

Alicia Abadie Modenbach, Ph.D., P.E.

Email: alicia.modenbach@uky.edu

Phone: (859) 257-1265

Current Position

Senior Lecturer, Department of Biosystems and Agricultural Engineering, University of Kentucky (July 2023-Present)

- DOE: 90% instruction, 10% service

Education

Doctor of Philosophy, Biosystems and Agricultural Engineering, University of Kentucky, Lexington, KY, August 2008-August 2013

Dissertation: *Sodium Hydroxide Pretreatment of Corn Stover and Subsequent Enzymatic Hydrolysis: An Investigation of Yields, Kinetic Modeling and Glucose Recovery.*

Advisor: Dr. Sue E. Nokes

GPA: 3.955/4.0 (Overall), 4.0/4.0 (In doctoral program)

Master of Science, Biosystems and Agricultural Engineering, University of Kentucky, Lexington, KY, August 2006-August 2008

Thesis: *Quantifying Cellulase in High Solids Environments.*

Advisor: Dr. Sue E. Nokes

GPA: 3.889/4.0

Bachelor of Science, Biological and Agricultural Engineering, Louisiana State University, A&M, Baton Rouge, LA, August 2002-May 2006

Overall GPA: 3.834/4.0, GPA in Major: 4.0/4.0

Graduated *Magna Cum Laude*

Certification

Professional Engineer (PE), State of Kentucky (License #32841, June 23, 2017)

Engineer-In-Training, State of Kentucky (Certificate No. 13095, June 15, 2007)

Professional Experience

Senior Lecturer, Department of Biosystems and Agricultural Engineering, University of Kentucky (July 2023-Present)

- Taught up to 3 courses per year (Primary instructor for BAE 200 Principles of Biosystems Engineering and Co-instructor for BAE 402 and BAE 403 Biosystems Engineering Design I and II, respectively)
- Advised Biosystems Engineering students on coursework, internships, and professional development activities

- Interacted with prospective students attending recruitment events for both the Pigman College of Engineering and Martin-Gatton College of Agriculture, Food and Environment
- Assisted with curriculum development and continuous improvement plans as part of departmental review and accreditation assignments

Lecturer, Department of Biosystems and Agricultural Engineering, University of Kentucky (September 2016-June 2023)

- Taught up to 4 courses per year (Primary instructor for BAE 200 Principles of Biosystems Engineering and BAE 775 Professional Practices Seminar and Co-instructor for BAE 402 and BAE 403 Biosystems Engineering Design I and II, respectively)
- Advised Biosystems Engineering students on coursework, internships, and professional development activities
- Interacted with prospective students attending recruitment events for both the Pigman College of Engineering and College of Agriculture, Food and Environment
- Assisted with curriculum development and continuous improvement plans as part of departmental review and accreditation assignments

Engineer Associate for Academics, Department of Biosystems and Agricultural Engineering, University of Kentucky (February 2014-August 2016)

- Advised Biosystems Engineering students and Technical Systems Management students on coursework, internships, and professional development activities
- Interacted with prospective students attending recruitment events for both the Pigman College of Engineering and College of Agriculture, Food and Environment
- Assisted with Senior Design Capstone courses, which included providing feedback on design reports, providing lecture content, attending weekly meetings with design groups, assisting with administrative tasks associated with this course
- Assisted with curriculum development and continuous improvement plans as part of departmental review and accreditation assignments
- Supervised undergraduate student workers in lab setting
- Taught 2 courses per year (Primary instructor for BAE 102 Introduction to Biosystems Engineering and BAE 503 Fundamentals of Biorenewable Resources and Co-instructor for BAE 103 Energy in Biological Systems)
- Assisted in development of Technical Systems Management program

Post-Doctoral Scholar, Department of Biosystems and Agricultural Engineering, University of Kentucky (August 2013-January 2014)

- Investigated the pretreatment and enzymatic hydrolysis unit steps of the lignocellulosic conversion process

Graduate Research Assistant, Department of Biosystems and Agricultural Engineering, University of Kentucky (August 2011-July 2013)

- Developed, conducted, and analyzed experiments pertaining to various aspects of the lignocellulose conversion process, specifically the pretreatment and enzymatic hydrolysis unit steps
- Collaborated with a multi-disciplinary team to achieve common research objectives concerning the use of novel materials in the separation of fermentable sugars from solution

- Delivered presentations to regional, national, and international audiences regarding results obtained from lignocellulose conversion and sugar separation experiments
- Authored multiple comprehensive refereed review articles on topics pertaining to the use of high solids loadings in pretreatment and enzymatic hydrolysis unit operations and the use of sodium hydroxide as a pretreatment reagent

National Science Foundation Fellow, Department of Biosystems and Agricultural Engineering, University of Kentucky (August 2008-August 2011)

- Taught (as a Teaching Assistant) first-year level students Excel in the recitation section of Introduction to Biosystems and Agricultural Engineering for two semesters
- Devised and implemented learning objectives, lesson plans and activities to meet goals
- Delivered high quality instruction to students which has been consistently met with positive feedback by students and faculty
- Supervised undergraduate and high school students performing independent laboratory projects
- Awarded tuition and a \$30,000 annual stipend

Graduate Research Assistant, Department of Biosystems and Agricultural Engineering, University of Kentucky (August 2006-August 2008)

- Collaborated with faculty from three universities and assisted in the development of new courses on the Fundamentals of Biorenewable Resources and Biofuels to promote the idea of distance-learning
- Performed and analyzed experiments pertaining to the quantification of cellulolytic enzymes in high solids environments

Undergraduate Research Assistant, Department of Biological and Agricultural Engineering, Louisiana State University (June 2003-July 2006)

- Assisted with site visits and inspections of area playgrounds for the LSU Community Playground Project
- Investigated the impact of construction materials on playground design
- Coordinated participant information and communications, distributed survey and collected data from female faculty in the biological and agricultural engineering discipline
- Researched and assisted with studies regarding the extraction of compounds found in rice bran for potential nutraceutical use

Summary

I served as an Engineer Associate (staff position) and completed my graduate work (student) in the Biosystems and Agricultural Engineering Department at the University of Kentucky (UK) prior to beginning a faculty position in the same department. Major accomplishments are separated to illustrate work completed during my faculty appointment from those prior to my faculty appointment as (a) completed during faculty appointment (September 2016-present), (b) completed during staff appointment (February 2014-August 2016), and (c) completed prior to staff appointment (prior to February 2014).

Teaching and Advising Activities

Activity	UK Faculty Since Sept 2016	UK Staff Feb 2014-Aug 2016	Prior to UK Staff Prior to Feb 2014	Total
Courses Developed	1	-	-	1
Courses Taught ¹	21 (4)	9 (3)	3 (3)	27 (8)
Courses Revised	1	-	-	1
Courses Supported	1	4	3	8
Awards and Recognition	15	-	-	14
Panel Presentations ²	9	1	-	10
Invited Speaker	3	1	1	5
Conference (Self)	2	2	-	4
Mentorships ²	5	--	--	5

¹Number of instances courses taught (number of unique courses taught). The total number of unique courses does not equal the sum of the unique courses in the preceding columns because two unique courses overlapped time as UK Staff and time prior to becoming UK Staff.

