February 19, 2015

To: Dean Van Galen, Chancellor  
116 North Hall  
University of Wisconsin-River Falls

From: David P. Rainville, Chair  
Faculty Senate  
University of Wisconsin-River Falls

Re: UWRF Faculty Senate Motion 2014-15/52

At the February 18, 2015 meeting of the University of Wisconsin-River Falls Faculty Senate, motion 2014-15/52 was passed and is effective immediately. The motion is forwarded to you for your action.

A motion from Academic Policy and Programs Committee (James Zimmerman, Chair) to approve the STEM teach option to the MSE in Secondary Education. Contingent to approval of this change, Continuing Education agrees to provide in five years of implementation of the program, a financial report reflecting the fiscal and human resource viability of the program. This report will be forwarded to both the Chair of Academic Policy and Programs Committee, the Deans of the Colleges of Education and Professional Studies and Arts and Sciences, and the Provost. The program changes and relevant supporting documents are attached.

Approved ✓

Disapproved

Dean Van Galen, Chancellor  
Date 2-24-15
November 17, 2014

To whom it may concern:

We have been asked to provide input about a new initial certification pathway program that is in the process of being developed at UW-River Falls. Our understanding is that this program would be used to provide post-bacs (including those changing careers, as well as recent graduates that are now entertaining the idea of teaching) a one-year pathway to become licensed to teach in various areas of STEM. We are supportive of providing a program like this for teacher candidates to become licensed to teach mathematics, as long as they have the necessary background in algebra, geometry, and probability.

We currently have an EA-A licensure program in mathematics for undergraduate teacher candidates. We foresee the current program and the STEMteach program meeting the needs of two different populations. As such, then, while we support the STEMteach proposal, we would not be in favor of replacing our undergraduate program with the STEMteach undergraduate program.

We would, however, inform seniors in our Liberal Arts – Mathematics program about the STEMteach program. Doing so would provide them an opportunity to pursue EA-A licensure after they complete their Liberal Arts degree, giving them a career option that they might not have considered previously. We would not, though, recruit teacher candidates for STEMteach from the ranks of Secondary Education – Mathematics majors.

We currently offer graduate level math courses as part of the MSE-Mathematics program. Since there are plans to incorporate an initial-certification master’s within STEMTeach, the Math Department would support the enrollment of in-service math teachers into targeted MSE-Mathematics courses for the fulfillment of any applicable STEMteach content coursework requirements.

Note that the department feels that it would be very problematic to provide the staffing needed to support this program from within the current ranks of its tenured faculty.
Rationale for STEMteach as a New Option or Emphasis for the MSE in Secondary Education

NOTE: This will be a new option or emphasis for our Master of Science (MSE) in Secondary Education. It will have its own designator (UTCH) and mostly new curriculum (i.e., current TED courses may be used to fulfill requirements for the master's degree – 6 to 10 credits). After the STEMteach curriculum is approved at UWRF, a proposal will be submitted to the Wisconsin Department of Public Instruction (DPI) for approval as an initial teacher licensure program under PI 34.08, Experimental and Innovative Programs. This category of program approval was created to cover programs in “high need” teaching areas that are not in full compliance with rules in PI 34. The WI DPI licensing division is aware that we are developing this program.

The College of Education and Professional Studies and Outreach and Continuing Education are developing a graduate teaching certification program with optional master’s degree. This cohort-based program will admit qualifying science, technology, engineering, and mathematics (STEM) degree holders and train them to be science and mathematics teachers for middle and high school classrooms. The program is being designed by a cross-campus team which is working closely with the nationally-recognized UTeach Institute at the University of Texas at Austin.

The driving force for the creation of this program was the desire to leverage the inherent strengths of the University of Wisconsin-River Falls’ teacher education, chemistry, biology, physics, and mathematics departments while fulfilling a national and statewide need for more and better STEM educators. STEMteach makes it possible for STEM professionals to attain teacher licensing via a rigorous, supportive, and compact program.

The nine STEMteach courses (UTCH 701-709) which comprise the initial certification pathway are being submitted for approval concurrently with this program change request. The optional master's degree pathways are comprised of existing (approved) UWRF courses. The proposed STEMteach curriculum is summarized on the following page.

Partial funding for UW-River Fall’s STEMteach program is provided by the National Science Foundation through the Robert Noyce Teacher Scholarship Program.
Proposed STEMteach Curriculum

Initial Certification Coursework (24 graduate degree credits, 30 total graduate course credits)

UTCH 701  Step 1 and 2 Combination (3 cr)
UTCH 702  Knowing and Learning in Math and Science (3 cr)
UTCH 703  Classroom Interactions (3 cr)
UTCH 704  Project-Based Instruction (3 cr)
UTCH 705  STEM Content Area Literacy (3 cr)
UTCH 706  Functions and Modeling (3 cr)
UTCH 707  Perspectives on Science and Mathematics (3 cr)
UTCH 708  Apprentice Teaching Seminar (3 cr)
*UTCH 709  STEM Apprentice Teaching for Secondary and Middle Grades (6 cr)

*Apprentice Teaching credits do not count toward required credits for optional master’s degree

Master’s Degree Pathways (optional, 6-10 additional graduate credits)

Plan A (Thesis), 6 additional graduate credits:
   TED 760 Methods of Research (3 cr, on-line)
   TED 799 Thesis (also could be a STEM 799 course) (3 cr)
   Oral or written comprehensive exam

