# Dossier

## (Activities since July 2014 while Associate Professor at University of Tennessee)

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## Table of Contents

| Grand Summary | | |
|---|---|---|
| **Item** | **Activities since July 2014 while Associate Professor at University of Tennessee** | **Career Total** |
| **Research** | | |
| Duty | 100% research appointment | 100% research appointment during most years |
| Published refereed journal articles | 40 | 88 |
| Manuscripts accepted with revisions or submitted | 9 | 9 |
| Manuscripts in preparation | 11 | 11 |
| Published invited book chapters & edited volumes | 1 | 5 |
| Published papers & abstracts in conference proceedings | 33 | 85 |
| Published popular press, in-house organs, & non-refereed journal articles | 14 | 32 |
| Completed research reports | 56 | 106 |
| Received grants or gifts in total (US dollars) | $ 2,447,688 | $ 4,470,551 |
| Received grants or gifts as leading PI (US dollars) | $ 1,607,364 | $ 3,200,559 |
| Received grants or gifts directly to my program (US dollars) | $ 1,145,665 | $ 2,380,799 |
| Delivered professional & technical presentations | 43 | 97 |
| Delivered presentations at seminars and workshops | 11 | 46 |
| **Teaching** | | |
| Duty | No teaching or Extension appointment | No teaching or Extension appointment |
| Taught/guest lectured undergraduate & training courses | 9 | 14 |
| Mentored junior or visiting faculty | 7 | 7 |

| | | |
|---|---|---|
| Supervised postdoctoral scientists & research associates/assistants | 2 | 11 |
| Advised graduate students as major advisor or co-advisor | 6 | 7 |
| Advised graduate students as committee member | 9 | 9 |
| Advised undergraduate interns or employees | 19 | 31 |
| Delivered Extension presentations | 15 | 52 |
| **Service** | | |
| Served on departmental & institutional committees | 13 | 21 |
| Active member of national & international professional societies | 7 | 13 |
| Served for public & private organizations | 21 | 33 |
| Provided professional services to governmental agencies & industries | 13 | 23 |
| Peer reviewed manuscripts for refereed journals | 41 | 110 |

## A. Educational and Employment History, Responsibilities, Criteria and Expectations

## A-2. Educational History and Employment History

## A-2.a. Educational History

| Institution | Program or Degree | Dates in Program | Degree |
|---|---|---|---|
| Purdue University | Agronomy | 09/1997 – 12/2001 | Ph.D. |
| Nanjing Agricultural University | Crop Nutrition & Fertilization | 09/1985 – 07/1988 | M.S. |
| Hunan Agricultural University | Soil Science & Agrochemistry | 09/1981 – 07/1985 | B.S. |

## A-2.b. Employment History

| Ranks Held | Institution | Department | Effective Date of Rank |
|---|---|---|---|
| Associate Professor (Tenured) | University of Tennessee | Plant Sciences | 07/2014 – present |
| Assistant Professor | University of Tennessee | Plant Sciences | 01/2008 – 06/2014 |
| Assistant Professor | Oregon State University | Crop & Soil Science | 07/2004 – 01/2008 |
| Post-Doctoral Research Fellow | Iowa State University | Agronomy | 07/2002 – 07/2004 |
| Post-Doctoral Research Fellow | Purdue University | Agronomy | 01/2002 – 06/2002 |
| Graduate Research Assistant (Part Time) | Purdue University | Agronomy | 09/1997 – 12/2001 |
| Associate Professor | Hunan Academy of Agric. Sci. | Soil & Fertilizer | 08/1997 – 09/1997 |
| Assistant Professor | Hunan Academy of Agric. Sci. | Soil & Fertilizer | 02/1992 – 08/1997 |

| | | | |
|---|---|---|---|
| Associate Researcher | Hunan Academy of Agric. Sci. | Soil & Fertilizer | 07/1988 – 02/1992 |
| Graduate Research Assistant (Part Time) | Nanjing Agric. University | Soil Science & Agrochemistry | 09/1985 – 07/1988 |

## A-3. Statement of Responsibilities

Dr. Xinhua (Frank) Yin holds a 100% research appointment as a Systems Agronomist in the Department of Plant Sciences at the University of Tennessee Institute of Agriculture. He is stationed at the West Tennessee Research and Education Center in Jackson. Dr. Yin was hired as an assistant professor in January 2008 and promoted to an associate professor with tenure in July 2014 in the area of systems agronomy. His research program addresses the needs of producers of agronomic crops, focusing on fertility/nutrient management in rotational cropping systems, sustainability of various row crop production strategies, variable input and precision applications to optimize cropping systems, and evaluation of innovative plant nutrition products.

Dr. Yin's research responsibilities include conceiving, designing, executing, interpreting, and reporting the results of research projects; attracting extramural funding from federal and state governmental agencies, industries, and growers' associations; developing and monitoring annual operating and capital budgets, and monitoring expenditures to accomplish project objectives; recruiting, hiring, and evaluating supporting staff; developing and implementing safety guidelines and procedures; overseeing progress and ensuring data integrity and quality of results; analyzing and interpreting results; reporting research findings at scientific conferences and industry symposiums; and developing refereed journal and Extension publications.

## A-4. Department and College Criteria Statements

**Professors** are expected to

1. hold the doctorate or other terminal degree of the discipline, or present equivalent training and experience appropriate to the particular appointment

2. be accomplished teachers

3. have achieved and to maintain a nationally recognized record in disciplinary research / scholarship/creative activity/engaged scholarship

4. have achieved and to maintain a record of significant institutional, disciplinary, and/or professional service or outreach engagement

5. serve as mentors to junior colleagues

6. have normally served as an associate professor for at least five years

7. have shown beyond doubt that they work well with colleagues and students in performing their university responsibilities

## A-5. Certification of Competence to Communicate in English

Not applicable.

## B. Teaching Ability and Effectiveness

| Summary | | |
|---|---|---|
| **Item** | **Teaching/Mentoring Activities since July 2014 while Associate Professor at University of Tennessee** | **Career Total** |
| Duty | No teaching or Extension appointment | No teaching or Extension appointment |
| Taught/guest lectured undergraduate & training courses | 9 | 14 |
| Mentored junior or visiting faculty | 7 | 7 |
| Supervised postdoctoral scientists & research associates/assistants | 2 | 11 |
| Advised graduate students as major advisor or co-advisor***** | 6 | 7 |
| Advised graduate students as committee member | 9 | 9 |
| Advised undergraduate interns or employees | 19 | 31 |
| Delivered Extension presentations | 15 | 52 |

* I have been working for the Department of Plant Sciences at The University of Tennessee since January, 2008, and am stationed off campus at the West Tennessee Research and Education Center in Jackson, which is 320 miles (5 hours of driving) from main campus. Many prospective graduate students prefer to be on main campus, so it has been difficult for me to recruit graduate students willing to work at such a distant off-campus location. Instead, I have successfully recruited and trained a large number of local college students (31 students since Jan. 2008; 19 students since July 2014) as interns or part-time employees to give them the first-hand experiences in agronomic research.

## B-1. Statements, Information, and Reports

## B-1.a. Candidate's Statement of Teaching Philosophy

Since I am stationed off campus and have no teaching or Extension appointment, my teaching activities at The University of Tennessee consist of: 1) training graduate students, postdoctoral scientists, undergraduate employees and interns, and supporting staff; 2) Extension education of growers, Extension agents, private consultants, industry agronomists, and governmental agency representatives; and 3) guest lecturing to college students. I have supervised and trained 19 undergraduate interns at The University of Tennessee since July 2014 as an associate professor. I always give them plenty of time to learn. I teach research principles, research techniques, skills for field and laboratory work and utilization of research instruments and software, etc. More importantly, I have cultivated their skills and abilities to define, analyze, and solve problems on their own or as members of a team. I was the major adviser for three Ph.D. students and one M.S. student, and I have served on the advisory committees for another nine graduate students since July 2014. As the major professor, I strive to take the graduate student's background, interests, and career goals into consideration as I design his/her education and research program. Also, I strive to place him/her in an appropriate position to be successful upon graduation. Meanwhile, my postdoctoral scientists, graduate students, and student interns have found appropriate jobs after training.

Since my research program is mainly applied research focusing on the problems and issues relating to crop production in Tennessee, some of my time has been devoted to Extension education to deliver my research results to growers, Extension agents, private consultants, industry agronomists, and governmental agency representatives. Through my presentations at different Extension events, such as field days, in-service training of Extension agents, international fertilizer development conferences, and commodity meetings, I have endeavored to deliver research-based practical information to the participants that can be used to increase crop productivity, grower profitability, and environmental sustainability. Meanwhile, I have also learned from the participants at the Extension education events about the problems limiting crop productivity and grower profitability in Tennessee that help guide my research efforts.

I delivered guest lectures to undergraduate classes at the University of Tennessee in Knoxville, Tennessee State University in Nashville, and six other undergraduate classes at several other universities since July 2014 as an associate professor. When I was guest lecturing, I not only educated the students with the knowledge in the text books, but also taught them the facilities, skills, and knowledge required for agronomic research.

Based on my teaching experiences in the USA and China and over 10-year learning experiences as an undergraduate, M.S. student, and Ph.D. student at different universities, I believe professors should be mentors: respectful, encouraging, and available for advice and assistance. An effective teacher is a guide, a resource, and an organizer. To be an outstanding teacher, one needs not only a solid mastery of the subject, but also the appropriate teaching methodology, a comprehensive understanding of one's responsibilities to the students, the academic institution, the discipline, and the society, and the passion for teaching and students. My teaching goals have been to deliver current knowledge to all the students in the class; and more importantly, to cultivate students' skills and abilities to define, analyze, and solve problems on their own or as members of a team.

## B-1.b. List of Courses Taught (Total since July 2014: 0; Career Total: 3)

None because of no teaching appointment.

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## B-1.c. Student Evaluation of Courses (Total since July 2014: 3; Career Total: 3)

1. Guest lectured for ESS (Environmental Soil Science) 334 Soil Nutrient Management and Fertilizers in the Department of Biosystems Engineering and Soil Science at The University of Tennessee Institute of Agriculture for one hour on October 14, 2019. All the student evaluation forms on this guest lecture are attached to this dossier as Appendix A. Below is a summary of the student evaluation results. The following five questions about different aspects of the guest lecture were included in the student evaluation forms. (1). Was lecture relevant? (2) Was presentation effective? (3) Were visual aids useful? (4) Did you learn anything? (5) Was instructor knowledgeable? Each of them had a score range from 1.0 (No) to 5.0 (Yes) with a 0.5 increment.

| **ESS 334 Soil Nutrient Management and Fertilizers at University of Tennessee, Knoxville** | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | |
| **Student** | **Question 1** | **Question 2** | **Question 3** | **Question 4** | **Question 5** | **Average** |
| 1 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | **5.0** |
| 2 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | **5.0** |
| 3 | 4.5 | 5.0 | 5.0 | 5.0 | 5.0 | **4.9** |
| 4 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | **5.0** |
| 5 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | **5.0** |
| 6 | 5.0 | 4.0 | 4.5 | 3.5 | 4.5 | **4.3** |
| 7 | 5.0 | 4.5 | 5.0 | 4.5 | 4.5 | **4.7** |
| 8 | 5.0 | 5.0 | 4.5 | 4.0 | 5.0 | **4.7** |
| 9 | 5.0 | 4.0 | 4.5 | 4.5 | 5.0 | **4.6** |
| 10 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | **5.0** |
| 11 | 5.0 | 4.5 | 4.5 | 4.5 | 5.0 | **4.7** |
| 12 | 4.5 | 4.5 | 5.0 | 4.0 | 5.0 | **4.6** |
| 13 | 5.0 | 4.5 | 5.0 | 5.0 | 5.0 | **4.9** |
| 14 | 5.0 | 5.0 | 4.5 | 5.0 | 5.0 | **4.9** |
| 15 | 4.0 | 4.0 | 5.0 | 5.0 | 5.0 | **4.6** |
| 16 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | **5.0** |
| 17 | 4.5 | 4.5 | 5.0 | 5.0 | 5.0 | **4.8** |
| 18 | 3.0 | 2.5 | 3.5 | 2.0 | 5.0 | **3.2** |
| 19 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | **5.0** |
| 20 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | **5.0** |
| 21 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | **5.0** |

| | | | | | | |
|---|---|---|---|---|---|---|
| 22 | 5.0 | 3.5 | 3.5 | 4.0 | 5.0 | **4.2** |
| 23 | 5.0 | 5.0 | 4.0 | 4.0 | 5.0 | **4.6** |
| 24 | 4.5 | 4.0 | 4.5 | 4.5 | 5.0 | **4.5** |
| 25 | 5.0 | 4.0 | 4.5 | 4.5 | 5.0 | **4.6** |
| 26 | 4.5 | 4.5 | 4.0 | 5.0 | 5.0 | **4.6** |
| 27 | 4.5 | 5.0 | 5.0 | 5.0 | 5.0 | **4.9** |
| 28 | 4.5 | 4.5 | 5.0 | 5.0 | 5.0 | **4.8** |
| 29 | 5.0 | 3.5 | 4.5 | 4.0 | 5.0 | **4.4** |
| 30 | 5.0 | 4.0 | 5.0 | 4.5 | 5.0 | **4.7** |
| 31 | 5.0 | 4.0 | 4.0 | 3.0 | 4.5 | **4.1** |
| 32 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | **5.0** |
| 33 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | **5.0** |
| **Average** | **4.8** | **4.5** | **4.7** | **4.6** | **5.0** | **4.7** |

2. Guest lectured for AGSC 4210 Soil and Plant Analyses in the Department of Agricultural and Environmental Sciences at Tennessee State University in Nashville for one and a half hours on October 1, 2019. All the student evaluation forms on this guest lecture are attached to this dossier as Appendix B. Below is a summary of the student evaluation results. There was only a simple question about the overall quality of the guest lecture in the student evaluation forms. It had a score range from 1.0 (Very Poor) to 5.0 (Excellent) with a 0.5 increment.

| **AGSC 4210 Soil and Plant Analyses at Tennessee State University** | |
|---|---|
| | |
| **Student** | **Overall Quality Score on Lecture** |
| 1 | 5.0 |
| 2 | 4.5 |
| 3 | 5.0 |
| 4 | 4.0 |
| 5 | 4.0 |
| 6 | 5.0 |
| **Average** | **4.6** |

3. Taught “Efficiency Enhanced Urea Fertilizer” at the International Fertilizer Development Center International Training Tour on Technology Advances in Agricultural Production and Fertilization at Jackson, TN on Aug. 21, 2019. All the trainee evaluation forms on this training lecture are attached to this dossier as Appendix C. Below is a summary of the trainee evaluation results. There was only a simple question about the overall quality of the training lecture in the

trainee evaluation forms. It had a score range from 1.0 (Very Poor) to 5.0 (Excellent) with a 0.5 increment.

| **IFDC International Training Tour on Technology Advances in Agricultural Production and Fertilization** | |
|---|---|
| | |
| **Trainee** | **Overall Quality Score on Lecture** |
| 1 | 5.0 |
| 2 | 4.5 |
| 3 | 5.0 |
| 4 | 4.5 |
| 5 | 4.5 |
| 6 | 5.0 |
| 7 | 4.0 |
| 8 | 4.5 |
| 9 | 5.0 |
| 10 | 4.0 |
| 11 | 5.0 |
| 12 | 3.5 |
| 13 | 5.0 |
| 14 | 4.0 |
| 15 | 5.0 |
| 16 | 4.0 |
| 17 | 5.0 |
| 18 | 4.5 |
| 19 | 4.0 |
| 20 | 5.0 |
| **Average** | **4.6** |

## B-1.d. Peer Evaluation of Teaching, Faculty Input and Internal Letters about Teaching Effectiveness (Total since July 2014: 4; Career Total: 4)

1. Peer evaluation forms on his presentations at national academic conferences about his teaching/outreach effectiveness are attached to this dossier as Appendix D.

2. Peer evaluation forms on his presentations at Extension/outreach activities such as field tours, Extension meetings, and international training programs about his teaching/outreach effectiveness are attached to this dossier as Appendix D.

3. A peer evaluation form on his guest lecture for AGSC 4210 Soil and Plant Analyses in the Department of Agricultural and Environmental Sciences at Tennessee State University for one and a half hours on October 1, 2019 is attached to this dossier as Appendix D.

4. Peer evaluation forms on his guest lecture for ESS (Environmental Soil Science) 334 Soil Nutrient Management and Fertilizers in the Department of Biosystems Engineering and Soil Science at University of Tennessee Institute of Agriculture for one hour on October 14, 2019 are attached to this dossier as Appendix D.

## B-2. Other Indicators of Teaching Quality

## B-2.a. Statements from Administrators

## B-2.b. Other Evidence of Teaching and Advising Effectiveness (Total since July 2014: 9; Career Total: 18)

Record of Mentoring of Junior Faculty at University of Tennessee and Visiting Faculty from Other Institutions:

| No. | Name | Title | Institution | Time |
|---|---|---|---|---|
| 1 | Dr. Tyson B. Raper | Tenure-Track Assistant Professor | Department of Plant Sciences, University of Tennessee | Mar. 2019 – present |
| 2 | Drs. David Verbree, Avat Shekoofa, & Nutifafa Adotey | Tenure-Track Assistant Professors. Advice and help were provided on an as needed basis. | Department of Plant Sciences, Department of Biosystems Engineering & Soil Science, University of Tennessee | July 2014 – present |
| 3 | Dr. Yongbo Xu | Visiting Scientist (Full Professor) | Yunnan Agricultural University | Aug. 2019 – Jul. 2020 |
| 4 | Dr. Guangqiang Long | Visiting Scientist (Associate Professor) | Yunnan Agricultural University | Sep. 2019 – Aug. 2020 |
| 5 | Dr. Jingxiu Xiao | Visiting Scientist | Yunnan Agricultural | Dec. 2016 – |

| | | | | |
|---|---|---|---|---|
| | | (Associate Professor) | University | Dec. 2017 |
| 6 | Dr. Xiaohui Wang | Visiting Scientist (Associate Professor) | Jilin Academy of Agricultural Sciences | Dec. 2016 – Dec. 2017 |
| 7 | Yan Zhang | Senior Visiting Scientist (Full Professor) | Xinjiang Academy of Agricultural Sciences | Feb. 2016 – Jul. 2016 |

Record of Supervision of Postdoctoral Scientists, Research Associates, Technicians, and Others:

| No. | Name | Title | Institution | Time |
|---|---|---|---|---|
| 1 | Robert Sharp | Senior Research Associate | University of Tennessee | Oct. 2008 – present |
| 2 | Dr. Shuangli Liu | Research Specialist | University of Tennessee | Jun. 2017 – Dec. 2017 |

## B-2.c. Honors and Awards Received from Teaching (Total since July 2014: 0; Career Total: 1)

None.

