NIBLSE Barriers 2021 Survey - Nov 2021

Survey Flow

Block: Intro text and IRB statement (2 Questions)

Standard: Block 4 (1 Question)

Standard: teaching bioinformatics (3 Questions)

Standard: Barriers block (7 Questions)

Standard: The following questions are about you and your educational background. (7 Questions)

Standard: institutions (3 Questions)

Standard: demographics (4 Questions)

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Start of Block: Intro text and IRB statement

 The Network for Integrating Bioinformatics into Life Sciences Education (NIBLSE; "nibbles") is a National Science Foundation Research Coordination Network for Undergraduate Biology Education (RCN-­UBE) devoted to establishing bioinformatics as essential to the undergraduate life sciences curriculum. To that end, we are asking the community to help us identify barriers to implementation of bioinformatics education.
 The survey should take you approximately 15 minutes to complete. Although some personal information is being collected (i.e., educational institutions you have attended), it will not be used to identify you or your responses, which will be anonymous. There are no direct benefits, risks, or compensation to you for participating in the study.
 We invite you to read more about our activities and other ways to contribute and provide feedback at our project website or contact us at the address below. Thank you in advance for your input.
 NIBLSE Leadership Team:
 Adam Kleinschmit, University of Dubuque William Morgan, College of Wooster Mark Pauley, University of Nebraska at Omaha
 Anne Rosenwald, Georgetown University
 William Tapprich, University of Nebraska at Omaha Eric Triplett, University of Florida   This survey is covered by IRB202102370 . If you have questions about the survey, please contact Sebastian Galindo (sgalindo@ufl.edu) or Jennifer Drew (jdrew@ufl.edu).  NIBLSE is supported by NSF Award #1539900. NIBLSE is a proud partner of QUBES: https://qubeshub.org/

* I AGREE to participate. (1)
* I do NOT AGREE to participate. (2)

Skip To: End of Survey If The Network for Integrating Bioinformatics into Life Sciences Education (NIBLSE; "nibbles") is a... = I do NOT AGREE to participate.

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Q31 Does your role at your current institution involve teaching undergraduate life science students? Teaching refers to any duration of instruction.

* yes (1)
* no (2)

Skip To: End of Survey If Does your role at your current institution involve teaching undergraduate life science students?... = no

End of Block: Intro text and IRB statement

Start of Block: Block 4

Q32 For the remainder of the survey, please respond according to your typical **pre-pandemic** teaching practices/load.

 For this survey, the term "bioinformatics" is defined as: *an interdisciplinary field that is concerned with the development and application of algorithms that analyze biological data to investigate the structure and function of biological polymers and their relationships to living systems* (Tapprich et al, 2021. Biochemistry and Molecular Biology Education, Vol. 49, No. 1)*.*

End of Block: Block 4

Start of Block: teaching bioinformatics

Q3 Thinking about the **undergraduate life science courses** that you teach at your institution, please select the statement(s) below that best describes your *typical teaching* of bioinformatics. Select ALL that apply.

* I do **not** include bioinformatics in my teaching and do **not** plan to do so (1)
* I do **not** include bioinformatics in my teaching at this time, but **do** plan to do so (2)
* I teach **some** bioinformatics (e.g., one lecture/lab module) in a lower-level courses (1st/2nd year) (3)
* I teach **some** bioinformatics (e.g., one lecture/lab module) in an upper-level courses (3rd/4th year) (8)
* I teach a **substantial** amount of bioinformatics (e.g., more than one lecture/lab module) in a lower-level courses (1st/2nd year) (4)
* I teach a **substantial** amount of bioinformatics (e.g., more than one lecture/lab module) in an upper-level courses (3rd/4th year) (9)
* I teach a **dedicated lower-level (1st/2nd) bioinformatics course(s)** (5)
* I teach a **dedicated upper-level (3rd/4th) bioinformatics course(s)** (7)

Display This Question:

