University of Vienna Research Data Management for the Life Sciences Course for PhD Students
Guide to Activities and Supporting Materials

Introduction

If you've found your way here, you're probably interested in using the University of Vienna Research Data Management for the Life Sciences Course. How nice! In addition to the online course written in LiaScript and the presentation slides, we created a few more materials. First, if you want to host an in-person session of the course, you can find a potential schedule under the file name **LifeSciences_Timeline**. This timeline is set-up for two sessions that are three hours each. In the far-right column, you'll find a list of the materials you need for the in-class activities. This guide will explain the activities and the materials we created.

For the course, we give students two weeks to complete the pre-learning course assessment (assessment materials are at the end of this guide) and the online content before coming to the in-person sessions. During the in-person sessions, we expect that the students will have complete the online modules and that they will have retained the most basic information. We complete quick reviews/ knowledge checks during the in-person sessions, but do not belabor the content review. Our focus is on activities, discussion, and questions.

Group Venn Diagram

The group Venn Diagram (with four interlocking circles) is the ice-breaker activity for the course. Break the students into groups of 3-4 people. We use cards with different shapes on them (all the stars work together, for example) and tend to use the same groups throughout the workshop. Once they are in their groups, you can handout a copy of the worksheet. For copyright reasons, we are unable to share our worksheet with you, but it should be easy to create.

To fill-out the worksheet, students should use "professional" facts about themselves whenever possible. It helps the students learn about each other as researchers and helps the trainers learn about the students' interests and background. If they cannot think of shared professional facts, they can use personal details. They often struggle to find a fact they all share, but this helps facilitate discussion. Once all groups are finished, have then share their findings.

Research Data Life Cycle Cards
To complete the research data life cycle cards, hand-out a set of cards/papers with the steps of the research data life cycle written on them to each group of students. Again, for copyright reasons, we cannot share our cards, but the cards should be easy to make, and we find humor and colorful designs really help to keep people engaged. Also give the students something they can use to hang the cards on the wall. We use sticky-tac that can be moved and reused. We also laminated our cards so that students can write on them with dry erase markers, and we can reuse them.

Ask each group to arrange the cards on the wall in an order and shape that makes the most sense to them. We like to include a card where they can add a step/steps to the life cycle that they think are missing. You might be surprised at the diversity of student responses. Our favorite added step was "Complain a Lot". We used it as an opportunity to discuss the importance of asking for help when we need it.

RDM/FAIR/OS Discussion Questions
Break students back into their groups. Each group should also receive around three **FAIR/OS_DiscussionQuestions**. We try to ensure that no two groups have the same three questions, but that all used questions are given to at least two groups. This helps ensure that differences in opinion between the groups can be discussed, but that no two groups are constantly debating each other.

Student DMP Template
Our **DMP_Template** can be used by students digitally or you can print versions of the form for them to fill-out by-hand. Especially during the first day of the workshop, we find keeping laptops out of circulation can help facilitate discussion and keeps everyone more focused.

Example Projects for Data Organization
Give each group one example project description from the **ExampleProjects_DataOrganization** set. You can also draft new examples that are more related to the projects your students work-on, but many times confronting them with projects they are not familiar with helps this activity. If they know less about the details of the analyses in question, they think less about small details and more about broad patterns of organization and documentation. You can assign each group to a chalkboard or whiteboard space if you have those resources, or you can give each group a large sheet of paper and markers to sketch-out their plan. When they are done, we hang their creation on the board, and they present the project example and their plan to the group. We provide feedback and answer questions.

Data Security and Back-Up Cards
Once again, the students get into their groups and each group receives a set of **DataSecurityBackUp_Cards**. To complete this activity, the students are creating a table. The column headers are "Bad, Fair, Good, Great". To help limit confusion, we also mark the cards that belong in the same row with the same shape or color (you will need to add these to the template). Then students decide which practices belong in each column. When we created this activity, we were concerned it would be too simple and the students wouldn't find it engaging. It actually seems to generate good discussion within the groups. We quickly circulate around the room and check their responses and answer questions.

readme Template
We use two versions of the readme template. One is a worksheet that can be printed (**readme_WriteOn**) and used in the classroom. This worksheet is heavily derived from the readme template created by the Cornell University Research Data Management Service Group, and they should be given credit for template's structure and content. You can find the template meant for digital use here.

Research License Scenarios

Give each group 1-3 of the **ResearchLicense_Scenarios**. If each group is given more than one scenario, make sure they include a variety of concepts. Students should decide what license is best suited to each scenario and why. Each group can present their scenarios and solutions to the class when they are finished. They usually have many questions (and frustrations) surrounding licensing.

Pre- and Post-Course Assessment

We wanted to establish 1) what our students knew about RDM before they began the online portion of the course and 2) if their knowledge and confidence had increased after the in-person sessions. We include both of our assessments in the materials for the course (**PreCourseAssessment** and **PostCourseAssessment**). You can adapt our survey or write your own, but highly recommend doing this. The results are fascinating, they help guide course development, and they provide a tangible metric you can use to show that students do learn things during the workshop.

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