



Information Letter

INFORMATION LETTER

Research Study entitled “Fostering ideological awareness in the context of postsecondary biology through open-source course modules”

You are invited to participate in a research study that examines biology instructors’ perceptions of teaching content that focuses on biases, stereotypes, and assumptions that shape contemporary and historical science.

The study is being conducted by Abby Beatty, Postdoctoral Fellow under the direction of Cissy Ballen, Assistant Professor of Biological Sciences at Auburn University. You are invited to participate because you are an instructor of biology.

What will be involved if you participate? If you decide to participate in this research study, you will be asked to complete a survey. Your total time commitment will be approximately 10-15 minutes.

Are there any risks or discomforts? A risk associated with participating in this study is breach of confidentiality, however we take every precaution possible to prevent this.

Are there any benefits to yourself or others? Benefits of participation include contributing to biology education research, especially equitable instructional approaches. We/I cannot promise you that you will receive any or all of the benefits described. If you change your mind about participating, you can withdraw at any time during the study. Your participation is completely voluntary. If you choose to withdraw, your data can be withdrawn as long as it is identifiable. Your decision about whether or not to participate or to stop participating will not jeopardize your future relations with Auburn University, the Department of Biological Sciences.

Any data obtained in connection with this study will remain anonymous. We will protect your privacy and the data you provide by anonymizing data collection and storing data in a password-protect and encrypted folder. Aggregate information collected through your participation may be published in a professional journal, and/or presented at a professional meeting.

If you have questions about this study, please contact Abby Beatty, aeb0084@auburn.edu or Cissy Ballen, mjb0100@auburn.edu.

If you have questions about your rights as a research participant, you may contact the Auburn University Office of Research Compliance or the Institutional Review Board by phone (334)-844-5966 or e-mail at IRBadmin@auburn.edu or IRBChair@auburn.edu.

HAVING READ THE INFORMATION PROVIDED, YOU MUST DECIDE IF YOU WANT TO PARTICIPATE IN THIS RESEARCH PROJECT. IF YOU DECIDE TO PARTICIPATE, THE DATA YOU PROVIDE WILL SERVE AS YOUR AGREEMENT TO DO SO. THIS LETTER IS YOURS TO KEEP.

For participation in this study, including the use of my provided responses in publication:

- ☐ I Consent
- ☐ I Do Not Consent
-

Block 4

The term "Ideological Awareness" is used frequently in the following section. The definition of this term will remain here and on the top of each page for your convenience.

Ideological awareness is an understanding of biases, stereotypes, and assumptions that shape contemporary and historical science. Examples of topics related to ideological awareness in the class include, but are not limited to:

1. Representation in STEM
2. Disparities in Healthcare related to systemic discrimination (Maternal mortality in the black population, LGBTQIA+ access to medical care)
3. The relationship between science and religion (Stem cell research)
4. The history of unethical human experimentation (Nazi Germany twin experiments)

- ☐ I have reviewed and understand these definitions
- ☐ I have NOT reviewed and/or understood these definitions

Teaching Experience

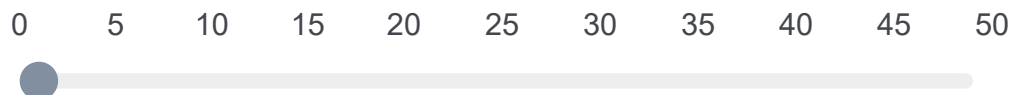
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Approximately how many years have you taught lower division* biology courses across your entire academic career?

*lower division courses are *generally* taken by first and second year students



How many students are in the largest lower division biology course you teach?
Please provide a numeric response without any character text (eg. ~).

How many students are in the smallest lower division biology course you teach?

Please provide a numeric response without any character text (eg. ~).

What percentage of your teaching load is comprised of the following types of courses in a typical academic year? Note: Your percentages should add up to 100% in total.

Lower-division undergraduate classes

Upper-level undergraduate classes

Graduate student classes

Total

In your view, why is it important for students to learn science?

What is your goal as a science educator in terms of student outcomes in your lower division courses?

How often do you modify/update your lower division course curriculum, activities, content, etc.?

