

Curriculum Vita January 2025

Instructor: Melanie Fields, Ph.D., Associate Professor

Department Head

Academic Department: Curriculum and Instruction

University Address: Sowers Education South, #218

Texas A&M University-Commerce

PO Box 3011

Commerce, TX 75429-3011

Office Phone: 903 886-5537

University Email Address: Melanie.fields@tamuc.edu Faculty Web Page Address: http://faculty.tamuc.edu/mfields

AREAS OF EXPERTISE

Curriculum and Instruction: Design and Implementation Secondary Education: Preservice Teacher Preparation Mathematics Education: Pedagogical Content Knowledge Secondary STEM Education: Project Based Learning and Pedagogy

Secondary Student Teacher Field Supervision

EDUCATION

Year	Degree	Major/Minor	Institution
2015	Ph.D.	Curriculum and Instruction/Mathematics & Educational Psychology	University of North Texas
2011	M.Ed.	Secondary Education/ Mathematics Education	Texas A&M Commerce
2007	BS	Interdisciplinary Studies/ Mathematics 4-8	Texas A&M Commerce

PROFESSIONAL TEACHING EXPERIENCE

Begin/End Year	Place of employment	Position/Department
2025-	East Texas A&M University	Department Head
2015-	Texas A&M University- Commerce	Assistant/Associate Professor LeoTeach Director Curriculum and Instruction
2014-2015	Texas A&M University- Commerce	Ad-Interim Instructor Curriculum and Instruction
2011-2014	University of North Texas	Graduate Teaching Assistant/ Teach North Texas
2008-2011	Princeton ISD	6 th grade mathematics teacher
2007	Texas A&M Commerce	Math Lab Tutor
2006-2007	St Paul's Episcopal School	Preschool Teacher

INSTRUCTIONAL ASSIGNMENTS

Texas A&M University-Commerce (2014-present)

Course Times Taught # of Students Total Range

Title (1-5, 1 is highest), until fall 2017 (1-5, 5 is the highest) began fall 2018

(1-5, 5 is the highest) began fall 2018

ELED 452 3 times 4-13 4.50 - 5.00

Student Teaching Field Based: Student Teaching in Field-Based Teacher Education Programs. Six semester hours. This is a course requiring observation, participation, and directed teaching for residents enrolled in the Center for Professional Development and Technology (CPDT). Prerequisite: Full Admission to the Teacher Education Program through placement in a NET CPDT Center for Residency. Prerequisites: "Full Admission to the Teacher Education Program through placement in a NET CPDT Center for Residency".

SED 300 4 times 14-24 1.15 – 1.19/4.92

The Teaching Profession: The course provides prospective teachers with a beginning foundation for understanding learners, enhancing student achievement, and understanding the teaching environment. The course will emphasize the structure, organization, management, and governance of the American school system and current issues related to the teaching profession. The legal, ethical, and multicultural foundations of teaching will be discussed.

SED 330 4 times 7-26 1.03 – 1.26/4.53

Roles of STEM Educators: This course introduces the professional body of knowledge necessary for effective teaching as part of the Mathematics/Science Teacher Preparation Program. This course emphasizes methods of

organizing and managing a classroom based on an understanding of diverse environments. Teacher skills, which have been proven to be effective in supporting diversity in the classroom, will be developed. The content of this course will center on lesson presentations by students in the field and in the classroom to fellow preservice teachers. Preparations for these lessons will include study of many topics including classroom management strategies, curriculum and lesson planning, teaching models, discipline theories, and certification issues.

SED 331 2 times 7-26 1.10 – 1.22/4.60

Instructional Design in STEM: This second course in the LeoTeach sequence includes middle school field experiences (i.e., observing master teachers and teaching collaboratively designed lessons to diverse learners). The preservice teachers will develop competence with questioning strategies, two teaching models (direct instruction and Inquiry learning), and use formative assessment data including student artifacts to revise initial lesson plans and further differentiate instruction. Their lesson plans will include modifications for ELL and ESL learners.

SED 332 7 times 7-26 1.08 – 1.43/4.91-4.96

Project Based Learning in STEM: This third course in the LeoTeach sequence includes high school field experiences. The preservice teachers will develop competence with the project based learning model through designing and carrying out an exploratory investigation of an integrated lesson. They will create and present a final project suitable for a high school classroom. Experiences with research design, implementation, and data analysis will be the foundation for a teacher inquiry project carried out during SED 330 and SED 331. As part of learning about PBL, they will conduct their own PBL about special education by creating a handbook about special education, plus present authentic findings that answer a driving question presented by professor.