²DEI-related activities (at least in part) to promote women and underrepresented groups in engineering professions

Publications

Peer-Reviewed Conference Proceedings (2 Total)

1. **Modenbach, A.A.***, Peterson, M. 2021. Lessons Learned from a COVID-Impacted Capstone¹. ASEE Conference Proceedings. Paper ID #34132. <https://peer.asee.org/37437> [296 downloads]
2. **Modenbach, A.A.***, Nokes, S.E. 2017. Transitioning students into BAE from a common-first year engineering curriculum – A work in progress¹. ASEE Conference Proceedings. Paper ID #18437. <https://peer.asee.org/29044> [476 downloads]

Refereed Publications (6 Total)

1. **Modenbach, A.A.**, Nokes, S.E.*, Montross, M.D., Knutson, B.L. 2017. Toward biochemical conversion of lignocellulose on-farm: Pretreatment and hydrolysis of corn stover in-situ. Transactions of the ASABE. 60(4), 1024-1032. Journal Impact Factor: 1.118. <https://doi.org/10.13031/trans.12069> [1 citation]
2. **Modenbach, A.A.***, Nokes, S.E. 2014. Effects of sodium hydroxide pretreatment on structural components of biomass. Transactions of the ASABE. 57(4): 1187-1198. Journal Impact Factor: 0.895. <https://doi.org/10.13031/trans.57.10046> [71 citations]
3. **Modenbach, A.A.***, Nokes, S.E. 2013. Enzymatic hydrolysis of biomass at high-solids loadings – A review. Biomass and Bioenergy. 56: 526-544. Journal Impact Factor: 3.411. <https://doi.org/10.1016/j.biombioe.2013.05.031> [364 citations]
4. **Modenbach, A.A.**, Nokes, S.E.* 2012. The use of high-solids loadings in biomass pretreatment – A review. Biotechnology and Bioengineering. 109(6): 1430-1442. Journal Impact Factor: 3.648. <https://doi.org/10.1002/bit.24464> [253 citations]
5. **Abadie, A.**, Christy, A.*, Jones, J., Wang, J., Lima, M. 2008. Longitudinal survey of female faculty in biological and agricultural engineering. Transactions of the ASABE. 52(4): 1397-1405. Journal Impact Factor: 0.902. <https://doi.org/10.13031/2013.27763> [2 citations]
6. Schramm, R., **Abadie, A.**, Hua, N., Xu, Z., Lima, M.* 2007. Fractionation of the rice bran layer and quantification of vitamin E, oryzanol, protein, and rice bran saccharide. Journal of Biological

Engineering. 1:9. Journal Impact Factor: Not available. <https://doi.org/10.1186/1754-1611-1-9>
[54 citations]

Other Publications (4 Total)

1. **Modenbach, A.** 2023, November/December. Embracing Circularity: Lessons from the 2023 ASABE Circular Bioeconomy Systems Day. Resource: Engineering and Technology for a Sustainable World. 30(6): 10-13. [[PDF document](#)]
2. Peterson, M., **Modenbach, A.** 2022, September/October. Capstone Students design a Teaching Tool for High-Tech Agriculture. Resource: Engineering and Technology for a Sustainable World. 29(5): 23. [[PDF document](#)]
3. **Modenbach, A.A.** 2019, September/October. Designing Solutions and Building Confidence. Resource: Engineering and Technology for a Sustainable World. 26(5): 13. [[PDF document](#)]
4. Akera, A., Cheville, A., Cutler, S., Estell, J., Goodman, K., Henderson, G., Howe, S., Kennedy, T., Kilgore, M., Marcus, I., Meier, R., **Modenbach, A.**, Olsen, R., Pawley, A., Tingerhal, J., Tranquillo, J. (Eds.) 2019. ASEE Conference Playbook: Co-Created Sessions from the ASEE 2019 Townhall Session. [[PDF document](#)]

Teaching and Teaching Development

Educators Sharing Pedagogical Research and Effective Strategies for Student Outcomes (M-G CAFE ESPRESSO)

Fall 2024-Present

Martin-Gatton College of Agriculture, Food and Environment Curriculum Innovation and Instructional Training Institute

Created program curriculum and facilitated discussions for early- and mid-career faculty and staff instructors to discuss practical issues in modern pedagogy to improve teaching practices, promote professional development, and foster a supportive community of educators across disciplines in the M-G CAFE.

Growing Graduates from the Ground Up, Teaching Cohort

Fall 2024-Spring 2025

Martin-Gatton College of Agriculture, Food and Environment Curriculum Innovation and Instructional Training Institute

Redesigned courses and improved teaching strategies based on a year-long collaboration with student curriculum consultants accompanied by instructor-specific workshops and trainings.

Lewis Honors College Honors Thesis Advisor

Spring 2023-Present

1. Laruen Doyle. 2023. *Clutch Analysis and Design for the Wildcat Pulling Team Quarter Scale Tractor Drivetrain*. HON 491. January 2023 to May 2023.
2. Marlenne Conrado Rojas. 2024. *Design Report: Hydroponic System Management with Open-Source Controls*. BAE 402/BAE 403. August 2023 to May 2024.

BAE 775 Professional Practices Seminar

Spring 2020

Created new content and provided instruction related to professional research communications and development of graduate research proposals to 15 graduate students

Faculty Fellows, Cohort 7

Spring 2017-Fall 2017

- Designed instructional materials (lessons, assignments, and rubrics) to incorporate multimodal communication into courses and to improve the student learning experience while developing critical communication skills

- Reflected on personal instructional experiences and learned strategies and techniques to improve upon those experiences
- Developed mentoring relationships with other Faculty Fellows and Presentation U! Staff

BAE 200 Principles of Biosystems Engineering, Fall 2016-Present

- *Course Development* Fall 2016-Fall 2017
Developed content for new second-year course for Biosystems Engineering students
- *Instruction* Fall 2017-Present
Provided instruction and hands-on learning opportunities for approximately 190 students (over 7 semesters)

BAE Departmental Seminar Committee Fall 2016-Present

Developed programming and coordinated speakers for weekly seminar series held during fall and spring semesters (196 seminar presentations over 16 semesters)

BAE 103 Energy in Biological Systems, Co-Instructor Spring 2015-Spring 2016

Responsible for setting up and supervising lab activities for approximately 130 students and 4 TAs (over 2 semesters)

BAE 402/403 Biosystems Engineering Design I and II Spring 2014-Present

- *Co-instructor* Fall 2024-Present
Revised BAE 402 from the existing 2-credit course into a 3-credit course by developing and integrating new engineering economics course content to reflect program changes
- *Co-Instructor* Spring 2019-Present
BAE 403 Spring 2019 – 35 students (9 teams)¹
BAE 402 Fall 2019 – 26 students (7 teams)
BAE 402 Fall 2020 – 25 students (7 teams)
BAE 402 Fall 2021 – 20 students (5 teams)
BAE 402 Fall 2022 - 19 students (6 teams)
BAE 402 Fall 2023 - 12 students (4 teams)
BAE 402 Fall 2024 - 16 students (5 teams)
- *Advisor* Fall 2016-Spring 2017
Advised Pre-Med Senior Design Team. Development of support system for female equestrian riders to promote breast health during riding activities. 4 students.
- *Reviewer* Spring 2014-Spring 2017
Reviewed and provided feedback to student teams on all quarterly reports

Technical Systems Management Program Curriculum Development Fall 2013-Spring 2016

Assisted with curriculum development for Technical Systems Management, a new program implemented in Fall 2014

BAE 400 Senior Seminar, Co-Instructor Fall 2013

Developed new course content and coordinated instructional activities for 30 Biosystems Engineering seniors

BAE 503 Fundamentals of Biorenewable Resources, Instructor Spring 2013-Spring 2014

Developed new course content and provided instruction to 18 undergraduate and graduate students (over 2 semesters)

¹ First taught senior design capstone course in spring 2019 (the second semester of a two-semester course sequence). All successive senior design teaching assignments began with the fall semester and teams remained intact for the subsequent spring semester.

