction, Mentorship, and Leadership	50	100
F07	ENE 695A	Seminar in Engineering Education	9	100
F07	ENE 595G	Effective Teaching of Engineering: Linking Theory and Practice	2	50
S08	ENE 695I	Leadership, Policy, and Change in STEM Education	11	50
F08	ENGR 104	Introduction to Engineering and Purdue <sup>a</sup>	~400	100

Semester	Course	Course Title	Enrollment	Percentage of Responsibility
F08	ENGR 404	Instruction, Mentorship, and Leadership	50	100
F08	ENE 695A	Seminar in Engineering Education	11	100
F08	ENE 595G	Effective Teaching of Engineering: Linking Theory and Practice	11	50
S09	ENE 695I	Leadership, Policy, and Change in STEM Education	15	100
F09	ENGR 10400	Introduction to Engineering and Purdue <sup>a</sup>	~450	100
F09	ENGR 40400	Instruction, Mentorship, and Leadership	50	100
F09	ENE 595G	Effective Teaching of Engineering: Linking Theory and Practice	6	50
F09	ENGR 19500	Transforming Ideas to Innovation I	120	100
S10	ENE 695I	Leadership, Policy, and Change in STEM Education	7	100
F10	ENGR 131	Transforming Ideas to Innovation I	120	100
F10	ENGR 10400	Introduction to Engineering and Purdue <sup>a</sup>	~500	100
F10	ENGR 40400	Instruction, Mentorship, and Leadership	50	100
S11	ENE 695I	Leadership, Policy, and Change in STEM Education	22	100
F11	ENGR 131	Transforming Ideas to Innovation I	120	100
F11	ENGR 10400	Introduction to Engineering and Purdue <sup>a</sup>	~500	100
F11	ENGR 40400	Instruction, Mentorship, and Leadership	50	100
F11	ENE 695	Harnessing Engineering Expertise	5	50
S12	ENE 695I	Leadership, Policy, and Change in STEM Education	13	100
F12	ENE 695	Harnessing Engineering Expertise	5	50
S13	ENE 695I	Leadership, Policy, and Change in STEM Education	19	100
F13	ENE 195	Planning for Engineering Leadership Development	7	100
S14	ENE 195	E-Portfolio: Experience Engineering Leadership	6	100
S14	ENE 695I	Leadership, Policy, and Change in STEM Education	19	100
F14	Sabbatical			
S15	ENE 695I	Leadership, Policy, and Change in STEM Education	15	100

Semester	Course	Course Title	Enrollment	Percentage of Responsibility
F15	ENE 195	Planning for Engineering Leadership Development	6	100
F15	ENE 195	E-Portfolio: Experience Engineering Leadership	6	100

<sup>a</sup> Administrative and supervisory role only

#### Ph.D. Thesis-Based Committees Chaired

NAME	GRADUATION DATE	NAME OF CO-CHAIR	DISSERTATION TITLE
Nathan McNeill	8/10	None	Global Engineering Education Programs: More than Just International Experiences
Rocio del Carmen Chavela Guerra	12/10	None	Faculty Development Units at Mexican Higher Education Institutions: A Descriptive Study of Characteristics, Common Practices, and Challenges
Jiabin Zhu	5/13	None	Personal Epistemological Development of Chinese Engineering Doctoral Students in U.S. Institutions: An Application of Perry's Theory
Mary K. Pilotte	5/13	None	Engineering: Defining and Differentiating Its Unique Culture
Diana Bairaktarova	8/13	William Graziano	Mechanical Objects and the Engineering Learner: An Experimental Study of How the Presence of Objects Affect Students' Performance on Engineering Related Tasks
Benjamin Ahn	5/14	None	Creation of an Instrument to Measure Graduate Student Mentoring Abilities in Undergraduate Research Settings
James Cawthorne	8/14	Ruth Streveler	Thematic Analysis of Influencers on Continuing Professional Learning of Tenure Track Engineering

			Faculty as Assistant Professor at an RU/VH Institution
Jeremi S. (Hayes) London	8/14	None	Characterizing the Impact of Undergraduate Engineering Education Projects Funded by the National Science Foundation: A Mixed Methods Study
Catherine Berdanier	5/16	Joyce Main	Learning the Language of Academic Engineering: Sociocognitive Writing in Graduate Students
Nikitha Sambamurthy	8/16	Joyce Main	The Hiring Game: Invisible and Visible Diversity in the Assessment of Engineers' Professional Skills

#### **Graduate Thesis Committee Service and Other Graduate Advisory Contributions**

<b>NAME</b>	<b>DEGREE</b>	<b>DATE</b>	<b>DEPARTMENT (UNIVERSITY)</b>	<b>ROLE</b>
Angie Andriot	Ph.D.	5/11	Sociology (Purdue)	Committee Member, ENE Research Advisor (Funded by Dr. Cox)
Sara Branch	Ph.D.	5/12	Educational Psychology (Purdue)	ENE Research Advisor (Funded by Dr. Cox)
María Del Carmen De La Luz Lanzagorta	Ph.D.	2011	Science, Engineering, and Technology Education (Universidad de Las Americas Puebla, Mexico)	Committee Member
María de Lourdes Gazca	Ph.D.	2011	Science, Engineering, and Technology Education (Universidad de Las Americas Puebla, Mexico)	Committee Member
Tameka Clarke Douglas	Ph.D.	5/10	Engineering Education (Purdue)	ENE Research Advisor (Funded by Dr. Cox), Committee Member
Velvet Fitzpatrick	Ph.D.	5/14	Engineering Education (Purdue)	ENE Research Advisor (Funded by Dr. Cox)

