



ONLINE Ljubljana Doctoral Summer School 2022

Creativity in Research (ECTS: 4)

11 – 15 July

9.00 – 13.00 (CEST, Ljubljana)

Course leader:

[Svetina Nabergoj Anja](#), Stanford University, Hasso Plattner Institute of Design, United States

Aims of the course:

Many PhD students have a mental schema of what research is like based on how science is taught. And this is schema is: A is the question, B is the answer and research is a direct path from A to B. When the experiment doesn't work or a student gets stuck on coming up with innovative research questions or procrastinate on a paper, most students get stressed and even depressed. We know that being stuck in research is inherent to our work because in order to discover something new we need to cross the boundary between the known and unknown. In this course we will teach you a more realistic schema, where getting stuck is normal. And we will teach you how to get unstuck.

We know that when feeling fear and despair our mind narrows down to safe and conservative ways of thinking. And you cannot reach your full potential. In order to discover something really new, you need other emotions: comfort mixed with excitement, you need playfulness and hope. But you also need abilities and mind-sets that help you get unstuck.

In this course we will explore how we can better manage ourselves, how to design for more deep work, how to manage and increase our energy and motivation. You will work alone and in pairs to help each other design small experiments on how to organize your workdays and what strategies you can use when you feel stuck.

We will also explore how early and low-resolution prototyping can help us test our research ideas early, seek out feedback on unfinished work and progress our projects faster. PhD students often suffer from inner critic, fear of appearing unoriginal. So they end up spending way too much time on making things perfect before showing it to their advisor or anyone else. We will teach you how to see your work as a series of mini experiments with rough prototypes in order to test your ideas and assumptions early. We will work on quieting down your inner critic, unleashing your creativity and progressing a projects you are currently stuck on.

This is a fast paced experiential workshop, where you will work individually and in pairs on a real challenge you are facing.

To learn more our methodology and work as well as watch the demo video from our workshops, visit our website <https://www.creativityinresearch.org/>



Course syllabus:

In this course we will cover 5 different modules (one each day):

1) **Working from... Home or Office: How to Design Your Work Space and Energy Intentionally?**

Working on a long project without a clear trajectory, which is often the case in science requires exceptional motivation and discipline. It requires to know yourself, your energy curve, times when we can produce our best work and also find ways to gain new energy and motivation to move forward. We have a series of exercises that teach scientists about how to structure their days, when to plan deep work vs mundane tasks, how to prioritize items on their to-do lists as well as how to avoid energy sucking activities and collaborations and how to gain new energy for work.

2) **Using Visual Collaboration Tools for Researchers: How to Become a Mural Ninja?**

Collaboration requires much more than just dividing and conquering. Visual collaboration tools like Mural can be a great way to share perspectives in a visual way, to generate new ideas with colleagues and create prototypes for new research projects, book outlines and presentation structure. In this module you will acquire basic skills to navigate digital whiteboards and use them on your own or with your team.

3) **(Remote) Storytelling for Researchers: How to Make Your Research as Exciting as Netflix?**

Scientists are used to present their work to their peers and scientific community. But they often lack skills to present to other audiences, users of their applied findings, founders and grant agencies. We teach them the art of storytelling by first understanding their audience, what they care about and how to present scientific findings in a compelling and understandable way. We will also address the challenges and opportunities of remote presentations to help you impress any Zoom audience.

4) **Prototyping: How to Design for Einstein Moments in Your Research?**

The biggest enemy of scientists is their inner critic. It protects us from being seen as stupid or unoriginal. But it also prevents us from moving our projects forward so we often get stuck or polish our projects for too long before showing them to anyone. We teach early development through prototyping and visualizing ideas from research project proposals, journal papers, conference presentations or research grants. We show the value of seeking out early feedback and iteration instead of doing things on our own

5) **Getting unstuck**

In science we get stuck. A lot. It is inherent to our craft, because we are constantly pushing the boundary between known and unknown. But when scientists get stuck they don't even have the words to describe what they are



experiencing, seeing and feeling. In this module we will cultivate mindfulness to fully embrace the feeling of being stuck and then apply design tools to help you get going and making progress on your research.

In each module students will go through a series of activities and then design personal experiments to apply the exercises to their own research work. For example: In module one you will learn your chrono-type and draw your own energy curve and design experiments to be more productive, reduce procrastination, increase your energy and prolong deep work periods. In module two you will learn how to use Mural to better organize your ideas as well as collaborate synchronously and asynchronously with your research collaborators. In module three we will explore how to design and prepare for remote presentations in conferences and research meetings, using inspiration from Pixar and Netflix. In module four you will learn how to test some of your early ideas and seek feedback from advisor or collaborators. In the last module we will explore situations in which you get stuck and help you design experiments to get you moving and progressing on your project.



List of readings:

Ulibarri, N., Cravens, A., Svetina Nabergoj, A., Kernbach, S., & Royalty, A. (2019). *Creativity in Research: Cultivate Clarity, Be Innovative, and Make Progress in your Research Journey*. Cambridge: Cambridge University Press. doi:10.1017/9781108594639

Teaching methods and credit:

The course is based on experiential learning methodology from Stanford University. The sessions will be a mix of short lectures combined with individual and team exercises. Our goal is for students to be able to immediately apply newly acquired skills to their research projects.

Students need to attend at least 4/5 sessions and complete a reflection paper at the end of the course in order to obtain credit.

**Course leader's biographical note:**

Anja Svetina Nabergoj (PhD) is Associate Professor at the University of Ljubljana and Lecturer at Hasso Plattner Institute of Design at Stanford University. For the last 10 years she has been developing pedagogy for teaching innovation process and nurturing creative mindsets to management in leading global companies as well as scientists in labs across Stanford campus.

*With her team she developed the curriculum for applying design thinking to scientific and scholarly research and has been teaching programs for graduate students and faculty members all around the world. With her team she developed a pedagogy to nurture creative potential in young scholars and empower them to combine scientific process with design principles and creative practice to produce original research in their field. They have published a book *Creativity in Research: Cultivate Clarity, Be Innovative, and Make Progress in your Research Journey* (Cambridge University Press, 2019) <https://www.creativityinresearch.org>*

Anja is on the Advisory Board of the Stanford Catalyst for Collaborative Solutions, which is a new initiative with a bold mission to create an open space to explore uncommon interdisciplinary solutions to the world's most pressing challenges.