## B-2.d. Graduate Students Advised as Major Advisor (Total since July 2014: 6; Career Total: 7)

1. Co-Chair of Advisory Committee, Timothy Robertson, M.S. student, Department of Plant Sciences, Expected to start in Jan. 2020. University of Tennessee, Knoxville.

2. Co-Chair of Advisory Committee, Matthew Davis, M.S. student, Department of Plant Sciences, Expected to start in Jan. 2020. University of Tennessee, Knoxville.

3. Chair of Advisory Committee, Sangeeta Bansal, Ph.D. student, Department of Plant Sciences, Aug. 2016 – present. University of Tennessee, Knoxville. Ph.D. topic: Long-term effects of conservation tillage, cover crops, crop rotations, and fertilizer application on C sequestration and greenhouse gas emissions. Scheduled to graduate in Fall, 2019.

4. Chair of Advisory Committee, Satyendra Kumar Pothula, Ph.D. student, Department of Plant Sciences, Aug. 2014 – Dec. 2014 (transferred). University of Tennessee, Knoxville. Ph.D. topic: Crop yield stability and nutrient cycling under integrated cover crop, crop rotation, and no-tillage systems.

5. Co-Chair of Advisory Committee, Guisu Zhou, Ph.D. student, studied at the College of Natural Resources and Environment, Yunnan Agricultural University (YAU) in China during Sept. 2010 – Feb. 2013 as a part-time student; conducted research and wrote dissertation and manuscripts in the Department of Plant Sciences, University of Tennessee, Knoxville as a full-time student during Mar. 2013 – Aug. 2014 where I served as her major advisor. She went back to YAU in Aug. 2014 and graduated in Jun. 2015. Ph.D. topic: Effect of intercropping and rotational cropping systems on yield, quality, and economic returns of major crops.

6. Co-Chair of Advisory Committee, Jianming Yu, M.S. student, studied at the College of Water Conservancy, Shenyang Agricultural University (SYU) in China during Sept. 2016 – Aug. 2018; conducted research and wrote thesis and manuscripts in the Department of Plant Sciences, University of Tennessee, Knoxville during Sep. 2018 – Sep. 2019 where I served as her major advisor. She returned to SYU in Sep. 2019 and is scheduled to graduate in Fall, 2019.

## B-2.e. Undergraduate Honors Theses Supervised

None.

## B-2.f. Membership on Graduate Degree's Candidates' Committees (Total since July 2014: 9; Career Total: 9)

1. Member of Advisory Committee, Jiani Tan, Ph.D. student, Department of Civil and Environmental Engineering, Aug. 2016 – present. University of Tennessee, Knoxville. Ph.D. topic: Global sulfur and nitrogen depositions – Distribution, source contribution, and critical loads and phosphorus deposition. Scheduled to graduate in Fall, 2019 (Completed dissertation defense on October 24, 2019).

2. Member of Advisory Committee, Surendra Singh, Ph.D. student, Department of Biosystems Engineering and Soil Science, Jan. 2017 – present. University of Tennessee, Knoxville. Ph.D. topic: Developing a sensitive soil health index (SHI) for the agricultural soils of Tennessee. Scheduled to graduate in Spring, 2020.

3. Member of Advisory Committee, Weston Bracey, M.S. student, Department of Plant Sciences, May 2018 – present. University of Tennessee, Knoxville. M.S. topic: Economic and environmental impact of dual-use cover crop species in Tennessee no-till soybean/corn rotations. Scheduled to graduate in Spring, 2020.

4. Member of Advisory Committee, Amin Nouri Gharahassanlou, Ph.D. student, Department of Biosystems Engineering and Soil Science, Aug. 2014 – Dec. 2017. University of Tennessee, Knoxville. Ph.D. topic: Long-term impact of tillage and cropping managements on soil hydro-physical properties and crop yield.

5. Member Advisory Committee, Kacey Cannon, M.S. student, Department of Plant Sciences, Jan. 2016 – May 2017. University of Tennessee, Knoxville. M.S. topic: Soybean yield optimization using nitrogen applications.

6. Member of Advisory Committee, Melissa Reynolds (Stefanini), M.S. student, Department of Agricultural and Resource Economics, Jan. 2013 – May 2015. University of Tennessee, Knoxville. M.S. topic: Evaluating the profitability of alternate agricultural production technologies in crop production.

7. Member of Advisory Committee, Christopher Maners, M.S. student, Department of Plant Sciences, Jan. 2015 – December 2015 (withdrew). University of Tennessee, Knoxville. M.S. topic: Deep placement of K and N fertilizers to prevent late-season K deficiencies.

8. Member of Advisory Committee, Qinjun Li, Ph.D. student, Department of Plant Nutrition, Aug. 2014 – May 2018. China Agricultural University, Beijing. Ph.D. topic: Best phosphorus rate and timing for high-yielding cotton on different soil types in arid area.

9. Member of Advisory Committee, Yingchao Liu, Ph.D. student, Department of Plant Nutrition, Aug. 2014 – Dec. 2017. Yunnan Agricultural University, Kunming. Ph.D. topic: Interactive influences of intercropping by nitrogen on flavonoid exudation and nodulation in faba bean.

## B-2.g. Mentoring of Undergraduates (Total since July 2014: 19; Career Total: 31)

The following undergraduate students were mentored as seasonal employees or interns at University of Tennessee since July 2014:

| No. | Name | Time |
|---|---|---|
| 1 | Nicholas Ross | Apr. 2016 – present |
| 2 | Earl Reed, Jr. | May 2018 – present |
| 3 | Chase Dyle | Mar. 2018 – Aug. 2018 |
| 4 | Cody Bourne | May 2017 – Dec. 2017 |
| 5 | Chase Dyle | May 2017 – July 2017 |
| 6 | Josh Brasher | Jan. 2017 – May 2017 |
| 7 | Jacob Seager | Apr. 2016 – Sep. 2016 |
| 8 | Chase Dyle | May 2016 – Aug. 2016 |
| 9 | Tim Kitzman | Apr. 2016 – Jul. 2016 |
| 10 | Wilbert Jefferson | Sep. 2016 – Oct. 2016 |
| 11 | Tyler Kelly | Apr. 2014 – Dec. 2015 |
| 12 | Logan Mitchell | Sep. 2014 – Dec. 2015 |
| 13 | Chase Dyle | May 2015 – Jul. 2015 |
| 14 | Josh Brasher | Oct. 2015 – Nov. 2015 |
| 15 | Tim Kitzman | Oct. 2015 – Nov. 2015 |
| 16 | Jacob Seager | Oct. 2015 – Nov. 2015 |
| 17 | Hayden Baynes | Apr. 2014 – Jul. 2014 |
| 18 | Heath Curtis | May 2014 – Aug. 2014 |
| 19 | Jonathan Chlarson | Apr. 2013 – Aug. 2014 |

## B-2.h. Guest Lectures to College Classes (Total since July 2014: 9; Career Total: 10)

| No. | Course Title | Institution | Involvement | Semester | Enrolment |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| 1 | ESS 334 Soil Nutrient Management and Fertilizers | University of Tennessee, Knoxville | Guest Instructor | 1 hr., Fall 2019 | 35 |
| 2 | AGSC 4210 Soil & Plant Analyses | Tennessee State University | Guest Instructor | 1.5 hrs., Fall 2019 | 8 |
| 3 | FFA Program | Lexington High School, Henderson County, TN | Guest Instructor | 0.5 hrs., Fall 2019 | 60 |
| 4 | Soil Management | Yunnan Agric. Univ. | Guest Instructor | 2 hrs., Summer 2018 | 60 |
| 5 | Plant Nutrition | Yunnan Agric. Univ. | Guest Instructor | 4 hrs., Spring 2016 | 46 |
| 6 | Research Seminar | Shanghai Jiaotong Univ. | Guest Instructor | 1 hr., Spring 2016 | 22 |
| 7 | Research Topics | Southwest Forestry Univ. | Guest Instructor | 2 hrs., Fall 2015 | 26 |
| 8 | Crop Production | Yunnan Agric. Univ. | Guest Instructor | 2 hrs., Fall 2015 | 91 |
| 9 | Soil Conservation | Yunnan Agric. Univ. | Guest Instructor | 2 hrs., Fall 2015 | 68 |

## B-2.i. Extension Presentations (Total since July 2014: 15; Career Total: 52)

1. **Yin, X.** 2019. Efficiency enhanced urea fertilizer. International Fertilizer Development Center International Training Tour on Technology Advances in Agricultural Production and Fertilization. Oral. Jackson, TN, Aug. 21 (40 min., 1 session, 22 attendees).

2. **Yin, X.** 2018. Overview of foliar nutrient and crop safener product research. University of Tennessee In-Service Training Workshop. *Oral.* Murfreesboro. TN, Nov. 26 (30 min., 1 session, 60 attendees).

3. **Yin, X.,** and T.B. Raper. 2018. Managing sulfur for higher cotton yields. University of Tennessee Cotton Tour Field Day. *Oral.* Jackson. TN Sept. 5 (20 min., 2 sessions, 80 attendees in total).

4. **Yin, X.** 2018. Efficiency enhanced urea fertilizer. International Fertilizer Development Center International Training Tour on Technology Advances in Agricultural Production and Fertilization. *Oral.* Jackson, TN, Aug. 22 (60 min., 1 session, 21 attendees).

5. **Yin, X.** 2018. Innovative fertilizers. National Cotton Council PIE Tour. *Oral.* Jackson, TN, Aug. 6 (10 min., 1 session, 20 attendees).

6. **Yin, X.,** and S. Bansal. 2018. Managing sulfur for higher row crop yields. UT No-Till Field Day. *Oral.* Milan. TN, Jul. 26 (20 min., 6 sessions, 102 attendees in total).

7. **Yin, X.** 2017. Technological advances in nutrient management. International Fertilizer Development Center International Training Tour on Technology Advances in Agricultural Production and Fertilization. *Oral.* Milan, TN, Aug. 23 (40 min., 1 session, 23 attendees).

8. **Yin, X.** 2016. Responses of cotton yields and quality to sulfur applications. International Fertilizer Development Center International Training Tour on Technology Advances in Agricultural Production and Fertilization. *Oral.* Jackson, TN, Aug. 24 (40 min. 1 session, 46 attendees).

9. **Yin, X.,** and T.B. Raper. 2016. Sulfur deficiencies and updated recommendations. UT cotton in-season in-service training. *Oral.* Ames Plantation. TN, Aug. 16 (20 min., 1 session, 26 attendees).

10. Sharp, R., **X. Yin,** and M. Essington. 2016. Nitrogen fertilizer enhancement products. UT No-Till Field Day. *Oral.* Milan. TN, Jul. 28 (20 min., 6 sessions, 116 attendees in total).

11. Savoy, H.J., and X. **Yin.** 2016. Soil nutrient management update. Tennessee Agricultural Production Association (TAPA) Winter Agronomic Workshop. *Oral.* Jackson, TN, Feb. 17.

12. **Yin, X.** 2015. Responses of cotton yields and quality to sulfur applications. International Fertilizer Development Center International Training Tour on Technology Advances in Agricultural Production and Fertilization. *Oral.* Jackson, TN, Aug. 26 (25 min., 1 session, 31 attendees).

13. **Yin, X.** 2014. Precision nitrogen management for cotton. Visitors from Argentina. *Oral.* Milan, TN, Sep. 5 (20 min., 1 session, 32 attendees).

14. **Yin, X.** 2014. Responses of cotton yields and quality to sulfur applications. International Fertilizer Development Center International Training Tour on Technology Advances in Agricultural Production and Fertilization. *Oral.* Jackson, TN, Aug. 20 (25 min., 1 session, 41 attendees).

15. **Yin, X.,** and S. Schaeffer. 2014. Variable rate nitrogen application on cotton. UT No-Till Field Day. *Oral.* Milan, TN, Jul. 24 (20 min., 6 sessions, 125 attendees in total).

## C. Research, Scholarship, and Creative Activity

| Summary | | |
|---|---|---|
| **Item** | **Activities since July 2014 while Associate Professor at University of Tennessee** | **Career Total** |
| Duty | 100% research appointment | 100% research appointment during most years |
| Published refereed journal articles | 40 | 88 |
| Manuscripts accepted with revisions or submitted | 9 | 9 |
| Manuscripts in preparation | 11 | 11 |
| Published invited book chapters & edited volumes | 1 | 5 |
| Published papers & abstracts in conference proceedings | 33 | 85 |
| Published popular press, in-house organs, & non-refereed journal articles | 14 | 32 |
| Completed research reports | 56 | 106 |
| Received grants or gifts in total | $ 2,447,688 | $ 4,470,551 |
| Received grants or gifts as leading PI | $ 1,607,364 | $ 3,200,559 |
| Received grants or gifts directly to my program | $ 1,145,665 | $ 2,380,799 |
| Delivered professional & technical presentations | 43 | 97 |
| Delivered presentations at seminars and workshops | 11 | 46 |

## C-1. Statement of Research/Scholarship/Creative Achievement Approach and/or Agenda

My research program has focused on systems agronomy which encompasses nutrient management, precision agriculture, and sustainable cropping systems. My vision for research is to provide leadership in applied research in agronomic cropping systems in TN, in the US and internationally where applicable. My research goals have been to: (1) develop innovative knowledge, best management practices, decision aids, and expert systems in systems agronomy that improve the profitability and sustainability of agronomic crop production - while minimizing the adverse environmental impacts; (2) develop high quality refereed and Extension publications from research results; and (3) provide information and technology to improve the skills and knowledge of farmers, crop consultants, Extension agents, industry agronomists, governmental agency personnel, and graduate students. My research methodology has varied with the specific research project because methodologies should always be appropriate to the research questions being addressed.

To be a successful faculty member in research, I have adopted the following strategies: (1) frequently develop research proposals to address large and high profile problems in systems agronomy in Tennessee and the U.S.; (2) consistently adopt an integrated approach by working collaboratively with a multidisciplinary team of faculty within the institution and across institutions and in close cooperation with producers, Extension specialists and agents, crop consultants, industry representatives, and governmental agency personnel; (3) aggressively search for funding from federal and state government agencies, industries, and producers' associations; (4) strictly implement research contracts, and regularly report research progress and findings to the funding agencies; (5) effectively and efficiently utilize research resources and facilities; (6) actively participate in academic exchanges; (7) publish research results in high-quality refereed and Extension journals as early as possible; and (8) recruit, train, and place undergraduate interns, graduate students, and postdoctoral research associates.

My research work during my career has produced significant achievements. For instance, I have secured $4,071,361 (including $1,401,849 of three USDA projects as the leading PI) for research. I have authored and co-authored 87 refereed journal articles. I have delivered 97 academic presentations at national and international conferences, etc.

Since July 2014, my research work has produced significant accomplishments. For example, I have secured $2,447,688 (including $760,545 of two USDA projects as the leading PI) for research during the past five years. I have authored or co-authored 39 refereed journal articles and seven additional manuscripts have either been accepted with revisions or submitted to refereed journals. From my research, I have collected enough data for another 12 manuscripts that will be submitted to refereed journals during the next two to three years. I have delivered 43 academic presentations at national and international conferences during the past five years.

Because I conduct mostly applied research focusing on the problems and issues relating to crop production across the state, the results from my research program have great potential impacts on stakeholders and other end-users in the agricultural sector in Tennessee and other states. I have completed projects in the following areas at the University of Tennessee since July 2014 as an

associate professor: Soil health, C sequestration, nutrient cycling, water availability, and crop yield stability under long-term integrated no-tillage, crop rotation, and cover crop systems; responses of yields and nutrient use efficiency of corn and cotton to efficiency enhanced nitrogen fertilizers; cotton yield and quality responses to sulfur applications on different soil types under no-tillage; and precision fluid nitrogen injection using integrated optical sensing and variable-rate technologies. The soil health project involved integrated no-tillage, crop rotation, and cover crop systems for improving soil health and crop yield stability and resilience to stresses. A multi-year evaluation of efficiency enhanced nitrogen fertilizers generated best management practices for increasing the use efficiency of urea and UAN. The cotton S project provided useful S rate guidelines for growers. The precision nitrogen injection project tested variable-rate N application algorithms for cotton for higher yield or less N fertilizer consumption or both in the Mid-Southern states. The results of these projects can be used to assist producers in TN and other states to enhance crop productivity, increase economic returns, and sustain the environment. Meanwhile, the discoveries of these projects will add scientific knowledge in these areas when results are published.

I have conducted small plot research at different research and education centers across the state (Jackson, Milan, Ames Plantation, Springfield, Springhill, Knoxville, & Little River) and on-farm studies in several counties (Gibson, Carroll, Crockett, Lake, Lauderdale, Haywood, Madison, Tipton, Fayette, etc.). I have collaborated with a lot of faculty within the institution and across institutions and have been in close cooperation with Extension specialists and agents, crop consultants, industry representatives, governmental agency personnel, and producers.