Lorie Groll	Ph.D.	5/13	Engineering Education (Purdue)	Committee Member
Jeeyeon Hahn	Ph.D.	5/12	Aerospace & Aeronautics (Purdue)	ENE Research Advisor (Funded by Dr. Cox)
Asawaree Kulkani	M.S.	8/09	Computer Information Technology (Purdue)	ENE Research Advisor (Funded by Dr. Cox)
Holly Matusovich	Ph.D.	12/08	Engineering Education (Purdue)	Committee Member
Janie McClurkin	Ph.D.	12/13	Agricultural & Biological Engineering (Purdue)	ENE Research Advisor (Funded by Dr. Cox)
Tenille Medley	M.S.	5/10	Electrical & Computer Engineering (Purdue)	ENE Research Advisor (Funded by Dr. Cox)
Irene Mena	Ph.D.	12/10	Engineering Education (Purdue)	Committee Member, Co-Teacher (ENE 595G)
Ida Ngambeki	Ph.D.	5/12	Engineering Education (Purdue)	Committee Member
Amadin Osagiede	M.S. MBA	5/13 5/15	Civil Engineering (Purdue) Management (Purdue)	Engineering Leadership Research Advisor (Funded by Dr. Cox)
Lynette Osborne	Ph.D.	5/06	Sociology (Purdue)	Committee Member
Kavitha Ramane	M.S.	5/12	Curriculum and Instruction (Purdue)	ENE Research Advisor (Funded by Dr. Cox)
Priyanka Shah	M.S.	5/08	Computer Information Technology (Purdue)	ENE Research Advisor (Funded by Dr. Cox)
Yogesh Velankar	Ph.D.	12/10	Engineering Education (Purdue)	Committee Member
Ruth Wertz	M.S.	8/10	Civil Engineering (Purdue)	ENE Research Advisor
Trina Fletcher	Ph.D.	5/17	Engineering Education (Purdue)	Committee Member
Matilde Sanchez Peña	Ph.D.	8/18	Engineering Education (Purdue)	Committee Member
Jungsook Kim	Ph.D.	5/17	English as Second Language (OSU)	EED Research Advisor
Christopher Travers	Ph.D.	8/17	Higher Education (OSU)	EED Research Advisor
Toni Calbert	Ph.D.	8/19	English (OSU)	Administrative Supervisor
Julie Aldridge	Ph.D.	8/18	Agriculture	EED Research Advisor



**Mentoring of Postdoctoral and Visiting Scholars**

<b>NAME</b>	<b>LAST DEGREE (DATE)</b>	<b>PRIOR AFFILIATION</b>	<b>POSITION TITLE/DATES</b>	<b>PROJECT TITLE</b>
Noemi Mendoza-Diaz	Ph.D. (2006)	Assistant to the Superintendent, The Brazos School for Inquiry and Creativity, College Station, TX	Post-doctoral researcher/August 2007-December 2008	Preschool to 12 <sup>th</sup> Grade Assessment and Evaluation
Osman Cekic	Ph.D. (2008)	Research Analyst, Indiana University, Project on Academic Success, Bloomington, IN	Post-doctoral Research Assistant/ November 2008- August 2010	CAREER: An Examination of Graduate Education's Role in Preparing Engineering Students for Careers in Academia and Industry.  Creation of an Instrument to Measure Selected Attitudes in Purdue's Engineer of 2020.
Meseret Hailu	Ph.D. (2018)	Fulbright-Hays Doctoral Dissertation Research Abroad (DDRA) Fellow, The Fulbright Program, Ethiopia	Post-doctoral researcher/June 2018-present	Why We Persist: An Intersectional Study to Characterize and Examine the Experiences of Women Tenure-Track Faculty in Engineering

Julie Aldridge	Ph.D. (2018)	Graduate Research Associate, The Ohio State University, College of Engineering, Columbus, OH	Post-doctoral researcher/September 2018-present	Why We Persist: An Intersectional Study to Characterize and Examine the Experiences of Women Tenure-Track Faculty in Engineering
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### Undergraduate Special Projects Directed

UNDERGRADUATE STUDENT (RESEARCH PROGRAM/ MAJOR)	DATE	PROJECT TITLE	SUMMARY OF WORK AND RESULTS
Nuris Ismail (Discovery Undergraduate Research Internship Student) Industrial Engineering	Spring 2006	Evaluation of Effective Pedagogical Practices within Engineering Courses	The student analyzed classroom observation data and confirmed differences in lecture-based engineering courses and innovative courses at Purdue using an Index created by Dr. Cox. Results reported pedagogical differences among engineering faculty.
Clarice Smith (Louis Stokes Alliance for Minority Participation (LSAMP) Scholar) Mechanical Engineering	Spring 2007	Tools to Assess K-12 Engineering Education	The student reviewed K-12 engineering education assessment literature; familiarized herself with assessment terminology; identified approximately 4 tools to assess engineering with K-12 learning environments; and compared research methodologies within selected articles.
Miriam Cowans (Edward Waters College Summer Undergraduate Research Fellowship Program (SURF) Student) Mathematics	Summer 2007	The Revision of a Tool to Observe Graduate Teaching Assistants	The student began the initial data collection of data for a pedagogical assessment tool for engineering faculty and graduate students.
Kelly Cross (Independent Research) Chemical Engineering	Spring, Summer 2007	Assessment of the Design, Application, Analysis, and Control of Interfaces (DAACI) REU Program and the	The student assisted Dr. Cox in the collection and analysis of data for both programs. Results laid the foundation for studies that will explore the long-term benefits of conducting

		Summer Undergraduate Research Fellowship (SURF) Program	undergraduate research within engineering.
Jeremi (Hayes) London (NSF Research Experiences for Undergraduate Student) Industrial Engineering	Fall 2008-Spring 2009	Development and Assessment of a Graduate Pedagogical Course	The student assisted Dr. Cox in the collection of qualitative and quantitative research data of graduate teaching assistants and students enrolled in a first-year engineering education course.
Matthew Frye (Independent Research) Mechanical Engineering	Fall 2009-Spring 2010	Assessment of Impact of the VaNTH Engineering Research Center	The student assisted in the analysis of qualitative research data collected among graduate students and faculty involved in VaNTH. The student completed a literature review for a peer-reviewed paper that will be published in the future.
Jonathan Hicks (Research Experiences for Undergraduates (REU)) Computer Graphics Technology	Summer 2009-Spring 2010	Course Innovations for Engineering Graduate Teaching Assistants	The student analyzed qualitatively the artifacts (i.e., teaching philosophy statements, journal entries, concept maps) that engineering graduate teaching assistants submitted for a pedagogical seminar. Results reported distinct differences across graduate teaching assistants.
Shree Frazier Louis Stokes Alliance for Minority Participation (LSAMP) Scholar Industrial Engineering	Summer 2010-Spring 2011	CAREER: An Examination of Graduate Education's Role in Preparing Engineering Students for Careers in Academia and Industry	The student assisted Dr. Cox in the preparation of research materials and in the collection of qualitative and quantitative research data of engineering PhD recipients.
Kehara Taylor Louis Stokes Alliance for Minority Participation (LSAMP) Scholar Industrial Engineering	Summer 2012	Revision of the Global Real-Time Tool for Teaching Enhancement (G-RATE)	The student assisted Dr. Cox in the revision of a multidimensional feedback tool for teaching enhancement.
Anne Tally	Summer 2013	Revision of the G-RATE Interface and Creation of a Web Presence for the International Institute for Engineering Education Assessment (i2e2a)	The student provided feedback about possible layout for i2e2a and the commercialization of engineering education assessment tools within Dr. Cox's research portfolio.

