CHM 730 – Seminar in Chemistry Education
Course Syllabus – Fall 2006
1 credit, W 4:00 – 4:50 p.m.

Instructor:	Stacey Lowery Bretz, Ph.D.	Office:	369 Hughes Laboratory
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COURSE OBJECTIVES

- To develop familiarity with the variety of literature in chemistry education.
- To develop an understanding of different research methodologies in chemistry education.
- To develop skills to critically evaluate the current literature.
- To develop skills in preparing, organizing, and presenting seminars that are clear and interesting.
- To foster interaction between students and faculty who are interested in chemistry education research.

COURSE ASSIGNMENTS

Literature Discussion. Readings are the heart of the course and must be read thoughtfully and faithfully. Students will take turns leading the class discussion regarding 2-3 articles drawn from the primary literature each week. A list of recommended journals can be found on Dr. Bretz's website. Articles must be published since 2000.

- Articles must be approved by the instructor; articles should be submitted to the instructor for approval at least one week before they are due to be discussed in class.
- After the instructor approves the articles, students should email pdfs of the articles to the instructor for posting to the course Blackboard site.

Framework for Critically Evaluating Chemistry Education Research. You should consider these to be guidelines to prepare for leading class discussions, as well as presenting your seminar.

- Who are the research subjects?
- What is the hypothesis or the phenomenon being investigated?
- What theoretical framework shapes the study?
- What assumptions, if any, underlie the study?
- What methods were used to collect the data?
- What kinds of data were collected?
- How was the data analyzed?
- What were the results of the study?
- What is the significance of this study's findings?
- How would you compare the relative strengths or weaknesses of the articles?

Seminar. Each graduate student in the Department of Chemistry & Biochemistry is required to give one seminar per year. This seminar can be a presentation and critical analysis of recent research or a presentation based upon your individual research. Accordingly,

- Each student will give a 40 minute seminar on recent literature or his/her own research, followed by 10 minutes of discussion.
- Seminar presentations should have a significant literature component and include at least one relevant, recent paper for assigned reading.
- Discuss your choice of papers with the instructor at least two weeks before the seminar and provide the instructor with a copy of the paper you select.

- One week before seminar, students should email the instructor an abstract for their presentation, a pdf of the assigned reading for classmates, and any additional references to be posted to the course Blackboard site.
- Seminars must be presented using Powerpoint; students should practice their presentation prior to class. Presentations in class are not the time to begin to understand content or to struggle with how to best present the data in a clear and logical manner.
- Classmates not presenting should read the papers prior to seminar and be prepared to ask questions during seminar.
- Evaluation of the seminar will be done by both the instructor and classmates, and will include both numerical ratings and constructive commentary.
- Evaluation of the seminar will include how well prepared the speaker is, how critically the speaker evaluated the data and the author's interpretation of the data, and how well the student organized the presentation.

COURSE CALENDAR

W Aug. 23	Introduction to Course
W Aug. 30	literature discussion (SLB)
W Sept. 6	literature discussion
W Sept. 13	literature discussion
W Sept. 20	literature discussion
W Sept. 27	No class
W Oct. 4	literature discussion
R Oct. 5	CHM 600 seminar – Melanie Cooper
W Oct. 11	literature discussion
W Oct. 18	literature discussion
W Oct. 25	Seminar presentation 1
W Nov. 1	Seminar presentation 2
W Nov. 8	No class
W Nov. 15	CHM 600 seminar
R Nov. 16	Seminar presentation 3
W. Nov. 22	No class – Thanksgiving
W. Nov. 29	Seminar presentation 4
W. Dec. 6	Seminar presentation 5

ASSESSMENT

Selection of Quality Articles & Leadership of Discussions	30%
Quality of Participation in Seminar Discussions	30%
Quality of Seminar Presentation	40%