## C-2. Research and/or Scholarly Publications

## C-2.a. Articles Published in Refereed Journals (Total since July 2014: 40; Career Total: 88)

* indicates corresponding author; # indicates former graduate students, post-docs, and visiting scientists with Dr. Yin as the major professor.

1. Liu#, S.L., X.H. Wang#, **X. Yin*,** H.J. Savoy, M.A. McClure, and M.E. Essington. 2019. Ammonia volatilization loss and corn nitrogen nutrition and productivity with efficiency enhanced UAN and urea under no-tillage. *Scientific Reports* 9:6610.

2. Wang#, X.H., S.L. Liu#, **X. Yin*,** N. Bellaloui, M.A. McClure, and A. Mengistu. 2019. Soybean seed isoflavones respond differentially to phosphorus in low and high phosphorus soils. *Nutrient Cycling in Agroecosystems* 113:217-230.

3. Yu#, J.M., **X. Yin*,** T.B. Raper, S. Jagadamma, and D.C. Chi. 2019. Nitrogen consumption and productivity of cotton under sensor-based variable-rate nitrogen fertilization. *Agron. J.* (So far published online). https://dl.sciencesocieties.org/publications/aj/pdfs/0/0/agronj2019.03.0197

4. Yu#, J.M., **X. Yin*,** T.B. Raper, and S. Jagadamma. 2019. Sulfur fertilization and sulfur sufficiency range for contemporary cotton cultivars with high yielding potentials.

*International Journal of Plant Production* (So far published online). https://link.springer.com/article/10.1007/s42106-019-00061-9

5. **Yin*, X.,** and G.S. Zhou#. 2019. Nitrogen nutrition, yield, and quality of cotton under varying nitrogen application timings interacted with planting dates. *American Journal of Agricultural Research* 4:72.

6. **Yin*, X.,** and J.H. Winings#. 2019. Corn mineral nutrition responses to NPSFe biofertilizer and NPKZn briquettes. *American Journal of Agricultural Research* 4:69.

7. **Yin*, X.,** and J.H. Winings#. 2019. Residual soil nutrient levels after corn harvest under NPSFe biofertilizer and NPKZn briquettes. *American Journal of Agricultural Research* 4:70.

8. Gharahassanlou, A.M., J. Lee, **X. Yin,** D.D. Tyler, A.M. Saxton, V.R. Sykes, and P. Arelli. 2019. Crop species in no-tillage summer crop rotations affect soil quality and yield in an Alfisol. *Geoderma* 345:51-62.

9. Gharahassanlou, A.M., J. Lee, **X. Yin,** D.D. Tyler, and A.M. Saxton. 2019. Thirty-four years of no-tillage and cover crops improve soil quality and increase cotton yield in Alfisols, Southeastern USA. *Geoderma* 337:998-1008.

10. Wang, S., Z.Y. Zhang, **X. Yin*,** N. Wang, and D.Y. Chen. 2019. Influences of nitrogen application levels on properties of humic acids in chernozem. *Sustainability* 11(19):5405.

11. Stefanini, M.R., J.A. Larson, D.M. Lambert, **X. Yin,** C.N. Boyer, P. Scharf, B.S. Tubana, J.J. Varco, D. Dunn, H.J. Savoy, and M.J. Buschermohle. 2019. Effects of optical sensing based variable rate nitrogen management on yields, nitrogen use and profitability for cotton. *Precision Agriculture* 20:591-610.

12. Singh, S., H.J. Savoy, **X. Yin,** L. Schneider, and S. Jagadamma. 2019. Phosphorus and potassium fertilizer rate verification for a corn-wheat and soybean rotation system in Tennessee. *Agron. J.* 111:1-9.

13. Wang, S., W.H. Li, **X. Yin*,** N. Wang, S. Yuan, T. Yan, S. Qu, and D.Y. Chen. 2019. $Cd^{2+}$ adsorption on different modified rice straws under FTIR spectroscopy as influenced by initial pH, $Cd^{2+}$ concentration, and ionic strength. *International Journal of Environmental Research and Public Health* 16(21):4129.

14. Jagadamma, S., M.E. Essington, S. Xu, and **X. Yin.** 2019. Total and active soil organic carbon from long-term agricultural management practices in west Tennessee. *Agricultural & Environmental Letters* 4:180062.

15. Raper, T.B., M.A. McClure, S. Butler, **X. Yin,** and R. Blair. 2019. Impacts of single and a multiple species cover crop on soybean relative to wheat-soybean double crop system. *Crop, Forage and Turfgrass Management* 5:180104.

16. He, Z., I.A. Tazisong, **X. Yin,** D.B. Watts, Z.N. Senwo, and H.A. Torbert. 2019. Long-term crop rotation, tillage, and poultry litter application affect the chemical properties of an Alabama Utisol. *Pedosphere* 29:180-194.

17. Liu, Y.C, **X. Yin,** J.X. Xiao, L. Tang, and Y. Zheng. 2019. Interactive influences of intercropping by nitrogen on flavonoid exudation and nodulation in faba bean. *Scientific Reports* 9:4818.

18. Xiao#, J.X., Y. Dong, **X. Yin,** J. Ren, L. Tang, and Y. Zheng. 2019. Wheat growth is stimulated by interspecific competition after faba bean attains its maximum growth rate. *Crop Sci.* 59:293-306.

19. Zhou#, G.S., **X. Yin*,** X. Guan, P. Liu, Y. Cha, M. He, W. Zi, and Y. Wang. 2019. Sugarcane yield and quality improvements with additions of sulfur and zinc. *Zhejiang Agricultural Science* 60(8):1401-1405.

20. Chen, S.J., **X. Yin,** S. Wang, and J.G. Wu. 2019. Effect of organic material types on temporal changes in characteristics of humic acids extracted from a chernozem. *Sustainability* 11 (20):5683.

21. Wang, S., N. Wang, K. Yao, Y.C. Fan, W.H. Li, W.H. Han, **X. Yin*,** and D.Y. Chen. 2019. Characterization and interpretation of Cd (II) adsorption by different types of organic materials. *Scientific Reports* 9:17868.

22. Wang, S., J.P. Xu, H.F. Chen, **X. Yin,** and N. Wang. 2019. Structural characteristics of humic-like acid from microbial transformation of lignin participated by metal (hydro) oxides. *Chinese Journal of Analytical Chemistry* 47(10): (In press).

23. Agyin-Birikorang, S., J. Winings#, **X. Yin*,** U. Singh, and J. Sanabria. 2018. Field evaluation of agronomic effectiveness of multi-nutrient fertilizer briquettes for upland crop production. *Nutrient Cycling in Agroecosystems* 110:395-406.

24. Zhou#, G.S., and **X. Yin*.** 2018. Assessing nitrogen nutritional status, biomass and yield of cotton with NDVI, SPAD, and petiole sap nitrate concentration. *Experimental Agriculture* 54:531-548.

25. Xiao#, J.X., **X. Yin,** J.B. Ren, M.Y. Zhang, L. Tang, and Y. Zheng. 2018. Complementation drives higher growth rate and yield of wheat and saves nitrogen fertilizer in wheat and faba bean intercropping. *Field Crops Research* 221:119-129.

26. Gharahassanlou, A.M., J. Lee, **X. Yin,** D.D. Tyler, S. Jagadamma, and P. Arelli. 2018. Soil physical properties and soybean yield as influenced by long-term tillage systems and cover cropping in the Mid-south USA. *Sustainability* 10:4696.

27. Zhou, X., J.A. Larson, **X. Yin,** H.J. Savoy, M.A. McClure, M.E. Essington, and C.N. Boyer. 2018. Profitability of enhanced efficiency urea fertilizers in no-tillage corn production.

*Agron. J.* 110:1439-1446.

28. Zheng, Y.L., **X. Yin,** and H.C. Ma. 2018. Effects of hydrogen peroxide on seed germination, seedling growth and physiological characteristics of *Bombax ceiba* after heat shock. *Pak. J. Bot.* 50:1327-1333.

29. Winings#, J., **X. Yin*,** S. Agyin-Birikorang, U. Singh, J. Sanabria, H.J. Savoy, F.L. Allen, and A.M. Saxton, 2017. Agronomic effectiveness of an organically enhanced nitrogen fertilizer. *Nutrient Cycling in Agroecosystems* 108:149-161.

30. Winings#, J., **X. Yin*,** S. Agyin-Birikorang, U. Singh, J. Sanabria, H.J. Savoy, F.L. Allen, A.M. Saxton, and J.L. DeForest. 2016. Changes of soil microbial population and structure under short-term application of an organically enhanced nitrogen fertilizer. *Soil Sci.* 181:494-502.

31. **Yin, X*.** 2016. Geostatistical analysis of field spatial variability of cotton yield. *J. Geoscience Environment Protection* 4:75-87.

32. **Yin, X*.** 2016. Small scale spatio-temporal variabilities in soil N, leaf N, and Normalized Difference Vegetation Index of cotton. *J. Geoscience Environment Protection* 4:65-74.

33. **Yin*, X.,** N. Bellaloui, M.A. McClure, D.D. Tyler, and A. Mengistu. 2016. Phosphorus differentially influences fatty acids, protein, and oil in soybean. *American Journal of Plant Sciences* 7:1975-1992.

34. Mengistu, A., **X. Yin,** N. Bellaloui, M.A. McClure, D.D. Tyler, and K.N. Reddy. 2016. Potassium and phosphorus effects on disease severity of Charcoal Rot of soybean. *Canadian J. Plant Pathology* 38:174-182.

35. **Yin*, X.,** and C.L. Main. 2015. Nitrogen fertilization and critical nitrogen concentration for contemporary high yielding cotton under no-tillage. *Nutrient Cycling in Agroecosystems* 103:359-373.

36. **Yin*, X.** 2015. In-season side-dressing of urea and ammonium nitrate to cotton on no-till soils with high residual nitrogen and pre-plant nitrogen application. *Open Journal of Soil Science* 5:276-286.

37. Zhou#. G.S., **X. Yin,** Y.M. Li, Z.X. Zhao, L.Z. Xu, and J.L. Ding. 2015. Optimal planting time for corn relay intercropped with flue-cured tobacco. *Crop Sci.* 55:2852-2862.

38. **Yin*, X.,** and G.S. Zhou#. 2014. Influence of cultivars and nitrogen rates on the residual effects of potassium applications to preceding cotton on maize. *Nutrient Cycling in Agroecosystems* 100:273-283. (Published in Dec. 2014).

39. Zhou#, G.S., and **X. Yin*.** 2014. Relationship of cotton nitrogen and yield with Normalized Difference Vegetation Index and plant height. *Nutrient Cycling in Agroecosystems* 100:147-

160. (Published in Nov. 2014).

40. Zhou#. G.S., **X. Yin,** Y.M. Li, H.W. Yang, Z.X. Zhao, P.K. Che, Q.Z. Cao, H. Zhao, Y.J. Wang, and L. Xu. 2014. Effects of relay cropping of corn on the productivity and quality of flue-cured tobacco. *Agron. J.* 103:1651-1658. (Published in Sept. 2014).

**Journal Impact Factors and Number of Article Citations**

I believe that for applied research like my program, either journal impact factor or number of article citations is not a good measurement of publication or research quality. The journals such as Field Crops Research, Agronomy Journal, Nutrient Cycling in Agroecosystems (formerly called Fertilizer Research), Scientific Reports, Geoderma, Crop Science, Sustainability, and Precision Agriculture, etc. I have published with are top journals in my area. Extension specialists and agents, crop consultants, governmental officials, and industry agronomists often do not cite refereed journal articles since they usually do not publish refereed articles, but they do use the results of refereed journal articles such as my refereed publications in their work. I think the adoption of my research results in crop production by farmers and the impacts of my research on crop production and the environment are much more important than the journal impact factors and number of article citations. Below are some relevant journal impact factors and number of article citations I have found in case this information is needed.

| Journal | Impact Factor |
|---|---|
| Field Crops Research | 4.683 |
| Geoderma | 4.564 |
| Scientific Reports | 4.525 |
| Precision Agriculture | 3.356 |
| Pedosphere | 3.188 |
| International Journal of Environmental Research and Public Health | 2.948 |
| Nutrient Cycling in Agroecosystems | 2.848 |
| Sustainability | 2.592 |
| Agronomy Journal | 2.132 |
| Experimental Agriculture | 2.089 |
| Soil Sci. Soc. of Am. J. | 1.997 |
| Crop Science | 1.908 |
| Soil Science | 1.700 |

Google Scholar Citations under my name: 1974 article citations for career and 1055 citations since 2014. It is available at https://scholar.google.com/citations?user=eh03_j4AAAAJ

## C-2.b.Books (Total since July 2014: 1; Career Total: 3)

* indicates corresponding author; # indicates former graduate students, post-docs, and visiting scientists with Dr. Yin as the major professor.

1. Xiao#, J.X., and **X. Yin*.** 2019. Cotton nutrient management. Chapter 4. *In* Chauhan B.S. and K. Jabran (eds.) Cotton Production. John Wiley & Sons Publishers, USA. https://onlinelibrary.wiley.com/doi/abs/10.1002/9781119385523.ch4

## C-2.c. Scholarly and/or Creative Activity Published through a Refereed Electronic Venue

See Section C-2.a. above. Journals in which these papers were published also have an electronic venue.

## C-2.d. Contributions to Edited Volumes (Total since July 2014: 0; Career Total: 2)

None.

## C-2.e. Papers Published in Refereed Conference Proceedings (Total since July 2014: 1; Career Total: 2)

1. Griffin, T.W., E.M. Barnes, P.A. Allen, P. Andrade-Sánchez, D.B. Arnall, K. Balkcom, L.T. Barber, P. Bauer, K.F. Bronson, M.J. Buschermohle, A.P. Jones, Y. Ge, G. Roberson, R.K., Taylor, B.S. Tubana, J.J. Varco, G. Vellidis, E.D. Vories, J.B. Wilkerson, and **X. Yin.** 2014. Pooled analysis of combined primary data across multiple states and investigators for the development of a NDVI-based on-the-go nitrogen application algorithm for cotton. ASABE Paper No. 1900279. St. Joseph, MI.

## C-2.f. Papers or Extended Abstracts Published in Conference Proceedings (Total since July 2014: 33; Career Total: 85)

# indicates former graduate students, post-docs, and visiting scientists with Dr. Yin as the major professor.

1. **Yin, X.,** B. Sangeeta#, V.R. Sykes, A.M. Taylor, S. Jagadamma, and J. Lee. 2019. Carbon footprints and sustainability index of major cropping sequence and bio-cover systems under no-tillage. 2019 Annual Meetings of American Society of Agronomy (ASA)-Crop Science Society of America (CSSA)-Soil Science Society of America (SSSA). *Agronomy Abstract.* San Antonio, TX. Nov. 10-13. (Accepted).

2. Sangeeta#, B., **X. Yin,** H.J. Savoy, S. Jagadamma, J. Lee, and V.R. Sykes. 2019. Long-term influence of phosphorus fertilization and aggregate size distribution on soil organic carbon and nitrogen at different depths under no-tillage. 2019 Annual Meetings of ASA-CSSA-SSSA. *Agronomy Abstract.* San Antonio, TX. Nov. 10-13. (Accepted).

3. Sangeeta#, B., **X. Yin,** V.R. Sykes, S. Jagadamma, and J. Lee. 2019. Long-term influence of crop sequences, bio-covers, and aggregate sizes on organic carbon and nitrogen in soil profile under no-tillage. 2019 Annual Meetings of ASA-CSSA-SSSA. *Agronomy Abstract.* San Antonio, TX. Nov. 10-13. (Accepted).

4. Sangeeta#, B., **X. Yin,** S. Jagadamma, V.R. Sykes, and J. Lee. 2019. Greenhouse gas emission and organic carbon and nitrogen in soil as affected by crop sequence diversity and bio-covers under no-tillage. 2019 Annual Meetings of ASA-CSSA-SSSA. *Agronomy Abstract.* San Antonio, TX. Nov. 10-13. (Accepted).

5. Raper, T.B. M.A. McClure, **X. Yin,** S. Butler, and R. Blair. 2019. Impacts of single- and a multiple-species cover crop on soybean relative to wheat-soybean double crop system. 2019 Annual Meetings of ASA-CSSA-SSSA. *Agronomy Abstract.* San Antonio, TX. Nov. 10-13. (Accepted).

6. Singh, S., D.C. Yoder, S. Jagadamma, **X. Yin,** and F.R. Walker. 2019. Soil conditioning index as a potential soil health index for the cropping systems of Tennessee. 2019 Annual Meetings of ASA-CSSA-SSSA. *Agronomy Abstract.* San Antonio, TX. Nov. 10-13. (Accepted).

7. Singh, S., S. Jagadamma, F.R. Walker, **X. Yin,** and D.C. Yoder. 2019. Evaluating soil health assessment approaches for the diverse agroecosystems in Tennessee. 2019 Annual Meetings of ASA-CSSA-SSSA. *Agronomy Abstract.* San Antonio, TX. Nov. 10-13. (Accepted).

8. Bracey, W., V.R. Sykes, G.E. Bates, R.G. Nave, **X. Yin,** and L. Steckel. 2019. Comparison of dual-use and single-use cover crops in no-till Tennessee production systems. 2019 Annual Meetings of ASA-CSSA-SSSA. *Agronomy Abstract.* San Antonio, TX. Nov. 10-13. (Accepted).

9. Bansal#, S., **X. Yin,** H.J. Savoy, S. Jagadamma, J. Lee, and V.R. Sykes. 2019. Long-term effects of phosphorus fertilization on soil organic carbon, nitrogen, and carbon:nitrogen ratio. 2019 Annual Meetings of SSSA, Canadian Society of Soil Science, and Mexican Society of Soil Science. *Soil Abstract.* San Diego, CA. Jan. 6-9.