☐ Every Semester

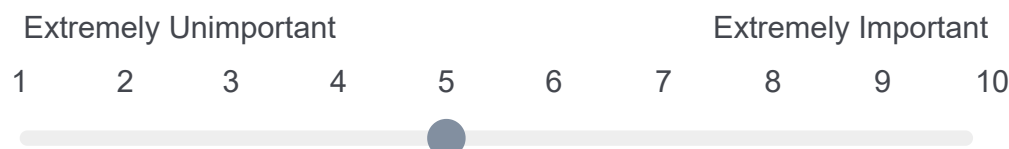
☐ Once a Year

- ☐ Once Every 5 Years
- ☐ Rarely/Never

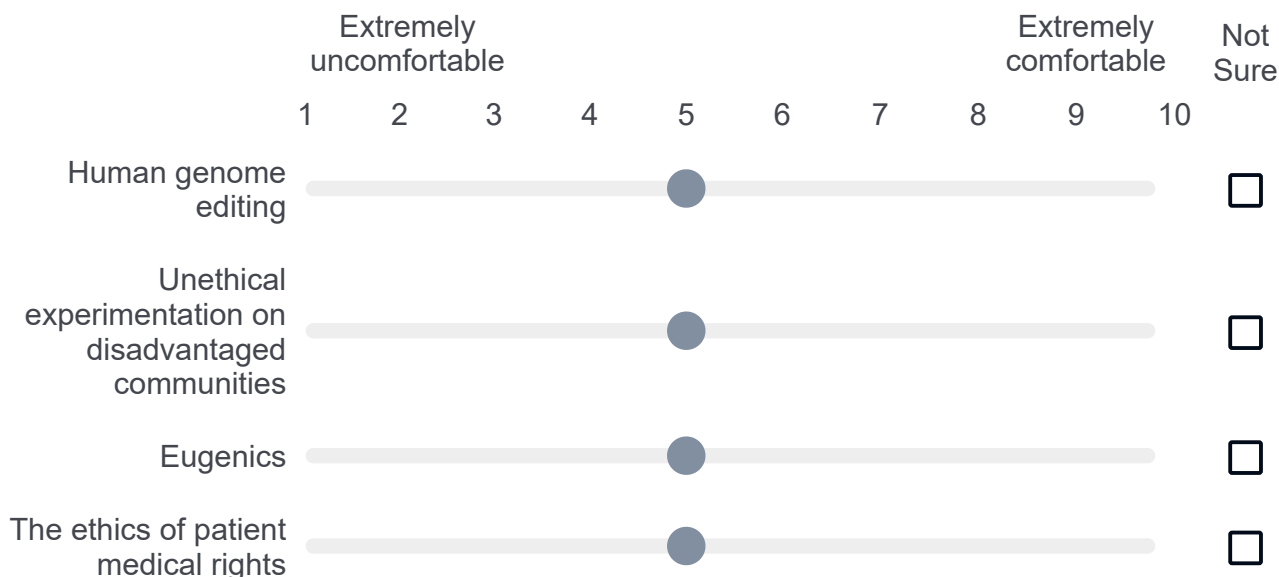
When you were a student taking lower division biology courses, how often were biases, stereotypes, and assumptions that shape contemporary and historical science addressed?

