

**ESCI 3450 - Practicum in Science Education**  
**Spring Semester 2009, 8:00 - 11:00 am, Wednesday**

**Schools:**

**Apalachee High School:** <http://www.barrow.k12.ga.us/ahs/index.html>

Principal: Mr. David McGee

Science Chair: Ms. Angela "Angie" Boyd, [angela.boyd@barrow.k12.ga.us](mailto:angela.boyd@barrow.k12.ga.us)

Biology: Angela Boyd, Amanda Gladys, Clay Bonnell

Chemistry: Chad Mote

Physical Science: Ben Highfield

Environmental Science: Kelly Strunk

**Haymon Morris Middle School:** <http://www.barrow.k12.ga.us/hmms/>

Principal: Dr. Sheila Kahrs, [skahrs@barrow.k12.ga.us](mailto:skahrs@barrow.k12.ga.us)

Teachers:

6<sup>th</sup> Grade Earth Science: Ms. Erin Guillebeau

7<sup>th</sup> Grade Life Science: Ms. Melissa Miller, Mr. Ryan Jones, Ms.

Suzanne McElreath

8<sup>th</sup> Grade Physical Science: Ms. Peggy Collins and Ms. Sherry

Aglietti: [sherry.aglietti@barrow.k12.ga.us](mailto:sherry.aglietti@barrow.k12.ga.us)

**Barrow County School District:** <http://www.barrow.k12.ga.us/>

**Course Instructors:**

Seri Chapman-Beall: [serichap@uga.edu](mailto:serichap@uga.edu), 770.633.9731

Lara Pacifici: [lpacific@uga.edu](mailto:lpacific@uga.edu)

Norman Thomson, Ph.D. [nthomson@uga.edu](mailto:nthomson@uga.edu), 706.542.4645

**Class Hours and Location:** 8:00-10:55, 215 Aderhold Hall

**Office:** 212 Aderhold Hall

**Office Hours:** Before and after class and by appointment

**Catalog Course Description**

Intensive school-based experiences in grades 7\* through 12 requiring students to teach in varied cultural and regional settings.

\*The State is now including 6<sup>th</sup> grade in certification.

**Course Overview**

In this practicum, you will interact as a professional with students and teachers in schools. The intent of this practicum is to allow you to experience the various dimensions and responsibilities of science teaching, learning, assessment, and management in middle and high school classrooms. The practicum will also enable you to test some of your developing understandings about students, teaching, planning, assessment, and the learning environment. The topics addressed in the practicum are integrated with your experiences described for ESCI 4450/6450 and ESCI 4460/6460. While in science classrooms, you will observe, work with small groups of students, assist classroom teachers in many ways, and teach lessons. It is important to remember that while in schools and interacting with teachers and students, YOU ARE THE UNIVERSITY of GEORGIA. Please ensure that your dress and actions reflect well on yourself and the University.

**Requests for Modifications**

It is policy of the University of Georgia to make reasonable accommodations for qualified individuals with disabilities. If you are a person with a disability and want to request accommodations to complete your course requirements, please make an appointment with the course professors as soon as possible to discuss your request. For information on documentation requirements, contact the office of Disability Services (2-8719).

**Academic Honesty**

The University of Georgia seeks to promote and ensure academic honesty and personal integrity among students and other members of the University

community. In keeping with the University Honor Code and Academic Honesty Policy, each student is expected to do his/her academic work and to acknowledge fully any assistance and academic resources. All academic work must meet the standards contained in "A Culture of Honesty." All students are responsible to inform themselves about those standards before performing any academic work. Terms of this policy, resolution procedures, and consequences of violation are available at: [http://www.uga.edu/ovpi/academic\\_honesty/culture\\_honesty.html](http://www.uga.edu/ovpi/academic_honesty/culture_honesty.html)

### **Attendance Policy**

This course is based on John Dewey's (1916/1966 Democracy and Education) philosophy that, "since growth is the characteristic of life, education is all one with growing; it has no end beyond itself. The criterion of the value of school education is the extent in which it creates a desire for continued growth and supplies means for making the desire effective in fact" (p. 53). Attendance and participation in discussions and assignments are required for educational growth, however, it is recognized that even teachers get sick. Two missed classes are permitted this session. BE ON TIME AT OUR SCHOOLS and IF YOU ARE EITHER GOING TO BE LATE OR ABSENT FROM CLASS PLEASE LET YOUR MENTOR TEACHER AND UNIVERSITY INSTRUCTORS KNOW AS SOON AS POSSIBLE.

