

Appendix A: Faculty Survey about Scientific Literacy

We are surveying faculty about their perceptions of what non-science majors should learn in an introductory biology course, particularly in courses that fulfill general education requirements. We are interested in increasing students' science literacy skills (i.e. the skills that students need to understand and use science in their everyday lives) and determining the role these courses play in teaching these skills.

Your identity will be kept strictly confidential during the entire research process, and the survey data itself will be collected anonymously. We are interested in the set of responses as a whole, not a particular individual's responses. Anonymous data or findings from this study might be included in various publications or presentations. The survey data will be stored in a secure, locked location for up to five years from the collection date.

1. At which type of institution are you currently a faculty member?

- | | |
|---|--|
| <input type="checkbox"/> Public Research University | <input type="checkbox"/> Public State College |
| <input type="checkbox"/> Public Regional University | <input type="checkbox"/> Public Two-year College |
| <input type="checkbox"/> Public State University | <input type="checkbox"/> Private College or University |

2. Does your introductory biology course fulfill a general education requirement at your school?

- Yes
No

3. Who are the students typically enrolled in your introductory biology course?

- Exclusively non-science majors
Mixture of science majors (may include pre-nursing) and non-majors
Mixture of biology and non-science majors
Other (Please briefly describe your student population and use percentages to indicate % majors vs non-majors)

4. In your opinion, what are the three most important science literacy skills for students to master in an introductory biology course that fulfills a general education requirement?

(space for write-in answer)

*For the following questions, please indicate answers based on considerations of your **introductory biology course**:*

Do you currently teach this skill? (Yes/No)

Do you assess this skill in your class? Yes/No

Whether or not you currently teach this skill, do you want to teach this skill or would you like to teach this skill? (Yes/No)

(Regardless of answers to prior questions, everyone should see this Q) How important is this skill to students' science literacy development? (Likert 1(unimportant)-5(very important))

Should this skill be taught in: lecture lab both lecture & lab

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Skill 1: Identify a valid scientific argument (e.g., recognizing when scientific evidence supports a hypothesis)

Skill 2: Conduct an effective literature search (e.g., evaluate the validity of sources and distinguish between types of sources)

Skill 3: Evaluate the use and misuse of scientific information (e.g., distinguish the appropriate use of science to make societal decisions)

Skill 4: Understand elements of research design and how they impact scientific findings/conclusions (e.g., identify strengths and weaknesses in research that are related to bias, sample size, randomization, and experimental control)

Skill 5: Create the appropriate graph from data

Skill 6: Read and interpret graphical representations of data

Skill 7: Solve problems using quantitative skills, including basic statistics (e.g., calculate means, probabilities, percentages, frequencies)

Skill 8: Understand and interpret basic statistics (e.g., interpret error bars, understand the need for statistics)

Skill 9: Justify inferences, predictions, and conclusions based on quantitative data

Relative to all the skills described in the prior questions, how important is it for undergraduate non-biology majors to learn content (e.g., cell structure and function):

- a) Learning *skills* is more important than learning *content*
- b) Learning *skills* is a little more important than learning *content*
- c) Learning *skills* and learning *content* are equally important
- d) Learning *content* is a little more important than learning *skills*
- e) Learning *content* is more important than learning *skills*

Which of the following do you feel is true regarding the incorporation of skills learning in your introductory biology course?

- a. Incorporating skills learning decreases the amount of content learned by students
- b. Incorporating skills learning does not change the amount of content learned by students
- c. Incorporating skills learning increases the amount of content learned by students

If you are willing to participate in a short follow-up interview regarding your responses to these questions, please enter your contact information below.

Name

Address 2 lines, City, State, Zip

Email,

Phone

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If you are interested in receiving information about how to incorporate these skills in your biology curriculum, please enter your contact information below. Your contact information will be not connected with your survey responses.

Name

Address 2 lines, City, State, Zip

Email,

Phone