10. Gharahassanlou, A.N., J. Lee, **X. Yin,** and D.D. Tyler. 2019. Thirty four years of tillage, cover crops, and fertilization effect on yield and yield stability under weather extremes. 2019 Annual Meetings of SSSA, Canadian Society of Soil Science, and Mexican Society of Soil Science. *Soil Abstract.* San Diego, CA. Jan. 6-9.

11. **Yin, X.,** B. Tubaña, J. Varco, P. Scharf, J.A. Larson, & D. Dunn. 2018. Precision N injection for cotton using integrated optical sensing and variable-rate technologies. 2018 Annual

Meetings of ASA-CSSA-Canadian Society of Agronomy. *Invited by Agronomic Production Systems Section of ASA. Agronomy Abstract.* Baltimore, MD. Nov. 4-7.

12. **Yin, X.,** T.B. Raper, and H.J. Savoy. 2017. Sulfur applications on no-till cotton and soil sulfur testing method comparison. 2017 Annual Meetings of ASA-CSSA-SSSA. *Agronomy Abstract.* Tampa, FL. Oct. 22-26.

13. Xiao#, J.X., **X. Yin,** L. Tang, and Y. Zhang. 2017. Wheat and faba bean intercropping stimulates non-phenolic organic acids exuded by roots but mitigates phenolic acids exudation. 2017 Annual Meetings of ASA-CSSA-SSSA. *Agronomy Abstract.* Tampa, FL. Oct. 22-26.

14. Lee, J., A.N. Gharahassanlou, **X. Yin,** D.D. Tyler, H.J. Savoy, and N.S. Eash. 2017. Long-term interactive impact of cover crop and no-tillage on soil hydro-physical quality, N-fertilizer demand and rainfed cotton yield. 2017 Annual Meetings of ASA-CSSA-SSSA. *Agronomy Abstract.* Tampa, FL. Oct. 22-26.

15. Singh, U., D. Hellums, W. Bible, V. Henry, J. Sanabria, and **X. Yin.** 2017. Performance of urea enhanced with urease inhibitors. 2017 Annual Meetings of ASA-CSSA-SSSA. *Agronomy Abstract.* Tampa, FL. Oct. 22-26.

16. Gharahassanlou, A.N., J. Lee, **X. Yin,** D.D. Tyler, N.S. Eash, and H.J. Savoy. 2017. Can long-term crop rotation improve soil hydro-physical quality and production under no-tillage? 2017 Annual Meetings of ASA-CSSA-SSSA. *Agronomy Abstract.* Tampa, FL. Oct. 22-26.

17. **Yin, X.,** and T.B. Raper. 2017. Sulfur applications for no-tillage cotton and comparison of soil sulfur testing methods. Technical Conference of Cotton Agronomy, Physiology, and Soil. *Proceedings of Beltwide Cotton Conferences.* Dallas, TX. Jan. 4-6.

18. Brown, F., T.B. Raper, **X. Yin,** S. Butler, D. McCurley. 2017. Evaluation of potassium placement, potassium rate and nitrogen placement to prevent potassium deficiencies. *Proceedings of Beltwide Cotton Conferences.* Dallas, TX. Jan. 4-6.

19. Larson, J.A., C. Boyer, M. Stefanini, D.M. Lambert, **X. Yin,** H.J. Savoy, M. Buschermohle, D.D Tyler, J. Varco, B. Tubana, and P. Scharf 2017. Risk management benefits of optical sensing and variable rate technology in cotton production. Technical Conference of Cotton Economics and Marketing. *Proceedings of Beltwide Cotton Conferences.* Dallas, TX. Jan. 4-6.

20. **Yin, X.** 2016. Precision nitrogen injection for cotton with integrated optical sensing and variable rate technologies. 2016 Annual Meetings of ASA-CSSA-SSSA. *Agronomy Abstract.* Phoenix, AZ. Nov. 6-9.

21. **Yin, X.** 2016. Mineral nutrition and yields of corn, soybean, and cotton as affected by long-term conservation tillage, cover crops, and crop rotations. 2016 Annual Meetings of ASA-CSSA-SSSA. *Agronomy Abstract.* Phoenix, AZ. Nov. 6-9.

22. Gharahassanlou, A.N., J. Lee, **X. Yin,** and D.D. Tyler. 2016. Impact of thirty four years of tillage and cover crop management on soil physical properties. 2016 Annual Meetings of ASA-CSSA-SSSA. Agronomy Abstract. Phoenix, AZ. Nov. 6-9.

23. Savoy, H.J., S. Jagadamma, **X. Yin,** and D. Joines. 2016. Crop and soil response from phosphorus and potassium fertilizer rate verification for the State of Tennessee. 2016 Annual Meetings of ASA-CSSA-SSSA. *Agronomy Abstract*. Phoenix, AZ. Nov. 6-9.

24. Larson, J., M. Stefanini, **X. Yin,** J.J. Varco, D. Dunn, B.S. Tubana, C.L. Main, P. Scharf, H. Savoy, M. Buschermohle, D.D. Tyler, and J. Dodd. 2016. Net returns and production use efficiency for optical sensing and variable rate nitrogen technologies in cotton production. *Proceedings of The 13th International Conference on Precision Agriculture*. Union Station, MO. Jul 31-Aug. 3.

25. **Yin, X.,** and C.L. Main. 2016. Nitrogen fertilization and critical nitrogen concentration for contemporary high yielding cotton under no-tillage. Technical Conference of Cotton Soil Management and Plant Nutrition. *Proceedings of Beltwide Cotton Conferences*. New Orleans, LA. Jan. 5-7.

26. Raper, T.B. and **X. Yin.** 2016. Deep placement of K and N fertilizers to prevent late season K deficiencies. *Proceedings of Beltwide Cotton Conferences*. New Orleans, LA. Jan. 5-7.

27. **Yin, X.,** and J. Winings. 2015. Soil microbial community structure responses to an organically enhanced nitrogen fertilizer. 2015 Annual Meetings of ASA-CSSA-SSSA. *Agronomy Abstract.* Minneapolis, MN. Nov. 15-18.

28. Savoy, H.J., **X. Yin,** M.A. McClure, and M.E. Essington. 2015. In field evaluation of products purported to reduce ammonia-N loss from urea. 2015 Annual Meetings of ASA-CSSA-SSSA. *Agronomy Abstract.* Minneapolis, MN. Nov. 15-18.

29. Stefanini, M.R., J.A. Larson, C.N. Boyer, S.H. Cho, D. Lambert, and **X. Yin.** 2015. Profitability of variable-rate technology in cotton production. 2015 Southern Agricultural Economics Association (SAEA) Annual Meeting. *Abstract.* Atlanta, GA. Jan. 31-Feb. 3.

30. Savoy, H.J. Jr., and **X. Yin.** 2015. Verification of fertilizer recommendations in a corn-wheat-soybean rotation in TN. ASA Southern Branch 2015 Annual Meeting. *Abstract.* Atlanta, GA. Feb. 1-3.

31. **Yin, X.,** and G.S. Zhou#. 2015. NDVI, SPAD, and petiole sap nitrate utilization in nitrogen nutrition and growth assessment and yield prediction for cotton. Consultants Conference. *Proceedings of Beltwide Cotton Conferences.* San Antonio, TX. Jan. 5-7 (Invited).

32. **Yin, X.,** and G.S. Zhou#. 2015. NDVI, SPAD, and petiole sap nitrate utilization in nitrogen nutrition and growth assessment and yield prediction for cotton. Technical Conference of Cotton Soil Management and Plant Nutrition. *Proceedings of Beltwide Cotton Conferences*.

San Antonio, TX. Jan. 5-7.

33. **Yin, X.,** G.S. Zhou#, and D. Verbree. 2014. Long-term residual effects of potassium to cotton on soil potassium supply and corn productivity under no-tillage. 2014 Annual Meetings of ASA-CSSA-SSSA. *Agronomy Abstract.* Long Beach, CA. Nov. 2-5.

## C-2.g. Articles Published in Popular Press (Total since July 2014: 4; Career Total: 14)

1. Johnson, T.M., J.A. Larson, **X. Yin,** H.J. Savoy, M.A. McClure, and M.E. Essington. 2018. UTIA studies profitability of enhanced efficiency urea fertilizers. *Delta Farm Press.* Dec. 4.

2. Johnson, T.M., J.A. Larson, **X. Yin,** H.J. Savoy, M.A. McClure, and M.E. Essington. 2018. UTIA studies profitability of enhanced efficiency urea fertilizers. *Southeast Farm Press.* Dec. 4.

3. Johnson, T.M., J.A. Larson, **X. Yin,** H.J. Savoy, M.A. McClure, and M.E. Essington. 2018. Profitability of enhanced efficiency urea fertilizers studied at UTIA. *New Chamber of Tennessee.* Dec. 4.

4. Raper, T.B., H. Kelly and **X. Yin.** 2016. Red leaves on your plants? It's important to know why. *AgFax.* Jul. 30.

## C-2.h. Articles Appearing in In-House Organs (Total since July 2014: 9; Career Total: 12)

1. Larson, J.A., X. Zhou, C.N. Boyer, **X. Yin,** M.A. McClure, H.J. Savoy, and M.E. Essington. 2019. Effects of enhanced efficiency urea on no-till corn yields and profit. *University of Tennessee Extension Bulletin*. W828.

2. Johnson, T.M., J.A. Larson, **X. Yin,** H.J. Savoy, M.A. McClure, and M.E. Essington. 2018. UTIA studies profitability of enhanced efficiency urea fertilizers. *UTIA News.* Nov. 9.

3. Johnson, T.M., J.A. Larson, **X. Yin,** H.J. Savoy, M.A. McClure, and M.E. Essington. 2018. UTIA studies profitability of enhanced efficiency urea fertilizers. *UTIA Agricultural and Resource Economics News.* Nov. 6.

4. Raper, T.B., M.A. McClure, **X. Yin,** and B. Brown. 2017. Sulfur and Tennessee row crops. *University of Tennessee Extension Bulletin*. W435.

5. Savoy, H.J. **X. Yin,** M.A. McClure, and M.E. Essington. 2016. New nitrogen products and nitrogen use efficiency enhancement products. *University of Tennessee Extension Bulletin*. W364.

6. Raper, T.B., H.Y. Kelly, and **X. Yin.** 2016. Red cotton leaves: Causes and implications. *University of Tennessee Extension Bulletin*.W344.

7. Raper, T.B., H.Y. Kelly, and **X. Yin.** 2016. Red cotton leaves: Causes and implications. *University of Tennessee news.utcrops.com*. Jul. 30.

8. Raper, T.B., and **X. Yin.** 2016. Updated sulfur recommendations for cotton. *University of Tennessee news.utcrops.com*. Jul. 6.

9. Raper, T.B and **X. Yin.** 2015. Sulfur deficiencies in cotton. *University of Tennessee news.utcrops.com* Aug. 3.

## C-2.i. Research Reports Submitted to Sponsors (Total since July 2014: 56; Career Total: 106)

1. **Yin, X.,** and V. Sykes. 2018. Long-term effects of cover crops and crop rotations on soil health and water availability. The United Soybean Board Grant Final Report.

2. Sykes, V., R. Nave, G. Bates, **X. Yin,** and L. Steckel. 2018. Economic and environmental impact of multi-use cover crop species in Tennessee no-till soybean/corn rotations. The United Soybean Board Grant Final Report.

3. **Yin, X.** 2018. Yield and quality responses of corn, cotton, and soybean to Micro Essentials. The Mosaic Company Grant Report.

4. **Yin, X.** 2018. Improving urea nitrogen use efficiency on corn with Agrotain products. The Koch Industries, Inc. Grant Report.

5. **Yin, X.** 2018. Fertigation of K and S on no-till soybean during late growing seasons. Tessenderlo Kerley, Inc. Grant Report.

6. **Yin, X.** 2018. Corn and cotton foliar nutrition trials. Brandt Consolidated Inc. Grant Report.

7. **Yin, X.** 2018. Effects of humic acid addition to UAN foliar application on corn leaf burn. Live Earth Products Inc. Grant Report.

8. McClure, M.A., L. Steckel, S. Stewart, H.Y. Kelly, **X. Yin,** and S. Danehower. 2018. Soybean agronomics – Cultural practices and fertility for yield enhancement. Tennessee Soybean Promotion Board Grant Report.

9. **Yin, X.,** and V. Sykes. 2018. Long-term effects of cover crops and crop rotations on soil health and water availability. The United Soybean Board Grant 4th Quarterly Report.

10. Sykes, V., R. Nave, G. Bates, **X. Yin,** and L. Steckel. 2018. Economic and environmental impact of multi-use cover crop species in Tennessee no-till soybean/corn rotations. The United Soybean Board Grant 4th Quarterly Report.

11. **Yin, X.,** and V. Sykes. 2018. Long-term effects of cover crops and crop rotations on soil health and water availability. The United Soybean Board Grant 3rd Quarterly Report.

12. Sykes, V., R. Nave, G. Bates, **X. Yin,** and L. Steckel. 2018. Economic and environmental impact of multi-use cover crop species in Tennessee no-till soybean/corn rotations. The United Soybean Board Grant 3rd Quarterly Report.

13. **Yin, X.,** and V. Sykes. 2018. Long-term effects of cover crops and crop rotations on soil health and water availability. The United Soybean Board Grant 2nd Quarterly Report.

14. Sykes, V., R. Nave, G. Bates, **X. Yin,** and L. Steckel. 2018. Economic and environmental impact of multi-use cover crop species in Tennessee no-till soybean/corn rotations. The United Soybean Board Grant 2nd Quarterly Report.

15. **Yin, X.,** and V. Sykes. 2018. Long-term effects of cover crops and crop rotations on soil health and water availability. The United Soybean Board Grant 1st Quarterly Report.

16. Sykes, V., R. Nave, G. Bates, **X. Yin,** and L. Steckel. 2018. Economic and environmental impact of multi-use cover crop species in Tennessee no-till soybean/corn rotations. The United Soybean Board Grant 1st Quarterly Report.

17. **Yin, X.,** D.D. Tyler, F. Allen, M.A. McClure, L. Steckel, M. Essington, J. Lee, and G. Brann. 2017. Long-term impacts of cover crops, crop rotations, and conservation tillage systems on soil health, nutrient cycling, soil water availability, and crop productivity. USDA Conservation Innovation Grants (CIG) Final Report.

18. **Yin, X.,** D.D. Tyler, F. Allen, M.A. McClure, L. Steckel, M. Essington, J. Lee, and G. Brann. 2017. Long-term impacts of cover crops, crop rotations, and conservation tillage systems on soil health, nutrient cycling, soil water availability, and crop productivity. USDA Conservation Innovation Grants (CIG) 2nd Semi-annual Report.

19. **Yin, X.,** D.D. Tyler, F. Allen, M.A. McClure, L. Steckel, M. Essington, J. Lee, and G. Brann. 2017. Long-term impacts of cover crops, crop rotations, and conservation tillage systems on soil health, nutrient cycling, soil water availability, and crop productivity. USDA Conservation Innovation Grants (CIG) 1st Semi-annual Report.

20. **Yin, X.** 2017. Quantifying effect of ES production process on maize yield and S availability. International Fertilizer Development Center Grant Report.

21. **Yin, X.** 2017. Yield and quality responses of corn, cotton, and soybean to Micro Essentials. The Mosaic Company Grant Report.

22. **Yin, X.** 2017. Improving urea nitrogen use efficiency on corn with Agrotain products. The Koch Industries, Inc. Grant Report.

23. **Yin, X.** 2017. Effects of Nitrapyrin on nitrogen use efficiency of urea. Dow AgroSciences Grant Report.

24. **Yin, X.** 2017. Evaluation of foliar applied Anuvia products on no-till cotton. Anuvia Plant Nutrients Grant Report.

25. **Yin, X.** 2017. Fertigation of K and S on no-till soybean during late growing seasons. Tessenderlo Kerley, Inc. Grant Report.

26. **Yin, X.** 2017. Application of Enersol with top dress nitrogen on winter wheat. Minerals Technologies Inc. Grant Report.

27. McClure, M.A., L. Steckel, S. Stewart, H.Y. Kelly, **X. Yin,** and S. Danehower. 2017. Soybean agronomics – Cultural practices and fertility for yield enhancement. Tennessee Soybean Promotion Board Grant Report.

28. Raper, T., M.A. McClure, X. **Yin,** S. Danehower, L. Steckel, and R. Hayes. 2017. Assessing impacts of multiple-species cover crop cultures on TN row-crop production. Tennessee Soybean Promotion Board Grant Report.

29. **Yin, X.,** J.J. Varco, D. Dunn, B.S. Tubana, J. Larson, C.L. Main, P. Scharf, H. Savoy, M. Buschermohle, D. Tyler, and J. Dodd. 2016. Precision nitrogen injection using integrated optical sensing and variable-rate technologies. USDA Conservation Innovation Grant (CIG) Final Report.

30. **Yin, X.,** D.D. Tyler, F. Allen, M.A. McClure, L. Steckel, M. Essington, J. Lee, and G. Brann. 2016. Long-term impacts of cover crops, crop rotations, and conservation tillage systems on soil health, nutrient cycling, soil water availability, and crop productivity. USDA Conservation Innovation Grants (CIG) 2nd Semi-annual Report.

31. **Yin, X.,** D.D. Tyler, F. Allen, M.A. McClure, L. Steckel, M. Essington, J. Lee, and G. Brann. 2016. Long-term impacts of cover crops, crop rotations, and conservation tillage systems on soil health, nutrient cycling, soil water availability, and crop productivity. USDA Conservation Innovation Grants (CIG) 1st Semi-annual Report.