Plan B (Research Paper), 6 additional graduate credits:
   TED 760 Methods of Research (3 cr, on-line)
   TED 798 Independent Research (also could be a STEM 798 course) (3 cr)
   Oral or written comprehensive exam

Plan C (Additional Credits), 10 additional graduate credits:
   TED 760 Methods of Research (3 cr, on-line)
   7 credits of 500 level or greater coursework
   Oral or written comprehensive exam

Transfer or elective credits must be approved by the Program Director

All requirements for this degree must be completed within seven years from the start of the first term.
10/22/2014

To Whom it May Concern:

The College of Education and Professional Studies (CEPS) is submitting nine new course proposals as part of a requested new graduate program, to be called STEMteach. STEMteach is designed as a route for science, technology, engineering, and mathematics (STEM) degree holders to earn initial teaching licensure. An optional master's degree in secondary education is also being developed.

The purpose of this letter is to provide written approval for the STEMteach initial certification pathway courses (UTCH 701 through 709) to be exempt from the final exam requirement. Candidates in each of the courses will be continually and individually assessed by university faculty, master teachers, and cooperating teachers. Assessment will involve the use of a Certification Portfolio. A final and thorough assessment of each candidate during the last semester of the initial certification pathway will use the Stanford University and AACTE-developed Education Teacher Performance Assessment (edTPA).

Sincerely,

Larry Solberg, Dean

UNIVERSITY OF WISCONSIN RIVER FALLS
410 S. Third Street • River Falls, WI 54022-5001 • USA
TRANSMITTAL for GRADUATE PROGRAMS: Changes or Proposals

I. INFORMATION:

A. Check all that apply: Existing Program ☑ New Program ☐
   Name Change ☐ Credits Change ☐ Change in Curriculum ☑

B. Program Title: STEM/Chem

C. Department(s) (Originating): Teacher Education ☑ D. College(s) (Originating): CEP/OD&CE

E. Programs / Departments Consulted (Requires letters of comment from all departments or programs substantially affected. Signatures of dept. chairs & deans affected by this proposal are required on the attached addendum.):
   1) Biology ☑ 2) Physics ☐ 3) Chemistry ☑ 4) Mathematics ☐

F. Catalog year of Implementation: 2015 ☑ Semester ☑ Summer ☐ Year 2015 ☐

G. Have all courses in this program been approved? Yes ☐ No ☑

H. Attach Request Narrative
   Include in narrative on attached pages clarification concerning which courses have not been approved, and a rationale for the requested changes or creation of program. If requesting a program change also include a listing of course array for both the current and proposed program?

II. UNIT APPROVALS: Requires signatures of all Department Chairs and Deans whose programs will be substantially affected by the changes or proposal. Signature lines for the affected Departments and Colleges (noted in “E” above), are on the addendum to this form. These signatures should be obtained prior to review by all other shared governance levels.

Department Curriculum Committee Chair (optional) ___________________________ Signature: _______________ Date: _______ Oct 6, 2014

Department/Program Chair ___________________________ Signature: _______________ Date: _______ 

College Curriculum Committee Chair ___________________________ Signature: _______________ Date: _______ 

Dean of College ___________________________ Signature: _______________ Date: _______ 10/29/14

Graduate Curriculum Cmtt. Chair ___________________________ Signature: _______________ Date: _______ 11/24/14

University Curriculum Cmtt. Chair ___________________________ Signature: _______________ Date: _______ 11/25/14

Academic Policy & Program Cmtt. Chair ___________________________ Signature: _______________ Date: _______ 

Faculty Senate Chair ___________________________ Signature: _______________ Date: _______ 

Provost / Vice Chancellor ___________________________ Signature: _______________ Date: _______ 3/31/15

Chancellor ___________________________ Signature: _______________ Date: _______ 

*NOTE: The master copy of this transmittal & accompanying documents must be filed in the Provost's office upon final approval. The Provost's office will notify all appropriate administrative offices [Registrar, Office of Graduate Studies, Dean(s), Department Chair(s)] of approvals & necessary actions to implement changes.

Revised December 2012
TRANSMITTAL for GRADUATE PROGRAMS: Changes or Proposals

I. INFORMATION:

A. Check all that apply: Existing Program □ New Program ✓
   Name Change □ Credits Change □ Change in Curriculum □

B. Program Title: STEMteach

C. Department(s) (Originating): Teacher Education
   D. College(s) (Originating): CEPS/O&CE

E. Programs / Departments Consulted (Requires letters of comment from all departments or programs substantially affected. Signatures of dept. chairs & deans affected by this proposal are required on the attached addendum):

   1) Biology  2) Physics  3) Chemistry  4) Mathematics

F. Catalog year of Implementation: 2015 Semester Summer Year 2015

G. Have all courses in this program been approved? Yes □ No ✓

H. Attach Request Narrative
   Include in narrative on attached pages clarification concerning which courses have not been approved, and a rationale for the requested changes or creation of program. If requesting a program change also include a listing of course array for both the current and proposed program.

