## English Version

The following questionnaires are attachments to the research project "Experiences from the IV Python Workshop for Biological Data" and will subsequently be drafted in Google Forms online format.

1. **ATTACHMENTS: Data Collection Instruments (Questionnaires)**

**Attachment 1 - Registration Form - Python Workshop for Biological Data 2021**

"This is the registration form for the 'Python Workshop for Biological Data - 2021 edition.'

The list of selected participants for the event will be announced on XXXXXX, 2021.

Good luck!"

Completion questions:

1. Email Address (Please provide a valid and frequently used email address)
2. Full Name

DEMOGRAPHIC INFORMATION:

1. Gender (Male, Female, Other) \*If 'Other', please specify.
2. Gender Identity (Cisgender Woman, Cisgender Man, Transgender Woman, Transgender Man, Non-binary, Other, Prefer not to classify, Prefer not to answer)
3. Year of Birth (4 digits)
4. Ethnicity (Asian, White, Indigenous, Mixed Race, Black, Other, Prefer not to classify, Prefer not to answer) \*If 'Other', please specify.
5. State of birth in Brazil (options) or country if non-Brazilian (in others)
6. Current state of residence in Brazil (options) or country if not Brazil (in others)
7. Disabilities (None, Low vision or subnormal vision, Blindness, Deafness, Physical, Intellectual, Global developmental disorder, Other) \*If 'Other', please specify.

ACADEMIC AND PROFESSIONAL BACKGROUND

1. Institution
2. Degree
3. Course
4. Area of expertise (if applicable) \*Add options

*For the justification of participation, we consider the candidate's need for biological data analysis. It is important to note that candidates are not required to present the title, hypotheses, or abstracts of their research projects if they are confidential; however, we encourage using the "project summary and research" space to justify the need for data analysis in a similar context.*

1. Title of research project (if applicable and not confidential)
2. Hypotheses of research project (if applicable and not confidential)
3. Summary of research project (if applicable and not confidential)
4. Funding agency or company (if applicable) (Options: CNPq, CAPES, FAPESP, other)
5. Supervisor or advisor (if applicable)
6. Institutional affiliation of the supervisor or advisor (if applicable)
7. Link to the candidate's Lattes Curriculum

Objective question about Programming Experience. Options (0 = None; 1 = Some, 3 = Moderate, 4 = Extensive):

1. Some: Variable assignment, Use of simple functions, Arithmetic operations.
2. Moderate: Writing functions, Use of loop structures, File manipulation.
3. Extensive: Development of complete programs and applications.

Objective question about Python Experience. Options (0 = None; 1 = Some, 3 = Moderate, 4 = Extensive)

Open-ended questions (Option: text response)

1. Have you had previous experience with other programming languages? If yes, which languages? (Yes or No, \*if yes, please specify)
2. Have you had previous experience with "omics"? If yes, which ones? Describe your experience with problems, technologies, and analyses of this type.

Objective question about expectations regarding the course. Options: becoming a programmer, developing bioinformatics tools, running bioinformatics tools, data analysis.

Open-ended questions (Option: text response)

1. Justification for participation

Invitation to participate in a brief presentation during the event (Flash Talks)

*"We will reserve time during the event for brief oral presentations (15 minutes) of three selected works. This is an opportunity to showcase your work, achievements, and outstanding issues to be resolved, facilitating interactions with other professionals present."*

Options: I want to participate, I do not want to participate.

**Attachment 2 – Evaluation of the Python Workshop**

*"Send us your feedback about the course you have just completed, including comments on the structure, content, and instructors."*

Objective questions about the level of effort (Options: 1 = Poor, 2 = Moderate, 3 = Satisfactory, 4 = Very Good, 5 = Excellent).

1. Effort level: Your level of dedication to the course.

Objective questions about the level of learning (1 = None; 2 = Little, 3 = Moderate, 4 = Much).

1. Skill/knowledge level at the beginning of the course.
2. Skill/knowledge level at the end of the course.
3. Course contribution to skill/knowledge.