John Jamieson, KC Miller, Megan Napier, Colleen Spaits, Alina Thai, Stephen Wu, and Leonard Yang	Summer 2016-Spring 2018	Data mining for “Why We Persist: An Intersectional Study to Characterize and Examine the Experiences of Women Tenure-Track Faculty in Engineering”	Students created a protocol and mined approximately 40,000 lines of faculty and institutional data across ~400 U.S. universities with engineering departments and programs.
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### **Short Courses and Workshops Taught**

1. “Incorporating Assessment in Your Classroom.” Invited Workshop Facilitator for Faculty at Universidad de las Americas-Puebla (UDLAP), Puebla, Mexico. (2008, July). Dr. Cox facilitated 25 faculty participants during a two-day workshop.
2. “Incorporating Assessment in Your Classroom.” Invited Workshop Facilitator for *Diplomado* Program, Tlaxala, Mexico. (2008, July). Dr. Cox facilitated 60 faculty participants during a two-day workshop.
3. “Building Capability and Communities in Engineering Education Research.” Workshop co-facilitator for a four-hour workshop sponsored by the Mexican National Association of Engineering Schools (ANFEI) and the Journal of Engineering Education (JEE), at the XXXVI National Engineering Conference, Merida, Mexico. Dr. Cox and her graduate student facilitated the workshop for approximately 40 engineering faculty.
4. “Building Capability and Communities in Engineering Education Research.” Workshop co-facilitator for a two-hour workshop sponsored by the Society for Engineering Education of South Africa (SEESA) inaugural conference, Cape Town, South Africa. Dr. Cox facilitated the workshop for approximately 100 conference attendees.
5. Series of Engineering Education Pedagogical Workshops for the Integrative Graduate Education and Research Traineeships Program in Magnetic and Nanostructured Materials (IGERT-MNM) Traineeship Program, West Lafayette, IN. Dr. Cox facilitated four engineering education modules for approximately 20 doctoral students in materials science-related program at Purdue University, Cornell University (NY), and Norfolk State University (VA).<sup>9</sup>
6. “Can You Hear Me Now? Communicating Effectively across Diverse Audiences.” (2011, October). Workshop facilitator for the 2011 Midwest Crossroads Alliance for Graduate Education for the Professoriate (AGEP) annual conference, Indianapolis, IN.

## **RESEARCH**

### **Grants and Contracts**

Agency/Title of Grant	Duration of Funding (Dates)	Total Amount of Award	Role (Amount Directly Responsible for, if applicable)	Co-investigators
National Science Foundation/ Expansion of “How People Learn”	3/1/07-8/31/10	\$149,999	PI	Heidi Diefes-Dux (Co-PI)

Metrics in Engineering Courses				
National Science Foundation/ Research Experiences for Undergraduates (REU) Supplement- Expansion of "How People Learn" Metrics in Engineering Courses	3/1/07-8/31/10	\$4,024	PI	Heidi Diefes-Dux (Co-PI)
National Science Foundation/ Graduate Research Supplement- Expansion of "How People Learn" Metrics in Engineering Courses	3/1/07-8/31/10	\$36,317	PI	Heidi Diefes-Dux (Co-PI)
National Science Foundation/ Research Experiences for Undergraduates (REU) Site: Design, Application, Analysis, and Control of Interfaces (DAACI)	3/1/07-2/29/10	\$294,363	Co-PI (\$147,181.50)	Stephen B. Beaudoin, Professor, Chemical Engineering (PI)
National Science Foundation/ Course Innovations as a Basis for Engineering Graduate Student Professional Development in Teaching	6/1/07-11/30/10	\$149,961	PI	Heidi Diefes-Dux (Co-PI)
National Science Foundation/ GSE/RES: Examining Engineering Perceptions, Aspirations and Identity among Young Girls	1/08-12/31/10	\$449,953	Co-PI (\$44,995.30)	Brenda Capobianco, Associate Professor of Science Education, Purdue (PI) Heidi Diefes-Dux (Co-PI)
National Science Foundation/ CAREER: An Examination of Graduate Education's Role in Preparing Engineering Students for Careers in Academia and Industry	08/18/08-08/17/13	\$540,047	PI	N/A
National Science Foundation/ S-STEM: Reinvigorating Engineering and	01/09/09-12/31/13	\$573,597	PI (\$573,597)	Audeen Fentiman, Associate Dean of Graduate Education, Professor of Nuclear Engineering (Co-PI)

Changing History (REACH) Scholars Program				Cyndi Lynch, Fellowship Administrator, Graduate School, (Co-PI) Phillip Dunston, Associate Professor, Civil Engineering, (Co-PI)
National Science Foundation/ Integrative Graduate Education and Research Traineeships Program in Magnetic and Nanostructured Materials	07/16/2010 - 07/31/15	\$3,071,612	Co-PI (\$309,456)	Suely Black, Professor of Chemistry, Norfolk State University (PI) Mikhail Noginov, Professor of Physics, Norfolk State University (Co-PI) Ulrich Wiesner, Professor, Materials Science and Engineering, Cornell University (Co-PI) Aswini Pradhan, Professor of Physics, Norfolk State University (Co-PI)
National Science Foundation/ Louis Stokes Alliance for Minority Participation Indiana- Phase II	05/01/2007-04/30/2012	\$3,000,000	Co-PI (\$500,000)	Timothy Sands, Provost and Professor of Electrical Engineering (PI) Gwendolyn Taylor, Vice Provost for Diversity and Inclusion (Co-PI)
Purdue University/ Creation of an Instrument to Measure Selected Attributes in Purdue's Engineer of 2020	2008-2009	\$40,000	PI (\$40,000)	N/A
Purdue University/ Leadership Case Studies: Developing Leadership Capacity in Undergraduate Engineering Students	2010-2011	\$40,000	PI (\$30,000)	Beverly Davenport Sypher, Vice Provost for Faculty Affairs and Professor of Communications (Co-PI) Eckhard Groll, Professor of Mechanical Engineering and Director, office of Professional Practice (Co-PI) Yating Haller, Assistant Director, Office of Professional Practice (Co-PI)
IGERT: Global Traineeship in Sustainable Electronics	07/01/2012-06/30/2017	\$3,373,675	Senior Personnel (2%)	Carol Handwerker (PI)
Different Paths: Similar Journeys: A Workshop for Women of Color in STEM from Historically	2011-2012	\$20,000	PI (\$20,000)	France Cordova, President (PI)

