



Utrecht  
University



UMC Utrecht

Graduate School  
of Life Sciences

Connecting Science and  
Society within Life Sciences  
Education

*Dr. Gisela van der Velden, dr. Harold van Rijen, dr. Gönül  
Dilaver*



# Graduate School of Life Sciences

Unique partnership of 3 faculties:

- Faculty of Medicine
  - Incorporated in UMC Utrecht
- Faculty of Veterinary Medicine
- Faculty of Science
  - Dept. Pharmaceutical Sciences
  - Dept. Chemistry
  - Dept. Biology

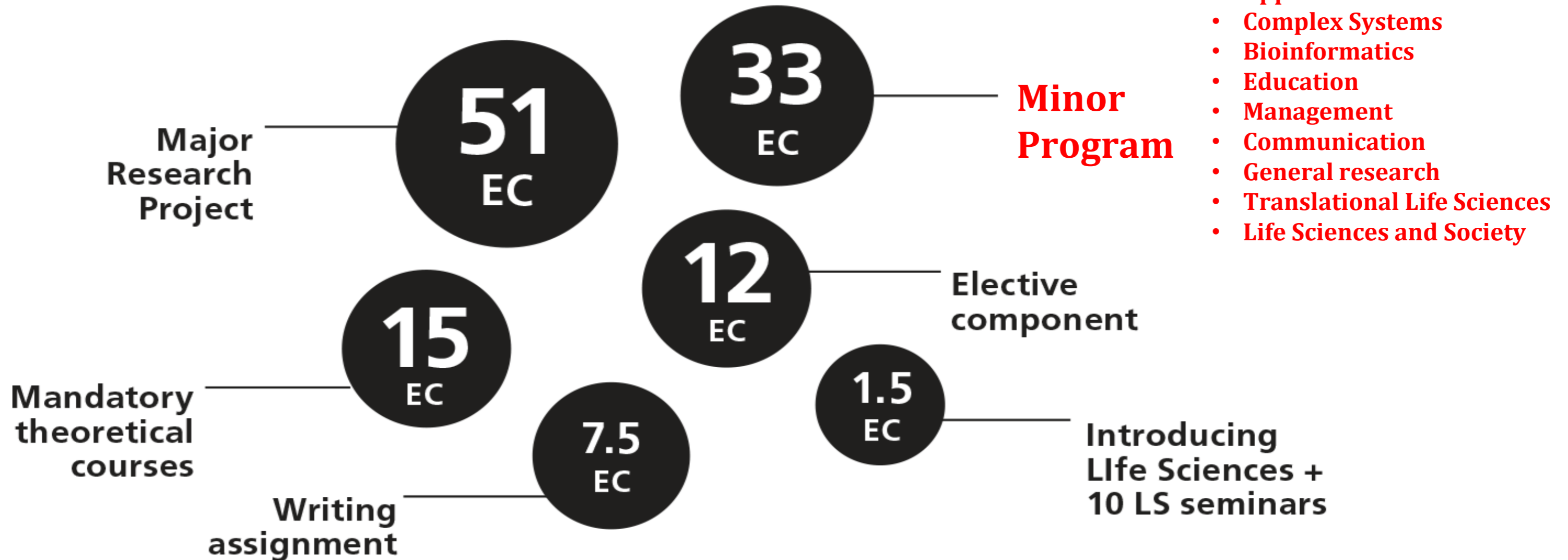


# 16 different master's programs

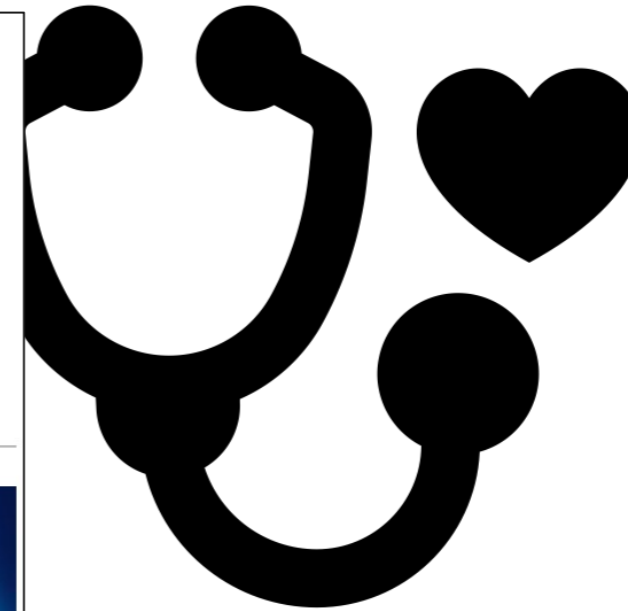
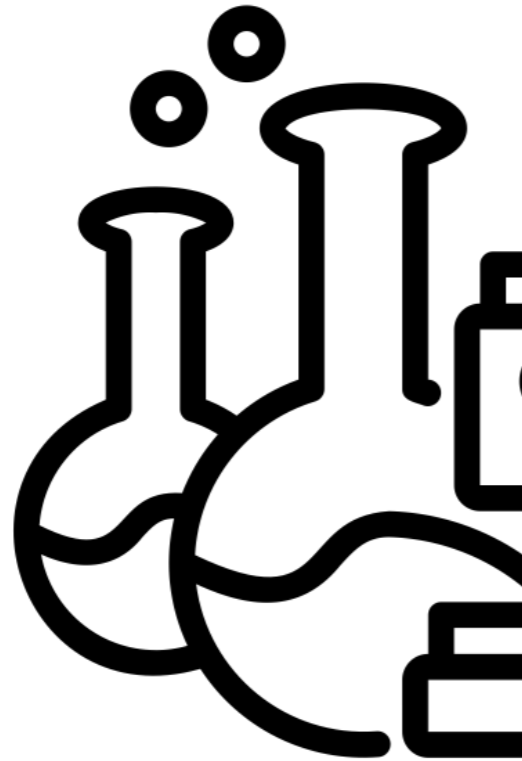
- Biofabrication
- Bioinformatics and Biocomplexity
- Bio Inspired Innovation
- Cardiovascular Health and Disease
- Cancer, Stem Cells and Developmental Biology
- Drug Innovation
- Environmental Biology
- Epidemiology
- Epidemiology Postgraduate
- Health and Environment
- Infection and Immunity
- Medical Imaging
- Molecular and Cellular Life Sciences
- Neuroscience and Cognition
- Regenerative Medicine and Technology
- Science and Business Management

# Master's programs Graduate School of Life Sciences

## 2-year programmes (120 EC)



# Aim of Life Sciences



## Inequalities in heart attack care 'costing women's lives'

By Dominic Hughes  
Health correspondent, BBC News

30 September 2019

**BBC**



GETTY IMAGES

There is a gender gap in the treatment of heart attacks, the report says