32. **Yin, X.** 2016. Field evaluation of the effectiveness sulfur-enhanced urea products as fertilizer for maize production in Tennessee. International Fertilizer Development Center Grant Report.

33. **Yin, X.** 2016. Field evaluations on the performances of urease and nitrification inhibitors in winter wheat production. International Fertilizer Development Center Grant Report.

34. **Yin, X.** 2016. Yield and quality responses of corn, cotton, and soybean to Micro Essentials. The Mosaic Company Grant Report.

35. **Yin, X.** 2016. Improving urea nitrogen use efficiency on corn with Agrotain products. The Koch Industries, Inc. Grant Report.

36. **Yin, X.** 2016. Effects of Nitrapyrin on nitrogen use efficiency of urea. Dow AgroSciences Grant Report.

37. **Yin, X.** 2016. Effects of Nitrapyrin on nitrogen use efficiency of urea. Anuvia Grant Report.

38. **Yin, X.** 2016. Effects of K in-furrow and foliar applications on corn. Actagro LLC. Grant Report.

39. **Yin, X.** 2016. Corn performances under P in-furrow and side-dress applications. Actagro LLC. Grant Report.

40. **Yin, X.** 2016. Evaluation of foliar applied Anuvia products on no-till cotton. Anuvia Plant Nutrients Grant Report.

41. **Yin, X.** 2016. Evaluation of foliar applied Nachurs products on no-till cotton. Nachurs Company Grant Report.

42. **Yin, X.** 2016. Performance of Organic Nitrogen 5.5, Super Nitro, and AN20 on corn. Bio-Huma Netics, Inc. Grant Report.

43. **Yin, X.** 2016. Corn and cotton responses to urea treated with Excelis Maxx. Timac Agro Grant Report.

44. McClure, M.A., L. Steckel, S. Stewart, H.Y. Kelly, **X. Yin,** and S. Danehower. 2016. Soybean agronomics – Cultural practices and fertility for yield enhancement. Tennessee Soybean Promotion Board Grant Report.

45. Raper, T., M.A. McClure, X. **Yin,** S. Danehower, L. Steckel, and R. Hayes. 2016. Assessing impacts of multiple-species cover crop cultures on TN row-crop production. Tennessee Soybean Promotion Board Grant Report.

46. **Yin, X.,** J.J. Varco, D. Dunn, B.S. Tubana, J. Larson, C.L. Main, P. Scharf, H. Savoy, M. Buschermohle, D. Tyler, and J. Dodd. 2015. Precision nitrogen injection using integrated optical sensing and variable-rate technologies. USDA Conservation Innovation Grant (CIG) 2nd Semi-annual Report.

47. **Yin, X.,** J.J. Varco, D. Dunn, B.S. Tubana, J. Larson, C.L. Main, P. Scharf, H. Savoy, M. Buschermohle, D. Tyler, and J. Dodd. 2015. Precision nitrogen injection using integrated optical sensing and variable-rate technologies. USDA Conservation Innovation Grant (CIG) 1st Semi-annual Report.

48. **Yin, X.,** D.D. Tyler, F. Allen, M.A. McClure, L. Steckel, M. Essington, J. Lee, and G. Brann. 2015. Long-term impacts of cover crops, crop rotations, and conservation tillage systems on

soil health, nutrient cycling, soil water availability, and crop productivity. USDA Conservation Innovation Grants (CIG) 2nd Semi-annual Report.

49. **Yin, X.,** D.D. Tyler, F. Allen, M.A. McClure, L. Steckel, M. Essington, J. Lee, and G. Brann. 2015. Long-term impacts of cover crops, crop rotations, and conservation tillage systems on soil health, nutrient cycling, soil water availability, and crop productivity. USDA Conservation Innovation Grants (CIG) 1st Semi-annual Report.

50. **Yin, X.** H. Savoy, and T. Raper. 2015. Cotton responses to sulfur applications and soil sulfur testing method calibration. The Cotton Incorporated Core Fund Report.

51. **Yin, X.** 2015. Yield and quality responses of corn, cotton, and soybean to Micro Essentials. The Mosaic Company Grant Report.

52. **Yin, X.** 2015. Effects of Nitrapyrin on nitrogen use efficiency of urea. Dow AgroSciences Grant Report.

53. **Yin, X.** 2015. Improving urea nitrogen use efficiency on corn with Agrotain products. The Koch Industries, Inc. Grant Report.

54. **Yin, X.** 2015. Agrotain treated UAN on corn nitrogen nutrition and productivity. The Koch Industries, Inc. Grant Report.

55. **Yin, X.,** J.J. Varco, D. Dunn, B.S. Tubana, J. Larson, C.L. Main, P. Scharf, H. Savoy, M. Buschermohle, D. Tyler, and J. Dodd. 2014. Precision nitrogen injection using integrated optical sensing and variable-rate technologies. USDA Conservation Innovation Grant (CIG) 2nd Semi-annual Report.

56. **Yin, X.,** D.D. Tyler, F. Allen, M.A. McClure, L. Steckel, M. Essington, J. Lee, and G. Brann. 2014. Long-term impacts of cover crops, crop rotations, and conservation tillage systems on soil health, nutrient cycling, soil water availability, and crop productivity. USDA Conservation Innovation Grants (CIG) 2nd Semi-annual Report.

## C-2.j. Articles Published in Non-Refereed Journals (Total since July 2014: 1; Career Total: 6)

1. **Yin, X.,** and G.S. Zhou. 2015. Residual potassium effects on corn under no-tillage. *Better Crops* 99 (4):23-25.

## C-2.k. Manuscripts Submitted for Publication (Total: 9)

* indicates corresponding author; # indicates former graduate students, post-docs, and visiting scientists with Dr. Yin as the major professor.

1. Bansal#, S., **X. Yin***, H.J. Savoy, S. Jagadamma, J. Lee, and V. Sykes. 2019. Long-term influence of phosphorus fertilization and soil aggregation on soil organic carbon and nitrogen under no-tillage production. *Agron. J.* (Accepted with revisions).

2. Zhou#, G.S., **X. Yin***, and Y. Li. 2019. Long-term effects of tillage systems, cover crops, and nitrogen fertilization on growth, yield, and quality of cotton. *Journal of Yunnan Agricultural University* (Accepted with revisions).

3. Xiao#, J.X., **X. Yin,** L. Tang, and Y. Zheng. 2019. Wheat and faba bean intercropping changes phenolic acids from roots to rhizosphere. *Crop Sci.* (Accepted with revisions).

4. Liu, Y.C., **X. Yin,** J.X. Xiao, L. Tang, and Y. Zheng. 2019. Interactive influences of intercropping by nitrogen on flavonoids exudation in wheat root. *Agron. J.* (Accepted with revisions).

5. Nouri, A., J. Lee, D.C. Yoder, S. Jagadamma, F.R. Walker, **X. Yin,** and P. Arelli. 2019. Management duration controls the synergistic effect of tillage, cover crop, and nitrogen rate on cotton yield and yield stability. *Proceedings of the National Academy of Sciences* (Submitted).

6. Liu#, S.L., X.H. Wang#, **X. Yin***, N. Bellaloui, J.H. Winings, S. Agyin-Birikorang, U. Singh, J. Sanabria, and A. Mengistu. 2019. Grain quality of maize as influenced by NPK briquette and organically enhanced N fertilizer interacted with N application rates. *Archives of Agronomy and Soil Science* (Submitted).

7. **Yin*, X.,** and V. Sykes. 2019. Bio-covers and crop sequences affect soil health at varying depths after 16 years. *Agrosystems, Geosciences & Environment* (Submitted).

8. Xu#, Y.B., J.J., Li, and **X. Yin***. 2019. Nitrogen transformation in red soil under different continuous cropping years. *Nutrient Cycling in Agroecosystems* (Submitted).

9. Duncan, L.A., T.B. Raper, S. Butler, M. Buschermohle, J. Wilkerson, W. Hart, and **X. Yin.** 2019. In-season assessment of cotton nitrogen status from a handheld smartphone and an unmanned aerial system. *Journal of Cotton Science* (Submitted).

## C-2.l. Manuscripts in Preparation (Total: 11)

* indicates corresponding author; # indicates former graduate students, post-docs, and visiting scientists with Dr. Yin as the major professor.

1. Liu#, S.L., **X. Yin*,** and X.H. Wang. 2019. Cover crop is a good sulfur nutrition source for the following crop. *Scientific Reports* (Under internal review).

2. Bansal#, S. **X. Yin*,** V. Sykes, S. Jagadamma, and J. Lee. 2019. Long-term influence of crop sequences, bio-covers, and aggregate sizes on organic carbon and nitrogen in soil profile under no-tillage. *Agron. J.* (Under internal review).

3. Cannon, K., M.A. McClure, C. Sams, and **X. Yin.** 2019. Sulfur rate effects on soybean and corn yields under no-tillage. *Agrosystems, Geosciences & Environment* (Under internal review).

4. Li, Q.J., Y. Zhang, H. Yibat, **X. Yin,** and G. Feng. 2019. Matching of soil phosphorus distribution and root distribution in cotton field based on DGT. *Nutrient Cycling in Agroecosystems* (Under internal review).

5. Xiao#, J.X., **X. Yin*,** V. Sykes, Z.Q. He, and S. Wang. 2019. Heavy metals in agricultural soils and crops and their health risks under long-term chicken litter application. *Environmental Science and Technology* (In preparation).

6. **Yin*, X.,** and C.L. Main. 2019. Monitoring and prediction of cotton crop maturity with normalized difference vegetation index via optical sensing technology. *Crop Sci.* (In preparation).

7. Wang, S., H.J. Savoy, T. Grant, and **X. Yin*.** 2019. Alfalfa response to potassium rate and timing of application. *Agron. J.* (In preparation).

8. Raper, T.B., **X. Yin,** C. Sams, and S. Butler. Deep placement of K and N fertilizers to prevent late season K deficiencies. *Agron. J.* (In preparation).

9. Raper. T.B., D. Verbree, and **X. Yin.** 2019. Efficiency of surface-applied nitrogen in sub-surface drip irrigated cotton grown on silt loam soils in the mid-South. *Agron. J.* (In preparation).

10. Stefanini, M.R., J.A. Larson, C.N. Boyer, S.H. Cho, D. Lambert, and **X. Yin.** 2019. Risks in use of variable-rate technology in cotton production. *Agron. J.* (In preparation).

11. Griffin, T.W., E.M. Barnes, P.A. Allen, P. Andrade-Sánchez, D.B. Arnall, K. Balkcom, L.T. Barber, P. Bauer, K.F. Bronson, M.J. Buschermohle, A.P. Jones, Y. Ge, G. Roberson, R.K. Taylor. B.S. Tubana, J.J. Varco, G. Vellidis, E.D. Vories, J.B. Wilkerson, and **X. Yin.** 2019. Pooled analysis of combined primary data across multiple states and investigators for the development of a NDVI-based on-the-go nitrogen application algorithm for cotton. *Precision Ag.* (In preparation).

## C-3. Creative Activity (Exhibitions, Installations, Productions, or Publications of Original Works of Architecture, Dance, Design, Electronic Media, Film, Journalism, Landscape Architecture, Literature, Music, Theatre, and Visual Art )

None.

## C-4. Projects, Grants, Commissions, and Contracts

**While associate professor at The University of Tennessee since July 2014, I have secured $2,447,688 as grants and gifts in total, secured $1,607,364 as grants and gifts as the leading principal investigator, and secured $1,145,665 as grants and gifts directly to my research program (combining C-4.a. Completed Grants with C-4.b. Grants Funded and in Progress).**

**For my entire career, I have secured $4,470,551 as grants and gifts in total, secured $3,200,559 as grants and gifts as the leading principal investigator, and secured $2,380,799 as grants and gifts directly to my program.**

## C-4.a. Completed Grants

* indicates leading principal investigator.

1. **Yin*, X.,** D.D. Tyler, F. Allen, M.A. McClure, L. Steckel, M. Essington, and J. Lee, and G. Brann. 2013-2017. Long-term impacts of cover crops, crop rotations, and conservation tillage systems on soil health, nutrient cycling, soil water availability, and crop productivity. My responsibilities included leading the multi-disciplinary team to conceive, design, execute, interpret, and report the project. United States Department of Agriculture (USDA) Conservation Innovation Grants (CIG). 09/30/2013 – 08/31/2017. Total: $634,107. My portion: $156,439. (During 07/01/2014 – 08/31/2017: Total: $512,682. My portion: $126,483).

2. **Yin*, X.,** J.J. Varco, D. Dunn, B.S. Tubana, J. Larson, C.L. Main, P. Scharf, H. Savoy, M. Buschermohle, D. Tyler, and J. Dodd. 2011-2015. Precision nitrogen injection using integrated optical sensing and variable-rate technologies. This is a multi-state and multi-disciplinary project involving four land-granted universities from four states (TN, MO, MS, & LA). My responsibilities included leading the team to conceive, design, execute, interpret, and report the project. United States Department of Agriculture (USDA) Conservation Innovation Grants (CIG). 09/30/2011 – 08/31/2015. Total: $650,827. My portion: $172,459. (During 07/01/2014 – 08/31/2015: Total: $193,863. My portion: $51,371).

3. **Yin*, X.,** and V. Sykes. 2017-2018. Long-term effects of cover crops and crop rotations on soil health and water availability. My responsibilities included leading the team to conceive, design, execute, interpret, and report the project. United Soybean Board. 10/01/2017 – 09/30/2018. Total: $36,008. My portion: $33,008.

4. **Yin*, X.** 2013-2018. Responses of corn, soybean, and cotton to Micro Essentials. Mosaic Company. 01/01/2013 – 12/31/2018. Total: $230,000. My portion: $230,000. (During 07/01/2014 – 12/31/2018: Total: $172,500. My portion: $172,500).

5. Sykes, V., **X. Yin,** R. Nave, L. Steckel, G. Bates, and D.M. Butler. 2017-2018. Economic and environmental impact of multi-use cover crop species in Tennessee no-till soybean and

corn. I was in charge of the soil health research. United Soybean Board. 10/01/2017 – 09/30/2018. Total: $116,604. My portion: $48,185.

6. McClure, M.A., L. Steckel, **X. Yin,** and S. Stewart. 2018. Soybean agronomics – Cultural practices and fertility for yield enhancement. I was in charge of the soybean sulfur research. Tennessee Soybean Promotion Board. 01/01/2018 – 12/31/2018. Total: $53,880. My portion: $18,080.

7. **Yin*, X.** 2017-2018. Fertigation of K and S on no-till soybean during late growing seasons. Tessenderlo Kerley, 01/01/2017 – 12/31/2018. Total: $14,000. My portion: $14,000.

8. **Yin*, X.** 2017-2018. Nonexchangeable potassium in soil profile following long-term potash application under corn-soybean-winter wheat rotation. Potash Corporation of Saskatchewan. 07/01/2017 – 06/30/2018. Total: $5,000. My portion: $5,000.

9. **Yin*, X.** 2016-2018. Evaluation of experimental urease inhibitors. Koch Industries, Inc. 01/01/2016 – 12/31/2018. Total: $40,000. My portion: $40,000.

10. McClure, M.A., L. Steckel, S. Stewart, H.Y. Kelly, **X. Yin,** and S. Danehower. 2016-2017. Soybean agronomics – Cultural practices and fertility for yield enhancement. I was involved in the proposal development. Tennessee Soybean Promotion Board. 01/01/2016 – 12/31/2017. Total: $100,150. My portion: $0.00.

11. Raper, T., M.A. McClure, X. **Yin,** S. Danehower, L. Steckel, and R. Hayes. 2016-2017. Assessing impacts of multiple-species cover crop cultures on TN row-crop production. I was involved in the proposal development. Tennessee Soybean Promotion Board. 01/01/2016 – 12/31/2017. Total: $53,350. My portion: $0.00.

12. Raper, T., **X. Yin,** L. Duncan, and D. Verbree. 2015-2017. Deep placement of K and N fertilizers to prevent late-season K deficiencies. I was involved in the proposal development. Cotton Incorporated. 01/01/2015 – 12/31/2017. Total: $51,000. My portion: $0.00.

13. **Yin*, X.** 2016. Effects of in-furrow and foliar K applications on corn. Actagro LLC. 01/01/2016 – 12/31/2016. Total: $29,664. My portion: $29,664.

14. **Yin*, X.** 2016. Corn performances under in-furrow and side-dress P applications. Actagro LLC. 01/01/2016 – 12/31/2016. Total: $23,098. My portion: $23,098.

15. **Yin*, X.** 2016. Evaluation of foliar applied Nachurs products on no-till cotton. Nachurs Company. 01/01/2016 – 12/31/2016. Total: $5,600. My portion: $5,600.

16. **Yin*, X.** 2016. Performance of Organic Nitrogen 5.5, Super Nitro, and AN20 on corn. Bio-Huma Netics, Inc. 01/01/2016 – 12/31/2016. Total: $12,500. My portion: $12,500.

17. **Yin*, X.** 2016. Corn and cotton responses to urea treated with Excelis Maxx. Timac Agro. 01/01/2016 – 12/31/2016. Total: $7,000. My portion: $7,000.

18. **Yin*, X.,** H. Savoy, and T. Raper. 2014-2016. Cotton responses to sulfur applications and soil sulfur testing method calibration. My responsibilities included leading the team to conceive, design, execute, interpret, and report the project. Cotton Incorporated Core Funds. 01/01/2014 – 12/31/2016. Total: $58,580. My portion: $58,580. (During 07/01/2014 – 12/31/2016: Total: $48,817. My portion: $48,817).

19. **Yin*, X.** 2016. Field evaluation of enhanced efficiency nitrogen fertilizers relative to urea for wheat production. International Fertilizer Development Center. 01/01/2016 – 12/31/2016. Total: $29,900. My portion: $29,900.