Black Colleges and Universities (HBCUs)				G. Christine Taylor, Vice Provost for Diversity and Inclusion (Co-PI)
Implementation of a Multidimensional Assessment Tool to Develop the Pedagogical Expertise of Engineering Graduate Students and Faculty	08/01/12-12/13/2014	\$200,000	\$180,000	Dr. Yukiko Maeda (Co-PI)
Partnership for Research and Education in Materials: Partnership for Advanced Functional Metamaterials (Meta-PREM)	04/01/2012-03/31/2017	\$350,000	5%	Vlad Shaleav (PI) Sasha Boltasseva (Co-PI) Evgenii Narimanov (Co-PI)
Purdue Black Award	05/16	\$20,000	PI	N/A
National Science Foundation/I-Corps: Expansion of a Multidimensional Assessment Tool across Diverse Environments	09/01/2016 – 08/31/2018	\$50,000	PI	N/A
National Science Foundation/Why We Persist: An Intersectional Study to Characterize and Examine the Experiences of Women Tenure-Track Faculty in Engineering	10/1/2106 – 08/31/2019	\$1,131,464	PI	Joyce B. Main (Co-PI) Ebony McGee (Co-PI)
Kern Family Foundation Institutional Award	01/17-08/18	\$293,707	PI	Faculty in the Department of Engineering Education

## PUBLICATIONS

### Full Articles in Refereed Publications

1. Ray, P.S., Frey, A., and (Farmer) Cox, M.C. (1999). Validation of the Behavioral Safety Index. *The Journal of the American Society of Safety Engineers*, 43, 10, 25-28.
2. Harris, A.H., & Cox, M.F. (2003). Developing an Observation System to Capture Instructional Differences in Engineering Classrooms. *Journal of Engineering Education*, 92, 4, 329-336.
3. Cox, M.F., & Cordray, D.S. (2008). Assessing Pedagogy in Engineering Classrooms: Quantifying Elements of the “How People Learn” Model Using the VaNTH Observation System (VOS). *Journal of Engineering Education*, 97, 4, 413-431.
4. Cox, M.F., Berry, C., & Smith, K.A. (2009). Development of a Leadership, Policy, and Change Course for Science, Technology, Engineering, and Mathematics Graduate Students. *Journal of STEM Education*. 10, ¾, 9-16.

5. Cox, M.F., & Andriot, A. (2009). Mentor and Undergraduate Student Comparisons of Students' Research Skills. *Journal of STEM Education*, 10, ½, 31-38.
6. Cox, M.F. (2009). Operationalization of Innovative and Traditional Pedagogical Practices within Undergraduate Bioengineering Courses. *International Journal for the Scholarship of Teaching and Learning*, 3, 1, 11 pages.
7. Smith, K., Douglas, T.C., & Cox, M.F. (2009). Supportive Teaching and Learning Strategies in STEM Education. Book chapter in *New Directions in Teaching and Learning: Creating Culture/Climate that Supports Undergraduate Teaching and Learning in Science, Technology, Engineering, and Mathematics*, 117, 19-32.
8. Cox, M.F., Cekic, O., & Adams, S.G., (2010). Developing Leadership Skills of Undergraduate Engineering Students: Perspectives from Engineering Faculty. *The Journal of STEM Education*. 11, ¾, 22-33.
9. Cox, M.F., & Harris, A.H. (2010). Comparison of Pretenured and Tenured Engineering Professors' Pedagogical Practices within Undergraduate Bioengineering Courses. *International Journal of the Scholarship of Teaching and Learning*, 4, 1, 11 pages.
10. Cox, M.F., Zhu, J., Cekic, O., Chavela, R., & London, J. (2010). Knowledge or Feelings: First Year Students' Perceptions of Graduate Teaching Assistants in Engineering. *Journal of Faculty Development*, 24, 1, 27-34.
11. Cox, M.F., Hahn, J., McNeill, N., Cekic, O., Zhu, J., & London, J. (2011). Enhancing the Quality of Engineering Graduate Teaching Assistants through Multidimensional Feedback, *Advances in Engineering Education*, 2, 3, 20 pages.
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### **Refereed Conference or Symposium Proceedings**

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78. Hailu, M.F., Ridgeway, M.L., Boyajian, R., McGee, E.O., & Cox, M.F. (2019). An Investigation of the "Pet to Threat" Phenomenon among Women of Color Engineering Faculty. *American Educational Research Association*. Toronto, Canada, April 5-9.
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### **Books**

1. Cox, M.F. (2020). *Demystifying the Engineering Ph.D.* Elsevier Publishing.

### **Chapters in Books**

2. Cox, M.F. (2003). Engineering Education. In Guthrie, J. (Ed.). *Encyclopedia of Education*, 2<sup>nd</sup> Edition). New York: Macmillan.
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3. Cox, M.F., et al. (2013). Graduate Student Mentoring Manual. Developed for use by the Midwest Crossroads Alliance for Graduate Education and Professoriate (AGEP) program.

### **Contributed Conference/Symposium Presentations**

1. Poster: Ismail, N., & Cox, M.F. Evaluation of Effective Pedagogical Practices within Engineering Courses. (Spring 2006). Poster Presentation for the Purdue University Discovery Undergraduate Research Internship (DURI) Program.
2. Poster: Cowans, M., Cox, M.F., & McNeill, N. The Revision of a Tool to Assess Graduate Teaching Assistants. (Summer 2007). Poster Presentation for the Purdue University Summer Undergraduate Research Fellowship (SURF) Program.
3. Poster: Smith, C.M., & Cox, M.F. Tools to Assess K-12 Engineering Education. Purdue University Louis Stokes for Minority Participation (LSAMP) Student Poster Presentation (Fall 2007), West Lafayette, IN.
4. Poster: Chavela, R., Cox, M.F., & Diefes-Dux, H. Development of a Pedagogically-Focused Course for Engineering Graduate Teaching Assistants. American Society for Engineering Education (ASEE) Annual Conference & Exposition (June 22 – 25, 2008), Pittsburgh, PA.
5. Poster: Cox, M.F., Heidi Diefes-Dux, H., Hahn, J., Kulkani, A., & McNeill, N., Developing a Global Real-time Assessment Tool for the Teaching Enhancement of Engineering Graduate Teaching Assistants, National Science Foundation Engineering Education Grantees Conference (2010), Reston, VA.
6. Poster: Cox, M.F., Cekic, O., Chavela, R., & Zhu, J., Exploring Industry and Academic Perspectives of What It Means to Be an Engineering Ph.D., National Science Foundation Engineering Education Grantees Conference (2010), Reston, VA.
7. Poster: Zhu, J., Cox, M.F., Cekic, O., Chavela, R., Hicks, J., & Diefes-Dux, H. Experiences of Graduate Teaching Assistants in Engineering Laboratories: Case Analysis Using the "How People Learn" Framework, Annual Graduate Student Educational Research Symposium (Mar. 31, 2010), Purdue University, IN.
8. Poster: McNeill, N., & Cox, M.F., "It's Just about the International Experience:" Identifying the Outcomes of Global Engineering Education Experiences, Annual Graduate Student Educational Research Symposium (Mar. 31, 2010), Purdue University, IN.
9. Poster: Cox, M.F., Hicks, J., Zhu, J., Cekic, O., Chavela, R., & Diefes-Dux, H. (2010). Development in Graduate Teaching Assistants' Teaching Philosophy in Engineering Laboratories 2010 Illinois - Indiana Section American Society for Engineering Education Conference (April 10, 2010), Purdue University, IN
10. Poster: Zhu, J., Hicks, J., Cox, M.F., Cekic, O., & Chavela, R. (2010), Experiences of Graduate Teaching Assistants in Engineering Laboratories: Content Analysis Using The "How People Learn" Framework, 2010 American Society for Engineering Education Annual Conference & Exposition (June 20 – 23, 2010), Louisville, KY.