If Thinking about the undergraduate life science courses that you teach at your institution, please... = I teach <strong>some</strong> bioinformatics (e.g., one lecture/lab module) in a lower-level courses (1st/2nd year)

Or Thinking about the undergraduate life science courses that you teach at your institution, please... = I teach <strong>some</strong> bioinformatics (e.g., one lecture/lab module) in an upper-level courses (3rd/4th year)

Or Thinking about the undergraduate life science courses that you teach at your institution, please... = I teach a <strong>substantial</strong> amount of bioinformatics (e.g., more than one lecture/lab module) in a lower-level courses (1st/2nd year)

Or Thinking about the undergraduate life science courses that you teach at your institution, please... = I teach a <strong>substantial</strong> amount of bioinformatics (e.g., more than one lecture/lab module) in an upper-level courses (3rd/4th year)

Or Thinking about the undergraduate life science courses that you teach at your institution, please... = I teach a <strong>dedicated lower-level (1st/2nd) bioinformatics course(s)</strong>

Or Thinking about the undergraduate life science courses that you teach at your institution, please... = I teach a <strong>dedicated upper-level (3rd/4th) bioinformatics course(s)</strong>

Q24 Is any of your bioinformatics teaching associated with a course-based undergraduate research experience (CURE) or a summer-based undergraduate research experience (SURE)? Select **ALL** that apply.

* yes, part of a CURE (1)
* yes, part of a SURE (2)
* neither (3)
* I don't know (4)

Q6 Does your institution offer any of the following at the undergraduate level? Select **ALL** that apply.

* a bioinformatics-specific course (1)
* a bioinformatics certificate (4)
* a bioinformatics minor (3)
* a bioinformatics major (2)
* I don't know (5)
* not applicable (6)

End of Block: teaching bioinformatics

Start of Block: Barriers block

Display This Question:

If Thinking about the undergraduate life science courses that you teach at your institution, please... = I do <strong>not</strong> include bioinformatics in my teaching and do <strong>not</strong> plan to do so

Q21 Why **DON'T** you plan to include bioinformatics into your teaching? Select **ALL** that apply.

* Because there are too many barriers (1)
* Because it's not my responsibility to teach it (6)
* Because it should be taught as a separate discipline and not integrated (2)
* Because bioinformatics is only suitable for graduate students (3)
* Because bioinformatics is **NOT** essential to life sciences education (4)
* Other (5) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Q5 In your opinion, are additional undergraduate courses with bioinformatics content needed at your institution?

* Yes (1)
* Maybe (2)
* No (3)

Display This Question:

If Thinking about the undergraduate life science courses that you teach at your institution, please... != I do <strong>not</strong> include bioinformatics in my teaching and do <strong>not</strong> plan to do so

Q7 Have you faced any barriers or challenges in integrating bioinformatics into your teaching?

* Yes (1)
* No (2)

Skip To: End of Block If Have you faced any barriers or challenges in integrating bioinformatics into your teaching? = No

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Display This Question:

If Have you faced any barriers or challenges in integrating bioinformatics into your teaching? = Yes

Or Why DON'T you plan to include bioinformatics into your teaching? Select ALL that apply.  = Because there are too many barriers

Q8 Please indicate if you agree or disagree with each of the following statements regarding your ability to **integrate bioinformatics** into your teaching.

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| --- | --- | --- |
|  | I agree with this statement (1) | I do **NOT** agree with this statement (2) |
| I lack expertise in bioinformatics. (1)  |  |  |
| I lack experience in teaching bioinformatics. (2)  |  |  |
| I lack time to restructure course(s). (3)  |  |  |
| I lack the autonomy to add content to my course(s). (4)  |  |  |
| I lack space in my course(s) to add content. (12)  |  |  |
| I lack curricular materials. (13)  |  |  |
| I lack appropriate technical resources (internet access/software/hardware/IT support). (7)  |  |  |

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Display This Question:

If Have you faced any barriers or challenges in integrating bioinformatics into your teaching? = Yes

Or Why DON'T you plan to include bioinformatics into your teaching? Select ALL that apply.  = Because there are too many barriers

Q35 Please indicate if you agree or disagree with each of the following statements regarding your **student population** and your ability to integrate bioinformatics.

|  |  |  |
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|  | I agree with this statement (1) | I do **NOT** agree with this statement (2) |
| My student population lacks access to appropriate technical resources (internet access/software/hardware/IT support). (8)  |  |  |
| My student population lacks prerequisite skills. (9)  |  |  |
| My student population lacks interest in bioinformatics. (10)  |  |  |
| Other (please specify): (11)  |  |  |

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Display This Question:

If Please indicate if you agree or disagree with each of the following statements regarding your abi... = I agree with this statement

Carry Forward Selected Choices from "Please indicate if you agree or disagree with each of the following statements regarding your ability to integrate bioinformatics into your teaching. "

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Q9 You indicated that the following were barriers to your integration of bioinformatics in your teaching. For each selection below, please indicate the extent to which it presents a challenge.

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|  | Severe challenge (1) | Moderate challenge (2) | Minor challenge (3) |
| I lack expertise in bioinformatics. (x1)  |  |  |  |
| I lack experience in teaching bioinformatics. (x2)  |  |  |  |
| I lack time to restructure course(s). (x3)  |  |  |  |
| I lack the autonomy to add content to my course(s). (x4)  |  |  |  |
| I lack space in my course(s) to add content. (x12)  |  |  |  |
| I lack curricular materials. (x13)  |  |  |  |
| I lack appropriate technical resources (internet access/software/hardware/IT support). (x7)  |  |  |  |

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Display This Question:

If Please indicate if you agree or disagree with each of the following statements regarding your stu... = I agree with this statement

Carry Forward Selected Choices from "Please indicate if you agree or disagree with each of the following statements regarding your student population and your ability to integrate bioinformatics."

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Q36 You indicated that the following were barriers to your integration of bioinformatics in your teaching. For each selection below, please indicate the extent to which it presents a challenge.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Severe challenge (1) | Moderate challenge (2) | Minor challenge (3) |
| My student population lacks access to appropriate technical resources (internet access/software/hardware/IT support). (x8)  |  |  |  |
| My student population lacks prerequisite skills. (x9)  |  |  |  |
| My student population lacks interest in bioinformatics. (x10)  |  |  |  |
| Other (please specify): (x11)  |  |  |  |

End of Block: Barriers block

Start of Block: The following questions are about you and your educational background.

Q10 In your opinion, how important is it for undergraduates majoring in life sciences (or closely related disciplines) to take a semester course, or series of courses, that develop a working knowledge of:

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| --- | --- | --- | --- | --- | --- |
|  | Extremely important (1) | Very important (2) | Moderately important (3) | Slightly important (4) | Not at all important (5) |
| computer programming? (1)  |  |  |  |  |  |
| statistics? (2)  |  |  |  |  |  |
| data science? (3)  |  |  |  |  |  |

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Q12 Which of the following best describes your level of bioinformatics training? Select **ALL** that apply.

* no training/experience (1)
* self-taught (2)
* workshops or bootcamp (3)
* online course(s) (i.e., Coursera) (4)
* undergraduate course(s) (5)
* undergraduate certificate (6)
* undergraduate degree (7)
* post-graduate certificate (8)
* graduate course(s) (9)
* graduate degree (10)

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Q33 Which of the following represents your highest academic degree?

* Undergraduate bachelor degree or equivalent (e.g., BS, BSc, BA, etc) (1)
* Masters degree or equivalent (e.g., MS, MBA, MA, etc) (2)
* Professional doctoral degrees or equivalent (MD, DVM, etc) (5)
* Doctoral degree or equivalent (e.g;, PhD, EdD, etc) (3)
* Other (4) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Q14 In which year did you earn your highest academic degree?