20. **Yin*, X.** 2016-2017. Application of ENERSOL with top dress nitrogen on winter wheat. Minerals Technologies Inc. 10/01/2016 – 09/30/2017. Total: $5,000. My portion: $5,000.

21. **Yin*, X.,** M.A. McClure, H.J. Savoy, and M. Essington 2015. Improving urea nitrogen use efficiency with Agrotain products. My responsibilities included leading the team to conceive, design, execute, interpret, and report the project. Koch Industries, Inc. 01/01/2015 – 12/31/2015. Total: $16,800. My portion: $8,400.

22. **Yin*, X.** 2015. Agrotain-treated UAN on corn nitrogen nutrition and productivity. Koch Industries, Inc. 01/01/2015 – 12/31/2015. Total: $13,800. My portion: $13,800.

23. **Yin*, X.** 2015. Corn responses to application timing and rate of UAN treated with Instinct II-nitrapyrin. Dow AgroSciences, 01/01/2015 – 12/31/2015. LLC. Total: $4,500. My portion: $4,500.

24. **Yin*, X.** 2013-2015. No-till corn responses to pre-planted applied UAN and starter N treated with Soil Builder AF and Titan. Advanced Microbial Solutions, LLC. 01/01/2013 – 12/31/2015. Total: $17,700. My portion: $17,700. (During 07/01/2014 – 12/31/2015: Total: $8,850. My portion: $8,850).

25. McClure, M.A., S. Stewart, R. Blair, S. Danehower, L. Steckel, **X. Yin,** and H.Y. Kelly. 2015. Soybean agronomics – Cultural practices and fertility for yield enhancement. I was involved in the proposal development. Tennessee Soybean Promotion Board. 01/01/2015 – 12/31/2015. Total: $38,400. My portion: $0.00.

26. Raper, T., M.A. McClure, X. **Yin,** S. Danehower, L. Steckel, and R. Hayes. 2015. Assessing impacts of multiple-species cover crop cultures on TN row-crop production. I was involved in the proposal development. Tennessee Soybean Promotion Board. 01/01/2015 – 12/31/2015. Total: $27,750. My portion: $0.00.

27. **Yin*, X.,** and M. Essington 2014. Effects of Alcoa products on nitrogen use efficiency of urea and ammonium nitrate. My responsibilities included leading the team to conceive, design, execute, interpret, and report the project. Alcoa Foundation. 01/01/2014 – 12/31/2014. Total: $31,500. My portion: $31,500. (During 07/01/2014 – 12/31/2014: Total: $15,750. My portion: $15,750).

28. **Yin*, X.** 2014. Corn and cotton responses to urea treated with Excelis Maxx. Timac Agro. 01/01/2014 – 12/31/2014. Total: $10,000. My portion: $10,000. (During 07/01/2014 – 12/31/2014: Total: $5,000. My portion: $5,000).

29. **Yin*, X.,** M.A. McClure, H.J. Savoy, and M. Essington 2014. Improving urea nitrogen use efficiency with Agrotain. My responsibilities included leading the team to conceive, design, execute, interpret, and report the project. Koch Industries, Inc. 01/01/2014 – 12/31/2014. Total: $15,000. My portion: $7,500. (During 07/01/2014 – 12/31/2014: Total: $7,500. My portion: $3,750).

30. **Yin*, X.** 2014. Corn responses to application timing and rate of UAN treated with Instinct II-nitrapyrin. Dow AgroSciences, LLC. 01/01/2014 – 12/31/2014. Total: $13,000. My portion: $13,000. (During 07/01/2014 – 12/31/2014: Total: $6,500. My portion: $6,500).

31. **Yin*, X.,** and M. Essington 2014. Agrotain® PLUS treated UAN on corn nitrogen nutrition and productivity. My responsibilities included leading the team to conceive, design, execute, interpret, and report the project. Koch Industries, Inc. 01/01/2014 – 12/31/2014. Total: $8,000. My portion: $8,000. (During 07/01/2014 – 12/31/2014: Total: $4,000. My portion: $4,000).

32. **Yin*, X.** 2013-2014. Cotton and soybean responses to pre-planted applied muriate of potash treated with Titan and foliar applied Accomplish OT. Advanced Microbial Solutions, LLC. 01/01/2013 – 12/31/2014. Total: $8,000. My portion: $8,000. (During 07/01/2014 – 12/31/2014. Total: $2,000. My portion: $2,000).

## C-4.b. Grants Funded and in Progress

* indicates leading principal investigator.

1. Kelly, H., S. Stewart, L. Steckel, T. Raper, M.A. McClure, A. Shekoofa, and **X. Yin.** 2019. Empowering the future ag. workforce - IPM internships with active learning in research and Extension. USDA National Institute of Food and Agriculture (NIFA), Agriculture and Food Research Initiative. I am in charge of the research and education theme: Systems agronomic research and education. 05/01/2000 – 04/30/2024. Total: $399,190. My portion: $44,116.

2. **Yin*, X.,** and M.A. McClure. 2018-2020. Impact of sulfur fertilization on soybean seed protein and amino acids and yield. My responsibilities included leading the team to conceive, design, execute, interpret, and report the project. United Soybean Board. 10/01/2018 – 09/30/2020. $67,922. My portion: $65,922.

3. **Yin*, X.** 2018-2020. Effects of Live Earth product on corn leaf burn caused by foliar spray of undiluted UAN. Live Earth Products Inc. 01/01/2018 – 12/31/2020. Total: $43,040. My portion: $43,040.

4. **Yin*, X.** 2018-2020. Foliar nutrition for soybean and cotton under no-tillage. Brandt Consolidated, Inc. 01/01/2018 – 12/31/2020. Total: $48,000. My portion: $48,000.

5. **Yin*, X.** 2019-2021. Responses of corn, soybean, and cotton to Micro Essentials. Mosaic Company. 01/01/2019 – 12/31/2023. Total: $120,000. My portion: $120,000.

6. **Yin*, X.** 2019-2021. Evaluation of new organic acid products on corn and soil health. Monty's Plant Food Company, Inc. 01/01/2019 – 12/31/2021. Total: $30,000. My portion: $30,000.

7. **Yin*, X.** 2019-2021. Effects of humic acid on corn and cotton production. BioAg, Inc. 01/01/2019 – 12/31/2021. Total: $15,000. My portion: $15,000.

8. **Yin*, X.** 2019-2021. Evaluation of side-dress and foliar nutrient products on cotton. Nachurs Alpine Solutions, Inc. 01/01/2019 – 12/31/2021. Total: $18,000. My portion: $18,000.

9. Sykes, V., **X. Yin,** R. Nave, L. Steckel, G. Bates, and D.M. Butler. 2019. Economic and environmental impact of multi-use cover crop species in Tennessee no-till soybean and corn. I am in charge of the soil health research. Tennessee Soybean Promotion Board. 01/01/2019 – 12/31/2019. Total: $45,000. My portion: $18,761.

## C-4.c. Grants under Review

1. **Yin, X.** 2019. Laboratory evaluation of ammonia volatilization loss with a variety of innovative efficiency enhanced urea fertilizers. Helena Company. 01/01/2020 – 12/31/2020. Total: $35,000.

2. **Yin, X.** 2019. Field evaluation of innovative Zn fertilizers for higher corn yield and nutrition. International Fertilizer Development Center. 01/01/2020 – 12/31/2020. Total: $30,000.

3. Adotey, N., T.B. Raper, and **X. Yin.** 2019. Evaluation of potassium uptake and lint yield responses of cotton to foliar potassium fertilizer containing boron and zinc. Cotton Incorporated Core Funds. 01/01/2020 – 12/31/2020. Total: $14,125.

## C-4.d. Research Grants Submitted but Not Funded (Total since July 2014: $7,481,385; Career Total: $17,491,498)

* indicates leading principal investigator.

1. **Yin*, X.,** V. Sykes, and J. Larson. 2019. Soil health and economic analysis of long-term integrative conservation soybean cropping systems. United Soybean Board. 10/01/2019 – 09/30/2021. $319,713.

2. Fu, J.S., C. Driscoll, **X. Yin,** and J. Schwartz. 2018. INFEWS: U.S. – China – Developing the impact assessment and prediction platform of food, energy, and water (IAPP-FEW)

through computational modeling. National Science Foundation (NSF). 08/01/2019 – 07/31/2022. Total: $500,000.

3. Poudyal, N., and **X. Yin.** 2018. Understanding the benefit of ecological intensification in productivity and value of agro-ecosystems. 01/01/2019 – 12/31/2021. USDA NIFA. $354,845.

4. **Yin*, X.,** V. Sykes, J. Lee, and J. Larson. 2018. Soil health and economic analyses of long-term integrative conservation cropping systems. USDA NRCS Conservation Innovation Grants (CIG). 09/30/2018 – 09/29/2021. $754,184.

5. **Yin*, X.,** and V. Sykes. 2018. Long-term effects of cover crops and crop rotations on soil health and water availability. United Soybean Board. 10/01/2018 – 09/30/2019. $36,008.

6. Sykes, V., R. Nave, L. Steckel, G. Bates, **X. Yin,** and D.M. Butler. 2018. Economic and environmental impact of multi-use cover crop species in Tennessee no-till soybean and corn. United Soybean Board. 10/01/2018 – 09/30/2019. $116,604.

7. Bansal, S., and **X. Yin.** 2018. Soil organic C composition, turnover, and sequestration following long-term crop sequences and bio-covers under no-tillage. USDA Southern SARE Graduate Student Grant. 09/01/2018 – 12/31/2019. $16,500.

8. **Yin*, X.,** S. Jagadamma, V. Sykes, J.A. Larson, and B. English. 2017. Greenhouse gas emissions and carbon storage in long-term integrated bio-cover and cropping sequence systems under no-tillage. USDA NIFA AFRI Resilient Agroecosystems in a Changing Climate Challenge Area. 01/01/2018 – 12/31/2020. $1,076,225.

9. **Yin*, X.,** T.B. Raper, and S. Jagadamma. 2017. Improving nitrogen use efficiency of urea and liquid urea-ammonium nitrate (UAN) with enhancement products. Cotton Incorporated. 01/01/2018 – 12/31/2018. $51,300.

10. Shekoofa, V., and **X. Yin.** 2017. Water conservation and nutrient application strategy among cotton cultivars under high vapor pressure deficit. Cotton Incorporated. 01/01/2018 – 12/31/2018. $46,500.

11. Fu, J.S., C. Driscoll, **X. Yin,** and T. Hazen. 2017. INFEWS: U.S. – China – Developing the impact assessment and prediction platform of food, energy, and water (IAPP-FEW) through computational modeling. National Science Foundation (NSF). 08/01/2018 – 07/31/2022. $500,000.

12. **Yin*, X.,** and M.A. McClure. 2017. Impact of sulfur fertilization on soybean seed protein and amino acids and yield. United Soybean Board. 10/01/2017 – 09/30/2019. $101,883.

13. **Yin*, X.,** and V. Sykes. 2017. Long-term effects of cover crops and crop rotations on soil health and water availability and crop nutrition. National Fluid Fertilizer Foundation. 01/01/2018 – 12/31/2019. $23,600.

14. **Yin*, X.,** F. Allen, S. Jagadamma, J. Larson, and B. English. 2016. Long-term impacts of bio-cover, cropping sequence, and no-tillage systems on greenhouse gas emissions and carbon storage and vulnerability. 01/01/2017 – 12/31/2019. USDA NIFA Roses Program. $836,405.

15. **Yin*, X.** 2016. Enhanced efficiency N fertilizers for mitigating greenhouse gas emissions and nitrate leaching from agricultural systems. EPA Source Reduction Assistance Grant Program via International Fertilizer Development Center. 05/01/2017 – 10/31/2018. $36,432.

16. **Yin*, X.,** T. Raper, and S. Jagadamma. 2016. Improving nitrogen use efficiency of urea and liquid urea-ammonium nitrate (UAN) with enhancement products. Cotton Incorporated Core Funds. 01/01/2017 – 12/31/2019. $51,300.

17. Jagadamma, S. **X. Yin,** and F. Walker. 2016. Cover cropping strategies for less carbon intensive crop production in the southern United States. USDA Southern Region SARE. 04/01/2017 – 03/31/2020. $373,215.

18. **Yin*, X.,** and T.B. Raper. 2016. Improving UAN and urea use efficiency in cotton production. Fluid Fertilizer Foundation. 01/01/2017 – 12/31/2019. $35,400.

19. **Yin*, X.,** M.A. McClure, C. Boyer, and T. Raper. 2016. Optimal combination of the 4 Rs of nitrogen management to protect water quality and improve profitability of corn, cotton, and wheat in a no-tillage system. USDA NRCS Conservation Innovation Grants. 09/30/2016 – 09/29/2019. $1,028,669.

20. **Yin*, X.** 2016. Soybean starter fertilizers. Tennessee Department of Agriculture, Agricultural Resources Conservation Fund. 01/01/2017 – 12/31/2017. $57,054.

21. **Yin*, X.** 2016. Nitrogen use efficiency enhancement products on cotton and wheat. Tennessee Department of Agriculture, Agricultural Resources Conservation Fund. 01/01/2017 – 12/31/2017. $63,684.

22. Ader, D., F. Walker, T. Gill, C. Clark, S. Harkins, and **X. Yin.** 2016. China SCE Program Farmland Quality Training. USDA - Foreign Agricultural Service (FAS) U.S.-China Scientific Cooperation Exchange Program. 03/01/2016 – 09/30/2016. $59,369.

23. **Yin*, X.,** M.A. McClure, C. Boyer, and F. Walker. 2015. Impacts of optimal combinations of 4 Rs of nitrogen management on nitrogen use efficiency, yield, and profit of irrigated vs. non-irrigated corn. USDA NRCS Conservation Innovation Grants (CIG). 10/01/2015 – 09/30/2018. $572,502.

24. Poudyal, N., D. Hodges, and **X. Yin.** 2015. An assessment of the relationship between landscape diversity and agricultural productivity. USDA NIFA. 01/01/2016 – 12/31/2018. $149,894.

25. Raper, T., M. Buschermohle, L. Duncan, and **X. Yin.** 2015. Development of an on-the-go digital image processing platform for the in-season assessment of crop N status. USDA NRCS Conservation Innovation Grants (CIG). 09/30/2015 – 09/29/2018. $320,099.

26. **Yin*, X.,** and M.A. McClure. 2014. In-furrow and foliar applications of fluid fertilizers to optimize soybean productivity. Fluid Fertilizer Foundation. 01/01/2015 – 12/31/2017. $34,500.

27. **Yin*, X.,** and F.L. Allen. 2014. Long-term impacts of soybean cropping systems on soil greenhouse gas emissions and carbon storage and vulnerability. United Soybean Board (USB). 10/01/2014 – 09/30/2017. $304,378.

28. **Yin*, X.,** and M.A. McClure. 2014. In-furrow and foliar applications of fluid fertilizers to optimize soybean productivity. USB. 10/01/2014 – 09/30/2017. $129,426.

29. Raper, T., **X. Yin,** and D. Verbree. 2014. Deep placement of K and N fertilizers to prevent late-season K deficiencies. Fluid Fertilizer Foundation. 01/01/2015 – 12/31/2017. $32,250.

## C-5. Other Evidence of Research or Creative Accomplishments (Patents, New Product Development, International and Intercultural Expertise or Experience, New Art Forms, New Computer Software Programs Developed, etc.) (Total since July 2014: 9; Career Total: 11)

1. **Yin, X.** 2018. Aug. 1. Invited by Yunnan Agricultural University (NAU) in Kunming, Yunnan Province, China to give a presentation about soil management (120 min., 92 attendees), visit its laboratories, and discussed with the relevant scientists and students. All related expenses were fully paid by YAU.

2. **Yin, X.** 2016. Aug. 4. Invited by Xinjiang Academy of Agricultural Sciences (XAAS) in Urumuqi, Xinjiang Province, China to give a presentation about nitrogen management (60 min., 65 attendees), visited its laboratories, and discussed with the relevant scientists. All related expenses were fully paid by XAAS.

3. **Yin, X.** 2016. Jul. 6 & 7. Invited by Yunnan Agricultural University (NAU) in Kunming, Yunnan Province, China to give a presentation about nitrogen management (120 min., 70 attendees) and another presentation about sulfur management (120 min., 80 attendees), visited its laboratories, and discussed with the relevant scientists and students. All related expenses were fully paid by YAU.

4. **Yin, X.** 2016. Jul. 4. Invited by Shanghai Jiaotong University (SJU) in Shanghai, China to give a presentation about precision agriculture (45 min., 36 attendees), visited its laboratories, and discussed with the relevant scientists and students. All related expenses were fully paid by SJU.

5. **Yin, X.** 2015. Sept. 19. Invited by Southwest Forestry University (SFU) in Kunming, Yunnan Province, China to give a presentation about no-tillage systems (90 min., 32

attendees), visited its laboratories, and discussed with the relevant scientists and students. All related expenses were fully paid by SFU.

6. **Yin, X.** 2015. Sept. 13-20. Invited by Yunnan Agricultural University (YAU) in Kunming, Yunnan Province, China to give a presentation about precision N management for cotton (90 min., 106 attendees) and another presentation about no-tillage systems (90 min., 53 attendees), visited its laboratories, and discussed with the relevant scientists and students. All related expenses were fully paid by YAU.

7. **Yin, X.** 2015. Sept. 6-12. Invited by Xinjiang Academy of Agricultural Sciences (XAAS) in Urumuqi, Xinjiang Province, China to give a presentation about no-tillage systems (60 min., 47 attendees), visited its N management on cotton experiments, discussed with the relevant scientists, and helped implement a precision N project funded by China Department of Agriculture. All related expenses were fully paid by XAAS.