### **Textbooks and Other Instructional Materials**

Required

Chiappetta, E. L., & Koballa, T. R. (2006). *Science instruction in middle and secondary schools*. Upper Saddle River, NJ: Merrill Prentice-Hall.

Georgia Department of Education. *Introduction to Science Performance Standards, Grades 6-8 and 9-12*. Available online: HYPERLINK "<http://www.georgiastandards.org/science.aspx>" <http://www.georgiastandards.org/science.aspx>

### **NOTES ON CLASS DISCUSSIONS:**

This course welcomes a caring style with respect to conversation and interaction with peers. A caring style encourages paraphrasing of others' thoughts and asking questions as a way to offer interest and attentiveness. A caring style offers compassion when others are frustrated. A caring style offers support for ideas to obtain clarity prior to critique. A caring style monitors their time so that they are not monopolizing the conversation---allow quieter others to voice their positions. A caring style is responsible to others to ensure that the current topic is given enough attention. Contrasting views are also appreciated and help to clarify others' ideas---so offer contrasting views when appropriate but in a constructive and inclusive way that permits effective exchanges.

### **NOTES ON MEETING AT THE LOCAL SCHOOLS:**

A professional style of dress is required for both men and women in the schools. Please use appropriate discretion when choosing to "dress down" for school spirit weeks and other events. Keep in mind that as you are observing the classroom, you are being constantly observed in the school, which has the potential to provide an excellent recommendation for employment, or not. Equally, if not more importantly, be early to the schools so that you have time to talk with the teachers prior to their students arriving. You are more likely to teach if you have time to converse. Take to the time to build a trusting relationship with the teacher by arriving early enough to class. That relationship will go a long ways with respect to the opportunities you have down the road.

### **ASSIGNMENTS PROFICIENCY AND SUMMARY:**

Assignment proficiency is meeting 90% of the required expectations for completing assignments (rubrics). Assignments may be re-completed to meet the

proficiency requirements for this course. The reading schedule, activities, and assignments rubrics will be negotiated with the class.

### **School Journal**

The school journal is to show that you have learned to reflect in-depth on your school experiences. The journal also provides a way for you to reference ideas gained through the interactions with teachers and students in ESCI 4450/6450 and ESCI 4460/6460, which enhance class discussion. You are encouraged to carry the school journal (Journaling Notebook w/ Lined Pages) with you at all times and jot down notes throughout the class experiences, and immediately after your classes. Document your experiences and reflections related to those experiences beyond a "book report". Keep track of science teaching ideas, materials, websites, and other resources that are new to you. In addition, keep track of your "daily practicum tasks," the kind and number of tasks completed. One entry for every Wednesday you are in the schools is the minimum for your school journal, but you are encouraged to talk with the teacher about other opportunities and journal those as well.

#### Example of a Journal Entry:

Date 01/??/09 Ms. Sandlewood, Room 43, Earth Science

First off, during the first part of the class, Ms. Sandlewood talked with the class, asking them some questions about what they had done the previous few days. I thought about how this fits into the inquiry scale, and I realized that it was probably more teacher directed, as for the most part the students were simply responding to her questions. At the same time however, I began to think about how her questions fit into the Bloom's taxonomy diagram that we looked at in the text. I took note of her questions and then referenced the diagram and found that her questions covered several levels of the taxonomy, including knowledge, comprehension, and analysis. I'm not sure whether or not she was actively thinking about this, or whether she just sort of subconsciously does it because she's been teaching so long, or if there was even any thought to this at all, but it is definitely something that I was glad to pick up on. I hope that, whether consciously thinking about it or not, I can implement all of these different sorts of questions into my teaching. Along with this idea, I saw the formatted lab report that she has the students fill in, and I think it also covers many of the levels of the taxonomy diagram. She has the students do a variety of activities from defining a hypothesis, describing the results, and constructing/ analyzing a graph. I would definitely like to talk more with her on this to see what her underlying thoughts are.