SED 401 11 times 27-63 1.00 – 1.13/3.94 – 4.86

Technology Infused Curriculum and Assessment in Field-Based Environments (in conjunction with SED 400): An experiential component in which future public school teachers design and implement curriculum and model the use of a variety of classroom assessment techniques. The resident teachers will use cutting edge technologies for both creating and assessing lessons. Special attention will center on the alignment of curriculum, instruction, and testing. Prospective teachers will achieve knowledge and skill by observing and assisting middle/secondary public school teachers in classroom situations.

SED 404 14 times 27-63 1.00 – 1.13/4.83-4.96

Secondary Teaching Practicum (in conjunction with SED 405): SED 404 – Supervised resident teaching experiences in the secondary school classroom. Regular seminar sessions will focus on the situations, questions, and concerns that arise directly from the resident teachers' experiences in secondary public school classrooms.

SED/EDCI 597 7 times - fully online 11-17 4.42-4.71

What Teachers Need to Know About Assessment: Focuses on formal and informal assessment strategies to be used by teachers of secondary students. Topics will include reliability, validity, bias, performance assessment, portfolios, affective assessment, standardized test score interpretation, and formative assessment. Particular attention will be given to practical applications of the assessment of learners within a particular classroom setting and curricular context.

SED 521 4 times 12-24 1.21-1.32/4.59

Models of Teaching Secondary: This course explores the models of instruction, with emphasis on the associated theories of teaching and learning. The course encourages teachers to integrate the models into practice and offers opportunities for research on the connections between teaching and learning theories, cognitive psychology, and educational philosophies.

EDCI 540 5 times – fully online 12-13 4.97-5.00

Mathematics Instruction for the 21st Century-Instruction: This course prepares students for success with the Texas Essential Knowledge and Skills for Math. This course takes a closer look at how children learn mathematics, and how we can foster a mindset for doing mathematics. It includes: NCTM's principles for mathematics education; ways children develop mathematical understanding, problem solving skills, and processes used to get there; analyzing student's error patterns; and resources for teaching mathematics.

EDCI 597 5 times – fully online 5-10 4.87/4.94

Project Based Learning: This course is designed to aid in understanding the difference in Problem Based Learning and Project Based learning. The overall goal is to examine and identify the key components in Project Based Learning. Additionally, the students will gain an understanding of the teacher role, student role, and assessment throughout a PBL unit.

EDCI/SED 597 1 time 16 1.15 - 1.19

Integrated Earth Science and Math: The course is designed to meet the following objectives and provide research-based practice experiences based on the 4 strands from Ready, Set, Science! (National Academies Press, 2008) along with research-based practices to create discussion based mathematics and science classrooms. The course content will focus on grades 4-6 selected science and mathematics concepts outlined in the Texas Essential Knowledge and Skills (TEKS) and best practices to incorporate this content and technology into the classroom. While the focus will be on upper elementary and middle school classroom applications, the content level instruction will be at a higher level. Experts in selected topics in science, mathematics, technology, and engineering and will also participate in class instruction.

GRADUATE & UNDERGRADUATE STUDENTS

- A. Dissertation Memberships
 - 2018 Shea Regian, Dissertation Committee, Proposal Defended
- B. Honors Students
 - 2022 **Grace Koone,** Thesis Committee

Study on Science Teaching & Pedagogy Preparation for Elementary Teachers

- 2020 **Kenzie-Lou Bramblett**, Thesis Committee Study on Grouping Students in a Classroom
- 2020 Kale Brashears, Thesis Advisor

Study on Homeschool Students Entering College

2020 Anthony Pierotti, Thesis Advisor

Study on Implementation of a Mentoring Program

2020 **Keeley Scott,** Thesis Committee

Study on Implementation of Inquiry Based Physics with Elementary Students

2019 **Taylor Harden, Thesis Advisor,** completed High Honors Study of Perceptions about Gifted and Talented Students in High School

