

## ***Senior Inquiry in Biology: Signature Work???***

**Biology Constraints:** Many students!! The majority of our students are selecting biology as a major to support pre-health professional pursuits/passions. Our SI experience typically assesses individual work, but not always. The assignments which offer practice throughout our major in preparation for SI are more likely done as group work due to larger class sizes.

**Biology SI Basic Info:** Most of our students will take a “literature review” course to fulfill senior inquiry. 1 faculty member / 10 students in a 10 week term; Umbrella/Specialized topics chosen by faculty members (not students). Students choose among specialized topics sections.

### Outcomes of Senior Inquiry

#### **Biology**

- **Reflect** on undergraduate experiences
- Generate a usable question and carry it through scientific **inquiry**
- Take responsibility for their **own learning**
- Utilize **information literacy** in the sciences
- **Communicate** their work in written and/or oral contexts

Closest alignment with Augustana College Learning Outcomes:  
*Analyze, Communicate, and Wonder*

**Primary activities in the course:** Student-led discussions of primary literature in the discipline, student presentations of primary literature, a series of assignments that lead to problem/topic identification, generation of sources to identify knowns, and production of a literature review that establishes the boundary between knowns/unknowns, forecasting a future direction of inquiry (research).

#### **Primary Acts evaluated for each student:**

- Leading Discussion of Primary Literature
- Literature-based Formal Presentations
- Literature-based Review and Proposal of Future work
- Reflective writing

**Signature Work???** *Sometimes, but always* a function of student self-identification as such.

**Assignments scaffolding to help guide students into a best shot at *signature work*:**

**Course Moodle Site:**

Exemplars of every major assignment in the class (SO IMPORTANT!!!)  
Rubrics  
Evaluation Criteria for every act in the course

**Literature Review Paper:**

Week 1: Discussions of big picture/popular science readings to frame the playing ground of “problems”  
Weeks 2-5: Instructor/Student selection of literature review to lead discussion with in class (each student is evaluated as a leader and a contributor)  
Week 5: Paper prospectus due (prior to meeting with science librarian)  
Week 7: Outline of paper due  
Weeks 8-9: First version of paper due (graded as final product – no “draft” business) and Individual meetings  
Week 10: Final paper due

**Literature Review Presentation:**

Week 5: Instructor exemplar presentation  
Weeks 6-7: Individual presentations of research articles (peer evaluations, self-evaluation of video recording – graded work)  
Week 10 – Finals slot: Final presentations

I used one source to develop the assignment scaffold leading to the final literature review in this course.  
This book is amazing!

John C. Bean in *Engaging Ideas*: Bean JC. 2011. *The Professor's Guide to Integrating Writing, Critical Thinking, and Active Learning in the Classroom*. 2<sup>nd</sup> ed. San Francisco: Jossey-Bass.