### **Invited Publications, Conference/Symposium, Keynote Presentations**



1. Cox, M.F. (2006, June). "Who Wants to Be An Engineer?" Invited Keynote Presenter for the Rowan University Engineering Clinics for Teachers Program, Glassboro, New Jersey.
2. Cox, M.F. (2007, July). "Engineering is Everywhere." Invited Keynote Presenter for the Rowan University Engineering Clinics for Teachers Program, Glassboro, New Jersey.
3. Cox, M.F. (2008, June 2008). "National Science Foundation Early Faculty CAREER Engineering Education Panel." American Society for Engineering Education, Pittsburgh, Pennsylvania.
4. Cox, M.F. (2008, June). "Graduate Student and Early-Career Faculty Summary Panel." Center for the Integration of Research, Teaching, and Learning (CIRTL) Forum 2008, Madison Wisconsin.
5. Cox, M.F. (2008, November). "Demystifying Engineering." Invited Keynote Speaker at the Annual Midwest AGEP Conference, Purdue University.
6. Cox, M.F. (2009, May). Early Faculty CAREER Engineering Education Workshop. Invited Presenter for the Purdue University Office of the Vice President for Research, West Lafayette, IN.
7. Cox, M.F. (2009, July). "Demystifying Engineering." Invited Keynote Speaker for the Rowan University Engineering Clinics for Teachers Program, Glassboro, New Jersey.
8. Cox, M.F. & Chavela, R. (2009, June). "Building Capability and Communities in Engineering Education Research" Workshop co-facilitator for a four-hour workshop sponsored by the Mexican National Association of Engineering Schools (ANFEI) and the Journal of Engineering Education (JEE), at the XXXVI National Engineering Conference, Merida, Mexico.
9. Cox, M.F. (2009, August). "Getting Off to a Smart Start as a Faculty Member at Purdue." Invited Presenter for the Purdue University New Faculty Orientation, West Lafayette, Indiana.
10. Cox, M.F. (2009, November). "Pathway to the President." Invited Presenter for the Purdue University Black Caucus, West Lafayette, Indiana.
11. Cox, M.F., Cekic, O., & Adams, S.G., (2010). "Developing Leadership Skills of Undergraduate Engineering Students: Perspective from Engineering Faculty." Invited paper for the *Journal of STEM Education*.
12. Cox, M.F. (2010, July). "Demystifying Engineering." Invited Keynote Speaker for the Rowan University Engineering Clinics for Teachers Program, Glassboro, New Jersey.
13. Cox, M.F. (2010, July). "Making a Lasting Impression." Invited Keynote Speaker for the NASA 2010 Motivating Undergraduates in Science and Technology (MUST) Student Leadership Symposium, Cleveland, Ohio.
14. Cox, M.F. (2010, August). "Getting Off to a Smart Start as a Faculty Member at Purdue." Invited Presenter for the Purdue University New Faculty Orientation, West Lafayette, Indiana.
15. Cox, M.F. (2011, January). "Preparation of CAREER Project Summary, Narrative, and Budget." Presenter for Quality Education for Minorities (QEM) Network Workshop for the National Science Foundation (NSF)'s Faculty Early Career Development (CAREER) Program, Albuquerque, NM.
16. Cox, M.F. (2011, September). "New Workplace Flexibility Policies to Support America's Scientists and their Families." Invited panelist by the White House Office of Science and Technology Policy and the Office of the First Lady Michelle Obama. Washington, DC.
17. Cox, M.F. (2011, October). "Can You Hear Me Now? Communicating Effectively across Diverse Audiences." Annual Midwest Crossroads AGEP Conference. Indianapolis, IN.
18. Zhu, J Cox, MF, Li, Y, London, J., and Hahn, J. (2011). Validation of a Survey for Graduate Teaching Assistants Guided by the How-People-Learn Framework. The International Doctoral Student Forum on Engineering Education, 8th Graduate Students Academic Forum of Beihang University, Beijing, China.
19. Cox, M.F., & Perna, L. (2011 November). "Demystifying the Grant Writing Process." Invited Presenter for the Association for the Study of Higher Education (ASHE)'s Pre-Conference Forum sponsored by the Council on Ethnic Participation (CEP). Charlotte, NC.

20. Cox, M.F. (2011 November). "Navigating the Engineering Graduate Education Pipeline: Profiles of Minority Student Success Transitioning from Classes to Research and Preparing a Research Plan." Quality Education for Minorities (QEM)/National Science Foundation (NSF) Professional Development Workshop for Underrepresented Minority Master's and Doctoral Engineering and Materials Science Students and Their Faculty/Staff. Baltimore, MD.
21. Cox, M.F. (2012, March). "Engineering Education for the 21<sup>st</sup> Century Engineer." Keynote Speaker for the Minority Faculty Development Workshop, Georgia Institute of Technology, Atlanta, Georgia.
22. Cox, M.F. (2012, April). Plenary Session: "Staying on Track: Getting a Doctorate in Engineering: Sustaining Positive Attitude, Assertiveness, and Persistence." Quality Education for Minorities (QEM)/National Science Foundation (NSF) Professional Development Workshop for Underrepresented Doctoral Engineering Students Supported through the National Science Foundation (NSF)'s Directorate for Engineering's Graduate Research Diversity Supplements (GRDS), Baltimore, MD.
23. Cox, M.F. (2013, March). "GEM FFP: Ins and Outs of the Tenure Track Process." Invited Presenter at the National Society of Black Engineers (NSBE) / Graduate Education for Minorities (GEM) Graduate School Conference Track.
24. Cox, M.F. (2014, January). "Mathematics: A Foundation for Advancing Research in Graduate Engineering Education." Presenter at the 2014 Joint Mathematics Meetings American Mathematical Society Special Session on Highlighting Achievements and Contributions of Mathematicians of the African Diaspora, Baltimore, MD.
25. Cox, M.F. (2012, July). Facilitator and Presenter, Workshop at the Diplomado Internacional Puebla, Mexico.
26. Cox, M.F., & Lynch, C. (2014, November). "Doctoral Education." Keynote Speaker, EU-China Workshop. November 14-16. Shanghai Jiao Tong University China.
27. Cox, M.F. (2015, November) "Professional Strategies for Pioneer Women in Engineering." Presenter at the 6th Annual Women in Engineering Convention, Johannesburg, South Africa.
28. Kajfez, R.L., Dringenberg, E., & Cox, M.F. (2018, January). "Integrating Engineering Education Research and Entrepreneurial Minded Learning in Undergraduate Education." Presenter at the Annual Kern Engineering Entrepreneurial Network (KEEN) Conference, Dallas, TX.
29. Cox, M.F. (2018, February). "Faculty Impact in Engineering: Pushing Boundaries." Understanding Measures of Faculty Impact and the Role of Engineering Societies, Presentation at a National Academy of Engineering Workshop, Atlanta, Georgia.
30. Berdanier, C.P., Tang, X., & Cox, M.F. (2018, March). "Ethics Education through Pictures: 'Photoelicitation' yields rich structured responses to dilemmas with no right answers." Invited paper for the *American Society for Engineering Education Prism Magazine*.
31. Cox, M.F. (2017). Invited speaker for the 13<sup>th</sup> Annual Etta Z. Falconer Mathematics Lecture. Spelman College, Atlanta, Georgia.