Laboratory Supervisor**Summer 2009-Fall 2015**

Supervised 8 undergraduate and high school students working on independent research projects

BAE 102 Introduction to Biosystems Engineering**Fall 2008-Fall 2015**

- *Instructor* Fall 2014-Fall 2015
Provided instruction and hands-on learning opportunities for 135 students (2 semesters)
- *Co-Instructor* Fall 2013
Assisted with teaching, grading, and preparing course material for 51 students
- *Teaching Assistant* Fall 2008-Fall 2010
Assisted with teaching, grading, and preparing course material, including leading a lab section in Fall 2010 that introduced EXCEL to freshmen BAE students (87 students over 3 semesters)

MUS 4250 Tiger Marching Band, Co-Section Leader**Fall 2005**

Provided instruction and direction for the approximately 30 members of the clarinet section

Courses TaughtBAE 102 Introduction to Biosystems Engineering¹

Semester	Number of Students	Response Rate	Course Quality ⁵ (College Mean)	Teaching Quality ⁵ (College Mean)
Fall 2015 ²	31	83.9%	2.77 (3.29)	3.00 (3.40)
	39	82.1%	2.81 (3.29)	3.09 (3.40)
Fall 2014 ²	31	67.7%	2.86 (3.37)	2.90 (3.42)
	32	65.6%	3.00 (3.37)	3.32 (3.42)
Fall 2013 ³	51	N/A	N/A	N/A
Fall 2010 ⁴	52 (27 in lab)	N/A	N/A	N/A
Fall 2009 ⁴	13	N/A	N/A	N/A
Fall 2008 ⁴	21	N/A	N/A	N/A

¹Existing course, partially developed new course content in 2014.²Instructor.³Co-instructor.⁴Teaching Assistant.⁵Scale: 1 to 4.BAE 103 Energy in Biological Systems¹

Semester	Number of Students	Response Rate	Course Quality ³ (College Mean)	Teaching Quality ³ (College Mean)
Spring 2016 ²	32	46.9%	3.40 (3.35)	3.53 (3.48)
	33	54.6%	3.44 (3.35)	3.50 (3.48)
Spring 2015 ²	32	N/A	N/A	N/A
	32	N/A	N/A	N/A

¹Existing course.²Co-instructor.³Scale: 1 to 4.

BAE 200 Principles of Biosystems Engineering¹

Semester	Number of Students	Response Rate	Course Quality (College Mean)	Teaching Quality (College Mean)
Fall 2024	34	N/A	N/A	N/A
Fall 2023	35	57.1%	4.3 (4.2)	4.5 (4.3)
Fall 2022	16	43.8%	4.7 (4.1)	5.0 (4.3)
Fall 2021	15	53.3%	4.8 (4.0)	4.9 (4.3)
Fall 2020	27	48.1%	4.08 (3.98)	4.62 (4.21)
Fall 2019	30	36.7%	3.7 (4.1)	4.5 (4.2)
Fall 2018	29	65.5%	3.8 (3.9)	4.5 (4.2)
Fall 2017	39	100%	2.5 (3.9)	3.0 (4.2)

¹Developed course.²Scale: 1 to 5.³Currently being taught.BAE 400 Senior Seminar¹

Semester	Number of Students	Response Rate	Course Quality (College Mean)	Teaching Quality (College Mean)
Fall 2013 ²	30	N/A ³	N/A ³	N/A ³

¹Existing course, partially developed new course content in 2013. ²Co-instructor.³Not evaluated.BAE 402 Biosystems Engineering Design I¹

Semester	Number of Students	Response Rate	Course Quality ³ (College Mean)	Teaching Quality ³ (College Mean)
Fall 2024 ²	16	N/A	N/A	N/A
Fall 2023 ²	12	50.0%	4.7 (4.2)	5.0 (4.3)
Fall 2022 ²	19	26.3%	4.0 (4.1)	4.4 (4.3)
Fall 2021 ²	20	40.0%	4.6 (4.0)	4.6 (4.3)
Fall 2020 ²	25	60.0%	4.00 (3.98)	4.53 (4.21)
Fall 2019 ²	26	42.3%	3.9 (4.1)	4.2 (4.2)

¹Existing course, partially developed new course content in 2019, 2021.²Co-instructor.³Scale: 1 to 5.⁴Currently being taught.BAE 403 Biosystems Engineering Design II¹

Semester	Number of Students	Response Rate	Course Quality ⁴ (College Mean)	Teaching Quality ⁴ (College Mean)
Spring 2024 ²	12	50.0%	4.3 (4.2)	4.7 (4.3)
Spring 2023 ²	19	N/A	N/A	N/A
Spring 2022 ²	20	35.0%	3.5 (4.2)	3.9 (4.3)
Spring 2021 ²	25	48.0%	4.2 (4.0)	4.3 (4.3)
Spring 2020 ^{2,3}	26	30.8%	4.0 (4.1)	4.4 (4.2)
Spring 2019 ²	35	48.6%	4.4 (4.0)	4.6 (4.2)

¹Existing course, partially developed new course content in 2020, 2022.²Co-instructor.³Transitioned to remote, online teaching at midterm due to Covid-19.⁴Scale: 1 to 5.

BAE 503 Fundamentals of Biorenewable Resources¹

Semester	Number of Students	Response Rate	Course Quality (College Mean)	Teaching Quality (College Mean)
Spring 2014 ²	6	N/A ³	N/A ³	N/A ³
Spring 2013 ²	12	N/A ³	N/A ³	N/A ³

¹Existing course, partially developed new course content in 2013.

²Instructor.

³Not evaluated.

BAE 775 Professional Practices Seminar¹

Semester	Number of Students	Response Rate	Course Quality (College Mean)	Teaching Quality (College Mean)
Spring 2020 ^{2,3}	12	N/A ⁴	N/A ⁴	N/A ⁴

¹Existing course, partially developed new course content in 2020.

²Instructor.

³Transitioned to remote, online teaching at midterm due to Covid-19.

⁴Not evaluated.

Advising and Recruitment Activities

Advising

Undergraduate Advising

	---- BAE ----				----- TSM ¹ -----			----- Totals -----		
	So	Jr	Sr	Fr	So	Jr	Sr	BAE Advisees	TSM Advisees	Direct Advisees/ Program Enrollment
Spring 2014	38	--	--	--	--	--	--	128	--	38/128
Fall 2014	31	--	--	--	--	2	--	171	2	33/173
Spring 2015	35	--	--	--	8	2	--	153	10	45/163
Fall 2015	60	--	--	1	11	3	2	204	16	76/220
Spring 2016	62	--	--	5	12	2	2	175	21	83/196
Fall 2016	55	--	--	--	6	10	4	197	20	75/117
Spring 2017	53	--	--	--	5	8	3	170	16	69/186
Fall 2017	53	--	--	--	--	5	7	144	12	65/153
Spring 2018	56	--	--	--	--	2	7	139	9	65/148
Fall 2018	40	--	--	--	--	1	4	107	5	45/112
Spring 2019	37	--	--	--	--	--	3	107	3	40/110
Fall 2019	46	--	3	--	--	--	1	101	1	50/102
Spring 2020	31	2	3	--	--	--	--	92	--	36/92
Fall 2020	31	11	2	--	--	--	--	96	--	44/96
Spring 2021	28	6	--	--	--	--	--	82	--	34/82
Fall 2021	16	13	2	--	--	--	--	69	--	31/69
Spring 2022	17	7	--	--	--	--	--	65	--	24/65
Fall 2022	20	9	2	--	--	--	--	65	--	31/65
Spring 2023	20	6	1	--	--	--	--	58	--	27/58
Fall 2023	49	6	2	--	--	--	--	74	--	57/74
Spring 2024	43	--	1	--	--	--	--	74	--	44/74
Fall 2024	28	12	2	--	--	--	--	83	--	42/83

¹No new students were admitted to the TSM program (operated as an Ag Individualized Degree Program) after the Spring 2016 semester.

Letters of Recommendation Written

2024: 10 (As of Aug 6)

2023: 7

2022: 8

2021: 5

2020: 20

2019: 15

2018: 3

2017: 4

2016: 5

2015: 13

2014: 1

Tours

1. **COE and CAFE Recruiters, Advisors, Administration, and Instructors Tours.** Attended by 10 people, March 7, 2024.
2. **COE and CAFE Recruiters, Advisors, Administration, and Instructors Tours.** Attended by 11 people, April 7, 2022.
3. **COE and CAFE Recruiters, Advisors, Administration, and Instructors Tours.** Attended by 13 people, March 10, 2022.
4. **Institute for Future Agricultural Leaders Tour.** Attended by approximately 45 high school students, June 22, 2021.
5. **COE and CAFE Recruiters, Advisors, Administration, and Instructors Tours.** Attended by 11 people, August 15, 2019.
6. **UK Pigman College of Engineering Grand Tours.** Tour guide for the BAE Department portion of the UK Pigman College of Engineering Grand Tour, a weekly tour for prospective students and their families (approximately 10-30 people each week) during the Fall and Spring semesters (September 2015-May 2017).
7. **COE and CAFE Recruiters, Advisors, Administration, and Instructors Tours.** Attended by 11 people, February 13 and 24, 2017.
8. **Upward Bound Program Tour.** Attended by approximately 30 high school students, July 2016.

