**NSF Principal Investigator**

**Computational Needs Assessment**

*Survey Questions*

*Developed by Lindsay Barone, Jason Williams, and David Micklos*

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**With what type(s) of data do you currently work in your research? *Please select all that apply*.**

DNA/RNA/protein sequence

DNA/RNA/protein structure

Ecological

Images

Microscopic

Pathways/interactions/networks

Phenotype

Physiological/medical

Other

**Do you currently work with large data sets (Big Data)?**

Yes

No

*IF NO:*

**Do you think you will be working with large data sets sometime in the next three years?**

Yes

No

**In terms of computational resources, what do you feel you need to remain a competitive researcher?**

Free response

**How do you think your data analysis needs will change over the next three years?**

Free response

**What do you see as the biggest data challenge facing biologists in the future?**

Free response

**Consider each of the following data analysis needs and respond in each column accordingly.**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Is this currently important in your research? | Does your institution meet this need for researchers? | Do you think this will be important to your research in three years? |
| Updated analysis software | Yes/No | Yes/No/I don’t know | Yes/No/I don’t know |
| Multi-step analysis workflows or pipelines | Yes/No | Yes/No/I don’t know | Yes/No/I don’t know |
| High-performance or cluster computing | Yes/No | Yes/No/I don’t know | Yes/No/I don’t know |
| Cloud computing (remote, configurable, on-demand computers) | Yes/No | Yes/No/I don’t know | Yes/No/I don’t know |

**Consider each of the following data storage, discovery, and sharing needs and respond in each column accordingly.**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Is this currently important in your research? | Does your institution meet this need for researchers? | Do you think this will be important to your research in three years? |
| Sufficient data storage | Yes/No | Yes/No/I don’t know | Yes/No/I don’t know |
| Search for data and discover relevant data sets | Yes/No | Yes/No/I don’t know | Yes/No/I don’t know |
| Share data with colleagues | Yes/No | Yes/No/I don’t know | Yes/No/I don’t know |
| Publish data to the community and/or archives | Yes/No | Yes/No/I don’t know | Yes/No/I don’t know |

**Consider each of the following computational support and training needs and respond in each column accordingly.**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Is this currently important in your research? | Does your institution meet this need for researchers? | Do you think this will be important to your research in three years? |
| Support for bioinformatics and analysis | Yes/No | Yes/No/I don’t know | Yes/No/I don’t know |
| Training on basic computing (Linux) and scripting (Python, R) | Yes/No | Yes/No/I don’t know | Yes/No/I don’t know |
| Training on data management and metadata | Yes/No | Yes/No/I don’t know | Yes/No/I don’t know |
| Training on integration of multiple data types | Yes/No | Yes/No/I don’t know | Yes/No/I don’t know |
| Training on scaling analysis to cloud or high performance computing | Yes/No | Yes/No/I don’t know | Yes/No/I don’t know |

**In what academic discipline is your research? *Select all that apply*.**

Agriculture

Biochemistry

Bioengineering

Biogeography

Bioinformatics

Biomechanics

Biomedical research

Biophysics

Biotechnology

Botany

Cell biology

Cognitive biology

Conservation biology

Developmental biology

Ecology

Environmental biology

Epidemiology

Evolutionary biology

Genetics

Integrative biology

Marine biology

Medicine

Microbiology

Molecular biology

Neurobiology

Population biology

Paleontology

Pathology

Physiology

Phytopathology

Psychobiology

Structural biology

Zoology

Other

**What position(s) do you currently hold? *Select all that apply*.**

Researcher (PI)

Researcher (post-doc)

Industry

Faculty/educator

Student

Other

**How large is your research group?**

Small research project (one PI)

Small laboratory (fewer than five people)

Large research project (multiple PIs)

Large laboratory (greater than five people)

Individual researcher

Do not work in a research capacity

Other (please specify)

**What are your teaching responsibilities?**

One course per term

Two courses per term

Three courses per term

Four courses per term

I do not have any teaching responsibilities

Other (please specify)