The second noteworthy thing today was a little activity that Mrs. Sandlewood did with the students. I don't think she required them to write anything down, just to work through it with her. She used an analogy of a car and how different forms of energy (topic of the week/chapter) are involved when the car cranks up and moves. She had a diagram that she put up on the projection screen and explained how when we think about driving a car we can also think about what forms of energy (mechanical, thermal, electrical) are helping us get to our destination. I think this was an excellent example of her considering the context of the students in her teaching. She knows that many of them work, and drive to work, and drive to school, so what better way to relate the concepts of energy that they have been talking about to their everyday lives. As a corollary to this, she also shared an article that she found on the internet about "dihydrogen monoxide" and "its terrible effects on the environment". I think she used this to tie in the fact that science isn't just about memorizing useless facts, but that being educated is important. If an uneducated person had come across such an article and had no idea that dihydrogen monoxide was simply water, then they would have probably

been outraged, and possibly "donated money to the campaign" against its use. A sad state of affairs if everyone was so easily fooled. Great teaching strategies!! I wonder what else she has up her sleeve ...

### **Grading**

Journal entries/reflections	70%
Evaluations of your teaching/team teaching	15%
Celebration of learning presentation	15%

### **Academic Honesty**

The University of Georgia seeks to promote and ensure academic honesty and personal integrity among students and other members of the University community. In keeping with the University Honor Code and Academic Honesty Policy, each student is expected to do his/her academic work and to acknowledge fully and assistance and academic resources. All academic work must meet the standards contained in "A Culture of Honesty." All students are responsible to inform themselves about those standards before performing any academic work. Terms of this policy, resolution procedures, and consequences of violation are available at: [http://www.uga.edu/honesty/ahpd/culture\\_honesty.htm](http://www.uga.edu/honesty/ahpd/culture_honesty.htm)

## **ESCI 3450 - Practicum in Science Education Tentative Daily Calendar Spring Semester 2009**

### **January**

Jan 12 Mon  
Science Fair Judging  
Clarke Middle School-Baxter Street  
*Journal entry/reflection (Exercise 2)*

Rotation 1 Begins

Jan 21 Wed  
*Journal entry/reflection (Exercise 10)*

Jan 28 Wed  
*Journal entry/reflection (Exercise 16 or 17 & 18)*

### **February**

Feb 4 Wed  
*No practicum*

Feb 11 Wed  
*Journal entry/reflection (complete two out of exercises 23, 24, & 25.)*

Feb 17, 18, 19, 20 Tues-Fri  
*Teach and/or Team-Teach  
Journal entry/reflection (Exercise 29)*

Feb 25 Wed  
*No practicum-Meet on campus with Dr. Thomson*

Rotation 1 Ends

Rotation 2 Begins

**March**

Mar 4 Wed  
Journal entry/reflection (Exercise 3)

Mar 9 - 13  
Spring Break University of Georgia

Mar 18 Wed  
Journal entry/reflection (Exercise 9 & 10)

Mar 25 Wed  
Journal entry/reflection (complete two out of exercises 15, 16 and/or 17)

**April**

Apr 1 Wed  
No practicum

Apr 8 Wed  
Journal entry/reflection (complete two out of exercises 22, 23, and/or 24)

Apr 14, 15, 16, 17 Tues-Fri  
Teach and/or Team-Teach  
Journal entry/reflection (Exercise 28)