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Department Curriculum Committee Chair (optional)
Signature ___________________________ Date 10/01/2014

Department/Program Chair ___________________________

College Curriculum Committee Chair □

Dean of College ___________________________

Graduate Curriculum Cmmt. Chair □

University Curriculum Cmmt. Chair □

Academic Policy & Program Cmmt. Chair ___________________________

Faculty Senate Chair ___________________________

Provost / Vice Chancellor ___________________________

Chancellor ___________________________

Signature ___________________________ Date ___________________________

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Raisid December 2012
TRANSMITTAL for GRADUATE PROGRAMS: Changes or Proposals - Addendum

Signatures of Additional Department & Colleges Affected

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Department Chair

Dean of College

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Signature                          Date

Department Chair

Dean of College

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Signature                          Date

Department Chair

Dean of College

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Signature                          Date

Department Chair

Dean of College

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Signature                          Date

Department Chair

Dean of College

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Hi Diane

The Chemistry Department supports the proposed STEMteach graduate program that you have outlined. Great work!!

Karl

Mark Bergland
Wed 10/29/2014 12:23 AM
To:
Diane Bennett;
Cc:
Karl Peterson;
Robert Coffman;
James Madsen;
You replied on 10/29/2014 7:37 AM.

Hi Diane,

The Biology Department supports approval of the STEMteach graduate program that you have outlined. I also would like to thank you and your colleagues for your hard work on this initiative.

Regards,

Mark

Mark Bergland, Chair
Biology Department, AGS 410
University of Wisconsin - River Falls
River Falls, WI 54022
mark.s.bergland@uwrf.edu
715-425-3591 (office) or 715-529-8845 (cell)
James Madsen
Tue 10/28/2014 2:08 PM
Deleted Items
To:
Diane Bennett;
Mark Bergland;
Karl Peterson;
Robert Coffman;

Dear Diane:
The physics department supports approving the STEMteach graduate program.
Thank you for all your work on this initiative.
Jim

Jim Madsen
Professor, Chair
Physics Department
UWRF
410 South Third Street
River Falls, WI 54022

Associate Director for Education and Outreach
Wisconsin ICECUBE Particle Astrophysics Center
715-425-3235 Office
715-425-0652 FAX
To Whom it May Concern:

There are nine courses in the STEMteach Initial certification coursework sequence. There is overlap between these courses, secondary education, elementary education, and mathematics courses offered at UWRF as well as overlap between courses in the STEMteach sequence itself. A partial list of UWRF courses which complement and support each of our STEMteach courses includes:

**TED120 Introduction to Education and Technology (with proposed Step 1-2 Combo)**

**TED212 Educational Psychology and TED 745 Educational Psychology (with proposed Knowing and Learning)**

**TED252 Multicultural Education (with proposed Classroom Interactions)**

**MATH 305 Integrating Technology in Teaching Secondary Mathematics**

**MATH 436 History of Math**

**TED414 Transcendent Development (with proposed Classroom Interactions)**

**TED438 Math Techniques (with proposed Classroom Interactions and Project-Based Instruction)**

**TED434 Science Techniques (with proposed Classroom Interactions and Project-Based Instruction)**

**TED465 Classroom Management (with proposed Knowing and Learning and Classroom Interactions)**

**TED422-424, 622-624 Content Area Literacy (with proposed Classroom Interactions, Project-Based Instruction, and STEM Content Area Literacy)**

**TED420 School and Society and TED 740 History, Philosophy, Multicultural Education (with proposed Perspectives)**

**Elementary education courses**

This long list reflects the fact that the STEMteach courses are designed in a fundamentally different way than existing teacher education and mathematics courses at UW-River Falls. Specifically, the STEMteach courses are sequential, STEM-content focused, technology infused, inclusive of early field experiences in a diverse range of learning environments, and offered exclusively to graduate students. STEMteach courses are designed to bring science and mathematics students together because there is a fundamental connection between science and mathematics that students must understand and appreciate. Moreover, STEMteach courses are designed to be rigorous. This rigor will be fostered by the intellectual maturity of the student population, all of which will have a STEM degree and some of which will have professional experience. In contrast, the above list of courses can be taken in a varied order because they are focused on a narrow topic; only four of the above courses are specific to STEM students; only the elementary education courses use elementary classroom experiences; and the courses are not open to graduate students. The current mathematics and science education courses are not designed for a combined student body of BOTH science and mathematics students.

Furthermore, a primary goal of the STEMteach program is for students to understand the fundamental nature and importance of inquiry in all the work that scientists do. In turn, STEMteach graduates should help their students understand what scientific inquiry is about, and enable them to develop the abilities to
conduct scientific inquiry. (From "Content Standard for Science as Inquiry" in Inquiry and the National Science Education Standards, 2000)

If you have questions about the STEMteach program or individual courses, please do not hesitate to contact me.

Sincerely,

[Signature]

Geoff Scheumann
University of Wisconsin-River Falls, Teacher Education, Chair
Proposed Working Mechanisms of the STEMteach program

Program Tuition: $12,750
First cohort: June 2015
Enrollment expected: 8 students (year 1), 10 students (year 2)
Maximum cohort: 20 students

The STEMteach program will be run through our Continuing Education and Outreach division as a cost recovery program (also known as self-supporting) rather than a general purpose revenue (GPR) program (tax payer supported). This means that all tuition revenue from students in the program is used directly to support the STEMteach program versus it going into the University’s general revenue fund. The master teacher, project manager, mentor teacher stipends, marketing, and other program expenses will be paid directly from tuition revenue. In our budgeting, we have determined that we need a minimum cohort of 12 graduate students to make the program financially self-sustaining in year 1.