Study of Perceptions about Gifted and Talented Students in High School

- 2018 **Claire Callaghan, Thesis Advisor,** completed Highest Honors Study on Homeschool Students Applying for the Honors Program at TAMUC
- C. LeoScholar
 - 2018 Chris Hernandez, LeoScholar Awarded

Served as the LeoScholar Supervisor in LeoTeach

Created a database of manipulatives and Supplies to reserve for teaching

- D. Graduate Teaching Assistants
 - 2020 Marissa Farmigoni, Presidential GAR Awarded

EXTERNAL GRANTS

Submitted

2023 Spencer Grant, Response to Intervention & Research: An Action Research project on RTI for rural pre-service STEM teachers, Co-PI, \$360,000

2023 NSF, S-STEM: Northeast Texas Consortium for Increasing Mathematics Talents Graduates (NTC-iMath), Co-Pi, \$5,000,000

Awarded

- 2021 Awarded, Collaborative Research, National Science Foundation (NSF), Co-PI, \$69,997
- 2020 Awarded PhysTEC, American Physical Society, Co-PI, \$15,000
- 2019 Awarded PhysTEC, American Physical Society, Co-PI, \$288,551
- 2018 Awarded Noyce Grant, National Science Foundation (NSF), Co-PI, \$1,008,572
- 2017 Awarded Teacher Quality Grant, Texas Higher Education Coordinating Board, Co-PI, \$105,346
- 2016 Awarded Teacher Quality Grant, Texas Higher Education Coordinating Board, Co-PI, \$150,000

PUBLICATIONS

Refereed

2017

- Fields, M., Regian, S., Sinclair, B., & Naizer, G. (2017). Perspectives change on STEM integration: Or do they?. In Mohr-Schroder, M.J. & Thomas, J.N. (Eds.) *Proceedings of the 116th annual convention of the School Science and Mathematics Association Vol. 4*, 36-43. Lexington, KY:SSMA
- Fields, M., Williams, J.J., & Isbell, L. (2017). Changes in preservice teacher beliefs: Indication of learning. *The Texas Forum of Teacher Education*, 7, 21-27.

2018

Fields, M., & Isbell, L. (2018). A culturally candid response: Tale of two professors' reflections. In. Bohan, C. (Ed.) *Curriculum Teaching and Dialogue*, 133 - 135. North Carolina: Information Age.

2019

Fields, M., Dixon. K., Isbell, L., & Tunks, J. (2019). Examining the levels of transfer: A closer look at

- the UTeach preparation program. Consortium of State Organizations for Texas Teacher Education, 29-33.
- Fields, M., & Isbell, L. (2019). Remember your 'why' to teaching! 4 strategies to motivate and encourage beginning teachers. *New Teacher Advocate*. 26(3), 10-11.
- Williams-Mills, J., Quast, J., & Fields, M. (2019). Mathematics teaching: Constructivist and non-constructivist beliefs of preservice teachers. *ArATE Electronic Journal*. *9*(1), 64-72.

2020

- Corp, A., Fields, M. (2020). Our exploratory research: Finding nothing reveals something important. In. Bohan, C. (Ed.) *Curriculum Teaching and Dialogue*, North Carolina: Information Age.
- Fields, M., Modir, B., Newton, W. G., Lock, R, & Stanfield, J.C. (2020). The transition to online teaching during the COVID-19 pandemic at a regional, rural, university: The experience of learning assistants. *Proceedings paper presented at Physics Education Research Virtual Conference*.
- Jones, B. A., Peterson-Ahmad, M., Fields, M., & Williams, N. (2020). Training Preservice Teachers to Match Assistive Technology to Student Needs. *Journal of Special Education Technology*. *1-13*. https://doi.org/10.1177/0162643420918337

2021

Mills, J. J. W., Quast, J. A., & Fields, M. (2021). COVID-19 Virtual Dilemma: Parents' Perspectives on Math Learning at Home. In *Educational Recovery for PK-12 Education During and After a Pandemic* (pp. 25-45). IGI Global.

2023

- Fields, M., Williams Mills., & Quast, J. (2023). Parents' support of mathematics learning during a pandemic: a follow-up study. *Texas Forum of Teacher Education*. *13*, 66-77.
- Mills-Williams, J., Fields, M., Isbell, L. (accepted 2023). Pre-service teachers' reflections of their implementation of mathematical teaching practices. *Southeastern Regional Association of Teacher Educators*.
- Fields, M., & Mills-Williams, J, (accepted 2023). Year-long teaching residency for STEM teacher candidates: Program planning and implementation. *Proceedings of the 122nd annual convention of the School Science and Mathematics Association*.