Apr 20-24  
Spring Break Barrow County

Apr 22 Wed  
Meet on Campus

Apr 29 Wed  
No practicum-Meet on campus with Dr. Thomson

Rotation 2 Ends

**May**

May 1  
Reading Day

May ?  
Final Exam Period  
Celebration of Learning  
*Presentation of teaching experience (inquiry learning experiences and unique selection from curriculum unit)*

## Weekly Agenda for Your Practicum Experience

**Jan 12 Mon**

### Getting Started

1. Set up a composition notebook or journal. Designating the following sections is suggested: Table of Contents, Daily Journal entries/Reflections, Interviews, Teaching Strategies, Assessment, Classroom Management, Tips for Teaching, Other.
2. **Journal entry/reflection**-Participate in Science Fair judging at Clarke Middle School off of Baxter Street. Wallace Salter chairs this event. Reflect on this experience. What did you learn? What stood out? What surprised you? What happened that you expected to happen? What would you do as a science teacher to mentor students through the science fair process? Evaluate the science fair products; did they reflect durable learning? Reflect on any experiences with teachers or students.
3. Review the Georgia Performance Standards that align with your rotation one. Find the standards on the DOE website: <http://www.georgiastandards.org/science.aspx>. What is your response to the standards for your rotation one class? Reflect and critically think.
4. The National Science Teachers Association (NSTA) is the largest organization in the world committed to the advancement of science teaching. Access the NSTA web site [[www.nsta.org](http://www.nsta.org)] and check out its teacher resources, events for science teachers, and professional journals—*The Science Teacher*, for high school teachers, and *Science Scope*, for middle school teachers. Join NSTA as a student member.
5. **Visit webCT, access this week's assignment, complete the assignment, and post it on webCT by Monday, Jan. 19th.**

### Rotation 1 Begins

**Jan 21 Wed**

### Introductions and the School as a Community

#### Hours One and Two

6. Find the appropriate place to park in the school lot. Introduce yourself at the office as a future science teacher representing the University of Georgia. Always be patient and courteous, wear a smile, and comment positively about the school, students, and teachers. Your positive comments may make someone's day, it's infectious, and they will remember and look forward to your arrival each day.
7. "Sign in" in the office upon your arrival, get a name-tag, and "sign out" when you exit the school. Remember that the principal is responsible for knowing at all times who is in her/his building.
8. Visit your rotation one teacher. Introduce yourself and express gratitude for his or her willingness to mentor you. Share the following list of experiences you hope to accomplish as outlined in this section.
9. Share with the teacher that you would like to teach or help teach a lesson on February 17, 18, 19 and 20. This is one of the major goals of your rotation one experience, and proclaiming this goal early will help ideas incubate and encourage planning ahead.
10. **Journal entry/reflection**-Request a copy of the year's syllabus for the class you are observing. Compare and contrast the syllabus with the Georgia Performance Standards you reviewed in exercise # 3. Reflect and critically think.

11. **Journal entry**-Make a sketch of the classrooms you are working in and learn the names of students. Do this the first day and memorize the names of students the first night. This is not only the first element of effective classroom management, but it shows the students that you care about who they are.

### **Hour Three**

12. Find out what resources are available for teaching science. Also, check out the library/media center for science books, videos, etc.

13. Meet at the designated location for our group reflection session by 10:25.

14. Visit webCT, access this week's assignment, complete the assignment and post it on webCT by Monday, January 26th.

## **Jan 28 Wed**

### **School and Classroom Safety**

#### **Hour One and Two (Choose between exercises 16 and 17)**

15. Visit your teacher's room. Discuss ideas for your teaching experiences for Feb 17-20.

16. **Journal entry/reflection**-What are the school procedures for severe storms, fire drills, and lock downs. What are the safety rules in the science classroom? How are emergencies handled, first aid administered, and fire extinguishers used? What are the protocols for emergencies? Locate posted procedures and the safety equipment in the classroom. Ask your teacher about how she/he prepares for the first day of school, introduces the year's work and classroom rules. Is students' work displayed in the classroom or in the hallways? If teachers are using a computerized system for record keeping, ask to see how it is done. Reflect.

