

# STEM Education

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## Department Information

- **Acting Program Director:**  
Jeffrey Boyer, Ph.D.
- **Department Location:**  
Deans Office, College of Science and Mathematics
- **Department Phone:**  
(701) 231-5953
- **Department Web Site:**  
[www.ndsu.edu/csme/stem\\_education\\_graduate\\_programs/](http://www.ndsu.edu/csme/stem_education_graduate_programs/)
- **Degrees Offered:**  
Ph.D. (Dual Major in STEM Education and STEM discipline is an option)
- **English Proficiency Requirements:**  
TOEFL iBT 88, IELTS 6.5

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## Program Description

Applicants are invited for NDSU's interdisciplinary Ph.D. program in Science-Technology-Engineering-Mathematics (STEM) Education. The program conducts and disseminates empirical research to improve STEM learning and teaching in higher education.

Coursework centers on graduate-level courses in the discipline area, a common core of STEM Education courses, and elective courses focused on research training. An interdisciplinary team of faculty supervised the candidate's dissertation research, which will investigate teaching and learning within/across one or more STEM disciplines.

Although interdisciplinary in nature, graduate students in the STEM Education Ph.D. Program have an academic home in the STEM department/program of their discipline preference. Graduate committee membership includes faculty from the STEM Education program and from the department/program of discipline preference.

Applicants will not be considered without a core faculty member who has agreed to serve as the major advisor.

Applicants for the STEM Education PhD program must meet at least one of the following criteria:

- Completed a Masters (or PhD) degree in a STEM discipline.
- Accepted into an NDSU Master's program in a STEM discipline.
- Accepted into an NDSU PhD program in a STEM discipline.

The program requires 60 semester hours beyond the Master's Degree. Additionally, by completion of the doctorate, the coursework must include either a Master's Degree or its equivalent coursework in the chosen STEM discipline (this applies if the Master's Degree is in Education or another related field). In consultation with the student's graduate committee, a plan of study will be developed to ensure that the student has a strong background in

1. discipline-based educational research at the undergraduate level,
2. curriculum, teaching, learning, and assessment, and
3. content expertise within a discipline.

Students enrolled in program must maintain an overall GPA of at least 3.0 both within the content area and STEM courses. If the GPA in either component should drop below 3.0, then the student is placed on academic probation within the program for the following semester. If at the end of that semester the GPA still remains below 3.0, the student is subject to dismissal from the program.

## Core Faculty

Jeff Boyer, Director STEM Education

Abraham Ayebo, Mathematics/Education

Warren Christensen, Physics/STEM Education

Mila Kryjevskaja, Physics/STEM Education

William Martin, Mathematics

Jennifer Momsen, Biology/STEM Education

Lisa Montplaisir, Biology/STEM Education

James Nyachwaya, Chemistry/Education

## **Affiliate Faculty**

Julia Bowsher, Biological Sciences

John Buncher, Physics

Angela Hodgson, Biological Sciences