Staffing
A full-time Clinical Instructor or Clinical Assistant Professor (depending on education and experience) will be hired by Teacher Education via a renewable 12 month contract. This instructional academic staff member will have the working title of “Master Teacher”. Responsibilities will include clinical and academic teaching in the STEMteach program, coordination of clinical experiences for STEMteach teacher candidates, serving as a liaison with schools in which STEMteach candidates will be placed, mentoring students, scholarly activity, and service. Anticipated appointment date: June 1, 2015.

We are inviting various UWRF science and mathematics faculty members to consider teaching STEMteach courses and, if interested, to discuss this with their department. Departments will be compensated at the rate of $1500/credit hour for contributing faculty to the STEMteach program.

Science and mathematics faculty will be chosen for each course based on the course content, the courses in that term, and the background of the MT. The Master Teacher will be involved in all of the STEMteach courses, therefore, when appropriate, the course instructor will be chosen so as to compliment the Master Teacher’s background.

The following courses comprise the initial certification pathway and are expected to be staffed by the Master Teacher and current UWRF faculty:

*Summer*
- UTCH 701 STEMteach: Steps 1 and 2 (3 cr)
- UTCH 702 Knowing and Learning (3 cr)

*MT*
- Geoff Scheurman (+MT)

*Fall*
- UTCH 703 Classroom Interactions (3 cr)
- UTCH 704 Project-based Instruction (3 cr)
- UTCH 705 STEM Content Area Literacy (3 cr)
- UTCH 706 Functions and Modeling (3 cr)

*tbd (+MT)*
- tbd (+MT)
- tbd (+MT)
- tbd (+MT)

*J-term*
- UTCH 707 Perspectives on Science and Mathematics (3 cr)

*Geoff Scheurman + tbd (+MT)*

*Spring*
- UTCH 708 Apprentice Teaching Seminar (3 cr)
- UTCH 709 STEM Apprentice Teaching (3 cr)

*TED and/or SM (+MT)*
- MT + adjunct supervisors
Budget Model with Explanatory Notes

Proposed Budget for 2015-2016 – Year 1

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Expenses

| Faculty time                     | $36,000    | $36,000    | $36,000     | $36,000     | $36,000     | $36,000     | $36,000     | $36,000     |
| Fringe (44.48%)                  | $46,243    | $46,243    | $46,243     | $46,243     | $46,243     | $46,243     | $46,243     | $46,243     |
| Mentor Teacher Stipends          | $1,500     | $2,000     | $2,500      | $3,000      | $3,500      | $4,000      | $4,500      | $5,000      |
| SBE (2% of rev)                  | $1,300     | $2,000     | $2,500      | $3,000      | $3,500      | $4,000      | $4,500      | $5,000      |
| Outreach support                 | $8,000     | $8,000     | $8,000      | $8,000      | $8,000      | $8,000      | $8,000      | $8,000      |
| Subtotal                         | $160,495   | $161,505   | $162,515    | $163,525    | $164,535    | $165,545    | $166,555    | $167,565    |
| Net Profit/Loss                  | ($64,731)  | ($40,043)  | ($15,751)   | ($8,759)    | ($5,229)    | ($7,719)    | ($8,209)    | ($10,699)   |
| Overhead 50% Net Profit          | $4,399.50  | $16,614.27 | $28,859.27  | $41,104.27  | $53,349.27  | $55,594.27  | $57,840.27  | $59,985.27  |
| Residual                         | $4,399.50  | $16,614.27 | $28,859.27  | $41,104.27  | $53,349.27  | $55,594.27  | $57,840.27  | $59,985.27  |

Proposed Budget for 2016-2017 and subsequent years

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| Faculty time                     | $36,000    | $36,000    | $36,000     | $36,000     | $36,000     | $36,000     | $36,000     | $36,000     |
| Fringe (44.48%)                  | $46,243    | $46,243    | $46,243     | $46,243     | $46,243     | $46,243     | $46,243     | $46,243     |
| Mentor Teacher Stipends          | $1,500     | $2,000     | $2,500      | $3,000      | $3,500      | $4,000      | $4,500      | $5,000      |
| SBE (2% of rev)                  | $1,300     | $2,000     | $2,500      | $3,000      | $3,500      | $4,000      | $4,500      | $5,000      |
| Outreach support                 | $8,000     | $8,000     | $8,000      | $8,000      | $8,000      | $8,000      | $8,000      | $8,000      |
| Subtotal                         | $160,495   | $161,505   | $162,515    | $163,525    | $164,535    | $165,545    | $166,555    | $167,565    |
| Net Profit/Loss                  | ($63,995)  | ($59,505)  | ($55,015)   | ($50,525)   | ($46,035)   | ($41,545)   | ($37,055)   | ($32,565)   |
| Overhead 50% Net Profit          | $6,982.27  | $19,227.27 | $31,472.27  | $43,717.27  | $46,972.27  | $49,227.27  | $51,472.27  | $53,717.27  |
| Residual                         | $6,982.27  | $19,227.27 | $31,472.27  | $43,717.27  | $46,972.27  | $49,227.27  | $51,472.27  | $53,717.27  |

Notes:

1. Tuition revenue is based on tuition for 30 credits in the program @ $425/cr. ($12,750 total).
2. Segregation fees of $1,571 to support services like career services, athletics, childcare center, health services, etc. (See http://www.uwrf.edu/StudentAffairs/SegratedFees.cfm)
3. Combined tuition and fees based on 2014-2015 rates for 30 credit certification = $14,321 (does not include books)
4. MN students are charge tuition at the reciprocity rate. We only get to keep the WI resident portion.
5. Used unclassified fringe rate for extramural funding.
6. Requesting in years 1-3 that 50% of net profit to overhead, instead of 18% of gross revenue.
7. Master teacher salary for a 12-month contract (computed on a 9-month base of $55,000-maximum).
8. Faculty salary based on 24 credits at $1,500/cr. transferred to respective teaching departments.
9. Mentor teachers paid $250 for each teacher candidate pair (UTEach model) for Summer and Fall semester.
DATE: November 25, 2014
TO: Whom it may concern
FROM: Bob Coffman, Chair
RE: UTCH 706 Proposal