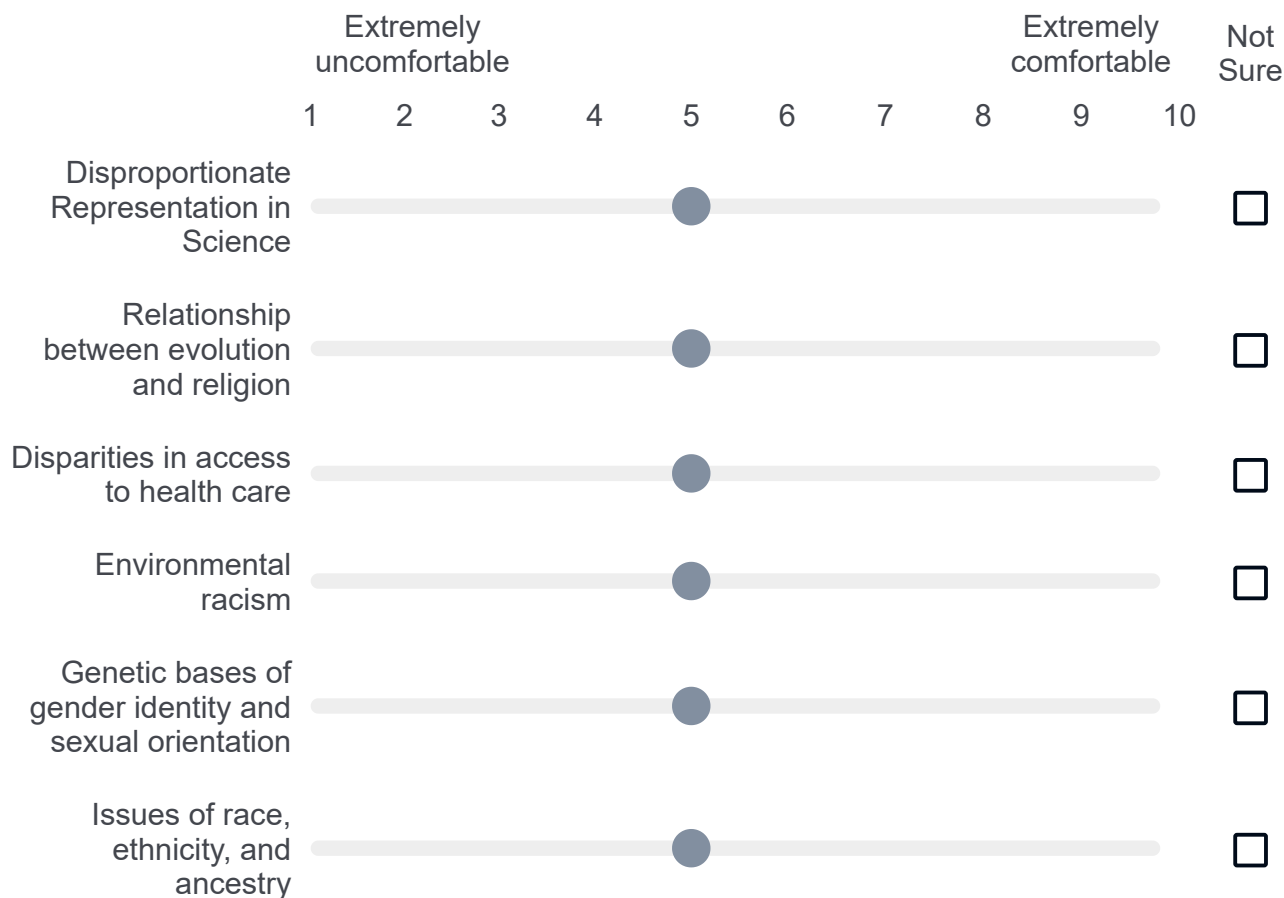
- ☐ Never
- ☐ In some courses
- ☐ About half of the courses
- ☐ Most of the courses
- ☐ Always

How important is it for students graduating from your institution to have exposure to a scientific curriculum that addresses biases, stereotypes, and assumptions that shape contemporary and historical science?

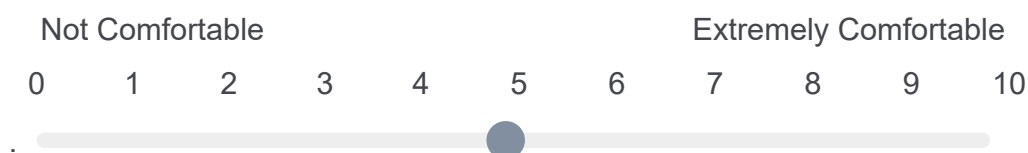


Indicate how comfortable you would be addressing each topic in your lower division biology course.





Indicate how comfortable you are with teaching the Ideological Awareness free (i.e. the traditional) biology content in your lower division biology courses.



In the lower division biology courses you teach, how often do you address biases, stereotypes, and assumptions that shape contemporary and historical science?

