

**College of Charleston**  
**SMFT 697, Science Teaching Seminar for Scientists**  
**Spring, 2004**

**2 Credit Hours** (total of 30 contact hours)

**Meeting Time and Place:**

**5-7:00 pm Tuesdays**

**Location: TBA**

<b>Instructors' Names:</b>	<b>Meta Van Sickle, George Tempel</b>
<b>Office Hours:</b>	<b>TBA</b>
<b>Office Location:</b>	<b>106 9 College Way (CofC) 416 Basic Science Building (MUSC)</b>
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<b>Course Prerequisites:</b>	<b>SMFT 697 Constructivist Science Teaching or EDEE 670</b>
<b>Course Description:</b>	<b>SMFT 697 is designed for scientists and practicing teachers working in a partnership. The course will focus on the study of research methods and analysis. The participants in this course will develop research protocols examining the impact of inquiry teaching and pedagogical tact.</b>
<b>Course Text/Materials:</b>	<b><u>Using Data: Getting Results,</u> by Nancy Love</b>

## **Course Objectives:**

As an NSF fellow or teacher you will:

1. Perform science as inquiry-
  - A. ask questions
  - B. plan and conduct investigations
  - C. use appropriate tools and techniques to gather data
  - D. think critically and logically about relationships between evidence and explanations
  - E. construct and analyze alternative explanations
  - F. communicate scientific arguments and explanations
  - G. understand scientific inquiry as the ability to identify and communicate a problem, and to design, implement and evaluate a solution
  
2. Engage in the ongoing assessment of your own teaching and of the students' learning-
  - A. use multiple methods to systematically gather data about student understanding and ability
  - B. analyze assessment data to guide subsequent teaching
  - C. guide students in self-assessment
  - D. use student data, observations of teaching, and peer interactions to reflect on and improve teaching practices
  - E. use student data, observations of teaching, and interactions with colleagues to report student achievement
  - F. know the naïve theories and misconceptions most children have about scientific and technological phenomena and help children build understanding

## **Course Requirements: Description of Projects/Assignments:**

(List all course requirements and give a description of each, and specific descriptions of all assignments.)

### Research Plans

You will be writing a research plan to test the working hypothesis, “the greater the teacher’s pedagogical tactfulness the more likely a student will give up misconceptions.” (SOE) Std I, II, III, IV, VI, VII)

### Recording of a Lesson

You will videotape a minimum of two of the lessons that you and your teacher-partner co-taught from the lesson plans (mini unit) that you created. We will be using these tapes to research pedagogical tact. (SOE Std1, II, III, IV)

Questions about the book and leadership on sections of the book

The class members will bring at least two questions about each chapter of the book for the class sessions. These questions should be at the application, analysis, synthesis or evaluation levels of higher order thinking. Teams of people will lead the discussion on chapters from the book. (SOE Std V)

Class Attendance and Participation

Each student is to attend class regularly and on time. It is imperative that you participate in large and small group discussion and activities. Because the method(s) of teaching that you will be learning are significantly different from methods that you have learned in other courses your **participation is mandatory**. I record your attendance and participation after each session. **You can lose up to two letter grades by failing to attend and participate.** (SOE Std I, II, III, IV, V, VI)

## Evaluation Scale:

A= 93-100

B+ = 88-92

B = 83-87

C+ = 78-82

C = 74-77

F = 70

## Evaluation Criteria:

(Include all activities that have a direct impact on the final grade)

<u>Research Plans</u>	25%
<u>Recording of a Lesson</u>	25%
<u>Questions about the book and leadership on sections of the book</u>	25%
<u>Class Attendance and Participation</u>	25%

**You can lose up to two letter grades by failing to attend and participate.**

## Resource Reading List:

Benchmarks

NSES

## Atlas

Research Authors: Bogdan, Biklin and/or Taylor

### **Attendance Policies:**

Absences are discouraged. If you must miss make sure to gain the instructors' approval. You must view the videotape of the week with your teacher-partner and present your results when you return. Emergencies must be reported as soon as possible. We follow the College of Charleston and the SOE policy manual.

### **Any special consideration/agreements:**

You will be assigned a teacher-partner to work with for the duration of this course. You are to spend 15 hours a week with the teacher in the development of your materials. You and your teacher-partner must attend the seminar together when it is your week to show your video.

### **Honor System:**

We will follow the College of Charleston policy manual.

### **Performance Data:**

**All course requirements are performance based.**

**Course Calendar:** (list the date and specific topic and assignments for each course meeting)

<b>Date</b>	<b>Topic</b>	<b>Assignment</b>
Week 1	<u>Using...</u> (book)	Chapters 1, 2, 3
Week 2	Library Searches	Find one article on educational research that has a tactic you want to explore. This exploration will assist with writing your ultimate research plan.
Week 3	<u>Using...</u> (book)	Discuss article, Chapters 4 & 5
Week 4	Library Searches	Find one article on educational research that has a tactic you want to

		explore. This exploration will assist with writing your research plan.
Week 5	<u>Using...</u> (book)	Discuss article, Chapters 6 & 7
Week 6	Library Searches	Find one article on educational research that has a tactic you want to explore. This exploration will assist with writing your research plan.
Week 7	<u>Using...</u> (book)	Discuss article, Chapters 8 & 9
Week 8	Library Searches	Find one article on educational research that has a tactic you want to explore. This exploration will assist with writing your research plan.
Week 9	Develop research plan	Discuss article, Use previous weeks' discussions of pedagogical tact to assist in development of research plans
Week 10	Library Searches	Find one article on educational research that has a tactic you want to explore. This exploration will assist with writing your research plan.
Week 11	Develop research plan	Discuss article, Use previous weeks' discussions of pedagogical tact to assist in development of research plans
Week 12	Library Searches	Find one article on educational research that has a tactic you want to explore. This exploration will assist with writing your research plan.
Week 13	Develop research plan	Discuss article, pilot test research plan and tools of collected videotapes.
Week 14	Library Searches	Find one article on

		educational research that has a tactic you want to explore. This exploration will assist with writing your research plan.
Week 15	Finalizing research projects.	Describe research project and post it to the NSF Website