A new course, UTCH 706: Functions and Modeling, is being proposed as a required course in the STEMteach post-baccalaureate initial certification pathway. This course would be required for both the mathematics and science teaching candidates in this cohort-based program. UTCH 706 is intended to provide a bridge between content and pedagogy for students in the STEMteach program. UTCH 706 is also intended to provide teacher candidates with illustrations of the modeling standards outlined in both the K-12 Common Core Math Standards and the K-12 Next Generation Science Standards.

A similarly named undergraduate course, MATH 316: Mathematical Modeling, counts as a content elective in the Mathematics – Secondary Education program, and likewise as an elective in the in the Mathematics – Liberal Arts program. Although MATH 316 meets content requirements for the undergraduate Secondary Education – Mathematics major, it does not delve into pedagogy, as it is meant to serve both Liberal Arts and Secondary Education majors.

The Mathematics Department hereby asserts that there is no significant overlap between MATH 316 and UTCH 706.
DATE: November 25, 2014
TO: Whom it may concern
FROM: Bob Coffman, Chair
RE: STEMTeach Proposal

We have been asked to provide input about a new initial certification pathway program that is in the process of being developed at UW-River Falls. Our understanding is that this program would be used to provide post-bacs (including those changing careers, as well as recent graduates that are now entertaining the idea of teaching) a one-year pathway to become licensed to teach in various areas of STEM. We are supportive of providing a program like this for teacher candidates to become licensed to teach mathematics, as long as they have the necessary background in algebra, geometry, and probability.

We currently have an EA-A licensure program in mathematics for undergraduate teacher candidates. We foresee the current program and the STEMteach program meeting the needs of two different populations. As such, then, while we support the STEMteach proposal, we would not be in favor of replacing our undergraduate program with the STEMteach undergraduate program.

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Note that the department feels that it would be very problematic to provide the staffing needed to support this program from within the current ranks of its tenured faculty.
DATE: November 25, 2014
TO: Whom it may concern
FROM: Bob Coffman, Chair
RE: STEMTeach Proposal

We have been asked to provide input about a new initial certification pathway program that is in the process of being developed at UW-River Falls. Our understanding is that this program would be used to provide post-bacs (including those changing careers, as well as recent graduates that are now entertaining the idea of teaching) a one-year pathway to become licensed to teach in various areas of STEM. We are supportive of providing a program like this for teacher candidates to become licensed to teach mathematics, as long as they have the necessary background in algebra, geometry, and probability.

We currently have an EA-A licensure program in mathematics for undergraduate teacher candidates. We foresee the current program and the STEMteach program meeting the needs of two different populations. As such, then, while we support the STEMteach proposal, we would not be in favor of replacing our undergraduate program with the STEMteach undergraduate program.

We would, however, inform seniors in our Liberal Arts – Mathematics program about the STEMteach program. Doing so would provide them an opportunity to pursue EA-A licensure after they complete their Liberal Arts degree, giving them a career option that they might not have considered previously. We would not, though, recruit teacher candidates for STEMteach from the ranks of Secondary Education – Mathematics majors.

We currently offer graduate level math courses as part of the MSE-Mathematics program. Since there are plans to incorporate an initial-certification master’s within STEMTeach, the Math Department would support the enrollment of in-service math teachers into targeted MSE-Mathematics courses for the fulfillment of any applicable STEMteach content coursework requirements.

Note that the department feels that it would be very problematic to provide the staffing needed to support this program from within the current ranks of its tenured faculty.
TRANSMITTAL for GRADUATE PROGRAMS: Changes or Proposals

I. INFORMATION:

A. Check all that apply: Existing Program ☑ New Program ☐
Name Change ☐ Credits Change ☐ Change in Curriculum ☑

B. Program Title: STEMteach

C. Department(s) (Originating): Teacher Education ☑ D. College(s) (Originating): CEPS/O&CE

E. Programs / Departments Consulted (Requires letters of comment from all departments or programs substantially affected. Signatures of dept. chairs & deans affected by this proposal are required on the attached addendum):

1) Biology ☑ 2) Physics ☑ 3) Chemistry ☑ 4) Mathematics

F. Catalog year of Implementation: 2015 Semester Summer Year 2015

G. Have all courses in this program been approved? Yes ☐ No ☑

H. Attach Request Narrative
Include in narrative on attached pages clarification concerning which courses have not been approved, and a rationale for the requested changes or creation of program. If requesting a program change also include a listing of course array for both the current and proposed program.

II. UNIT APPROVALS: Requires signatures of all Department Chairs and Deans whose programs will be substantially affected by the changes or proposal. Signature lines for the affected Departments and Colleges (noted in “E” above), are on the addendum to this form. These signatures should be obtained prior to review by all other shared governance levels.