- ☐ Never
- ☐ Rarely (1%-33% of class periods)
- ☐ Sometimes (34%-65% of class periods)
- ☐ Often (66%-90% of class periods)
- ☐ Always (>90% of class periods)

You indicated that you never or rarely address biases, stereotypes, and assumptions in your course. Why do you think these topics are rarely addressed in biology classes?

Example topics:

- a. Human genome editing
- b. Unethical experimentation on disadvantaged communities
- c. Eugenics
- d. Tissue ownership and the ethics of patient rights
- e. role of identities on historic science
- f. representation in science
- g. integration of evolution and religion
- h. disparities in access to health care
- i. environmental racism
- j. persisting biases in science
- k. genetic bases of gender identity and sexual orientation
- l. issues of race versus ancestry

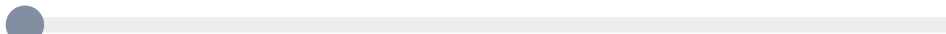
You indicated that you address biases, stereotypes, and assumptions in the classroom more than 33% of the time. However, we often get responses indicating faculty rarely teach these relationships. Why do you think these topics are rarely addressed in biology courses?

Example topics: a. Human genome editing b. Unethical experimentation on disadvantaged communities c. Eugenics d. Tissue ownership and the ethics of patient rights e. role of identities on historic science f. representation in science g. integration of evolution and religion h. disparities in access to health care i. environmental racism j. persisting biases in science k. genetic bases of gender identity and sexual orientation l. issues of race versus ancestry

What percentage of:

0 10 20 30 40 50 60 70 80 90 100

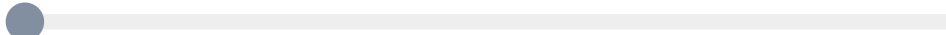
each lower division
course should be
dedicated to moral
and ideological
components of
scientific issues?



the curriculum for
your lower division
course was
developed by you
versus being
inherited from
another instructor?



students in your
lower-division
course(s) are
PEERs (persons
traditionally excluded
based on ethnicity or
race)?



It is the role of the instructor to explicitly link biological content to social and ethical issues, rather than allowing students to connect biological content to social issues in a more self-directed way.

Strongly disagree Disagree Somewhat disagree Neither agree nor disagree Somewhat agree Agree Strongly agree
1 2 3 4 5 6 7

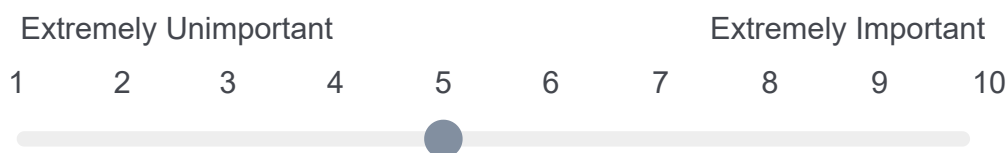


In your view, why is it important for students to learn science?