Events

1. **BAE Virtual Reception¹.** January 29, 2024.
2. **BAE Grad Student Recruitment Event².** Attended by 8 prospective students, January 25-27, 2024.
3. **Martin-Gatton CAFE Open House¹.** October 13, 2023.
4. **Martin-Gatton CAFE Future Wildcat Roundup¹.** September 28, 2023.
5. **Pigman College of Engineering Advisor Meet and Greet¹.** April 20, 2023.
6. **BAE Grad Student Recruitment Event².** Attended by 9 prospective students, January 26-28, 2023.
7. **CAFE Future Wildcat Roundup¹.** Spoke directly with 20 people, October 6, 2022.
8. **Pigman College of Engineering Advisor Meet and Greet¹.** April 5, 2022.
9. **Pigman College of Engineering First Year Engineering Information Session¹.** October 6, 2021.

¹ Program representative, ² Event coordinator

10. **CAFE Future Wildcat Round-Up¹**. Spoke directly with 21 people, September 30, 2021.
11. **BAE Virtual Reception¹**. *Engineering a Sustainable Future: Impacting Our World Through Food, Energy, and Water*. Attended by 3 prospective students. April 7, 2021.
12. **BAE Virtual Reception¹**. *Engineering a Sustainable Future: Impacting Our World Through Food, Energy, and Water*. Attended by 14 prospective students, February 10, 2021.
13. **BAE Virtual Reception¹**. Attended by 3 prospective students, November 10, 2020.
14. **COE Regional School Advisor Meeting¹**. Attended by approximately 35 advisors from regional Kentucky schools and community colleges, October 15, 2020.
15. **BAE Virtual Reception¹**. Attended by 3 prospective students, October 13, 2020.
16. **Pigman College of Engineering First Year Engineering Information Session¹**. September 16, 2020.
17. **BAE Virtual Reception¹**. Attended by 7 prospective students, May 13, 2020.
18. **Grad SWE Female Faculty-Student Luncheon and Networking Event¹**. March 4, 2020.
19. **BAE Welcome Picnic and Open House¹**. September 25, 2019.
20. **Future Student Roundup Event¹**. Spoke directly with 8 people, September 12, 2019.
21. **BAE Grad Student Recruitment Event²**. Attended by 7 prospective students, January 17-19, 2019.
22. **CAFE Winter Event¹**. Spoke directly with 4 prospective students and their families. January 8, 2019.
23. **Pigman College of Engineering First Year Engineering Information Session¹**. November 29, 2018.
24. **Pigman College of Engineering First Year Engineering Information Session¹**. October 10, 2018.
25. **Future Student Roundup Event¹**. Spoke directly with 7 people, September 27, 2018.
26. **Institute for Future Agricultural Leaders¹**. Attended by 44 students and spoke directly with 9 students, June 20, 2018.
27. **Summer Technical Update Training – Information Session about Biosystems Engineering Program¹**. Hosted by the Department of Community and Leadership Development and Agricultural Education. Attended by 15 Kentucky Agricultural Education teachers, June 12, 2018.
28. **COE Regional School Advisor Meeting¹**. Attended by advisors from regional Kentucky schools and community colleges, March 7, 2018.
29. **BAE Grad Student Recruitment Event²**. Attended by 6 prospective students, January 25-27, 2018.
30. **Pigman College of Engineering First Year Engineering Information Session¹**. November 15, 2017.
31. **Pigman College of Engineering First Year Engineering Information Session¹**. October 10, 2017.
32. **Future Student Roundup Event¹**. Spoke directly with 13 people, October 5, 2017.
33. **BAE Grad Student Recruitment Event²**. Attended by 8 prospective students, January 19-21, 2017.
34. **CAFE Winter Event¹**. Attended by approximately 70 people (25 prospective students) and spoke directly with 2 families, January 7, 2017.
35. **BAE Open House for Prospective Students^{1,2}**. November 16, 2016.
36. **Pigman College of Engineering First Year Engineering Information Session¹**. November 7, 2016.

¹ Program representative, ² Event coordinator

37. **Pigman College of Engineering First Year Engineering Information Session**¹. September 12, 2016.
38. **BAE Grad Student Recruitment Event**². Attended by 13 prospective students, January 28-30, 2016.
39. **BAE Grad Student Recruitment Event**². Attended by 11 prospective students, February 5-7, 2015.
40. **BAE Grad Student Recruitment Event**². Attended by 8 prospective students, January 23-25, 2014.

Presentations

Invited Speaker and Panel Presentations (16 Total)

1. Hirsch, L., **Modenbach, A.**, Norman-Burgdolf, H., Shi, J. *What I Wish I Knew Faculty Panel*. Presented to new Martin-Gatton CAFE faculty, Lexington, KY. December 2023. Approx. 15 people.
2. **Modenbach, A.** *Biosystems Engineering at the University of Kentucky Info Session*. Presented to two sections of EGR 101, Lexington, KY. September 14, 2023. Approx. 90 people.
3. Bae, J., Blackburn-Lynch, W., Chapelin, F., Hauser, A., Lumpp, J., Messer, T., **Modenbach, A.**, Nassereddine, H. *Women in Engineering Faculty Panel*. Presented to prospective female students and their families, Lexington, KY. April 2023. Approx. 65 people (26 prospective students)
4. Chapelin, F., Letellier, L., **Modenbach, A.**, Nassereddine, H. *Women in Engineering Faculty Panel*. Presented to prospective female students and their families, Lexington, KY. September 2022. Approx. 65 people (36 prospective students)
5. Blackburn-Lynch, W., Khamfroush, H., Messer, T., **Modenbach, A.** *Women in Engineering Faculty Panel*. Presented to prospective female students and their families, Lexington, KY. April 2022. Approx. 62 people (33 prospective students)
6. Khamfroush, H., Letellier, L., Messer, T., **Modenbach, A.**, Wilson, S. *Women in Engineering Faculty Panel*. Presented to prospective female students and their families, Lexington, KY. November 2021. Approx. 30 people (15 prospective students)
7. **Modenbach, A.** *Building Relationships and Community in Biosystems and Agricultural Engineering*. Presented as the ASEE Biological and Agricultural Engineering Division Keynote Address. ASEE Annual Meeting, Virtual Conference. June 2020.
8. Escobar, I., Grady, M., Letellier, L., **Modenbach, A.** *Engineering Girl Day Faculty Q&A Panel*. Presented during the University of Kentucky Pigman College of Engineering E-Week activities to prospective female students and their families, Lexington, KY. September 2019. Approx. 75 people (47 prospective students).
9. Anderson, K., Hart, K., **Modenbach, A.**, Wilson, S. *Engineering Girl Day Faculty Q&A Panel*. Presented during the University of Kentucky Pigman College of Engineering E-Week activities to prospective female students and their families, Lexington, KY. February 2018. Approx. 110 people (61 prospective students).
10. **Modenbach, A.** *Using digital portfolios to document student growth*. Presented at the UK Faculty Fellows Showcase, Lexington, KY. November 2017.
11. Anderson, K., Cui, L., Letellier, L., **Modenbach, A.**, Pennell, K. *Engineering Girl Day Faculty Q&A Panel*. Presented to prospective female students and their families, Lexington, KY. October 2017. Approx. 80 people (33 prospective students).