Department Curriculum Committee Chair (optional) ___________________________ Signature ____________ Date ____________

Department/Program Chair ___________________________ ___________________________ ___________________________

College Curriculum Committee Chair ___________________________ ___________________________ ___________________________

Dean of College ____________ ____________ ____________ ____________ ____________ ____________ ____________

Graduate Curriculum Cmtt. Chair ____________ ____________ ____________ ____________ ____________ ____________

University Curriculum Cmtt. Chair ____________ ____________ ____________ ____________ ____________ ____________

Academic Policy & Program Cmtt. Chair ____________ ____________ ____________ ____________ ____________ ____________

Faculty Senate Chair ___________________________ ___________________________ ___________________________

Provost / Vice Chancellor ___________________________ ___________________________ ___________________________

Chancellor ___________________________ ___________________________ ___________________________

*NOTE: The master copy of this transmittal & accompanying documents must be filed in the Provost’s office upon final approval. The Provost’s office will notify all appropriate administrative offices [Registrar, Office of Graduate Studies, Dean(s), Department Chair(s)] of approvals & necessary actions to implement changes.

Revised December 2012
TRANSMITTAL for GRADUATE PROGRAMS: Changes or Proposals

I. INFORMATION:

A. Check all that apply: Existing Program □ New Program ✓
   Name Change □ Credits Change □ Change in Curriculum □

B. Program Title: STEMteach

C. Department(s) (Originating): Teacher Education  D. College(s) (Originating): CEPS/O&CE

E. Programs / Departments Consulted (Requires letters of comment from all departments or
   programs substantially affected. Signatures of dept. chairs & deans affected by this proposal are
   required on the attached addendum.):

   1) Biology  2) Physics  3) Chemistry  4) Mathematic

F. Catalog year of Implementation: 2015 Semester Summer Year 2015

G. Have all courses in this program been approved? Yes □ No ✓

H. Attach Request Narrative
   Include in narrative on attached pages clarification concerning which courses have not been approved,
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Department Curriculum Committee Chair (optional)  Signature  Date  10/08/2014

Department/Program Chair ________________________________

College Curriculum Committee Chair  □

Dean of College ________________________________

Graduate Curriculum Cmtt. Chair  ____________  11/24/2014

University Curriculum Cmtt. Chair  ____________  11/25/2014

Academic Policy & Program Cmtt. Chair ________________________________

Faculty Senate Chair ________________________________

Provost / Vice Chancellor ________________________________

Chancellor ________________________________

Signature  Date

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Revised December 2012
TRANSMITTAL for GRADUATE PROGRAMS: Changes or Proposals - Addendum

Signatures of Additional Department & Colleges Affected

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TRANSMITTAL for GRADUATE PROGRAMS: Changes or Proposals

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F. Catalog year of Implementation: 2015 Semester Summer Year 2015

G. Have all courses in this program been approved? Yes □ No ✓

H. Attach Request Narrative
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Department/Program Chair [Signature] [Date]

College Curriculum Committee Chair [Signature] [Date]

Dean of College [Signature] [Date]

Graduate Curriculum Cmtt. Chair [Signature] [Date]

University Curriculum Cmtt. Chair [Signature] [Date]

Academic Policy & Program Cmtt. Chair [Signature] [Date]

Faculty Senate Chair [Signature] [Date]

Provost / Vice Chancellor [Signature] [Date]

Chancellor [Signature] [Date]

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Revised December 2012
TRANSMITTAL for GRADUATE PROGRAMS: Changes or Proposals - Addendum

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<td>Dean of College</td>
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Revised December 2012
Proposed Working Mechanisms of the STEMteach program

Program Tuition: $12,750
First cohort: June 2015
Enrollment expected: 8 students (year 1), 10 students (year 2)
Maximum cohort: 20 students

The STEMteach program will be run through our Continuing Education and Outreach division as a cost recovery program (also known as self-supporting) rather than a general purpose revenue (GPR) program (tax payer supported). This means that all tuition revenue from students in the program is used directly to support the STEMteach program versus it going into the University’s general revenue fund. The master teacher, project manager, mentor teacher stipends, marketing, and other program expenses will be paid directly from tuition revenue. In our budgeting, we have determined that we need a minimum cohort of 12 graduate students to make the program financially self-sustaining in year 1.

Staffing
A full-time Clinical Instructor or Clinical Assistant Professor (depending on education and experience) will be hired by Teacher Education via a renewable 12 month contract. This instructional academic staff member will have the working title of “Master Teacher”. Responsibilities will include clinical and academic teaching in the STEMteach program, coordination of clinical experiences for STEMteach teacher candidates, serving as a liaison with schools in which STEMteach candidates will be placed, mentoring students, scholarly activity, and service. Anticipated appointment date: June 1, 2015.

We are inviting various UWRF science and mathematics faculty members to consider teaching STEMteach courses and, if interested, to discuss this with their department. Departments will be compensated at the rate of $1500/credit hour for contributing faculty to the STEMteach program.

Science and mathematics faculty will be chosen for each course based on the course content, the courses in that term, and the background of the MT. The Master Teacher will be involved in all of the STEMteach courses, therefore, when appropriate, the course instructor will be chosen so as to compliment the Master Teacher’s background.

