Supplemental Appendix 2. Survey Consent Form, Questions, and Logic

Introductory Information and Consent:
Welcome to the Open Soil Science Laboratory Manual Project Survey! This survey is designed to collect information about the views students who are currently enrolled in “AGRON 305 – Soils” at Kansas State University, or “SSC 201 – Soil Science Laboratory” at North Carolina State University who have utilized university-specific versions of the Open Soil Science Laboratory Manual. The purpose of this survey is to: 1) determine how the lab manuals were utilized by students in soil science laboratory courses; 2) summarize views of students in soil science laboratory courses regarding textbook costs, open textbooks, and textbook format; and 3) solicit student feedback that can be used to improve the Soil Science Laboratory Manual and related course content.

The results from this survey will be published as an open-access journal article in a peer-reviewed teaching journal along with a complete, digital copy of the Open Soil Science Laboratory Manual. This will facilitate the use of this laboratory manual by instructors and students from around the world, and in the process reduce the textbook-related costs of enrollment in soil science courses. This will also help improve the Open Soil Science Laboratory Manual for use by future students enrolled in the soils course at your university.

This project is research, and your participation in this survey is voluntary. You may withdraw your consent at any time and stop participating at any time without explanation, penalty, or loss of benefits or academic standing.

Approximate Time to Complete:
15 minutes

Extra Credit:
Students who participate in this survey and who are enrolled in “AGRON 305 – Soils” at Kansas State University, or “SSC 201 – Soil Science Laboratory” at North Carolina State University during the fall 2016 semester will be granted extra credit by their instructors, which will be applied towards their laboratory grade. Students who do not wish to participate in this survey, but would like to receive an equivalent amount of extra credit are encouraged to contact their instructor in regard to an alternative activity – a paper discussing the relevance of soil science the student’s major, and how the soil science lab manual and/or course could be modified to emphasize that relevance. Students are not required to participate in the survey or the alternative activity, and will not be punished for such choices. Students who do participate in the survey are allowed to skip questions that they feel uncomfortable answering. Names and emails will be collected as part of this survey, and are required in order to provide extra credit to any participant. Survey responses or alternative activities must be completed and submitted by the
end of finals week. Once extra credit has been applied and semester grades have been submitted for the fall 2016 semester, all names and emails will be removed from the data and responses will become anonymous.

Contact Information:
Survey intent and outcomes: Dr. Colby J. Moorberg (principle investigator, moorberg@ksu.edu, 785-532-7207) and Dr. David A. Crouse (co-investigator, crouse@ncsu.edu, 919-515-7302). Qualtrics functionality and content: K-State IT Helpdesk (helpdesk@k-state.edu, 785-532-7722). If you have questions about your rights or welfare as a participant, please contact Rick Scheidt (Chair, Committee on Research Involving Human Subjects, rscheidt@ksu.edu, 785-532-3224) or Cheryl Doerr (Associate Vice President for Research Compliance, cdoerr@ksu.edu, 785-532-3224). Based upon information provided to the Kansas State University Institutional Review Board, this activity was classified as exempt on November 30, 2016 under the criteria set forth in the Federal Policy for the Protection of Human Subjects, 45 CFR 46.101(b)(1).

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1. By selecting “I agree” below, you verify that you read and understand the information provided above, and willingly agree to participate in this study under the terms described, and acknowledge that you may print a copy of this consent form to retain for your own records, and that you are at least 18 years of age.

☐ I agree
☐ I do not agree

Skip to the end of survey if “I do not agree” is selected

Student Information for Extra Credit

Please enter the following information. (Required in order to receive extra credit)

2. First and last name:
3. University email address:
Demographics

4. Select your major.
- Ag Business
- Ag Communications
- Ag Economics
- Ag Education
- Agronomy
- Ag Technology & Management
- Animal Science
- Biological Systems Engineering
- Fisheries Wildlife & Conservation Biology
- Geology
- Horticulture
- Parks Management & Conservation
- Wildlife & Outdoor Enterprise Management
- Other

5. What year are you in school, currently?
- Freshman, year 1
- Sophomore, year 2
- Junior, year 3
- Senior, year(s) 4+

6. Choose the answer below that best represents your preferred learning style.
- I prefer to learn through hands-on activities
- I prefer to learn through listening to lectures
- I prefer to learn through watching videos or studying diagrams
- I prefer to learn through reading my textbook and/or lab manual