17. **Journal entry/reflection**-What classroom procedures are observed? For example, is there an agenda posted on the board? Do the students have roles of responsibility in the classroom and if so, what are their duties and how are they chosen? Is there a procedure for what students are to do when they enter or exit class? Are there procedures for group work, asking questions, etc.? Record the procedures you observe or that are shared. Reflect and critically think.

### **Hour Three**

18. **Journal entry/reflection**-Develop a set of class rules that you would display in your classroom. Show the class rules to science teachers and ask what changes they would recommend. Write a paragraph that describes how you would introduce class rules to students. Include in your paragraph information about the level of student involvement in constructing the class rules. Reflect and critically think.

19. Set up interviews or participants for two out of the following three exercises (23, 24, and 25).

20. Meet at the designated location for our group reflection session by 10:25.

21. Visit webCT, access this week's assignment, complete the assignment and post it on webCT by Monday, February 2nd.

**Feb 4 Wed**  
**No practicum**

**Feb 11 Wed**  
**The Science Classroom Environment**

**Choose two of three out of exercises 23, 24 and 25.**

22. Visit your rotation one teacher. Discuss plans for your teaching experiences for Feb. 17-20

23. **Journal entry/reflection**-Interview two science teachers about the Georgia Performance Standards for the courses that they teach. Ask how these standards impact their teaching and student learning. How do end of course assessments (CRCT, EOCT, AP, IB) influence their curriculum planning? Reflect on your conversation.

24. **Journal entry/reflection**-Observe a science class taught by a veteran teacher and pay particular attention to how he or she addresses the areas of classroom management, including interpersonal relationships, organization and management, and lesson design and teaching. Arrange to meet with the teacher after the class to discuss your observations. Direct the discussion to have the teacher talk about his or her reasons for the management decisions and strategies you observed. Reflect on this experience and what you observed.

25. **Journal entry/reflection**-Talk with a school principal or the assistant principal in charge of discipline. Ask about the school's disciplinary procedures and under what conditions it is considered appropriate for teachers to send students to the school office for discipline.

26. Meet at the designated area for our group reflection session by 10:25.

27. Visit webCT, access this week's assignment, complete the assignment and post it on webCT by Monday, February 16th.

**Feb 17-20 Tues-Fri**

**The Science Classroom Environment and the Teaching and Learning of Science**

28. Work with your teacher to team teach or teach this week.

29. **Journal entry/reflection**-Write a reflection about your teaching experiences.

30. Visit webCT, access this week's assignment, complete the assignment and post it on webCT by Monday, February 23rd.

**Feb 25 Wed**

**No practicum-Meet with Dr. Thomson on campus**

## Rotation 2 Begins

### Mar 4 Wed

#### Introductions and School as Community

##### Hours One and Two

1. Visit your rotation one teacher. Introduce yourself and express gratitude for his or her willingness to mentor you. Share the following list of experiences you hope to accomplish as outlined in this section.
2. Share with the teacher that you would like to teach or help teach lessons April 14-17. This is one of the major goals of your rotation two experience, and proclaiming this goal early will help ideas incubate and encourage planning ahead.
3. **Journal entry/reflection**-Request a copy of the year's syllabus for the class you are observing. Compare and contrast the syllabus with the Georgia Performance Standards (<http://www.georgiastandards.org/science.aspx>). Reflect and critically think.
4. **Journal entry**-Make a sketch of the classrooms you are working in and learn the names of students. Do this the first day and memorize the names of students the first night. This is not only the first element of effective classroom management, but it shows the students that you care about who they are.