The following courses comprise the initial certification pathway and are expected to be staffed by the Master Teacher and current UWRF faculty:

**Summer**
- U T C H 701 STEMteach: Steps 1 and 2 (3 cr)
- U T C H 702 Knowing and Learning (3 cr)
- **MT** Geoff Scheurman (+MT)

**Fall**
- U T C H 703 Classroom Interactions (3 cr)
- U T C H 704 Project-based Instruction (3 cr)
- U T C H 705 STEM Content Area Literacy (3 cr)
- U T C H 706 Functions and Modeling (3 cr)
- **tbd (+MT)**

**J-term**
- U T C H 707 Perspectives on Science and Mathematics (3 cr)
- **Geoff Scheurman + tbd (+MT)**

**Spring**
- U T C H 708 Apprentice Teaching Seminar (3 cr)
- U T C H 709 STEM Apprentice Teaching (3 cr)
- **TED and/or SM (+MT)**
- **MT + adjunct supervisors**
Budget Model with Explanatory Notes

Proposed Budget for 2015-2016 – Year 1

<table>
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<tr>
<th>Revenue</th>
<th>6 Students</th>
<th>8 Students</th>
<th>10 Students</th>
<th>12 Students</th>
<th>14 Students</th>
<th>16 Students</th>
<th>18 Students</th>
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<td>$127,500</td>
<td>$153,000</td>
<td>$178,500</td>
<td>$204,000</td>
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Proposed Budget for 2016-2017 and subsequent years

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Notes:

1. Tuition revenue is based on tuition for 30 credits in the program @ $425/credit ($12,750 total).
2. Segregation fees of $1,571 to support services like career services, athletics, childcare center, health services, etc. (See [Website](http://www.unr.edu/StudentAffairs/SegregatedFees.cfm))
3. Combined tuition and fees based on 2014-2015 rates for 30 credit certification = $14,321 (does not include books)
4. MN students are charge tuition at the reciprocity rate. We only get to keep the WI resident portion.
5. Used unclassified fringe rate for extramural funding.
6. Requesting in years 1-3 that 50% of net profit to overhead, instead of 18% of gross revenue.
7. Master teacher salary for a 12-month contract (computed on a 9-month base of $55,000-maximum).
8. Faculty salary based on 24 credits at $1,500/credit transferred to respective teaching departments.
9. Mentor teachers paid $250 for each teacher candidate pair (UTeach model) for Summer and Fall semester.
November 17, 2014

To whom it may concern:

We have been asked to provide input about a new initial certification pathway program that is in the process of being developed at UW-River Falls. Our understanding is that this program would be used to provide post-bacs (including those changing careers, as well as recent graduates that are now entertaining the idea of teaching) a one-year pathway to become licensed to teach in various areas of STEM. We are supportive of providing a program like this for teacher candidates to become licensed to teach mathematics, as long as they have the necessary background in algebra, geometry, and probability.

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Note that the department feels that it would be very problematic to provide the staffing needed to support this program from within the current ranks of its tenured faculty.
Rationale for STEMteach as a New Option or Emphasis for the MSE in Secondary Education

NOTE: This will be a new option or emphasis for our Master of Science (MSE) in Secondary Education. It will have its own designator (UTCH) and mostly new curriculum (i.e., current TED courses may be used to fulfill requirements for the master’s degree – 6 to 10 credits). After the STEMteach curriculum is approved at UWRF, a proposal will be submitted to the Wisconsin Department of Public Instruction (DPI) for approval as an initial teacher licensure program under PI 34.08, Experimental and Innovative Programs. This category of program approval was created to cover programs in “high need” teaching areas that are not in full compliance with rules in PI 34. The WI DPI licensing division is aware that we are developing this program.

The College of Education and Professional Studies and Outreach and Continuing Education are developing a graduate teaching certification program with optional master’s degree. This cohort-based program will admit qualifying science, technology, engineering, and mathematics (STEM) degree holders and train them to be science and mathematics teachers for middle and high school classrooms. The program is being designed by a cross-campus team which is working closely with the nationally-recognized UTeach Institute at the University of Texas at Austin.

The driving force for the creation of this program was the desire to leverage the inherent strengths of the University of Wisconsin-River Falls’ teacher education, chemistry, biology, physics, and mathematics departments while fulfilling a national and statewide need for more and better STEM educators. STEMteach makes it possible for STEM professionals to attain teacher licensing via a rigorous, supportive, and compact program.

The nine STEMteach courses (UTCH 701-709) which comprise the initial certification pathway are being submitted for approval concurrently with this program change request. The optional master’s degree pathways are comprised of existing (approved) UWRF courses. The proposed STEMteach curriculum is summarized on the following page.

Partial funding for UW-River Falls’ STEMteach program is provided by the National Science Foundation through the Robert Noyce Teacher Scholarship Program.
Proposed STEMteach Curriculum

Initial Certification Coursework (24 graduate degree credits, 30 total graduate course credits)

UTCH 701  Step 1 and 2 Combination (3 cr)
UTCH 702  Knowing and Learning in Math and Science (3 cr)
UTCH 703  Classroom Interactions (3 cr)
UTCH 704  Project-Based Instruction (3 cr)
UTCH 705  STEM Content Area Literacy (3 cr)
UTCH 706  Functions and Modeling (3 cr)
UTCH 707  Perspectives on Science and Mathematics (3 cr)
UTCH 708  Apprentice Teaching Seminar (3 cr)
*UTCH 709  STEM Apprentice Teaching for Secondary and Middle Grades (6 cr)

*Apprentice Teaching credits do not count toward required credits for optional master's degree

Master's Degree Pathways (optional, 6-10 additional graduate credits)

Plan A (Thesis), 6 additional graduate credits:
  TED 760 Methods of Research (3 cr, on-line)
  TED 799 Thesis (also could be a STEM 799 course) (3 cr)
  Oral or written comprehensive exam