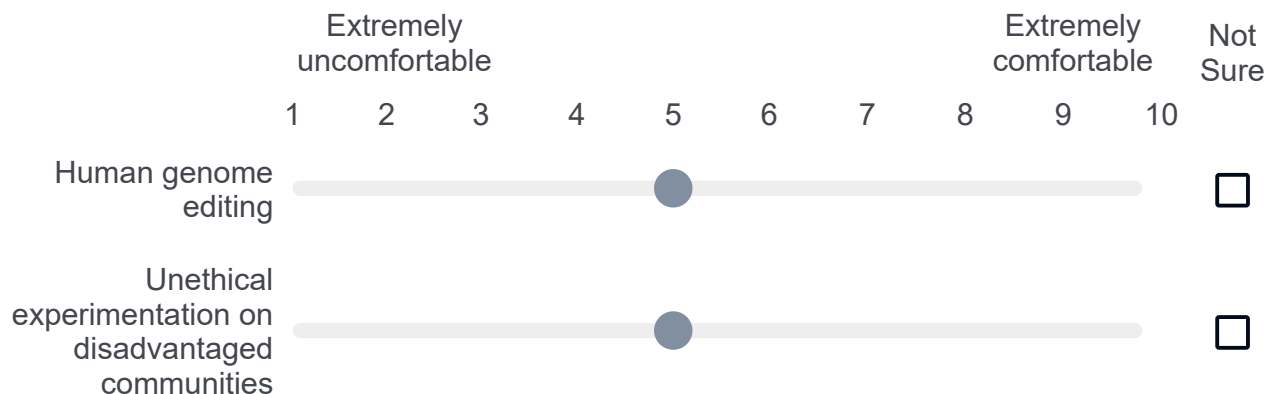
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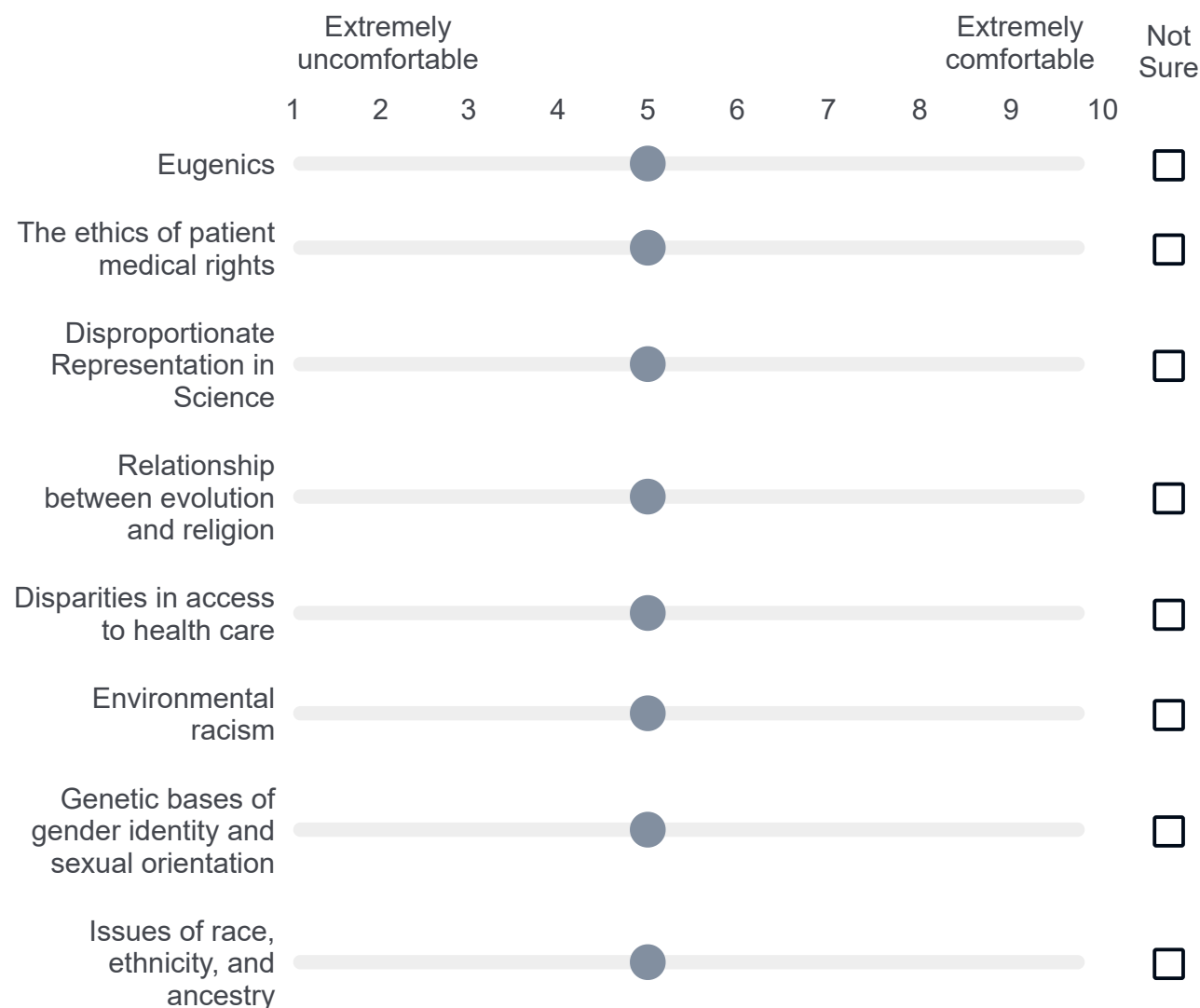
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