My Thesis and Beyond: Developing an interdisciplinary research idea (3 ECTS credits)

Who is this course for? Are you working on your doctoral project (at least 1 year in) 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 these questions, we hope you will register for this exciting 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 (~22.5 hours/month, 90 hours total) 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 will take the form of a PowerPoint-style final presentation that proposes a research question, approach and pilot experiment. To collect credits, you must achieve a passing grade (4+) on your team's final presentation (graded by supervisors and instructor) and a journal documenting your experiences learning about your partner's research group (graded by instructor).

When is the course? The course will consist of 7 online (Zoom) sessions as well as out-of-class exercises. The sessions are scheduled as:

Session	Date	Topic
1	22.2.2022 (Tues), 10am-12pm	Course introduction
2	1.3.2022 (Tues), 10am-12pm	Preparing your hosting plan
3	8.3.2022 (Tues), 10am-12pm	Intro. to journaling
4	26.4.2022 (Tues), 10am-12pm	Building your team's project idea
5	3.5.2022 (Tues), 10am-12pm	Evaluating feasibility, novelty, significance
6	31.5.2022 (Tues), 10am-12pm	Ideating a pilot experiment
7 (1 of 3 dates)	29.6.2022 (Wed), 1-4pm	Final presentations, part 1
7	30.6.2022 (Thurs), 1-4pm	Final presentations, part 2
7	1.7.2022 (Fri), 1-4pm	Final 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 Tuesday, 18 January 2022 from 5-7pm (Zoom 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 to find a course partner. Immediately after the event,

you will receive a course registration form by email. **Sign up for the Apéro here by Saturday, 8 January 2022: https://forms.gle/Cqa88Qk6mfwwo7JM7.** 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 18 January 2022 to schedule a short conversation. You will then receive a registration form by email.

Registration forms (one/student pair; completed and signed) must be submitted by 15 February 2022 to Elizabeth Amadei (eamadei@ethz.ch) to enroll in the course.

COVID considerations. Due to the current situation, the Apéro and 7 course 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.