

My Thesis and Beyond: Developing an interdisciplinary research idea (2 ECTS credits)

Who is this course for? Are you working on your doctoral thesis and curious about new directions it could take in the future? Would you like to gain experience working with others across disciplines to develop novel and impactful research ideas? If you answer yes to either of these questions, we hope you will register for this exciting new course.

What does it involve and how will you benefit? Highly-cited research papers tend to build on existing disciplines **and** infuse novel elements from other disciplines (Uzzi et al., *Science* 342, 468-472 (2013)). How do they do this? In this 4-month (15 hours/month) course, **you will learn and practice a structured process for developing an interdisciplinary research project idea**. You can apply this process throughout your career!

You will first identify a doctoral student partner with whom you have a common research concept, theme, principle or question (CTPQ). You will then directly experience the methods, technologies and tools of your partner's group, which will be different from your own. Based on your experiences, you will identify how these methods, technologies and tools could be used to address unanswered questions in your home discipline. Together, you and your partner will decide on one question to develop into a formal research project idea. This idea may take the form of a pilot experiment that you propose or perform during the course. At the end of the course, you and your partner will present your idea to the class and your research supervisors. To collect credits, your team will submit a final copy of your presentation signed by supervisors to the ZNZ office.

When is the course? The course will consist of 8 sessions (in-person or online, TBA in January 2021) as well as out-of-class exercises. The total time commitment will be 60 hours over 4 months (15 hours/month). The 8 sessions are tentatively scheduled as follows. If needed, the times can be adjusted based on students' needs. Please email the course instructor Elizabeth Amadei (eamadei@ethz.ch) if you are interested in the course, but one or more of these times does not work for you.

- 16 February 2021 (Tuesday), 10am - 12pm (Session 1)
- 23 February 2021 (Tuesday), 10am - 12pm (Session 2)
- 2 March 2021 (Tuesday), 10am - 12pm (Session 3)
- 13 April 2021 (Tuesday), 10am - 12pm (Session 4)
- 4 May 2021 (Tuesday), 10am - 12pm (Session 5)
- 15 June 2021 (Tuesday), 1-4 pm (Session 6, presentations part 1)
- 16 June 2021 (Wednesday), 1-4 pm (Session 7, presentations part 2)
- 17 June 2021 (Thursday), 1-4 pm (Session 8, presentations part 3)

How to register? To register, you must first identify a ZNZ doctoral student who is working on a distinct project to your own in a different research group, but with whom you have identified a common CTPQ. For example, if you study the biological mechanisms of reinforcement learning, and your colleague applies reinforcement learning algorithms to train artificial neural networks, this course will guide you and your colleague to develop an interdisciplinary project idea based on reinforcement learning.

There are 2 ways to find a partner and register together for the course:

1. **Recommended.** Attend our informational Apéro on the 15 January 2021, 12-1:30pm (online event). Here, the course instructor Elizabeth Amadei will demonstrate how to find

a common CTPQ with a researcher from a different discipline. You will then practice this with other participants, identifying connections that you could pursue together in the course. Immediately after the event, you will receive a course registration form by email. **Sign up for the Apéro here by Wednesday, 6 January 2021:** <https://forms.gle/653y5GL8jYaUpXAQ8>. All participants will receive a special treat in the mail to enjoy during the event!

2. If you have already identified a CTPQ with a ZNZ doctoral student and want to register together for the course, please email Elizabeth Amadei (eamadei@ethz.ch) by 15 January 2021 to schedule a short video conversation. You will then receive a registration form by email.

Registration forms (one/student pair) must be submitted by 1 February 2021 to the ZNZ office to enroll in the course.

COVID considerations. Due to the current situation, the informational Apéro and potentially the 8 class sessions will be held online. Out-of-class exercises, in which students are learning about the methods, technologies and tools of their partners' research group and developing project ideas may involve an in-person component. The level of in-person interactions will be decided on a team by team basis, with all precautions taken to minimize risk.