Book Chapter

2020

Corp, A., Fields, M. & Naizer, G. (2020). Chapter 27: Elementary STEM teacher education: Recent practices to prepare general elementary teachers for STEM. In C. Johnson, M. Schroeder, T. Moore, & L. English (Eds.), *Handbook of Research on STEM Education 337-348*. Routledge Taylor and Francis. New York.

In Review

Fields, M., Williams-Mills, J., Isbell, L. (under review, 2024). Art as Metaphor: A Tool for Assessing Preservice Teachers' Emotions about Learning and Teaching Mathematics. Curriculum Teacher Dialogue.

Non-Refereed

Technical Report

Fields, M. (2020). *LeoTeach Secondary STEM Teacher Preparation Program*. Department of Curriculum and Instruction at Texas A&M University-Commerce.

SELECTED PRESENTATIONS

Research Presentations

2023

Fields, M., Mills, J, & Isbell, L. (2023, February). Art as a Metaphor. Presentation at Southwest Educational Research Association 46th Annual Meeting. San Antonio, Texas.

2022

Fields, M., Painter, A., & Bramblett, K. (2022, October). Students Disengaged? Tips and Tricks to Revamp your Quadratics!. Presentation at School Science and Mathematics 121st Annual Convention. Missoula, MT.

2020

- Fields, M., Williams-Mills, J., & Quast, J. (2020, October). Covid-19 Virtual Dilemma: Parents' Perspectives on Math Learning at Home. Presentation at Consortium of State Organizations for Texas Teacher Education (CSOTTE) Fall 2020 Virtual Teacher Education Conference.
- Fields, M., Modir, B., Newton, W. G., Lock, R, & Stanfield, J.C. (2020, August). The transition to online teaching during the COVID-19 pandemic at a regional, rural, university: The experience of learning assistants. Poster presented at Physics Education Research Virtual Conference.

2019

- Corp, A. & Fields, M. (2019, October). Are student teachers walking our talk? Evidence for integration in student teaching. School Science and Mathematics 118th Annual Convention. Salt Lake City, UT.
- Corp, A. & Fields, M. (2019, June). Summary of research: STEM integration in elementary teacher preparation. Texas Association of Texas Educators Summer Conference (TxATE). Austin, TX.

2018

- Fields, M. & Isbell. L, Williams. J. (2018, February). Inquiry-based lessons: Observing preservice teachers progress and understanding perceptions. Southwest Educational Research Association (SERA) 41st Annual Meeting. New Orleans, LA.
- Fields, M. & Isbell. L. (2018, October). A culturally candid response: Tale of two professors' reflection. American Association of Teaching and Curriculum (AATC) 25th Annual Conference, Dallas, TX.

Williams, J. & Fields, M. (2018, October). Preservice teacher beliefs about mathematics teaching. American Association of Teaching and Curriculum (AATC) 25th Annual Conference, Dallas, TX.

2017

- Fields, M. & Williams, J. (2017, October). Preservice teacher early beliefs as indicators of Learning. American Association for Teaching and Curriculum. Denver, CO
- Fields, M., Regian, C., Sinclair, B., & Naizer, G. (2017, November,). Perspectives change on STEM integration: Or do they? School Science and Mathematics Association 116th Annual Convention. Lexington, KY
- Isbell, L., Fields, M., & Naizer, G. (2017, February). Motivation of preservice teachers classroom development. Southwest Educational Research Association 40th Annual Meeting. San Antonio, TX.

2016

Fields, M. & Faulkenberry, E. (2016, February). Examining teacher preparation through the lens of transfer of learning. Research Council on Mathematics Learning (RCML). Orlando, FL

2015

Fields, M. & Blount. K. (2015, October). Integrating content and pedagogy within and beyond STEM for secondary pre-service teachers. School Science and Mathematics Association 114th Annual Convention, Oklahoma City, OK.

2014

- Fields, M. (2014, February). Support For High School Math teachers Through Induction. Research Council on Mathematics Learning (RCML). San Antonio, TX.
- Watson, C., Asim, S. & Fields, M. (2014). Beliefs of STEM Pre-Service Teachers Towards PBI. T-STEM Center Coalition 7th Annual STEM Conference. Dallas, TX.