### **Invited Colloquium/Seminar Series Presentations**

1. Cox, M.F. (2006, August). "Navigating the Graduate Process." Invited Presenter for the American Society for Engineering Management's Graduate Colloquium, Huntsville, Alabama.
2. Cox, M.F. (2008, April). "An Empirical Exploration of Engineering Education's Role in the Professional Development of Graduate Students." Invited Presenter for the Virginia Tech Department of Engineering Education, Blacksburg, VA.

3. Cox, M.F. (2008, July). "Incorporating Assessment in Your Classroom." Invited Workshop Facilitator for Faculty at Universidad de las Americas-Puebla (UDLAP), Puebla, Mexico.
4. Cox, M.F. (2008, July) "Incorporating Assessment in Your Classroom." Invited Workshop Facilitator for *Diplomado* Program, Tlaxala, Mexico.
5. Cox, M. F., (2010, February). "Development of the Global Real-time Assessment Tool for Teaching Enhancement." The University of Alabama College of Engineering, Tuscaloosa, Alabama.
6. Cox, M.F. (2010, April). "Development of the Global Real-time Assessment Tool for Teaching Enhancement." The University of Colorado, Boulder, Colorado.

**Appearances in Media Interviews and Other Coverage. (e.g., print, web, radio, television or other media coverage)**

1. The White House, Office of the Press Secretary (2009, July 9). President Honors Outstanding Early-Career Scientists. Accessed on July 30, 2010, [http://www.whitehouse.gov/the\\_press\\_office/PRESIDENT-HONORS-OUTSTANDING-EARLY-CAREER-SCIENTISTS](http://www.whitehouse.gov/the_press_office/PRESIDENT-HONORS-OUTSTANDING-EARLY-CAREER-SCIENTISTS).
2. Purdue University News. (2008, October 6). 9 Purdue Researchers Win NSF Early-Career Awards. Accessed on July 30, 2010, <http://news.uns.purdue.edu/x/2008b/081006NSFCareer.html>
3. Pluviose, D. (2008, January 10). Emerging Scholars: The Class of 2008. Diverse Issues in Higher Education, Accessed on July 30, 2010, [http://diverseeducation.com/artman/publish/article\\_10472.shtml](http://diverseeducation.com/artman/publish/article_10472.shtml).
4. *Purdue University News Service*. (2010, January 11). *Purdue researcher receives presidential award*. Accessed on July 30, 2010, <http://www.purdue.edu/newsroom/faculty/2010/100111CoxPresidential.html>.
5. Mack, J. L. ( 2009, July 20). Presidential Award Honors Professor's Work. *Journal & Courier - Lafayette, Indiana*, p. A.6.
6. Mack, J. L. ( 2010, January 12). Purdue Researcher One of 100 to Receive Award from President. *Journal & Courier - Lafayette, Indiana*, p. B.4.
7. Ridings, A. (2009, July 24). Professor to Receive Presidential Award for Research. *Purdue Exponent*, Accessed on July 30, 2010, [http://www.purdueexponent.org/?module=article&story\\_id=17192](http://www.purdueexponent.org/?module=article&story_id=17192).
8. *Weekly Bulletin*. (2009, August 13). Young African Americans Who Are Helping to End the Racial Stereotype That Blacks Are Not Capable of High-Level Scientific Research. *The Journal of Blacks in Higher Education*, Accessed on July 30, 2010, <http://www.jbhe.com/latest/news/8-13-09/research.html>.
9. Fox59 Morning News, January 12 2010, Air time, 4:30 am- 9 am.
10. Smith, H. R. (2009). A Wise Choice. *NSF*. Accessed on July 30, 2010, <http://www.nasa.gov/audience/foreducators/postsecondary/features/a-wise-choice.html>
11. <http://www.nasa.gov/audience/foreducators/postsecondary/features/a-wise-choice.html>
12. Gaidos, S. (2009, August, 28). Winning Strategies: Advice from PECASE Winners. Accessed on July 30, 2010, [http://sciencecareers.sciencemag.org/career\\_magazine/previous\\_issues/articles/2009\\_08\\_28/caredit.a0900105](http://sciencecareers.sciencemag.org/career_magazine/previous_issues/articles/2009_08_28/caredit.a0900105).
13. Mathis, R. (2009, July 15). President Honors Outstanding Early Career Scientists, Spelman College Media Alert, Accessed on July 30, 2010. <http://www.spelman.edu/ezpost/data/23004.shtml>
14. National Science Foundation FACT SHEET (2009). Presidential Early Career Awards for Scientists and Engineers (PECASE) 2009 Recognition Program. NSF, Accessed on July 30, 2010, <http://www.nsf.gov/news/newsmedia/pr115171/pr115171.pdf>