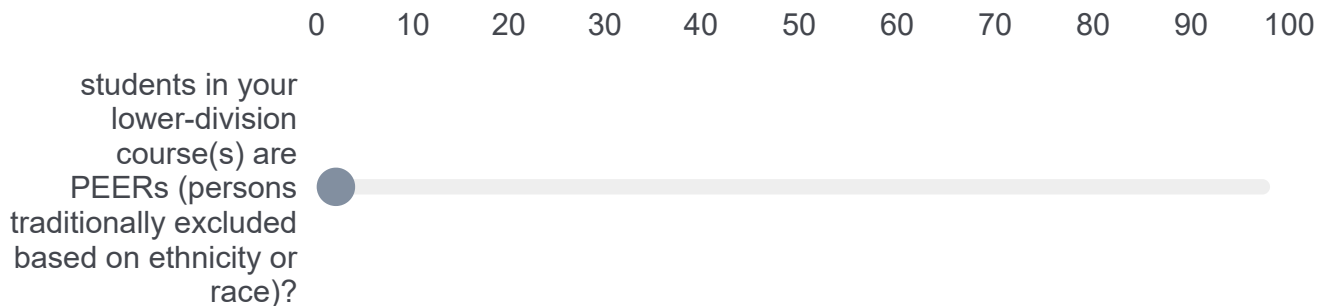
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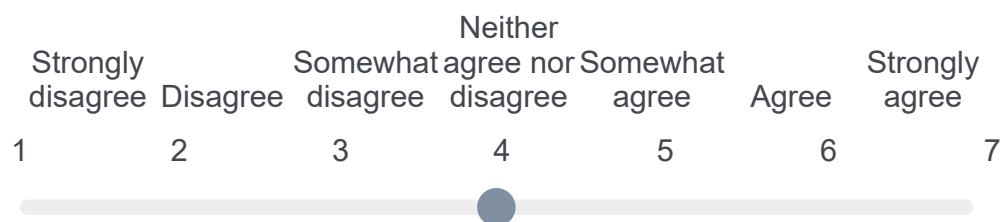