8. **Yin, X.** 2015. Sept. 1-5. Invited by Jilin Academy of Agricultural Sciences (JAAS) in Changchun, Jilin Province, China to give a presentation about precision N management and no-tillage systems (120 min., 34 attendees), visited its research and Extension centers, and discussed with the relevant scientists. All related expenses were fully paid by JAAS.

9. **Yin, X.** 2014. Helped Xinjiang Academy of Agricultural Sciences in Urumuqi, Xinjiang Province, China develop a precision N management proposal submitted to China Department of Agriculture; it was awarded with 800,000 Chinses dollars.

## C-6. Record of Participation in, and Description of Seminars and Workshops (Total since July 2014: 11; Career Total: 46)

1. **Yin, X.** 2018. Update of B, Zn, and K research. TN State Soil Testing and Fertility Review Meeting. Oral. Nashville. TN Dec. 4 (30 min., 1 session, 10 attendees).

2. **Yin, X.,** T.B. Raper, and H.J. Savoy. 2017. Sulfur applications on no-till cotton and soil sulfur testing method comparison. TN State Soil Testing and Fertility Review Meeting. Oral. Nashville, TN Dec. 5 (20 min., 1 session, 18 attendees).

3. Zhou, X., J.A. Larson, **X. Yin,** and C. Boyer. 2017. Economic impacts of enhanced urea fertilizers on no-till corn production in TN. TN State Soil Testing and Fertility Review Meeting. Oral. Nashville, TN Dec. 5 (20 min., 1 session, 18 attendees).

4. **Yin, X.,** T.B. Raper, and H.J. Savoy. 2016. Update on sulfur fertility for cotton studies. TN State Soil Testing and Fertility Review Meeting. *Oral.* Nashville. TN Mar. 23 (20 min., 1 session, 18 attendees).

5. **Yin, X.** 2016. N fertilization and critical N concentration for cotton. TN State Soil Testing and Fertility Review Meeting. *Oral.* Nashville. TN Mar. 23 (20 min., 1 session, 18 attendees).

6. Savoy, H.J., **X. Yin,** M.A. McClure, and M.E. Essington. 2016. TN fertilizer enhancement product research update. TN State Soil Testing and Fertility Review Meeting. *Oral.* Nashville, TN Mar. 23 (20 min., 1 session, 18 attendees).

7. Savoy, H.J., and **X. Yin.** 2016. Ongoing corn/wheat/soybean soil test calibration/verification. TN State Soil Testing and Fertility Review Meeting. *Oral,* Nashville, TN, Mar. 23 (30 min., 1 session, 18 attendees).

8. McClure, M.A., **X. Yin,** and B. Brown. 2016. Update on Milan sulfur fertility studies. TN State Soil Testing and Fertility Review Meeting. *Oral,* Nashville, TN, Mar. 23 (20 min., 1 session, 18 attendees).

9. **Yin, X.,** H.J. Savoy, M.A. McClure, and M.E. Essington. 2015. TN fertilizer enhancement product research update. TN State Soil Testing and Fertility Review Meeting. Nashville, TN Mar. 20 (20 min., 1 session, 12 attendees).

10. **Yin, X.,** H.J. Savoy, and T.B. Raper. 2015. Update on sulphur soil test calibration. TN State Soil Testing and Fertility Review Meeting. Nashville. TN Mar. 20 (15 min., 1 session, 12 attendees).

11. Savoy, H.J., and **X. Yin.** 2015. Ongoing corn/wheat/soybean soil test calibration/verification. TN State Soil Testing and Fertility Review Meeting. Oral, Nashville, TN, Mar. 20 (30 min., 1 session, 12 attendees).

## C-7. Papers Presented at Technical and Professional Meetings (Total since July 2014: 43; Career Total: 97)

*, indicates the presenter. # indicates former graduate students, post-docs, and visiting scientists with Dr. Yin as the major advisor.

1. **Yin*, X.,** B. Tubaña, J. Varco, P. Scharf, J.A. Larson, & D. Dunn. 2018. Precision N injection for cotton using integrated optical sensing and variable-rate technologies. 2018 Annual Meetings of ASA-CSSA. *Oral, presented at the Symposium of Sensor-based Nutrient Management. Invited by the Sensor-based Nutrient Management Community, Agronomic Production Systems Section of ASA. Agronomy Abstract.* Baltimore, MD. Nov. 4-7.

2. **Yin*, X.,** and G.S. Zhou. 2015. NDVI, SPAD, and petiole sap nitrate utilization in nitrogen nutrition and growth assessment and yield prediction for cotton. Consultants Conference. *Proceedings of Beltwide Cotton Conferences. Oral.* San Antonio, TX. Jan. 5-7. *Invited by the organizer of Consultants Conference.*

3. **Yin*, X.** 2018. Soil management for heathier soil. Kunming, Yunnan Province, China. Oral. Aug. 1. *Invited by Yunnan Agricultural University (NAU). All related expenses were fully paid by YAU (120 min., 92 attendees).*

4. **Yin*, X.** 2016. Nitrogen nutrition and management: present and future. Urumuqi, Xinjiang Province, China. *Oral.* Aug. 4. *Invited by Xinjiang Academy of Agricultural Sciences (XAAS). All related expenses were fully paid by XAAS (60 min., 65 attendees).*

5. **Yin*, X.** 2016. Nitrogen nutrition and management: present and future. Kunming, Yunnan Province, China. *Oral.* Jul. 7. *Invited by Yunnan Agricultural University (YAU). All related expenses were fully paid by YAU (120 min., 70 attendees).*

6. **Yin*, X.** 2016. Has sulfur become a critical issue??? Kunming, Yunnan Province, China. *Oral.* Jul. 6. *Invited by Yunnan Agricultural University (YAU). All related expenses were fully paid by YAU (120 min., 80 attendees).*

7. **Yin*, X.** 2016. Theories and application of new technologies in precision agriculture. Shanghai City, China. *Oral.* Jul. 4. *Invited by Shanghai Jiaotong University (SJU). All related expenses were fully paid by SJU (45 min., 36 attendees).*

8. **Yin*, X.** 2015. Greenhouse gas emissions, nutrient management, and yield stability of no-tillage systems. Kunming, Yunnan Province, China. *Oral.* Sept. 19. *Invited by Southwest Forestry University (SFU). All related expenses were fully paid by SFU (90 min., 32 attendees).*

9. **Yin*, X.** 2015. Yield stability, greenhouse gas emissions, and nutrient management of no-tillage systems. Kunming, Yunnan Province, China. *Oral.* Sept. 13-20. *Invited by Yunnan Agricultural University, All related expenses were fully paid by YAU (90 min., 53 attendees).*

10. **Yin*, X.** 2015. Sensor-based precision nitrogen management. Kunming, Yunnan Province, China. *Oral.* Sept. 13-20. *Invited by Yunnan Agricultural University (YAU). All related expenses were fully paid by YAU (90 min., 106 attendees).*

11. **Yin*, X.** 2015. Yield stability, greenhouse gas emissions, and nutrient management of no-tillage systems. Urumuqi, Xinjiang Province, China. *Oral.* Sept. 6-12. *Invited by Xinjiang Academy of Agricultural Sciences (XAAS). All related expenses were fully paid by XAAS (60 min., 47 attendees).*

12. **Yin*, X.** 2015. Sensor-based precision agriculture and yield stability, greenhouse gas emissions, and nutrient management of no-tillage systems. Changchun, Jilin Province, China. *Oral.* Sept. 1-5. *Invited by Jilin Academy of Agricultural Sciences (JAAS). All related expenses were fully paid by JAAS (120 min., 34 attendees).*

13. **Yin*, X.,** Sangeeta, B., V.R. Sykes, A.M. Taylor, S. Jagadamma, and J. Lee. 2019. Carbon footprints and sustainability index of major cropping sequence and bio-cover systems under no-tillage. 2019 Annual Meetings of American Society of Agronomy (ASA)-Crop Science Society of America (CSSA)-Soil Science Society of America (SSSA). *Oral. Agronomy Abstract.* San Antonio, TX. Nov. 10-13. (Accepted).

14. Sangeeta#, B., **X. Yin,** H.J. Savoy, S. Jagadamma, J. Lee, and V.R. Sykes. 2019. Long-term

influence of phosphorus fertilization and aggregate size distribution on soil organic carbon and nitrogen at different depths under no-tillage. 2019 Annual Meetings of ASA-CSSA-SSSA. *Poster*. *Agronomy Abstract.* San Antonio, TX. Nov. 10-13. (Accepted).

15. Sangeeta#, B., **X. Yin,** V.R. Sykes, S. Jagadamma, and J. Lee. 2019. Long-term influence of crop sequences, bio-covers, and aggregate sizes on organic carbon and nitrogen in soil profile under no-tillage. 2019 Annual Meetings of ASA-CSSA-SSSA. *Oral. Agronomy Abstract.* San Antonio, TX. Nov. 10-13. (Accepted).

16. Sangeeta#, B., **X. Yin,** S. Jagadamma, V.R. Sykes, and J. Lee. 2019. Greenhouse gas emission and organic carbon and nitrogen in soil as affected by crop sequence diversity and bio-covers under no-tillage. 2019 Annual Meetings of ASA-CSSA-SSSA. *Poster*. *Agronomy Abstract.* San Antonio, TX. Nov. 10-13. (Accepted).

17. Raper, T.B., M.A. McClure, **X. Yin,** S. Butler, and R. Blair. 2019. Impacts of single- and a multiple-species cover crop on soybean relative to wheat-soybean double crop system. 2019 Annual Meetings of ASA-CSSA-SSSA. *Poster*. *Agronomy Abstract.* San Antonio, TX. Nov. 10-13. (Accepted).

18. Singh, S., D.C. Yoder, S. Jagadamma, **X. Yin,** and F.R. Walker. 2019. Soil conditioning index as a potential soil health index for the cropping systems of Tennessee. 2019 Annual Meetings of ASA-CSSA-SSSA. *Poster*. *Agronomy Abstract.* San Antonio, TX. Nov. 10-13. (Accepted).

19. Singh, S., S. Jagadamma, F.R. Walker, **X. Yin,** and D.C. Yoder. 2019. Evaluating soil health assessment approaches for the diverse agroecosystems in Tennessee. 2019 Annual Meetings of ASA-CSSA-SSSA. *Poster*. *Agronomy Abstract.* San Antonio, TX. Nov. 10-13. (Accepted).

20. Bracey, W., V.R. Sykes, G.E. Bates, R.G. Nave, **X. Yin,** and L. Steckel. 2019. Comparison of dual-use and single-use cover crops in no-till Tennessee production systems. 2019 Annual Meetings of ASA-CSSA-SSSA. *Poster*. *Agronomy Abstract.* San Antonio, TX. Nov. 10-13. (Accepted).

21. Bansal#, S., **X. Yin,** H.J. Savoy, S. Jagadamma, J. Lee, and V.R. Sykes. 2019. Long-term effects of phosphorus fertilization on soil organic carbon, nitrogen, and carbon:nitrogen ratio. 2019 Annual Meetings of SSSA, Canadian Society of Soil Science, and Mexican Society of Soil Science. *Oral. Soil Abstract.* San Diego, CA. Jan. 6-9.

22. Gharahassanlou, A.N., J. Lee, **X. Yin,** and D.D. Tyler. 2019. Thirty four years of tillage, cover crops, and fertilization effect on yield and yield stability under weather extremes. 2019 Annual Meetings of SSSA, Canadian Society of Soil Science, and Mexican Society of Soil Science. *Oral. Soil Abstract.* San Diego, CA. Jan. 6-9.

23. **Yin*, X.,** T.B. Raper, and H.J. Savoy. 2017. Sulfur applications on no-till cotton and soil sulfur testing method comparison. 2017 Annual Meetings of ASA-CSSA-SSSA. *Oral.*

*Agronomy Abstract.* Tampa, FL. Oct. 22-26.

24. Xiao#, J.X., **X. Yin,** L. Tang, and Y. Zhang. 2017. Wheat and faba bean intercropping stimulates non-phenolic organic acids exuded by roots but mitigates phenolic acids exudation. 2017 Annual Meetings of ASA-CSSA-SSSA. *Poster. Agronomy Abstract.* Tampa, FL. Oct. 22-26.

25. Lee, J., A.N. Gharahassanlou, **X. Yin,** D.D. Tyler, H.J. Savoy, and N.S. Eash. 2017. Long-term interactive impact of cover crop and no-tillage on soil hydro-physical quality, N-fertilizer demand and rainfed cotton yield. 2017 Annual Meetings of ASA-CSSA-SSSA. *Poster. Agronomy Abstract.* Tampa, FL. Oct. 22-26.

26. Singh, U., D. Hellums, W. Bible, V. Henry, J. Sanabria, and **X. Yin.** 2017. Performance of urea enhanced with urease inhibitors. 2017 Annual Meetings of ASA-CSSA-SSSA. *Oral. Agronomy Abstract.* Tampa, FL. Oct. 22-26.

27. Gharahassanlou, A.N., J. Lee, **X. Yin,** D.D. Tyler, N.S. Eash, and H.J. Savoy. 2017. Can long-term crop rotation improve soil hydro-physical quality and production under no-tillage? 2017 Annual Meetings of ASA-CSSA-SSSA. *Poster. Agronomy Abstract.* Tampa, FL. Oct. 22-26.

28. **Yin*, X.,** and T.B. Raper. 2017. Sulfur applications for no-tillage cotton and comparison of soil sulfur testing methods. Technical Conference of Cotton Agronomy, Physiology, and Soil. *Oral. Proceedings of Beltwide Cotton Conferences*. Dallas, TX. Jan. 4-6.

29. Larson, J.A., C. Boyer, M. Stefanini, D.M. Lambert, **X. Yin,** H.J. Savoy, M. Buschermohle, D.D Tyler, J. Varco, B. Tubana, and P. Scharf 2017. Risk management benefits of optical sensing and variable rate technology in cotton production. *Oral.* Technical Conference of Cotton Economics and Marketing. *Proceedings of Beltwide Cotton Conferences*. Dallas, TX. Jan. 4-6.

30. **Yin*, X.** 2016. Precision nitrogen injection for cotton with integrated optical sensing and variable rate technologies. 2016 Annual Meetings of ASA-CSSA-SSSA. *Oral. Agronomy Abstract.* Phoenix, AZ. Nov. 6-9.

31. **Yin*, X.** 2016. Mineral nutrition and yields of corn, soybean, and cotton as affected by long-term conservation tillage, cover crops, and crop rotations. 2016 Annual Meetings of ASA-CSSA-SSSA. *Oral. Agronomy Abstract.* Phoenix, AZ. Nov. 6-9.

32. Gharahassanlou, A.N., J. Lee, **X. Yin,** and D.D. Tyler. 2016. Impact of thirty four years of tillage and cover crop management on soil physical properties. 2016 Annual Meetings of ASA-CSSA-SSSA. *Oral. Agronomy Abstract*. Phoenix, AZ. Nov. 6-9.

33. Savoy, H.J., S. Jagadamma, **X. Yin,** and D. Joines. 2016. Crop and soil response from phosphorus and potassium fertilizer rate verification for the State of Tennessee. 2016 Annual Meetings of ASA-CSSA-SSSA. *Poster. Agronomy Abstract*. Phoenix, AZ. Nov. 6-9.

34. Savoy, H., S. Jagadamma, **X. Yin,** and D. Joines. 2016. Crop and soil response from phosphorus and potassium fertilizer rate verification for the state of Tennessee. 2016 Annual Meetings of ASA-CSSA-SSSA. *Poster. Agronomy Abstract.* Phoenix, AZ. Nov. 6-9.

35. Larson, J., M. Stefanini, **X. Yin,** J.J. Varco, D. Dunn, B.S. Tubana, C.L. Main, P. Scharf, H. Savoy, M. Buschermohle, D. Tyler, and J. Dodd. 2016. Net returns and production use efficiency for optical sensing and variable rate nitrogen technologies in cotton production. *Oral. Proceedings of The 13th International Conference on Precision Agriculture*. Union Station, MO. Jul 31-Aug. 3.

36. **Yin*, X.,** and C.L. Main. 2016. Nitrogen fertilization and critical nitrogen concentration for contemporary high yielding cotton under no-tillage. Technical Conference of Cotton Soil Management and Plant Nutrition. *Proceedings of Beltwide Cotton Conferences*. *Oral.* New Orleans, LA. Jan. 5-7.

37. **Yin*, X.,** and J. Winings. 2015. Soil microbial community structure responses to an organically enhanced nitrogen fertilizer. 2015 Annual Meetings of ASA-CSSA-SSSA. *Oral. Agronomy Abstract.* Minneapolis, MN. Nov. 15-18.

38. Savoy, H.J., **X. Yin,** M.A. McClure, and M.E. Essington. 2015. In field evaluation of products purported to reduce ammonia-N loss from urea. 2015 Annual Meetings of ASA-CSSA-SSSA. *Oral. Agronomy Abstract.* Minneapolis, MN. Nov. 15-18.

39. Stefanini, M.R., J.A. Larson, C.N. Boyer, S.H. Cho, D. Lambert, and **X. Yin.** 2015. Profitability of variable-rate technology in cotton production. 2015 Southern Agricultural Economics Association (SAEA) Annual Meeting. *Oral. Abstract.* Atlanta, GA. Jan. 31-Feb. 3.

40. Savoy, H.J. Jr., and **X. Yin.** 2015. Verification of fertilizer recommendations in a corn-wheat-soybean rotation in TN. ASA Southern Branch 2015 Annual Meeting. *Oral. Abstract.* Atlanta, GA. Feb. 1-3.

41. **Yin*, X.,** and G.S. Zhou. 2015. NDVI, SPAD, and petiole sap nitrate utilization in nitrogen nutrition and growth assessment and yield prediction for cotton. Technical Conference of Cotton Soil Management and Plant Nutrition. *Oral. Proceedings of Beltwide Cotton Conferences.* San Antonio, TX. Jan. 5-7.