15. American Society of Mechanical Engineering. (October 2011). Michelle Obama Introduces Family-Friendly NSF Initiative. Accessed January 24, 2014, <https://www.asme.org/engineering-topics/articles/technology-and-society/michelle-obama-introduces-new-nsf-family-friendly>
16. Peabody Reflector. (Summer 2012). Monica Cox, Ph.D. '05. New Ideas for Educating Engineers. Accessed on January 24, 2014, <http://www.vanderbilt.edu/magazines/peabody-reflector/2012/07/monica-cox-phd05/>
17. Stuart, R. (2014, January 23). Black Scholars: Sincerity Key to Academy's Dealing with Faculty Prospects. Accessed on January 24, 2014, <http://diverseeducation.com/article/60312/>
18. Cox, M.F. (2016, April 4). Engineer, Professor, and Pioneer for Women in STEM. Accessed January 6, 2019. Trailblazers Podcast. <https://www.iheart.com/podcast/263-the-trailblazersfm-podcas-27630335/episode/tb-10-monica-f-cox-phd-27670158/>
19. Cox, M.F., Berry, C., & Williams, R. (2017, February 27). Three Black STEM Women with Ph.D.s Discuss the Movie "Hidden Figures" and How to Become More Visible. Trailblazers Podcast. Accessed January 6, 2019, <https://tbpod.com/blackstemfigures>.
20. Cox, M.F. (2016, June 13). Revolutionizing Engineering Education. Big Beacon Podcast. Accessed January 6, 2019, <https://www.voiceamerica.com/episode/92652/revolutionizing-engineering-education-and-its-leadership-an-interview-with>

### **Major Committee Assignments in the Department, School, and/or University**

#### ***Engineering Education***

- Engineering Education Graduate Recruitment Committee, Purdue (2006-2008)
- Engineering Library Liaison, Purdue (2006- 2015)
- ENGR 100 Transition Committee, Purdue (2006-2007)
- Engineering Education Leadership Team, Purdue (2008-2009)
- Engineering Education Graduate Committee, Purdue (2005-2007, 2009- 2015)
- Engineering Awards Committee Co-Chairperson, Purdue (2011-2015)
- Engineering Education Internal Review Committee Member, Purdue (2011-2012)
- Engineering Education Faculty Search Committee, Purdue (2012-2015)
- College of Engineering Executive Committee, Ohio State (2016-present)

#### ***University***

- Center for Research and Engagement in Science and Mathematics (CRESME) Task Force Committee, Purdue (2011-2012)
- George E. Brown Jr. Network for Earthquake Engineering Simulation (NEES) Red Team Member, Purdue (2011, 2013)
- Discovery Learning Research Center Internal Advisory Board Member, Purdue (2010- 2015)
- Discovery Learning Research Center Strategic Planning Committee Member, Purdue (2013-2015)
- Faculty Senator, School of Engineering Education, Purdue (2013-2015)
- Faculty Search Committee, Department of Teaching and Learning (Science Education), Ohio State (2016)
- Dean Search Committee, College of Education and Human Ecology, Ohio State (2017)

#### ***Administrative Duties***

- Inaugural Director, Engineering Leadership Minor (Engineering Leadership @ Purdue), June 2012-2015
- Purdue ADVANCE Co-PI, Member of the Steering Committee, Fall 2013- 2015
- Interim Statewide Director, Louis Stokes Alliance for Minority Participation (LSAMP) Indiana Program, 2011-2015
- Principal Investigator and Administrator, Reinvigorating Engineering and Changing History (REACH) Scholars Program, March 2009-2016
- Director of Assessment & Evaluation, Purdue Institute for P-12 Engineering Research and Learning (INSPIRE), May 2006-2008
- Assessment & Evaluation Co-Leader, Purdue Summer Undergraduate Research Fellowships (SURF) Program, May 2006- Dec. 2007
- Assessment & Evaluation Leader, Design, Application, Analysis and Control of Interfaces (DAACI) REU, Dec. 2006-2009
- Administrator for ENGR 104, Introduction to Engineering and Purdue, 2007-2012

### **Service to Government or Professional Organization**

#### ***Consulting Editor***

- College Teaching (2013-present)

#### ***American Society of Engineering Education (ASEE) Service***

- Minorities in Engineering (MIND) Program Chair (2012-2014)
- MIND Division Chair (2014-2016)
- MIND Chair Emeritus (2016-2018)
- ASEE Diversity Committee MIND Representative (2014-2016)
- Chester F. Carlson Award Committee (2016-2019)

#### ***Panel Reviewer (National Science Foundation)***

- Research Experiences for Undergraduates (REU)
- Science, Technology, Engineering, and Mathematics Scholarships (S-STEM)
- Faculty Early Career (CAREER)
- Research and Evaluation on Education in Science and Engineering (REESE)
- Human and Social Dynamics (HSD)
- ADVANCE PAID
- Innovative Technology Experiences for Students and Teachers (ITEST)
- HBCU-UP

#### ***Site Visitor (National Science Foundation)***

- Science and Technology Centers
- Engineering Research Centers

#### ***Committee of Visitors (National Science Foundation)***

- HBCU-UP Program

### ***Conference Moderators***

- Frontiers in Education Conferences
- American Society for Engineering Education Conferences

### ***Journal Reviewer***

- Advances in Engineering Education
- College Teaching
- European Journal of Engineering Education Reviewer
- Journal of Engineering Education
- Journal of STEM Education
- The Journal of Women and Minorities in Science and Engineering
- International Journal of Engineering Education
- American Educational Research Journal: Teaching, Learning, and Human Development
- Journal of Aviation Technology and Engineering

### ***Consulting Arrangements***

- Rigorous Research in Engineering Education/ Center for the Advancement of Scholarship in Engineering Education, 20 hours, December 2007
- National Academy of Engineering's Center for the Advancement of Scholarship in Engineering Education, 2009-2010
- Quality Education for Minorities (QEM) Network Consultant (2010-present)
- University of Alabama Nanotechnology Undergraduate Education Evaluator (2013-2015)
- NSF Faculty Early Career (CAREER) Advisory Board Participation
  - Demetra Evangelou (Presidential Early Career Aware for Scientists and Engineers (PECASE) Recipient), School of Engineering Education, Purdue
  - Elham Fini, Department of Civil Engineering, North Carolina A&T
  - Lisa McNair, Department of Engineering Education, Virginia Tech
  - Alice Pawley (PECASE Recipient), School of Engineering Education, Purdue
  - Catherine Berdanier, Department of Mechanical Engineering, Penn State

### ***Advisory Board Membership***

- Virginia Tech Department of Engineering Education Advisory Board Member, 2013-2016
- Institute for Women's Policy Research, Advisory Board Member, Women of Color and Community College Research Projects, 2011-present
- University of Massachusetts Collaboration and Equity: The Resources, Relationships, and Recognition (R3) Model for Advancing Women and Underrepresented Faculty in Science and Engineering ADVANCE Institutional Transformation Grant, 2017-2022
- National Science Foundation Proposal, "NRT-HDR: Harnessing Computational and Data Sciences to Address Challenges in Meta-Manufacturing," External Evaluator (pending funding), 2019-2024

### **International Program Activities**

- Visiting Professor, Universidad de Las Americas Puebla (UDLAP), Puebla, Mexico, 2008-present
- Facilitator, “Building Capability and Communities in Engineering Education Research,” Workshop sponsored by the Mexican National Association of Engineering Schools (ANFEI) and the Journal of Engineering Education (JEE), at the XXXVI National Engineering Conference, Merida, Mexico, June 19, 2009.
- Advisory Board, "Turkey's Vision 2023 Conference Series: International Engineering Education Conference IEEC 2010," Organized by Atilim University, Ankara, Turkey, November 4-6, 2010.
- Facilitator, “Building Capability and Communities in Engineering Education Research,” Workshop sponsored by the Society for Engineering Education of South Africa (SEESA), Cape Town, South Africa, 2012.
- Facilitator, “Developing Engineering Education Assessments” Workshop at the Diplomado Internacional Puebla, Mexico, 2013.
- Keynote Speaker, EU-China Workshop. Shanghai Jiao Tong University China, November 14-16, November 14-16, 2014.