What percentage of:





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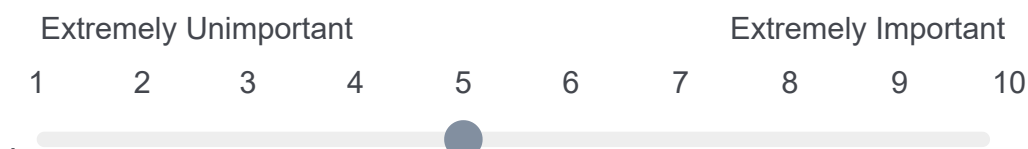


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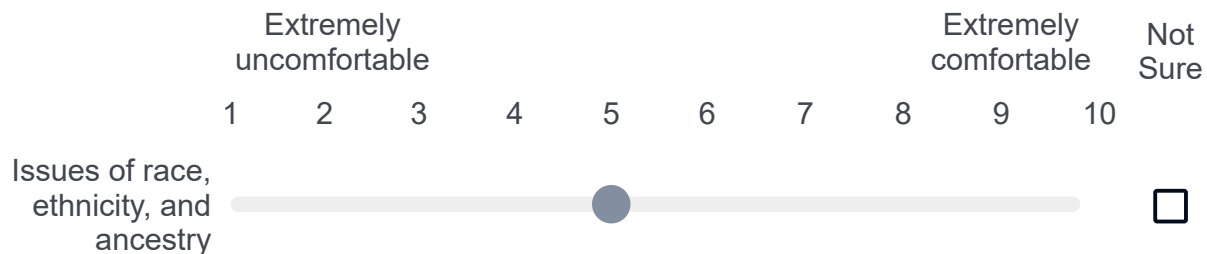
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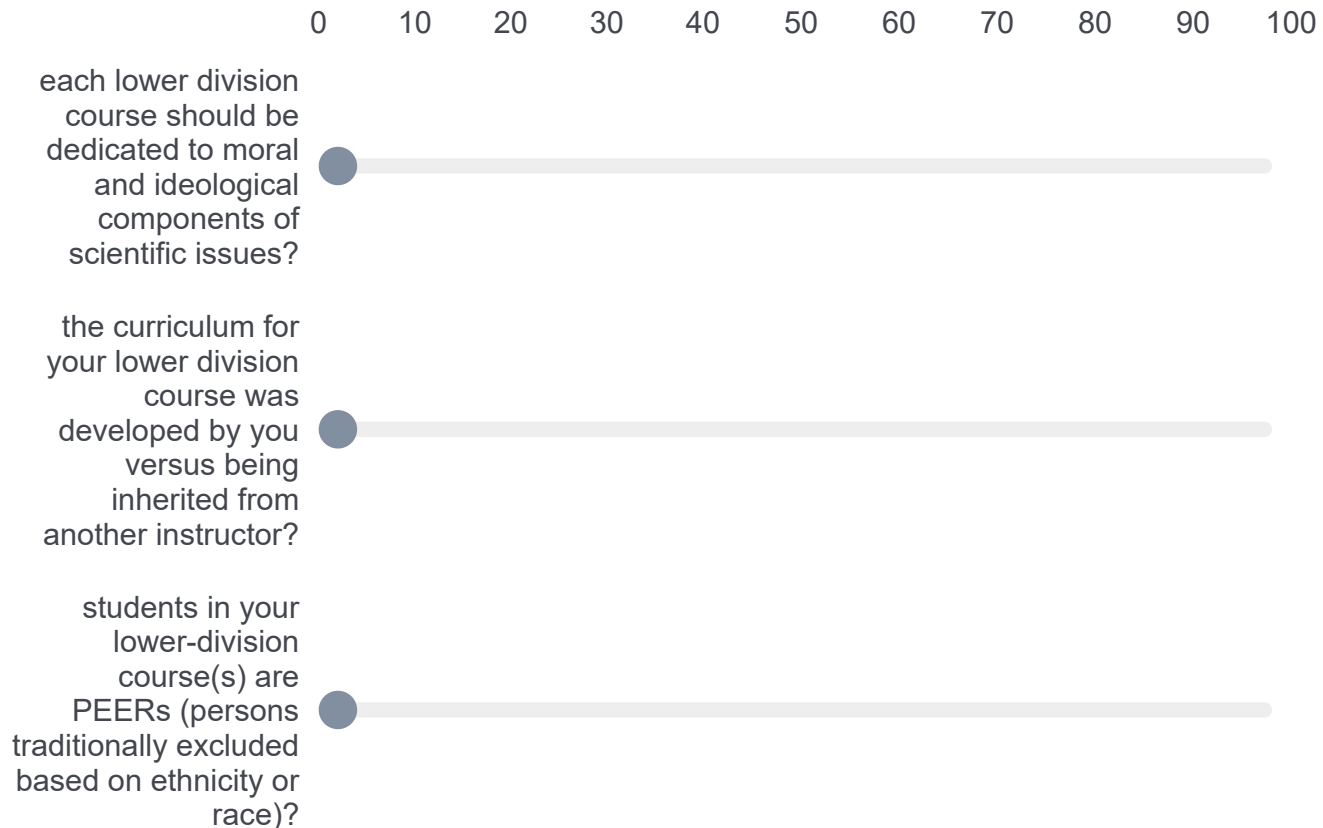


Indicate how comfortable you would be addressing each topic in your lower division biology course.