Objective questions about Instructor Skill and Engagement (Options: 0 - Strongly Disagree, 1 - Disagree, 2 - Neutral, 3 - Agree, 4 - Strongly Agree).

1. Instructors were effective.
2. Presentations were clear and organized.
3. Instructors stimulated student interest.
4. Instructors managed time well during classes.
5. Instructors were accessible and helpful.

Objective questions about course content (Options: 0 - Strongly Disagree, 1 - Disagree, 2 - Neutral, 3 - Agree, 4 - Strongly Agree).

1. Objectives were clear.
2. Course content was organized and well-planned.
3. Course workload was appropriate.
4. The course was organized to allow participation from all students.
5. Educational materials were well-prepared.
6. Tools used were suitable for the course.

Open-ended questions about the course (Option for long text response)

1. Which aspects of this course were most useful or valuable?
2. How/To what extent are the contents presented during the event applied in your research?
3. How would you improve this course?
4. Do you have any other comments, criticisms, or suggestions?
5. Is there anything else you would like to see included in the course?
6. What was your experience participating in the course remotely? Would you take another course in the same format?
7. (Optional) Do you have additional observations about the event? Would you like to write a personal account? Please use this space.

**Attachment 3 – Participants' Daily Feedback (Questionnaire administered at the end of each day of the course).**

*"The purpose of this form is to help us improve the course. We will ask you to inform us if anything was unclear so that we can plan a brief review for the next class. In addition, participation in the Workshop will be recorded based on the daily feedback forms."*

**General objective questions about the course (Options: 0 - Strongly Disagree, 1 - Disagree, 2 - Neutral, 3 - Agree, 4 - Strongly Agree)**

1. **(Objective)** Did today's lecture enhance your understanding of applying programming in biosciences?
2. **(Objective)** Was the content presented today effectively delivered by the Workshop member?
3. **(Objective)** Was today's content easily understandable for workshop participants (students)?

**General open-ended questions about the course (Open-ended responses)**

1. **(Open-ended)** Are there topics that should be reviewed? Which ones? (Please specify the topic, e.g., Seaborn library, Matplotlib figures...)
2. **(Open-ended)** What criticisms and suggestions from today could enhance the workshop in the future?
3. **(Open-ended)** How could the contents be applied to your research project?

**Specific questions about the daily course content**

**Day 1 (Python Introduction)**

1. **(Objective)** Did you understand the concept of variables, variable types, and their manipulation well?
2. **(Objective)** Did you understand the usage and use cases for conditional statements (if, elif, else) well?
3. **(Open-ended)** What part of the explanation was most challenging?

**Day 2 (Pandas and Matplotlib)**

1. **(Objective)** Will the presented matplotlib content be useful for your research?
2. **(Open-ended)** If your answer to the previous question was affirmative, which matplotlib library functions will be explored in your work?
3. **(Open-ended)** What other types of plots would you like to see presented?

**Day 3 (Seaborn and Matplotlib)**

1. **(Objective)** Did you understand the use of pandas library functions for manipulation and preparation of tabular biological data for practical analysis well?
2. **(Objective)** Did you understand the application of seaborn and matplotlib libraries for creating scientific graphs and visualizing biological data analysis well?
3. **(Open-ended)** Do you believe Python language can assist in analyzing real biological data and, consequently, in decision-making for crisis mitigation strategies (such as in the case of the COVID pandemic)?
4. **(Objective)** Can you transfer the concepts and adapt the codes you learned in the workshop so far to the context of your scientific research?
5. **(Open-ended)** If your answer to the above question was different from 4, briefly describe which concepts were unclear or not covered that limit your application of the knowledge gained from this day to the context of your scientific research.

**Day 4 (Geopandas)**

1. **(Objective)** Regarding the importance of biogeographical data analysis.
2. **(Objective)** Do you feel confident to start creating your own biodiversity records charts?
3. **(Open-ended)** What is the importance of Geopandas for distribution data analysis?