2013

- Fields, M. (2013, February). TNT Pre-Service Teachers Perceptions of Teaching: A Qualitative Study Research Council on Mathematics Learning (RCML). Tulsa, OK.
- Fields, M. & Tunks, J. (2013, November). Freshman Pre-Service Teachers' Perceptions of Teaching: A Perspective from STEM Majors. University of North Texas Graduate Exhibition Poster Presentation. Denton, TX.

Service Presentations

<u>2023</u>

- Fields, M., & Mills, J, (2023, July). Reading Math: Use Literature to Encourage Math Talk. Presentation Conference of the Advancement of Mathematics. Fort Worth, TX.
- Mills, J, & Fields, M. (2023, July). Wait, that's math?: Connecting home and school mathematics knowledge. . Presentation Conference of the Advancement of Mathematics. Fort Worth, TX.

2020

Check your vision: Is that a ratio you are wearing. Conference for the Advancement of Mathematics. Vision

2020: Success [In]SightVirtual Conference.

2016

Teaching STEM to in-service teachers via geology-based field experiences. School Science and Mathematics Association, Phoenix, AZ/ syllabus share.

Ratios, Proportional Reasoning, Golden Ratio, Measurement. Conference for the Advancement of Mathematics Teacher, San Antonio, TX/ activities for middle school math teachers.

2015

Ratios, Proportional Reasoning, Measurement. Conference for the Advancement of Mathematics Teacher, San Antonio, TX/ activities for middle school math teachers.

2014

Integrating children's literature into math classes. Bill Martin Symposium, Texas A&M University-Commerce/ reading activities for elementary and middle school math teachers.

Professional Development Workshops Conducted

2019, 2020, 2021

Noyce Professional Development Workshops, Co-Host with Dr. William Newton, Dr. Robin Lock, & Dr. Bahar Modir, Texas A&M University-Commerce

2016, 2017, 2018

LeoTeach Symposium, Co-Host with Dr. Kit Blount and LeoTeach Students, Texas A&M University-Commerce

PROFESSIONAL SERVICE

Department

Year	Organization	Office	Assignment
2020 - present	Curriculum and Instruction	LeoTeach STEM	LeoTeach STEM Director
2018 – 2023	Curriculum and Instruction	Secondary/All-level Center Coordinator	Program coordination of SED/All-level: seminars, courses, exam approvals, resident placements, content area meetings
2021	Curriculum and Instruction	Secondary Center	edTPA Coordinator for Secondary Center
2020	Curriculum and Instruction	Raise Your Hand Texas	Secondary faculty representative
2019 – 2020	Curriculum and	LeoTeach	Interim-Director

	Instruction		
2019	LeoTeach Student Organization	Advisor	Faculty advisor for our LeoTeach Student Organization
2016 - 2017	Secondary/All-level Student Teaching Program	Co-Coordinator	Program coordination of seminars and courses
2014 - Current	LeoTeach Program	Course Lead for SED 330, 331, & 332	Design and plan course instruction for the series of courses for STEM secondary education majors
2014 - Current	Secondary/LeoTeach Committee	Committee Member	Plan student outcomes Discuss course changes Analyze course offerings
2014 - Current	LeoTeach Council	Conference Committee	Plan annual conference
2014 - 2018	Bill Martin Symposium	Conference Committee	Committee Member/Donations and Door Prizes

College and University

Year	Organization	Office	Assignment
2022	CATE	Advisor	Advise and Assist with CATE nominations
2019-2021	Faculty Senate	Budget Committee	Committee member to report to faculty senate on budget issues and concerns
2019	TAMUC/Career Development Hiring Committee	Committee Member	Interview potential candidates for Career Coach Position in Career Development
2018	2018 A&M Annual Research Symposium	Judge	Judge Oral and Poster Research Presentations
2018- present	TEARAC	Committee Member	Review Appeals for Student Teaching for C&I

2018/2020	NETCAT Collaboration	Invited Presenter	Presenter to 8 th graders about C&I Teacher Preparation Programs
2015-2019	Faculty Development Leave Committee	TAMUC University Committee	Committee Member/Review Proposals for Developmental Leave