Plan B (Research Paper), 6 additional graduate credits:
  TED 760 Methods of Research (3 cr, on-line)
  TED 798 Independent Research (also could be a STEM 798 course) (3 cr)
  Oral or written comprehensive exam

Plan C (Additional Credits), 10 additional graduate credits:
  TED 760 Methods of Research (3 cr, on-line)
  7 credits of 500 level or greater coursework
  Oral or written comprehensive exam

Transfer or elective credits must be approved by the Program Director
All requirements for this degree must be completed within seven years from the start of the first term.
10/22/2014

To Whom it May Concern:

The College of Education and Professional Studies (CEPS) is submitting nine new course proposals as part of a requested new graduate program, to be called STEMteach. STEMteach is designed as a route for science, technology, engineering, and mathematics (STEM) degree holders to earn initial teaching licensure. An optional master's degree in secondary education is also being developed.

The purpose of this letter is to provide written approval for the STEMteach initial certification pathway courses (UTCH 701 through 709) to be exempt from the final exam requirement. Candidates in each of the courses will be continually and individually assessed by university faculty, master teachers, and cooperating teachers. Assessment will involve the use of a Certification Portfolio. A final and thorough assessment of each candidate during the last semester of the initial certification pathway will use the Stanford University and AACTE-developed Education Teacher Performance Assessment (edTPA).

Sincerely,

Larry Solberg, Dean

UNIVERSITY OF WISCONSIN RIVER FALLS
410 S. Third Street • River Falls, WI 54022-5001 • USA
Hi Diane,

The Chemistry Department supports the proposed STEMteach graduate program that you have outlined. Great work!!

Karl

Mark Bergland
Wed 10/29/2014 12:23 AM
To:
Diane Bennett;
Cc:
Karl Peterson;
Robert Coffman;
James Madsen;
You replied on 10/29/2014 7:37 AM.

Hi Diane,

The Biology Department supports approval of the STEMteach graduate program that you have outlined. I also would like to thank you and your colleagues for your hard work on this initiative.

Regards,

Mark

Mark Bergland, Chair
Biology Department, AGS 410
University of Wisconsin - River Falls
River Falls, WI 54022
mark.s.bergland@uwrf.edu
715-425-3591 (office) or 715-529-8845 (cell)
Dear Diane:
The physics department supports approving the STEMteach graduate program. Thank you for all your work on this initiative.
Jim

Jim Madsen
Professor, Chair
Physics Department
UWRF
410 South Third Street
River Falls, WI 54022

Associate Director for Education and Outreach
Wisconsin ICECUBE Particle Astrophysics Center

715-425-3235 Office
715-425-0652 FAX
10/22/2014

To Whom it May Concern:

There are nine courses in the STEMteach initial certification coursework sequence. There is overlap between these courses, secondary education, elementary education, and mathematics courses offered at UWRF as well as overlap between courses in the STEMteach sequence itself. A partial list of UWRF courses which complement and support each of our STEMteach courses includes:

- **TED120 Introduction to Education and Technology** (with proposed Step 1-2 Combo)
- **TED212 Educational Psychology and TED 745 Educational Psychology (with proposed Knowing and Learning)**
- **TED252 Multicultural Education (with proposed Classroom Interactions)**
- **MATH 305 Integrating Technology in Teaching Secondary Mathematics**
- **MATH 436 History of Math**
- **TED414 Transcendent Development (with proposed Classroom Interactions)**
- **TED438 Math Techniques (with proposed Classroom Interactions and Project-Based Instruction)**
- **TED434 Science Techniques (with proposed Classroom Interactions and Project-Based Instruction)**
- **TED465 Classroom Management (with proposed Knowing and Learning and Classroom Interactions)**
- **TED422-424, 622-624 Content Area Literacy (with proposed Classroom Interactions, Project-Based Instruction, and STEM Content Area Literacy)**
- **TED420 School and Society and TED 740 History, Philosophy, Multicultural Education (with proposed Perspectives)**

Elementary education courses

This long list reflects the fact that the STEMteach courses are designed in a fundamentally different way than existing teacher education and mathematics courses at UW-River Falls. Specifically, the STEMteach courses are sequential, STEM-content focused, technology infused, inclusive of early field experiences in a diverse range of learning environments, and offered exclusively to graduate students. STEMteach courses are designed to bring science and mathematics students together because there is a fundamental connection between science and mathematics that students must understand and appreciate. Moreover, STEMteach courses are designed to be rigorous. This rigor will be a fostered by the intellectual maturity of the student population, all of which will have a STEM degree and some of which will have professional experience. In contrast, the above list of courses can be taken in a varied order because they are focused on a narrow topic; only four of the above courses are specific to STEM students; only the elementary education courses use elementary classroom experiences; and the courses are not open to graduate students. The current mathematics and science education courses are not designed for a combined student body of BOTH science and mathematics students.

Furthermore, a primary goal of the STEMteach program is for students to understand the fundamental nature and importance of inquiry in all the work that scientists do. In turn, STEMteach graduates should help their students understand what scientific inquiry is about, and enable them to develop the abilities to
conduct scientific inquiry. (From "Content Standard for Science as Inquiry" in Inquiry and the National Science Education Standards, 2000)

If you have questions about the STEMteach program or individual courses, please do not hesitate to contact me.

Sincerely,

Geoff Scheuman

University of Wisconsin-River Falls, Teacher Education, Chair