	Extremely uncomfortable								Extremely comfortable	Not Sure	
	1	2	3	4	5	6	7	8	9	10	
Human genome editing										<input type="checkbox"/>	
Unethical experimentation on disadvantaged communities										<input type="checkbox"/>	
Eugenics										<input type="checkbox"/>	
The ethics of patient medical rights										<input type="checkbox"/>	
Disproportionate Representation in Science										<input type="checkbox"/>	
Relationship between evolution and religion										<input type="checkbox"/>	
Disparities in access to health care										<input type="checkbox"/>	
Environmental racism										<input type="checkbox"/>	
Genetic bases of gender identity and sexual orientation										<input type="checkbox"/>	



What percentage of:



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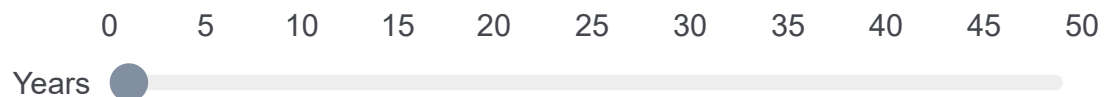
Demographics

How would you classify the institution you are currently at? (mark all that apply)

- ☐ Doctoral Awarding Institution
 - ☐ Baccalaureate Awarding Institution
 - ☐ Master's Awarding Institution
 - ☐ Primarily Minority-Serving Institution
 - ☐ Faith-Based Institution
 - ☐ Public Institution
 - ☐ Private Institution
 - ☐ Two-year Institution
 - ☐ If you are unsure, provide the name of your institution:
-

In which US state is your institution located?

How long have you been at your current institution?



What is the best descriptor of your current academic appointment?

- ☐ Graduate Student
- ☐ Post-Doctoral Researcher
- ☐ Part time Instructor/Adjunct
- ☐ Full time Instructor
- ☐ Non-tenure Track Faculty
- ☐ Tenure-track Faculty
- ☐ Tenured Associate Professor
- ☐ Tenured Full Professor

☐ Staff☐ Other and/or detailed response:

What term best describes your gender identity (select all that apply)?

☐ Man☐ Woman☐ Intersex☐ Transgender☐ Genderqueer☐ Nonbinary☐ My gender is:

How would you describe your sexuality/sexual orientation?

What is your race*? (select all that apply)

*According to the National Institutes of Health (NIH), we define each racial category as follows: American Indian or Alaska Native. A person having origins in any of the original peoples of North and South America (including Central America), and who maintains tribal affiliation or community attachment. Asian/Asian American. A person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam. Black/African American. A person having origins in any of the black racial groups of Africa. Latino/Hispanic/Hispanic American. A person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin, regardless of race. The term, "Spanish origin," can be used in addition to "Hispanic or Latino." Native Hawaiian or Other Pacific Islander. A person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands. White/European American. A person having origins in any of the original peoples of Europe, the Middle East, or North Africa.

☐ American Indian/Alaska Native☐ Asian/Asian American

- ☐ Black/African American
- ☐ Latino/Hispanic/Hispanic American
- ☐ Native Hawaiian or Other Pacific Islander
- ☐ White/European American
- ☐ My race is:
-

Were you a first-generation college student*?

*We define a student as a first-generation college student if neither of their parents attended college.

- ☐ No
- ☐ Yes
- ☐ Don't know
-

Do you have any other aspects of your identity that you feel are underrepresented, marginalized, or minoritized in STEM or society? If so, please list them here.

Examples might include but are not limited to: disability, neurodiversity, citizenship status, tribal status, socioeconomic status, religion, marital status, etc.

Invitation to Participate in Research Project

Would you like access to materials addressing IA topics for use in your classroom?

Would you like to participate in a research study related to ideological awareness? If so, please see below for our recruitment letter.

Download recruitment letter here for more information:

[Faculty Recruitment Letter](#)

I am willing to:

- ☐ teach three activities, provide your survey link to my students, and am willing to complete the 1 hour interview.
- ☐ teach three activities, provide your survey link to my students, but NOT willing to complete the 1 hour interview.
- ☐ access the materials, but not be part of the research study
- ☐ None of the above. I would not like to participate in any way.
-

You indicated that you would like materials sent to you, or that you would like to participate in the research study. These data will be stored separately from your survey responses to maintain confidentiality. Please provide your contact details here (name, email, and/or phone):

- ☐ Name
- ☐ Email
- ☐ Phone Number

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