### **Selected Collaborative Activities with Other Faculty and Institutions**

- Dr. Stephanie G. Adams, Professor and Dean, Old Dominion University- co-author on a book chapter about doctoral education and journal paper about engineering education leadership
- Dr. Carlotta Berry, Professor, Rose-Hulman Institute of Technology- co-author on a journal paper about leadership and a collaborator on work about Women of Color in engineering
- Dr. Suely Black, Professor, Norfolk State University- PI on Dr. Cox's funded IGERT and collaborator for a proposed NSF STC
- Dr. David S. Cordray, Professor, Vanderbilt University- co-author on Dr. Cox's work on assessment in the VaNTH Engineering Research Center
- Dr. Norman Fortenberry, Executive Director, American Society for Engineering Education- Lead on Dr. Cox's Academic Change Leadership Consulting Project for the National Academy of Engineering
- Dr. Jenefer Husman, Associate Prof., University of Oregon- Advisor and mentor for Dr. Cox's CAREER research work
- Dr. Joyce Main, Assistant Professor, Purdue University- Co-PI on Dr. Cox's funded NSF “Why We Persist” Grant
- Dr. Joyce McGee, Associate Professor, Vanderbilt University- Co-PI on Dr. Cox's funded NSF “Why We Persist” Grant
- Dr. Mikhail Noginov, Professor, Norfolk State University- Co-PI on Dr. Cox's funded IGERT
- Dr. Enrique Palou, Director, Center for Science, Engineering, and Technology Education Professor and Past Chair, Department of Chemical, Food, and Environmental Engineering Universidad de las Americas Puebla- collaborator on several doctoral committees and on Dr. Cox's IGERT project
- Dr. Aswini Pradhan, Professor, Norfolk State University- Co-PI on Dr. Cox's funded IGERT
- Dr. Ulrich Wiesner, Professor, Cornell University- Co-PI on Dr. Cox's funded IGERT

### **Outreach Activities**

#### **Selected External Presentations**

1. Cox, M.F. (February 2006). "Career Opportunities in Engineering." Presentation given at Arsenal Technical High School, Indianapolis, Indiana.
2. Cox, M.F., & Brown, C.M. (April 2006). "A Different World"- Transitioning from High School to College When Engineering is Your Major. Presentation given at the 2006 National Society for Black Engineers Conference, Pittsburgh, PA.
3. Cox, M.F., & Brown, C.M. (March 2006). "The Sky is Not the Limit!"- Maximizing Your Opportunities in a Multidisciplinary World. Presentation given at the 2006 National Society for Black Engineers Conference, Pittsburgh, PA.
4. Cox, M.F. (October 2006). "Welcome to WIEP Preview Days 2006." Presentation for Purdue University's Women in Engineering Program Preview Day.
5. Cox, M.F. (February 2007). "Obtaining a Faculty Position." Invited Panelist for the American Society for Engineering Education Student Chapter Meeting.
6. Cox, M.F. (February 2007). "Destination Purdue." Invited Panelist.
7. Cox, M.F., Cox, I., & Bowker, D. (March 2007). "Who Wants to Be an Engineer?" Upward Bound's 5<sup>th</sup> Annual TRIO Day Conference, South Bend, IN. (Presentation to approximately 50 underrepresented students about opportunities within engineering).
8. Cox, M.F. (February 2010). Invited Seminar Speaker for Women and Leadership Seminar in the Department of Communications.
9. Cox, M.F. (February 2010). "Pathway to the President." Invited Seminar Speaker for the Black Graduate Association/ National Society of Black Engineers Mentoring Program.
10. Cox, M.F., & Borrego, M. (March 2012). "Laying a Foundation for Future Graduate Student Success." Presenter at the 2012 National Science Foundation Engineering Education Awardees Conference.
11. Cox, M.F. (April 2012). Mentoring Junior Faculty. Speaker for the ADVANCE Faculty Advancement, Success, and Tenure Professional Development Series.
12. Cox, M.F. (July 2012). "Participating in Professional Communities." Invited Presenter for the Purdue College of Engineering's Summer Undergraduate Research Fellowship (SURF) Program.
13. Cox, M.F. (August 2012). "Science Bound Freshmen Meet with Professionals." Invited speaker for the Purdue Science Bound Program.
14. Cox, M.F., (September 2012). "Pathway to the Ph.D." Invited presenter for the Purdue University Graduate Education for Minorities (GEM) Grad Lab.
15. Cox, M.F. (February 2013). "Grant Writing Experiential Exercise." Judge and Speaker for the Grant Writing Workshop for the Midwest Crossroads Alliance for Graduate Education and Professoriate (AGEP)'s Midyear Gathering.
16. Cox, M.F. (April 2013). Purdue University Counselor Fly-In. Invited Faculty Participant with 45 Counselors Sponsored by the Purdue University Office of Admissions.
17. Cox, M.F. (July 2013). "Participating in Professional Communities." Invited Presenter for the Purdue College of Engineering's Summer Undergraduate Research Fellowship (SURF) Program.
18. Cox, M.F. (September 2013). "Surviving Engineering Research." Invited Presenter for the Purdue National Society of Black Engineers' Professional Development Series."
19. Cox, M.F. (Academic Year, 2013-14). Classroom Speaker on behalf of Engineering Leadership @ Purdue. First-year Band/Engineering Learning Community; CoE Engineering Ambassador Course.



20. Cox, M.F. (January 2014). Best Practices: Minority Recruitment and Retention. Emerging Scholars Panelist at the 2014 Meeting of the Association of American Colleges and Communities session sponsored by *Diverse: Issues in Higher Education*.
21. Cox, M. F. (November 2015). Keynote Speaker, Pioneering Purdue Women Awards.
22. Cox, M. F. (November 2015). Faculty Presenter, Purdue National Society of Black Engineers (NSBE) Student Chapter.