¹ Program representative, ² Event coordinator

12. Anderson, K., Letellier, L., **Modenbach, A.**, Pennell, K., Trinkle, C. *Engineering Girl Day Faculty Q&A Panel*. Presented during the University of Kentucky Pigman College of Engineering E-Week activities to prospective female students and their families, Lexington, KY. February 2017. Approx. 80 people (32 prospective students).
13. **Modenbach, A.** *Biosystems Engineering at the University of Kentucky*. Presented during the 4H Teen Conference held at the University of Kentucky, Lexington, KY. June 2016. Approx. 15 people.
14. Agouridis, C., Goldsmith, J., Knutson, B., Lump, J., **Modenbach, A.** *Engineering Girl Day Faculty Q&A Panel*. Presented during the University of Kentucky Pigman College of Engineering E-Week activities to prospective female students and their families, Lexington, KY. February 2016. Approx. 60 people.
15. **Modenbach, A.**, *Online Professionalism*. Presented at a UK BAE Student Branch Meeting, Lexington, KY. September 2013.
16. Crofcheck, C.*, J. Ferrara, **A. Abadie**, and S. Nokes. 2008. *Biofuels Education: Opportunities and Possibilities*. Presented at the International Fuel Ethanol Workshop in Nashville, TN, June 18, 2008.

Conference Presentations (15 Total)

1. **Modenbach, A.A.***, Peterson, M. *Lessons Learned from a COVID-Impacted Capstone*. Presented at the ASEE Annual Meeting, Virtual Conference. July 2021.
2. **Modenbach, A.***, Nokes, S. *Transitioning students into BAE from a common first-year curriculum – A work in progress*. Presented at the ASEE Annual Meeting, Columbus, OH. June 2017.
3. **Modenbach, A.***, Nokes, S., Day, G., Adams, W. *An alternative approach to introducing the engineering design process to freshmen engineering students*. Presented at the ASABE Annual International Meeting, Montreal, Quebec, Canada. July 2014.
4. **Modenbach, A.***, Nokes, S. *Effects of solids loadings in sodium hydroxide pretreatment and enzymatic hydrolysis of corn stover*. Presented at the IBE Annual Meeting, Lexington, KY. March 2014.
5. **Modenbach, A.***, Nokes, S. *Example of freshmen biological engineering design projects*. Presented at the IBE Annual Meeting, Lexington, KY. March 2014.
6. **Modenbach, A.***, Nokes, S. *Towards improving hydrolysis of sodium hydroxide pretreated corn stover at high-solids loadings*. Presented at the ASABE Annual International Meeting, Kansas City, MO. July 2013.
7. Gray, K.*, Nokes, S., Montross, M., **Modenbach, A.**, Jackson, J. *Investigation of alkaline hydrogen peroxide pretreatment for its use in an on-farm butanol bioprocessing facility*. Poster presented at the ASABE Annual International Meeting, Kansas City, MO. July 2013.
8. **Modenbach, A.***, Nokes, S., Montross, M., Knutson, B. 2012. *Characterization of soluble and insoluble inhibitor effects on enzymatic hydrolysis at high solids using pretreated corn stover*. Presented at the ASABE Annual International Meeting, Dallas, TX, July 2012.
9. **Modenbach, A.***, Nokes, S., Knutson, B., Rankin, S. 2011. *Recovery of a Purified Stream of C5 Sugars from Lignocellulosic Hydrolyzate Using Microphase-Directed Imprinted Materials*. Presented at the ASABE Annual International Meeting, Louisville, KY, July 2011.

*Presenter

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10. **Modenbach, A.**, Nokes, S.*, Knutson, B., Rankin, S. 2011. *Recovery of a Purified Stream of C5 Sugars from Lignocellulosic Hydrolyzate Using Microphase-Directed Imprinted Materials*. Poster presented at the S-1041 Annual Symposium, Stillwater, OK, 2011.
11. **Abadie, A.***, Nokes, S., Osei-Prempeh, G., Knutson, B., Rankin, S. 2010. *Towards Recovery of Purified Streams of Feedstocks from Biomass for Novel Cellulosic Ethanol Co-Products*. Poster presented at the IBE Annual Meeting Poster Competition, Cambridge, MA, March 2010.
12. **Abadie, A.***, Nokes, S.E., Chen, W. 2008. *Quantifying Cellulase in High-Solid Systems*. Presented at the ASABE Annual International Meeting, Providence, RI, June 2008.
13. **Abadie, A.***, Bridges, T.K.*, Lima, M. 2006. *Minimizing the Environmental Impact of Construction Materials in Playground Design*. Poster presented at the American Society of Agricultural and Biological Engineers Annual Meeting Undergraduate Poster Competition, Portland, OR, June 2006.
14. **Abadie, A.***, Bridges, T.K.*, Qureshi, T., Lima, M. 2006. *Minimizing the Environmental Impact of Construction Materials in Playground Design*. Poster presented at the Environmental Protection Agency's P3: People, Prosperity, and the Planet Student Design Competition for Sustainability, Washington, D.C., May 2006.
15. **Abadie, A.***, Lima, M. 2005. *The Quantification and Extraction of an Anti-tumor Compound from Rice Bran*. Poster presented at the ASAE Annual International Meeting Undergraduate Poster Competition, Tampa, FL, July 2005.

Seminars/Webinars (2 Total)

1. **Modenbach, A.*** *Engaging Our Membership: Advancing Circular Bioeconomy Systems*. Presented as part of the ASABE Member Hour CBS Webinar Series. [Webinar]. April 27, 2023. Approx. 73 people.
2. **Modenbach, A.***, Nokes, S*. *Teaching students how to learn: Strategies you can incorporate into any course to improve student metacognition, learning and motivation*. Presented at the BAE Departmental Seminar, Lexington, KY. October 2016. Approx. 35 people.

Research

1. **Modenbach, A.A.** *Sodium Hydroxide Pretreatment of Corn Stover and Subsequent Enzymatic Hydrolysis: An Investigation of Yields, Kinetic Modeling and Glucose Recovery*. Dissertation. 2008-2013.
2. **Abadie, A.** *Quantifying Cellulase in High Solids Environments*. Thesis. 2006-2008.
3. **Abadie, A.**, Jones, J., Lima, M. *Survey of Women Faculty in Agricultural and Biological Engineering*. 2005-2006.
4. **Abadie, A.**, Qureshi, T., Lima, M. Environmental Protection Agency (EPA) P3 Award Competition. *Minimizing the Environmental Impact of Construction Materials in Playground Design*. **\$10,000**. 2005-2006.
5. **Abadie, A.**, Assad, J., Duvernay, W., Higgins, M. College of Agriculture Undergraduate Research Grant. *The Design of a Continuous Magnetic Nanoparticle Separation and Collection System*. **\$800**. 2005-2006.

*Presenter

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6. **Abadie, A.** College of Agriculture Undergraduate Research Grant. *The Quantification and Extraction of an Anti-tumor Compound from Rice Bran*. **\$1,000**. 2004-2005.

Professional Development

1. **Food Waste Reduction and Recovery Workshop.** Hosted by NIST. Virtual. December 5-7, 2023.
2. **ASABE Certified Journal Reviewer.** Presented by Garey Fox and Kati Migliaccio. July 17, 2022.
3. **Women Executive Leadership Development (WELD) Program.** Cohort 7; February 2022-December 2022. Competitive program (approx. 60% acceptance rate for Cohort 7).
4. **Sustainability in Practice.** 4-week online course offered through Polytechnique Montreal and Engineers Canada on sustainable development and environmental stewardship. March 2022-April 2022.
5. **The Essential Leadership Program.** Hosted by UK Human Resources. Completed 7 of 21 required courses. September 2021-Present.
6. **Kentucky Spirits One-Day Conference.** Hosted by the James B. Beam Institute, February 27, 2020.

Teaching-Related Professional Development

1. **Elevating Professional Skills in Engineering Education.** Presented by Stephanie Adams, Jeffrey Abell, Julian Gay, and Kelly Dore and hosted by ASEE. Aug 13, 2024.
2. **Setting Boundaries and Clear Expectations to Support Learning.** Presented by Jill Abney and Izzy Barber and facilitated by CELT, January 16, 2024.
3. **Engineering Ethics in Academic and Research Settings.** Engineering Ethics workshop sponsored by the ASABE Education, Outreach and Professional Development Professional Ethics Committee July 18, 2022.
4. **Transparent Assignment Design.** Presented by Mike Wallace and Hannah Ruehl. December 2, 2021.
5. **ASEE Essentials of Effective Instruction.** Four-part workshop presented by Terri Lynch-Caris. September 2021.
6. **Methods and Procedures for Teaching Engineering Ethics.** Engineering Ethics workshop sponsored by the ASABE Education, Outreach and Professional Development Professional Ethics Committee, July 14, 2021.
7. **Instructor Training for LockDown Browser and Respondus Monitor: Prevent Cheating During Online Exams.** Respondus Training Team, August 25, 2020.
8. **Engineering Online Teaching Workshop.** Presentation by Christine Goble, David Silverstein, and Sarah Wilson, August 4, 2020.
9. **Demystifying Video Creation.** Presentation by David Cole, Week of Teaching Symposium, July 31, 2020.
10. **Digital Tools.** Presentation by Alicia Benben, July 8, 2020.
11. **Engage Students and Create Class Community.** Presentation by Alicia Benben and Shauna Morgan, Week of Teaching Symposium, April 29, 2020.