42. **Yin*, X.,** G.S. Zhou, and D. Verbree. 2014. Long-term residual effects of potassium to cotton on soil potassium supply and corn productivity under no-tillage. 2014 Annual Meetings of ASA-CSSA-SSSA. *Oral. Agronomy Abstract.* Long Beach, CA. Nov. 2-5.

43. Griffin, T.W., E.M. Barnes, P.A. Allen, P. Andrade-Sánchez, D.B. Arnall, K. Balkcom, L.T. Barber, P. Bauer, K.F. Bronson, M.J. Buschermohle, A.P. Jones, Y. Ge, G. Roberson, R.K. Taylor. B.S. Tubana, J.J. Varco, G. Vellidis, E.D. Vories, J.B. Wilkerson, and **X. Yin.** 2014. Pooled analysis of combined primary data across multiple states and investigators for the

development of a NDVI-based on-the-go nitrogen application algorithm for cotton. *Oral.* ASABE Paper No. 1900279. St. Joseph, MI: ASABE.

## C-8. Honors or Awards for Research/Scholarship/Creative Achievement (Total since July 2014: 13; Career Total: 43)

1. Invited panelist for the Food and Agriculture Cyberinformatics and Tools (FACT) Program, National Institute of Food and Agriculture (NIFA), USDA, 2019.

2. Sangeeta Bansal, Ph.D. student of Dr. Yin, won the University of Tennessee Access and Diversity Fellowship in Spring 2019.

3. Soil management for heathier soil. Seminar. Aug. 1. Invited and fully paid by Yunnan Agricultural University, China. 2018.

4. Nitrogen management: Present and future. Seminar. Aug. 4. Invited and fully paid by Xinjiang Academy of Agricultural Sciences, China. 2016.

5. Nitrogen management: Present and future. Seminar. Jul. 7. Invited and fully paid by Yunnan Agricultural University, China. 2016.

6. Has sulfur become a critical issue? Seminar. Jul. 6. Invited and fully paid by Yunnan Agricultural University, China. 2016.

7. New technologies in precision agriculture. Seminar. Jul. 4. Invited and fully paid by Shanghai Jiaotong University, China. 2016.

8. Guest Professor. Yunnan Agricultural University, China. 2015.

9. Greenhouse gas emissions of no-tillage systems. Seminar. Sept. 19. Invited and fully paid by Southwest Forestry University, China. 2015.

10. Yield resilience of no-tillage systems. Seminar. Sept. 18. Invited and fully paid by Yunnan Agricultural University, China. 2015.

11. Sensor-based precision N management. Seminar. Sept. 14. Invited and fully paid by Yunnan Agricultural University, China. 2015.

12. Yield stability of no-tillage systems. Seminar. Sept. 7. Invited and fully paid by Xinjiang Academy of Agricultural Sciences, China. 2015.

13. Sensor-based precision agriculture. Seminar. Sept. 2. Invited and fully paid by Jilin Academy of Agricultural Sciences, China. 2015.

## C-9. Grants and Contracts for Instruction or for Training Programs

None.

## D. Institutional, Disciplinary, and/or Professional Service

| Summary | | |
|---|---|---|
| **Item** | **Activities since July 2014 while Associate Professor at University of Tennessee** | **Career Total** |
| Served on departmental & institutional committees | 13 | 21 |
| Active member of national & international professional societies | 7 | 13 |
| Served for public & private organizations | 21 | 33 |
| Provided professional services to governmental agencies & industries | 13 | 23 |
| Peer reviewed manuscripts for refereed journals | 41 | 110 |

## D-1. Statement of Service

My philosophy of service is that I must do the utmost to provide excellent service to the institution, discipline, and profession because I was served by a lot of outstanding people during my higher education and career. Furthermore, service to the institution, discipline, and profession not only helps other people, but also increase the visibility of my program. I served or am serving on 13 different committees for the UT Plant Sciences Department and UT since July 2014 as an associate professor, such as UT Soil Fertilizer Recommendation Group, UTIA Service Awards Committee, Plant Sciences Department Faculty Advisory Committee, Plant Sciences Department Facilities and Equipment Committee, and Plant Sciences Department Seminars Committee.

Service to colleagues within the UT Plant Sciences Department and UT is an important part of my work. Teamwork and collaboration with colleagues in projects is the key for the success in my career. I have enjoyed serving the WTREC Summer Celebration Field Day and Milan No-Till Field Day, etc.

Since July 2014 as an associate professor, I have provided 21 professional services to public and private organizations and 13 professional services to governmental agencies and industries. For instance, I am serving as the leader of Sensor-Based Nutrient Management Community (with over 900 members) in the Section of Agronomic Production Systems in the American Society of Agronomy in 2019. I have been serving as an Associate Editor for the Agronomy Journal since 2019. I served as an Associate Editor for the Soil Science Society of America Journal during

2016 through 2018. I served as the president of Tennessee Agricultural Production Association (TAPA) in 2014. I served as an invited panelist for the Food and Agriculture Cyberinformatics and Tools (FACT) Program, National Institute of Food and Agriculture (NIFA) in USDA in 2019. I served as an organizer for the International Fertilizer Development Center International Training Tour on Technology Advances in Agricultural Production and Fertilization at Jackson, TN for six years from 2014 through 2019. I have reviewed 41 manuscripts for various refereed journals since July 2014.

## D-2. Summary of Service Record

## D-2.a. Institutional Service

## D-2.a.1. Committee Service at Department, College, and University Levels (Total since July 2014: 13; Career Total: 21)

1. Co-Chair (2020) /Member (2019), UT Plant Sciences Department Seminars Committee, 2019 – 2020.

2. Member, UT Soil Fertilizer Recommendation Group, 2008 – present.

3. Chair, UT Plant Sciences Department Facilities and Equipment Committee, 2014 – present.

4. Member, UT Plant Sciences Department Faculty Advisory Committee, 2014 – present.

5. Member, UT Biosystems Engineering and Soil Science Department Assistant Professor in Soil Fertility and Resource Management Position Search Committee, 2018 – 2019.

6. Member, Industrial Hemp Working Group, UT, 2019 – present

7. Member, Crop Nutrient Stewardship Workgroup, UT, 2015 – present.

8. Member, UTIA Service Awards Committee, 2014 – 2016.

9. Chair, UT Plant Sciences Assistant Professor/Crop Physiologist/Agronomist Position Search Committee, 2015.

10. Member, UT Biosystems Engineering and Soil Science Department Assistant Professor in Sustainable Nutrient and Soil Resource Management Position Search Committee, 2014 – 2015.

11. Member, UT Plant Sciences Department Facilities and Equipment Committee, 2009 – 2014.

12. Member, UT Plant Sciences Department Seminars Committee, 2011 – 2014.

13. Member, UT Plant Sciences Assistant Professor/Cotton Extension Specialist Position Search Committee, 2013 – 2014.

## D-2.a.2. Participation in University-Wide Governance Bodies

None.

## D-2.a.3. Contributions to the University's Programs to Enhance Equal Opportunity, Cultural Diversity, and International and Intercultural Awareness (Total since July 2014: 11; Career Total: 14)

1. **Yin, X.** 2019. Organizer and presenter for the International Fertilizer Development Center International Training Tour on Technology Advances in Agricultural Production and Fertilization (22 scientists, Extension specialists, governmental officers, and industry agronomists from many different countries). Jackson, TN, Aug. 21.

2. **Yin, X.** 2019. Hosted Dr. Baokun Lei, full professor and deputy director of Environment and Resources Research Institute at Yunnan Academy of Agricultural Sciences, Kunming, China for eight days on soil fertility and nutrient management. Aug. 2-9. The guest paid for all his expenses.

3. **Yin, X.** 2018. Organizer and presenter for the International Fertilizer Development Center International Training Tour on Technology Advances in Agricultural Production and Fertilization (23 scientists, Extension specialists, governmental officers, and industry agronomists from many different countries). Jackson, TN, Aug. 22.

4. **Yin, X.** 2017. Hosted five administrators/faculty members: Hangwen Yang (former dean & full professor), Zhengxiong Zhao (dean & full professor) and Na Wang (associate dean & associate professor) in College of Tobacco Science and Technology and Li Tang (associate dean & full professor) and Yan Dong (associate professor) in College of Resources and Environment from Yunnan Agricultural University, Yunnan Province, China visiting University of Tennessee for five days on tobacco science and technology, nutrient management, and sustainable soil management. Jul. 17-21. The guests paid for all their expenses.

5. **Yin, X.** 2017. Organizer and presenter for the International Fertilizer Development Center International Training Tour on Technology Advances in Agricultural Production and Fertilization (23 scientists, Extension specialists, governmental officers, and industry agronomists from many different countries). Milan, TN, Aug. 23.

6. **Yin, X.** 2016. Hosted six administrators/faculty members: Youbo Su (associate professor) and Zhi Xu (associate professor) in College of Resources and Environment, Xiahong He (dean & full professor) and Fan Li (full professor) in College of Plant Protection, and Yongbo Xu (full professor) and Ge Wang (associate professor) in College of Tobacco Science and Technology from Yunnan Agricultural University, Yunnan Province, China visiting University of Tennessee and Tennessee State University for seven days on nutriment management, soil biogeochemistry, plant pathology, and tobacco science. Nov. 11-17. The guests paid for all their expenses.

7. **Yin, X.** 2016. Hosted four faculty members: Hui Xu (full professor), Huancheng Ma (full professor) and Qingtai Shu (associate professor) from Southwest Forestry University and Xiuying Li (full professor) from South China Agricultural University for two days on forestry management and silviculture. Nov 19-20. The guests paid for all their expenses.

8. **Yin, X.** 2016. Organizer and presenter for the International Fertilizer Development Center International Training Tour on Technology Advances in Agricultural Production and Fertilization (46 scientists, Extension specialists, governmental officers, and industry agronomists from many different countries). Jackson, TN, Aug. 24.

9. **Yin, X.,** and M. Buschermohle. 2015. Hosted two scientists: Yan Zhang (full professor) and Nana Shan (associate professor) from Xinjiang Academy of Agricultural Sciences, Xinjiang, China visiting University of Tennessee for nine days on precision agriculture and sustainable nutrient management. May 10-18. The guests paid for all their expenses.

10. **Yin, X.** 2015. Organizer and presenter for the International Fertilizer Development Center International Training Tour on Technology Advances in Agricultural Production and Fertilization (22 scientists, Extension specialists, governmental officers, and industry agronomists from many different countries). Jackson, TN, Aug. 26.

11. **Yin, X.** 2014. Organizer and presenter for the International Fertilizer Development Center International Training Tour on Technology Advances in Agricultural Production and Fertilization (31 scientists, Extension specialists, governmental officers, and industry agronomists from many different countries). Jackson, TN, Aug. 20.

## D-2.b. Disciplinary Service

## D-2.b.1 Membership in Professional Societies (Total since July 2014: 7; Career Total: 13)

1. American Society of Agronomy (since 1998).

2. Soil Science Society of America (since 1998).

3. Crop Science Society of America (since 1999).

4. World Union of Soil Science (since 1998).

5. Sigma Xi – The Honor Scientific Research Society (since 2007).

6. Gamma Sigma Delta International –The Honor Society of Agriculture (since 1999).

7. Tennessee Agricultural Production Association (since 2008).

## D-2.b.2. Honors or Awards for Service Activity within the Academic Discipline (Total since July 2014: 1; Career Total: 4)

1. Invited panelist for the Food and Agriculture Cyberinformatics and Tools (FACT) Program, National Institute of Food and Agriculture (NIFA), USDA, 2019.

## D-2.c. Professional Service

## D-2.c.1. Professional Service to Public and Private Organizations or Institutions (Total since July 2014: 21; Career Total: 33)

1. The Leader of Sensor-Based Nutrient Management Community (with over 900 members), Section of Agronomic Production Systems, American Society of Agronomy (ASA), 2019.

2. Associate Editor, Agronomy Journal, American Society of Agronomy, 2019 – 2021.

3. Associate Editor, Soil Science Society of America Journal (SSSAJ), Soil Science Society of America, 2016 – 2018.

4. Past President, Tennessee Agricultural Production Association (TAPA), 2015.

5. President, Tennessee Agricultural Production Association (TAPA), 2014.

6. Symposium Moderator, Symposium--Crop and Nutrient Management Recommendations Based on Integrated Unmanned Aerial Vehicle and Digital Camera Systems. *Oral.* 2019 Annual Meetings of ASA. San Antonio, TX. Nov. 10-13. (Accepted).

7. Session Moderator, Crop and Nutrient Management Recommendations Based on Integrated UAV and Digital Camera Systems. *Oral.* 2019 Annual Meetings of ASA. San Antonio, TX. Nov. 10-13. (Accepted).

8. Symposium Organizer, Symposium--Crop and Nutrient Management Recommendations Based on Integrated Unmanned Aerial Vehicle and Digital Camera Systems. *Oral.* 2019 Annual Meetings of ASA. San Antonio, TX. Nov. 10-13. (Accepted).

9. Session Organizer, Crop and Nutrient Management Recommendations Based on Integrated UAV and Digital Camera Systems. *Oral.* 2019 Annual Meetings of ASA. San Antonio, TX. Nov. 10-13. (Accepted).

10. Session Organizer, Sensor-Based Nutrient Management for Greater Profitability and Healthier Environment Oral I (includes student competition). 2019 Annual Meetings of ASA. San Antonio, TX. Nov. 10-13. (Accepted).

11. Session Organizer, Sensor-Based Nutrient Management for Greater Profitability and Healthier Environment Oral II (includes student competition). 2019 Annual Meetings of ASA. San Antonio, TX. Nov. 10-13. (Accepted).

12. Session Organizer & Moderator, ASA Community Planning Session--Sensor-Based Nutrient Management. 2019 Annual Meetings of ASA. San Antonio, TX. Nov. 10-13. (Accepted).

13. Mid-South Plant Nutrient Regional Committee, 2008 – present.

14. Committee Member of Sustainable and Organic Production Systems Committee, American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America, 2012 – present.

15. Editorial Board, The Scientific World Journal, Hindawi Publishing Corporation, 2013 – present.

16. Editorial Board, Open Journal of Soil Science, Scientific Researching Publishing, 2011 – present.

17. Editorial Board, Open Access Journal of Science and Technology, AgiAl Publishing House, Great Britain, 2012 – present.

18. Associate Editor, The World Research Journal of Agriculture and Food Science, 2012 – present.

19. Editorial Board, Advances in Crop Science and Technology, 2012 – present.

20. Editorial Board, Journal of Agricultural Sciences and Application, 2012 – present.

21. Peer reviewed manuscripts for a variety of refereed journals, 2002 – present. Career Total: 110 manuscripts; Total since July 2014: 41 manuscripts.

## D-2.c.2. Professional Service to Governmental Agencies (Total since July 2014: 2; Career Total: 4)

1. Invited Panelist for the Food and Agriculture Cyberinformatics and Tools (FACT) Program, National Institute of Food and Agriculture (NIFA), The United States Department of Agriculture (USDA), 02/7, 8, &11/ 2019.

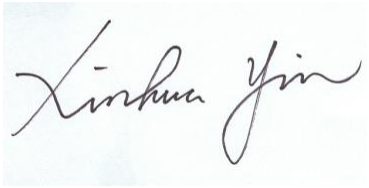
2. Technical help was provided to Patricia Turman at the Nashville State Office, NRCS, USDA about Rosen's Inc. Nitrogen Protection Products, 01/24/2018.

## D-2-c.3. Professional Service to Industry, e.g., Training, Workshops, Consulting (Total since July 2014: 11; Career Total: 19)

1. Organizer and presenter for the International Fertilizer Development Center International Training Tour on Technology Advances in Agricultural Production and Fertilization (22 scientists, Extension specialists, governmental officers, and industry agronomists from many different countries). Jackson, TN, 08/21/2019.
2. Technical help was provided to the Farmspace Systems, Inc. about precision agriculture, 06/17/2019.
3. Technical help was provided to the Jenkins Soil Fertility Consulting, Inc. about the effectiveness of sulfur and micronutrients, 11/14/2018.
4. Organizer and presenter for the International Fertilizer Development Center International Training Tour on Technology Advances in Agricultural Production and Fertilization (23 scientists, Extension specialists, governmental officers, and industry agronomists from many different countries). Jackson, TN, 08/22/2018.
5. Organizer and presenter for the International Fertilizer Development Center International Training Tour on Technology Advances in Agricultural Production and Fertilization (23 scientists, Extension specialists, governmental officers, and industry agronomists from many different countries). Milan, TN, 08/23/2017.
6. Organizer and presenter for the International Fertilizer Development Center International Training Tour on Technology Advances in Agricultural Production and Fertilization (46 scientists, Extension specialists, governmental officers, and industry agronomists from many different countries). Jackson, TN, 08/24/2016.
7. Tour of sponsored research in progress, Cotton Inc. State Support Committee, 07/24/2016.
8. Technical help was provided to the CFS, Inc. about nitrogen use efficiency of UAN and urea in the USA, 02/24/2016.
9. Organizer and presenter for the International Fertilizer Development Center International Training Tour on Technology Advances in Agricultural Production and Fertilization (22 scientists, Extension specialists, governmental officers, and industry agronomists from many different countries). Jackson, TN, 08/26/2015.
10. Tour of sponsored research in progress, Cotton Inc. State Support Committee, 07/24/2015.
11. Organizer and presenter for the International Fertilizer Development Center International Training Tour on Technology Advances in Agricultural Production and Fertilization (31 scientists, Extension specialists, governmental officers, and industry agronomists from many different countries). Jackson, TN, 08/20/2014.

## E. Candidate Signature Statement

I hereby attest that I have examined for accuracy the factual and informational parts of my dossier (excluding the external letters of assessment).



10-16-2019

Candidate Signature | Date