7. Choose the answer below that best represents your opinion on laboratories associated with a class (including chemistry lab, biology lab, soils lab, etc.).
- I greatly enjoy labs
- I somewhat enjoy labs
- I somewhat dislike labs
- I severely dislike labs
Textbook Costs & Perceived Impact

8. What do you think is a reasonable cost for a laboratory manual or course packet?
   - Less than $20
   - Between $20 and $40
   - Between $40 and $60
   - Between $60 and $80
   - Greater than $80

9. How much do you typically spend on textbooks each year for both the fall and spring semesters combined?
   ______ Total amount spent annually on textbooks:

10. Has textbook or lab manual costs ever impacted which or how many classes you took?
    - Yes, significantly
    - Yes, somewhat
    - No

11. Have you ever went without purchasing a textbook (i.e., did not buy a textbook) that was required for a course because you could not afford the book?
    - Yes
    - No

Display question if “Yes” is selected for “Have you ever went without purchasing a textbook (i.e., did not buy a textbook) that was required for a course because you could not afford the book?”

12. Have your grades ever suffered because you did not buy a required textbook?
    - Definitely yes
    - Probably yes
    - Probably not
    - Definitely not
13. Has your ability to study effectively ever been limited by not purchasing a required textbook?
   - Yes
   - Occasionally
   - No

14. Have you ever shared a textbook with another student in order cut down on the cost of the book?
   - Yes
   - No

15. Did sharing a textbook with a classmate limit your ability to effectively study for the course?
   - Yes
   - Occasionally
   - No

16. How often do you purchase used textbooks in order to reduce the cost of buying books?
   - I regularly buy used textbooks
   - I sometimes buy used textbooks
   - I rarely buy used textbooks
   - I never buy used textbooks

17. How are your textbook purchases usually funded? (Select all that apply)
   - My textbooks are purchased by a family member or friend
   - My textbooks are purchased using my own money
   - My textbooks are purchased using money from a student loan
   - My textbooks are purchased using my credit card
   - My textbooks are purchased using scholarship money
   - My textbooks are purchased using money from a source not listed above
Textbook Format Preferences

18. In general, what is your opinion of digital textbooks/eBooks?
   ○ I greatly prefer eBooks
   ○ I somewhat prefer eBooks
   ○ I somewhat dislike eBooks
   ○ I greatly dislike eBooks

19. What devices are readily available to you for accessing digital textbooks/eBooks? (Select all that apply)
   ○ Traditional laptop
   ○ Tablet
   ○ Hybrid 2-in-1 laptop/tablet
   ○ Desktop
   ○ eReader
   ○ Smart phone
   ○ Other

20. Have you ever used a digital textbook/eBook in any class (including Soils)?
   ○ Yes
   ○ No

Display question if “Yes” is selected for “Have you ever used a digital textbook/eBook in any class (including Soils)?”

21. What is your preferred device for accessing digital textbooks/eBooks?
   ○ Traditional laptop
   ○ Tablet
   ○ Hybrid 2-in-1 laptop/tablet
   ○ Desktop
   ○ eReader
   ○ Smart phone
   ○ Other
22. If a digital textbook/eBook was your only option for a course, what would be your preferred device for accessing the digital textbooks/eBooks?

- Traditional laptop
- Tablet
- Hybrid 2-in-1 laptop/tablet
- Desktop
- eReader
- Smart phone
- Other

Display this question if “Other” is selected for “What is your preferred device for accessing digital textbooks/eBooks?”

Or, if “Other” is selected for “If a digital textbook/eBook was your only option for a course, what would be your preferred device for accessing the digital textbooks/eBooks?”

23. If you selected "other" in regard to devices used for accessing digital textbooks/eBooks, please explain.

24. If a course textbook or lab manual was only available in digital format, but you had the ability to print it off so that you could have a hard copy, which of the following would you do?

- Access the textbook digitally through a laptop, tablet, phone, or other device
- Print off the textbook so that you could have a hard copy

25. Before taking the Soil Science Laboratory, have any of your college classes used an open or alternative textbook for which there was a free version available to you?

- Yes
- No
- I don't recall
26. Would you be more likely to enroll in a course that required a textbook/lab manual that had a free, digital option?

- Yes
- Maybe
- No

27. Rate your agreement with the following statement: "Developing open-access lab manuals, textbooks, or course content is an effective use of my instructor's time."

- Strongly agree
- Somewhat agree
- Somewhat disagree
- Strongly disagree

29. Rate your agreement with the following statement: "The development of open-access lab manuals, textbooks, or course content is an effective use of tuition, student fee, and/or tax dollars."