12. **Design the Syllabus and Choose Modes of Delivery.** Presentation by Hannah Ruehl and Tia Williams, Week of Teaching Symposium, April 27, 2020.
13. **Engineering Inclusive Classrooms: Guiding Principles and Strategies (Part 2 of 2).** Presentation by Tershia Pinder-Grover, and facilitated by ASEE, April 10, 2019.
14. **Engineering Inclusive Classrooms: Cultivating a Positive Climate (Part 1 of 2).** Presentation by Tershia Pinder-Grover, and facilitated by ASEE, March 20, 2019.
15. **Teaching Metacognition to Help Students Own and Improve Their Learning: Part 2 of 2.** Presentation by Patrick Cunningham and Holly Matusovich, and facilitated by ASEE, February 20, 2019.
16. **Teaching Metacognition to Help Students Own and Improve Their Learning: Part 1 of 2.** Presentation by Patrick Cunningham and Holly Matusovich, and facilitated by ASEE, February 6, 2019.
17. **Learn How to Ask Better Questions with the Question Formulation Technique.** Presentation by Luz Santana and Andrew P. Minigan, Right Question Institute, and facilitated by ASEE, December 5, 2018.
18. **Integrity and Ethics in Instruction: A Workshop and Conversation.** Presented by T. Lynn Williamson, Dr. Joseph McGillis, Dr. Morris Grubbs, and Dr. G.T. Lineberry and sponsored by College of Agriculture, Food and Environment, January 9, 2018.
19. **Effective Teaching Strategies.** Presented by Dr. Kim Woodrum, Dr. Matt Beck, Dr. Czarena Crofcheck, and Dr. Bill Smith and facilitated by the Pigman College of Engineering, March 21, 2017.
20. **Cheating – Curbing, Catching, and Consequences.** Presented by Dr. Bill Burke and facilitated by CELT, February 15, 2017.
21. **Mindset and Motivation.** Presented by CELT, September 28, 2016.
22. **Metacognition: The Key to Teaching Students Transformative Learning Strategies.** Presented by Dr. Sandra McGuire and facilitated by CELT, May 4, 2016.
23. **Accommodating Accommodations: How to Work with Students with Disabilities or Emotional Concerns.** College of Agriculture, Food and Environment Lunch-and-Learn Series presented by Dr. Leisa Pickering and Dr. Matt Ashton, April 13, 2016.
24. **Panel Discussion with Underrepresented Students in STEM.** Facilitated by CELT and Dr. Renee Fatemi, April 7, 2016.
25. **Teaching the Millennials with the Net Generation on the Way (Advice from a Boomer).** Graduate Student Workshop presented by Bill Burke, November 10, 2011.
26. **Preparing for the Professoriate: What You Can Do Now to Optimize Your Success.** Graduate Student Workshop presented by Morris Grubbs and Linda Worley, April 13, 2011.
27. **Effective Course Design: Teaching and Learning Activities.** Graduate Student Workshop, April 2010.
28. **Effective Course Design: Generating Learning Goals.** Graduate Student Workshop, April 2010.
29. **Designing for Significant Learning.** Presented by Kathryn Cunningham, May 2007.

Advising-Related Professional Development

1. **Email Efficiency Tips & Tricks Virtual Training.** Presented by Casey Shadix and hosted by UK Academic Advising, Office of Student Success, June 13, 2024.
2. **Trauma Informed Campus and Classroom.** Presented by Laura J. Clark and hosted by UK Academic Advising, Office of Student Success, June 6, 2024.
3. **Canvas Notes Refresher.** Presented by Jaime Wainscott and hosted by UK Academic Advising, Office of Student Success, May 22, 2024.
4. **University of Kentucky Advising Network Professional Development Day.** Presentations by Sean Bridgen and Sydney Shields and hosted by the UK Advising Network, May 6, 2024.
5. **University of Kentucky Advising Network Professional Development Day.** Presentations by Leron Collier, Shawn Stuart, Katherine Hale, and Jesse Farley and hosted by the UK Advising Network, May 8, 2023.
6. **University of Kentucky Advising Network Professional Development Day.** Presentations by Carol Wilson, Hannah Byrd, Rolando Torres, and Karen Slaymaker and hosted by the UK Advising Network, May 9, 2022.
7. **Integrated Success Coach Training.** Presented by Julie Bradley, Bailey Ubellacker, Alli Lake, Melinda Humbert, Benn Dunn, Trevor Tierney, and Dominick Williams, December 11, 2020.
8. **Canvas as an Advising Tool.** Presentation by Jordan Hoehler and Ryan Story, and facilitated by the UK Advising Network, September 26, 2019.
9. **Academic Coaching Training.** Presentation by Julie Bradley, May 21, 2019.
10. **University of Kentucky Advising Network Professional Development Day.** Presentations by Kim Scott, Colette Tebeau, Amy Karr, John Blaine, Lexie Foellger and hosted by the UK Advising Network, May 10, 2019.
11. **Student Anxiety and What Advisors Should Know.** Presentation by the UK Counseling Center, and facilitated by the UK Advising Network, February 13, 2019.
12. **Degree Audit Training.** Presentation by Mike Shanks, November 29, 2018.
13. **COE Advisors Professional Development Workshop.** Presentations by Marietta Watts, Rayne Parker, Julie Bradley, and Buddy Hall and facilitated by Jennifer Doerge, June 1, 2018.
14. **University of Kentucky Advising Network Professional Development Day.** Presentations by Sarah Ballard, Meg Marquis, and Dr. James Thomas and hosted by the UK Advising Network, May 18, 2018.
15. **Holding Difficult Conversations.** Presented by Debra Graham and sponsored by Pigman College of Engineering, January 24, 2018.
16. **University of Kentucky Advising Network Professional Development Day.** An Introduction to Design Thinking. Presented by John Nash and hosted by the UK Advising Network, May 19, 2017.
17. **Improving Academic Advising to Support Student Success: A Campus-Wide Approach to Open Dialogue and Changing Culture.** Presented by Charlie Nutt, Lynn Brabender, and Jennifer Joslin and facilitated by NACADA, May 11, 2017.
18. **COE Advisors Professional Development Workshop.** Presented by Rob Theakston, Susan Herrick, Jennifer Doerge, and Dr. Beth Higgins and facilitated by Jennifer Doerge, May 3, 2017.