* Before 1980 (1)
* 1980-1989 (2)
* 1990-1999 (3)
* 2000-2009 (4)
* 2010-2019 (5)
* 2020 or later (6)

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Q27 Please enter the complete name - *no abbreviations, please!* - of the institution from which you earned your **highest academic degree**. If a place is part of the official name (e.g., University of Nebraska at Omaha), please be sure to include it.

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Q25 Which of the following best describes the institution from which you earned your highest academic degree?

* Public (1)
* Private (2)
* For Profit (3)
* Not sure (4)

Q26 Which of the following best describes the institution from which you earned your highest academic degree?

* Historically Black College or University (HBCU) (1)
* Hispanic-Serving Institution (HSI) (2)
* Tribal College or University(TCU) (3)
* Alaska Native and Native Hawaiian Institution (ANNHI) (4)
* Asian American and Native American Pacific Islander-Serving Institution (AANAPISI) (5)
* Predominantly Black Institution (PBI) (6)
* Native American-Serving, Nontribal Institution (NASNI) (7)
* Predominantly White Institution (PWI) (8)
* non-U.S. International Institution (9)
* Not sure (10)
* Prefer not to answer (11)

End of Block: The following questions are about you and your educational background.

Start of Block: institutions

Display This Question:

If Which of the following represents your highest academic degree? != Undergraduate bachelor degree or equivalent (e.g., BS, BSc, BA, etc)

Q28 Please enter the complete name - *no abbreviations, please!* - of the institution from which you earned your **undergraduate degree** (e.g., BS, BSc, BA, etc). If a place is part of the official name (e.g., University of Nebraska at Omaha), please be sure to include it.

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Display This Question:

If Which of the following represents your highest academic degree? != Undergraduate bachelor degree or equivalent (e.g., BS, BSc, BA, etc)

Q13 Which of the following best describes the institution from which you earned your **undergraduate degree** (e.g., BS, BSc, BA, etc)?

* Public (1)
* Private (2)
* For Profit (3)
* Not sure (4)

Display This Question:

If Which of the following represents your highest academic degree? != Undergraduate bachelor degree or equivalent (e.g., BS, BSc, BA, etc)

Q15 Which of the following best describes the institution from which you earned your **undergraduate degree** (e.g., BS, BSc, BA, etc)?

* Historically Black College or University (HBCU) (1)
* Hispanic-Serving Institution (HSI) (2)
* Tribal College or University (TCU) (3)
* Alaska Native or Native Hawaiian Institution (ANNHI) (4)
* Asian American and Native American Pacific Islander-Serving Institutions(AANAPISI) (5)
* Predominantly Black Institutions(PBI) (6)
* Native American-Serving, Nontribal Institution (NASNI) (7)
* Predominantly White Institution (PWI) (8)
* Non-U.S. International Institution (9)
* Not sure (10)
* Prefer not to answer (11)

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End of Block: institutions

Start of Block: demographics

Q16 Which of the following best describes your current academic rank?

* Lecturer/Instructor/Professor, non-tenure track (1)
* Assistant Professor, tenure track (2)
* Associate Professor, tenure track (3)
* Full Professor, tenure track (4)
* Other (5) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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 What is your gender identity?

* Man (1)
* Woman (2)
* Non-binary (3)
* Transgender man (4)
* Transgender woman (5)
* Gender variant / Non-conforming (6)
* I would like to provide my own gender: (7) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* I prefer not to share (8)

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Q22 Do you consider yourself Hispanic/Latino?

* Yes, I consider myself Hispanic/Latino (1)
* No, I do not consider myself Hispanic/Latino (2)

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Q24 Which category(ies) best describes your race(s)? Select ALL that apply to you.

* American Indian or Alaska Native (1)
* Asian (2)
* Black or African American (3)
* Native Hawaiian or Pacific Islander (4)
* White (5)
* Other (please specify): (6) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

End of Block: demographics