- Strongly agree
- Somewhat agree
- Somewhat disagree
- Strongly disagree

Preferences for Accessing the Soil Science Laboratory Manual

30. How did you access the Soils laboratory manual during the fall 2016 semester?†

- I purchased a hard copy from the university book store
- I used the free PDF provided by the instructor

†Students did not have an option of purchasing a hard copy from the university book store during the spring 2017 semester, so this question was omitted from the spring 2017 survey.
31. Because you used the free PDF version of the lab manual, please select the primary way you accessed the manual during the semester.

- I printed off the PDF so I could have a hard copy
- I accessed the PDF electronically

†Due to students not having an option of purchasing a hard copy from the university book store during the spring 2017 semester, the display logic for this question was removed, and the question was rephrased to say: “Please select the primary way you accessed the manual during the semester.”

32. What type of device did you use to access the PDF electronically during lab?

- Traditional laptop
- Tablet
- Hybrid 2-in-1 laptop/tablet
- eReader
- Smartphone
- Other

Display question if “Other” is selected for “What type of device did you use to access the PDF electronically during lab?”

33. If "other", please elaborate.

Display question if “I accessed the PDF electronically” is selected for “Because you used the free PDF version of the lab manual, please select the primary way you accessed the manual during the semester.”

34. How did you record answers, data, etc. while completing lab activities?

- Wrote down answers, data, etc. on paper while viewing the lab activity on my device
- Recorded answers, data, etc. on my device
35. How did you record answers, data, etc. on your device while using the lab manual PDF?
- I used a single program to both view the PDF and to record my answers, data, etc.
- I opened the PDF in a PDF viewer, and recorded answers, data, etc. in a different program.
- I converted the PDF to another file format (such as a Word document) and notated that file.

36. Please name the program(s) you used to record your answers, data, etc.

37. How did you print the PDF version of the lab manual?
- Using my own printer
- Using a printer owned by the university
- Other

38. If you selected "other" for how you printed the PDF version of the lab manual, please explain.

39. Approximately how much did it cost you to print the lab manual?
- $0
- Less than $3
- Between $3 and $6
- Between $6 and $10
- Greater than $10
Display question if “I printed off the PDF so I could have a hard copy” is selected for “Because you used the free PDF version of the lab manual, please select the primary way you accessed the manual during the semester.”

40. Did you bind the lab manual once it was printed?

- I put it in a three-ring binder
- I had it spiral bound
- I bound it using another method
- I did not bind the lab manual

Feedback on Soil Science Laboratory Manual and Related Course Content

41. Select your three favorite lab activities from the AGRON 305 - Soils course

- Chemistry & Math Review
- Formation of Soil
- Classification & Mapping of Soil
- Physical Properties of Texture & Structure
- Soil Density
- Soil Pit Field Trips
- Soil & Water Relationships
- Composting Field Trip
- Soil Respiration and Carbon Cycling
- Soil Colloids
- Soil Acidity & Liming
- Nutrient Management & Tour of the K-State Soil Testing Lab
42. Select your three least favorite lab activities from the AGRON 305 - Soils course

- Chemistry & Math Review
- Formation of Soil
- Classification & Mapping of Soil
- Physical Properties of Texture & Structure
- Soil Density
- Soil Pit Field Trips
- Soil & Water Relationships
- Composting Field Trip
- Soil Respiration and Carbon Cycling
- Soil Colloids
- Soil Acidity & Liming
- Nutrient Management & Tour of the K-State Soil Testing Lab

43. Select your favorite type of lab assignment:

- Problem sets
- Lab summaries & reports
- Online quizzes

44. Select your least favorite type of lab assignment:

- Problem sets
- Lab summaries & reports
- Online quizzes

45. How often did you complete the pre-lab assignments prior to attending lab?

- Always
- Sometimes
- Rarely
- Never
46. How often did you use the lab manual when studying for an exam in lecture?
- Always
- Sometimes
- Rarely
- Never

47. How often did you use lab assignments when studying for an exam in lecture?
- Always
- Sometimes
- Rarely
- Never

48. Rate your agreement with the following statement: "Overall the lab activities greatly increased how much I learned in Soils."
- Strongly agree
- Somewhat agree
- Somewhat disagree
- Strongly disagree

49. Rate your agreement with the following statement: "Overall the lab activities complimented the lectures well."
- Strongly agree
- Somewhat agree
- Somewhat disagree
- Strongly disagree

50. If you have any suggestions for how the Soils Laboratory Manual can be improved, please provide suggestions below.