In-Service Training

1. **Graduate School Admissions and Scholarship Faculty Reviewer Training.** September 20, 2023.
2. **UK Human Research – Group 2 Social/Behavioral Investigators and Key Personnel (Basic).** June 6, 2022.
3. **UK Responsible Conduct of Research (Refresher).** January 3, 2022.
4. **Question Persuade Refer (QPR) Training.** Presented by Dr. Amanda Bloom. January 8, 2021.
5. **UK Responsible Conduct of Research (Basic).** December 1, 2020.
6. **Lunch and Learn Addiction 101.** Presentation by Holly Dye, September 19, 2019.
7. **Mental Health First Aid Training.** Presentation by Ashley Hinton, May 8-9, 2019.
8. **Green Dot Overview.** Presentation by Deloris Foxworth and Maria Rivera, and facilitated by the UK Advising Network, February 19, 2019.
9. **Meeting Productively.** Presented by Debra Graham and sponsored by Pigman College of Engineering, March 1, 2018.
10. **Unconscious Bias Training (Faculty Emphasis).** May 16, 2017.
11. **Digital Measures Training Workshop.** Presented by Megan Lucy, May 11, 2017.
12. **Internal Review Board.** College of Agriculture, Food and Environment Lunch-and-Learn Series presented by Helene Lake-Bullock and Noe Tirado-Muniz, April 13, 2017.
13. **Active Shooter Forum.** Presented by Officer Boatman (UKPD) and sponsored by College of Agriculture, Food and Environment, February 15, 2017.
14. **Student Financial Wellness.** College of Agriculture, Food and Environment Lunch-and-Learn Series presented by Holly Sandlin and Tiffany Jackson, February 7, 2017.
15. **Working with Students in Distress.** Presented by the UK Counseling Center and sponsored by the Pigman College of Engineering, January 3, 2017.
16. **CAFE Social Media Workshop – Analytics.** Presented by Jenny Evans and Renee Fox, November 17, 2016.
17. **SafeZone Workshop.** University of Kentucky Office of LGBTQ* Resources presented by Lance Poston, March 2, 2016.
18. **BAE Brown Bag Mentoring Lunch.** Sponsored by BAE Department for new faculty, November 11, 2016; February 14, 2017; March 14, 2017; April 11, 2017.

Extramural Projects

ASABE Circular Bioeconomy Systems Day

August 2022-July 2023

- Coordinated program development and planning of a one-day event that included invited speakers, oral presentations, and poster presentations, and held in conjunction with ASABE's 2023 annual international meeting
- Attended by approximately 200 people

ASABE Bioprocess Startup Competition

August 2021-Present

- Collaborated with peers at multiple universities to develop a new “Shark Tank”-style student competition for students to pitch ideas for a bioprocess engineering startup company or product
- Created rubric and scoresheet for judges to use during the evaluation phase of the competition
- Evaluated entries for the written portion of the competition

UK Biosystems and Agricultural Engineering Academic Showcase

October 2018-April 2019

- Assisted with the development and planning of an event to showcase the academic and professional success of current students and alumni

ASABE Young Professionals Community Professional Development Workshop

July 2014-April 2016

- Secured funding for the development of the workshop, \$50,000
- Developed workshop programs, prepared advertisement materials, and secured guest speakers

UK Biosystems and Agricultural Engineering Graduate Student Recruitment Event

August 2010-Present

- Developed a graduate student recruitment event held annually for the Department of Biosystems and Agricultural Engineering at the University of Kentucky
- Prepared advertisement materials and application forms, developed event programs, and interacted with faculty and potential graduate students
- Recruited 26 of 71 attendees (37% yield) into the Biosystems and Agricultural Engineering Graduate Program since 2014 event

Distance-Learning Course Development

June 2007-December 2007

- Worked with professors at multiple universities to develop and implement a Fundamentals of Biorenewable Resources course and a Biofuels course to promote distance-learning

LSU Community Playground Project

June 2003-July 2006

- Worked with community partners in the city of Baton Rouge, LA on playground designs
- Constructed a playground at the Louisiana School for the Deaf
- Investigated public school playground conditions in Baton Rouge, LA

Professional Society and Organization Memberships

1. National Academic Advising Association (NACADA; January 2017-Present)
2. ASABE KY Section (May 2015-Present)
3. American Society of Engineering Education (ASEE; January 2014-Present)
4. Gamma Sigma Delta Honor Society of Agriculture (March 2012-Present)
5. ASABE Alpha Epsilon Honor Society Kentucky Omega Chapter (April 2007-Present)
6. Institute of Biological Engineers (IBE; January 2007-December 2015)
7. American Society of Agricultural and Biological Engineers (ASABE; January 2005-Present)
8. Louisiana State University Biological Engineering Student Organization (BESO; August 2003-August 2005)

Professional Meetings Attended

1. ASABE Annual International Meeting. Anaheim, CA (2024)
2. ASABE Annual International Meeting. Omaha, NE (2023)
3. ASEE Annual Conference and Expo. Baltimore, MD (2023)
4. ASABE Annual International Meeting. Houston, TX (2022)
5. ASABE Annual International Meeting. Virtual (2021)
6. ASEE Annual Conference and Expo. Virtual (2021)
7. ASABE Annual International Meeting. Virtual (2020)

8. ASEE Annual Conference and Expo. Virtual (2020)
9. ASABE Annual International Meeting. Boston, MA (2019)
10. ASEE Annual Conference and Expo. Tampa, FL (2019)
11. ASABE Annual International Meeting. Spokane, WA (2017)
12. ASEE Annual Conference and Expo. Columbus, OH (2017)
13. ASABE Annual International Meeting. Orlando, FL (2016)
14. ASABE Annual International Meeting. New Orleans, LA (2015)
15. ASABE Annual International Meeting. Montreal, Quebec, Canada (2014)
16. ASEE Annual Conference and Expo. Indianapolis, IN (2014)
17. IBE Annual Meeting. Lexington, KY (2014)
18. ASABE Annual International Meeting. Kansas City, MO (2013)
19. ASABE Annual International Meeting. Dallas, TX (2012)
20. ASABE Annual International Meeting. Louisville, KY (2011)
21. ASABE Annual International Meeting. Pittsburgh, PA (2010)
22. IBE Annual Meeting. Cambridge, MA (2010)
23. ASABE Annual International Meeting. Reno, NV (2009)
24. ASABE Annual International Meeting. Providence, RI (2008)
25. IBE Annual Meeting. Raleigh, NC (2008)
26. ASABE Annual International Meeting. Minneapolis, MN (2007)
27. IBE Annual Meeting. St. Louis, MO (2007)
28. ASABE Annual International Meeting. Portland, OR (2006)
29. ASABE Annual International Meeting. Tampa, FL (2005)

Service and Leadership

Service – Committee Membership

University Committees

1. Senate Undergraduate Curriculum Council. Elected Martin-Gatton CAFE Representative (August 2024-Present)
2. University Appeals Board (September 2020-August 2023)
3. Senate Undergraduate Curriculum Council – Advising Network Representative (July 2018-May 2021)

College Committees

1. College of Agriculture, Food and Environment Faculty Council Member (May 2022-Present)

Department Committees

1. BAE Search Committee Assistant/Associate/Professor Extension Professor in Agricultural Health and Safety (June 2023-Present)
2. BAE Engineer Aide Principal Staff Search Committee (June 2022-November 2022)
3. BAE Laboratory Safety Committee (September 2021-Present)
4. BAE Search Committee Assistant Professor in Food and Bioprocess Engineering and Fermentation (February 2020-May 2021)
5. BAE Search Committee Administrative Assistant (January 2020)
6. BAE Soil and Watershed Science Graduate Certificate Committee (July 2017-Present)
7. Technical Systems Management Curriculum Committee (September 2015-December 2019)
8. BAE Undergraduate Curriculum Committee (September 2014-Present)
9. BAE Student Recruitment and Outreach Committee (September 2014-Present)
10. BAE Alumni Committee (September 2014-August 2021)

11. BAE Periodic Program Review Committee (*Ad Hoc*; October 2011-April 2012)
12. BAE Research and Graduate Studies Committee (September 2011-September 2012, September 2014-Present)
13. BAE Departmental Seminar Committee (August 2007-August 2011, August 2013-Present)

Professional Society Committees

1. ASABE Search Committee Executive Director (August 2024-Present)
2. ASABE P-130 Bioprocess Startup Committee (August 2023-Present)
3. ASABE M-115 A.W. Farrall Young Educator Award Committee (August 2023-Present)
4. ASABE Positioning and Visual Identity Committee (*Ad Hoc*; September 2022-July 2023)
5. Transitioning Food and Agriculture to Circular Systems (TFACS) Task Force (August 2022-July 2023)
6. ASABE Foundation Board of Trustees (July 2021-July 2024, July 2024-Present)
Development Committee (July 2021-Present)
Nominating Committee (November 2021-Present)
7. ASABE M-102 Awards Coordinating Committee (September 2019-Present)
8. ASABE Member Value Committee (*Ad Hoc*; July 2017-August 2018)
9. ASABE Initiative Fund Review Committee (July 2017-July 2020)
10. ASABE M-163 Gale A. Holloway Professional Development Award Committee (September 2016-Present)
11. ASABE YPC Executive Committee – Membership Development Council Representative (July 2013-July 2015)
12. ASABE Membership Development Council – YPC Representative (July 2013-July 2015)
13. ASABE BE-28 Bioconversion and Bioprocesses Technical Committee (July 2013-July 2014)
14. ASABE E-05 Marketing and External Communication Committee (July 2012-Present)
15. ASABE YPC Executive Committee Member-At-Large – Coordinated invited speakers and prepared and developed events and activities for the ASABE Annual International Meeting (July 2010-July 2013)
16. ASABE P-120 Student Organizations Committee (June 2008-July 2017)