##### Hour Three

5. Find out what resources are available for teaching science. Also, check out the library/media center for science books, videos, etc.
6. Meet at the designated location for our group reflection session by 10:25.
7. **Visit webCT, access this week's assignment, complete the assignment and post it on webCT by Monday, March 16th.**

### March 18 Wed

#### Teaching and Learning Science

##### Hour One

8. Visit your rotation two teacher and discuss ideas for the lessons to be taught on April 14-17.
9. **Journal entry/reflection**-Administer Chiappetta and Koballa's "Myths of Science" quiz to several students and then discuss their answers with them. Write a paragraph that describes their responses to the quiz and thinking about the nature of science. Reflect. [The quiz is in the November 2004 issue of *The Science Teacher*, page 58-61 and on page 90 of your textbook.]

##### Hour Two

10. **Journal entry/reflection**-Gather instructional materials from a teacher that he or she uses to teach students about the nature of science. Compare the concepts taught by the teacher with those discussed by Dr. William McComas in his chapter about the myths of science. Reflect.

##### Hour Three

11. Set up interviews for exercises 15, 16 and/or 17; choose two or the three exercises to complete.
12. Meet at the designated location for our group reflection session by 10:25.
13. **Visit webCT, access this week's assignment, complete the assignment and post it on webCT by Monday, March 23rd.**

**March 25 Wed****Teaching and Learning Science**

**Choose two of three out of exercises 15, 16 & 17.**

14. Visit your rotation two teacher and discuss ideas for your lessons for April 14-17.
15. **Journal entry/reflection**-Interview two students about their science learning experiences. In a paragraph, describe how their comments reflected the themes of scientific literacy: (1) science as a way of thinking, (2) science as a way of investigating, (3) science as a body of knowledge, and (4) science and its interactions with technology and society. Reflect.
16. **Journal entry/reflection**-Interview two science teachers about their lesson assessment practices. Ask about alignment among standards, instruction, and assessment. Reflect.
17. **Journal entry/reflection**-Ask a veteran science teacher to assess his or her own lesson assessment practices using the checklist presented in Table 6.3 of the textbook. Discuss your own thoughts with him or her about lesson assessment and determine what changes he or she would suggest to improve the checklist and your own thinking about lesson assessment. Reflect.
18. Recruit participants for exercises 22 and/or 24 for next week; choose two of the following three exercises for your next visit: #22, 23, and 24.
19. Meet at the designated location for our group reflection session by 10:25.
20. Visit webCT, access this week's assignment, complete the assignment and post it on webCT by Monday, March 30th.

**April 8 Wed****Teaching and Learning Science**

**Choose two of the following three journal entries: 22, 23, and/or 24.**

21. Visit your rotation two teacher and discuss lesson ideas for April 15th and 24th.
22. **Journal entry/reflection**-Ask teachers to allow you to examine curriculum units that they have developed. After examining the units, talk with the teachers about them. Ask about the vision and philosophy that supports the unit, the standards addressed in the unit, and how student learning of unit content is assessed. Reflect.
23. **Journal entry/reflection**-Select a concept or topic from a middle or high school science course that you believe students find boring. Develop a plan to teach the concept or topic in a way that will motivate students to be engaged science learners. Reflect.
24. **Journal entry/reflection**-Interview a science teacher who has served as the mentor for beginning teachers in the past. Ask the teacher about his or her expectations for a beginning science teacher in the areas of lesson planning, instruction, classroom management, and learning assessment. Prepare a report summarizing your findings and drawing conclusions regarding your own preparation for science teaching. Reflect.
25. Meet at the designated location for our group reflection session by 10:00.
26. Visit webCT, access this week's assignment, complete the assignment and post it on webCT by Monday, April 3rd.

**April 14, 15, 16, 17 Tues-Fri**  
**Teaching and Learning Science**

27. Conduct your lesson.

28. **Journal entry/reflection**-Write a reflection on your teaching experiences

29. **Visit webCT, access this week's assignment, complete the assignment and post it on webCT by Monday, April 27th.**

**April 29 Wed**

**No practicum-Meet with Dr. Thomson on campus**