State and National

Year	Organization	Office	Assignment
2023-2025	School Science and Mathematics	Conference Chair	Organize and plan for 2025 – 124 th Annual Convention
2021 – current	Texas Mathematics Teacher Journal	Editorial Board	Review articles and proofs annual publication.
2020 - 2023	School Science and Mathematics Association (SSMA)	Finance Committee	Three-year assignment to aid in financial decisions of the organization.
2020	Research Council of Mathematics Publication Investigations	Invited Reviewer	Review articles
2020	Physics Education Research Conference (PERC)	Conference Reviewer	Review conference proposals and proceedings
2017-current	School Science and Mathematics Association (SSMA)	Invited Reviewer	Review articles
2017 - 2020	Research Council of Mathematics (RCML)	Conference Committee	Review Proposals/During Conference Duties
2017	Southwest Education Research Association (SERA)	Invited Reviewer	Reviewed conference proposals
2016 - 2017	Research Council of Mathematics (RCML)	Nominated Position/ Conference Committee	Program Co-Chair
2016	School Science and	Invited Reviewer	Reviewed articles

	Mathematics Association (SSMA)		
2016	Connect to Learn Online (C2L)	Reviewer	Reviewed conference proposals
2014-2015	UNT/COE Doctoral Student Association	Vice President	Plan annual conference
2006-2007	Council of Teachers of Mathematics, Texas A&M University-Commerce	President	Lead, acquire scholarships for members

	PROFESSIONAL MEMBERSHIPS	
2018-present	Kappa Delta Pi International Honor Society in Education	
2017-present	Texas Association Teacher Educators	
2017-present	American Association for Teaching and Curriculum	
2016-present	Southwest Educational Research Association	
2015-present	School Science and Mathematics Association	
2006-present	National Council of Teachers of Mathematics	
2011-present	Research Council on Mathematics Learning	
2011-present	Association of Mathematics Texas Educators	
2011-present	Association of Wathernatics Texas Educators Association of Teacher Educators	
2011 present	Association of Teacher Educators	
	AWARDS, RECOGNITIONS, & HONORS	
2022	Paul W. Barrus Teaching Award	
2022	Chancellor's Academy of Teacher Educators Team Award	
	TAMUC STEM Education Alliance Team	
2019	Hats Off To Women Faculty Achievement Award	
2014	Alvin & Lillian Miller Scholarship	
2014	College of Education Dissertation Support Grant	
2014	College of Education Dean Emeritus Scholarship	
2014	Gerald & Leslie Gantzer Scholarship	
2012	UNT College of Education Key to Success for North Texans	
2011-2014	Academic Achievement Scholarship	
2011-2014	Texas Instruments Foundation Scholarship	
2007	President's Scholars List, Texas A&M University-Commerce	
2004-4007	TxCEPT Scholarship	
ZUU4-4UU /	1 XCEr 1 Scholarship	

PROFESSIONAL DEVELOPMENT

2021-2022

- Association of College and University Educators (ACUE)

 25 weeks/modules for designing effective online and face-to-face instruction
 - Earned full credential May 2022

2020	 Noyce Workshop, Co-hosted with College of Science and Engineering. Co-hosted 4 day STEM Professional Development Workshop on Technology.
2020	 PhysTEC Workshop, Co-hosted with College of Science and Engineering. 1.5 days work-shop with Physics Teachers and pre-service physics teacher candidates on creating virtual Physics Labs
2019	 Noyce Workshop, Co-hosted with College of Science and Engineering. Co-hosted 4 day STEM Professional Development Workshop on Integration of STEM.
2019-2020	Conference for the Advancement of Mathematics Teaching (CAMT) • 3-day conference on mathematics teaching pedagogy and content
2019	edTPA Southeast Regional Conference, Tennessee • 3-day conference on an evidence-based evaluation system for teachers
2017	Project Based Learning 101, Region 10 • 3 day Buck Institute PBL Training
2015	Summer Institute on Culturally Responsive Teacher Education • 3 day institute at Ball State University
2008-2011	 Teacher Quality Grant Participant, Texas A&M University-Commerce In-Depth Middle School Mathematics Preparing for Algebra grades 3-8 (120+CPE)
2007-2009	Math, Science, Technology Teacher Academy, Texas A&M University-Commerce • Japanese Lesson Study • STEM Integration