Other Committees

1. University of Kentucky Department of Electrical and Computer Engineering Senior Design External Review Committee (April 2020-May 2021)
2. University of Florida Department of Agricultural and Biological Engineering Advisory Board (two terms, October 2018-December 2024)
3. LSU Tiger Marching Band Clarinet Section Member – Attended and performed at university events and home and away games, as well as the Cotton Bowl, the National Championship Game at the Sugar Bowl, the Capitol One Bowl, and the Chick-Fil-A Peach Bowl (August 2002-May 2006)

Service – Leadership

Past Chair

1. ASABE Circular Bioeconomy Systems Institute Working Group 2 (July 2023-July 2024)
2. ASEE BAE Division (June 2020-July 2021)
3. ASABE Membership Development Council (July 2017-August 2018)

Chair

1. ASABE TFACS Circular Bioeconomy Systems Working Group 2 (August 2022-July 2023)
2. ASABE E-05 Gathering Information Committee (*Ad-hoc*; July 2020-July 2021)
3. UK BAE Undergraduate Curriculum Committee (September 2019-August 2021)
4. ASABE M-163 Gale A. Holloway Professional Development Award Committee (September 2019-July 2022)

5. ASEE BAE Division (June 2019-June 2020)
6. UK BAE Departmental Seminar Committee (September 2016-August 2021)
7. ASABE Membership Development Council (July 2015-July 2017)
8. ASABE E-05/1 National Engineers' Week Subcommittee (July 2012-July 2019)

Chair Elect

1. ASABE Circular Bioeconomy Systems Institute Working Team 3: Organize Meetings (July 2024-July 2025)

Vice-Chair

1. ASABE M-115 A.W. Farrall Young Educator Award Committee (August 2024-August 2025)
2. ASABE Kentucky Section Vice Chair of Publicity (May 2015-June 2017)
3. ASABE Membership Development Council (July 2014-July 2015)

Secretary/Treasurer

1. ASABE Professional Engineer Institute (July 2020-August 2022)
2. ASABE National Alpha Epsilon Honor Society (June 2009-July 2014; February 2016-July 2019)

Secretary

1. ASABE M-115 A.W. Farrall Young Educator Award Committee (August 2023-August 2024)
2. ASEE BAE Division (June 2017-June 2018)
3. ASABE Kentucky Section (July 2017-July 2018)

Other

1. ASABE Circular Bioeconomy Systems Institute Executive Committee (July 2023-Present)
2. ASABE M-102 Awards Coordinating Committee Executive Committee (July 2022-Present)
3. ASEE BAE Division Awards Chair (June 2020-July 2021)
4. ASEE BAE Division Program Chair (June 2018-June 2019)
5. LSU Tiger Marching Band Clarinet Section Co-Section Leader (July 2005-May 2006)

Service – Other

Reviewer (9 Journals)

1. *AIChE Journal* (2016)
2. *ASCE Conference Proceedings* (2020, 2022, 2023, 2024)
3. *BioEnergy Research* (2015)
4. *Biomass Conversion and Biorefinery* (2014)
5. *Biotechnology for Biofuels* (2015)
6. *Brazilian Journal of Chemical Engineering* (2014)
7. *Energy & Fuels* (2016)
8. *Journal of the ASABE* (2022)
9. *Transactions of the ASABE* (2020)

Mentor (4 Total)

1. ASABE Professional Engineer Mentor Program – mentored 4 Engineers in Training during preparation for professional engineering licensure exam (January 2018-Present)
2. BIPOC in ASABE Mentoring Program – mentoring 1 graduate student (August 2021-August 2022)

Competition Judge

1. ASABE Bioprocess Startup Competition (2022, 2023)
2. CAFE Scholarship Reviewer (2020, 2021, 2022, 2023)
3. National Future City Competition Judge, Washington, D.C. (February 2015)
4. Regional Future City Competition Judge, Lexington, KY (January 2015)

5. Dixie Elementary School Science Fair Judge, Lexington, KY (January 2014)

Organizer/Moderator

1. ASABE Member Hour CBS Webinar Series, (April 2023-June 2023, April-June 2024)
 - Webinar Series Moderator
 - Organized and moderated webinar series related to circular bioeconomy systems featuring industry experts and thought leaders
 - Facilitated discussions, introduced speakers, and managed Q&A session
2. CAFE Promotion and Tenure Workshop (March 2023)
 - Organized and moderated workshop for CAFE faculty related to promotion and tenure processes
 - Facilitated discussions, introduced speakers, and managed Q&A session

Honors and Awards

1. UK Pigman College of Engineering Henry Mason Lutes Excellence in Teaching Award (2024)
2. ASABE Presidential Citation (2023, Awarded for exceptional leadership in planning and outstanding execution of the Circular Bioeconomy Systems Day, Omaha, NE, July, 9, 2023)
3. ASABE A. W. Farrall Young Educator Award (2023, Awarded to an individual under the age of 40 at the time of selection. Honors outstanding success motivating the application of engineering principles to the problems of agricultural engineering.)
4. UK Ken Freedman Outstanding Faculty Advisor Nominee (2021)
5. ASEE Biological and Agricultural Engineering Division Early Achievement in Engineering Education Award (2020)
6. UK College of Engineering Henry Mason Lutes Excellence in Teaching Nominee (2020, 2021, 2024)
7. University of Kentucky Outstanding Biosystems and Agricultural Engineering Teacher (2018, 2019, 2020, 2021, 2023, 2024)
8. ASABE Gale A. Holloway Professional Development Award (2016, Seeks to encourage and recognize outstanding leadership and active involvement in ASABE for early career members)
9. Order of the Engineer, Class of 2011 (2011)
10. New Faces of ASABE (2011, Awarded to members of the American Society of Agricultural and Biological Engineers who are under the age of 30 and have shown outstanding, early-career achievements in agricultural and biological engineering)
11. 2010 Chancellor's Sesquicentennial Service Award (2010, Awarded to the LSU Community Playground Project for their service to the community)
12. National Science Foundation Fellowship (2008-2011, tuition + \$30,000 annual stipend)
13. Donald W. Clayton Engineering Excellence Award for Outstanding Undergraduate Students (2006, \$5,000)
14. Carl H. Thomas Memorial Scholarship (2005)
15. Blue Angels' Alumni Association Scholarship (2004, 2005)
16. LSU Centennial Scholarship (2002-2006, \$1000/year)
17. Pegues Scholarship (2002-2006, \$800/year)
18. TOPS Scholarship – Honors Award (2002-2006, tuition + \$800 annual stipend)
19. LSU Dean's List (4 semesters) and Chancellor's List (3 semesters)

Media Coverage

1. Modenbach, Alicia A. Contributor. "Celebrating 20 Years of the Young Professionals Community." The Lead with ASABE. [Podcast] February 23, 2023.

2. Horsetalk.co.nz. [Researchers work to develop equestrian helmet crush test.](#) Published April 7, 2021.
3. UKNow University of Kentucky News. [UK Students Working to Develop Safety Standard for Equestrian Helmets.](#) Published March 18, 2021.
4. Equus Magazine. [University of Kentucky Students Working to Develop Safety Standard for Equestrian Helmets.](#) Published March 8, 2021.
5. CAFE Equine Program. [Helmet Safety and Connection of Horseshoes to Osteoarthritis Issues are Two Focus Areas for UK Engineering Seniors.](#) Published January 21, 2021.