Women who suffer heart attacks are dying needlessly because they fail to recognise their symptoms and receive poorer care than men, says a British Heart Foundation report.



Utrecht University



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# Why a Life Sciences and Society program?

We need to connect to society's needs, include their perspective for our research to be accurate, representative, and have more impact.



GETTY IMAGES  
There is a gender gap in the treatment of heart attacks, the report says  
Women who suffer heart attacks are dying needlessly because they fail to recognise their symptoms and receive poorer care than men, says a British Heart Foundation report.

**Interview with Professor Mike Rogerson**  
Glaciers are melting, tropical storms are changing and some pacific islands are already under water... but to some the idea of man-made climate change is just a worldwide conspiracy to claim your tax dollars.

# The teacher team



**Dr. Gisela van der Velden**  
Assistant professor  
Educational Innovation



**Dr. Christine Fox**  
Assistant professor  
Biomedical Sciences



**Eveline Kallenberg, MSc**  
Junior teacher and educational  
developer Biomedical Sciences



**Prof. dr. Joel Anderson**  
Professor Philosophy



**Dr. Yara Al Salman**  
Assistant professor  
Ethics and Political Philosophy



**Kirsten Boersma-van  
Nierop**  
Policy adviser Biomedical  
Sciences and  
Student Coach



**Dr. Maarke Roelofs**  
Policy adviser and teacher  
Biomedical Sciences



**Rutger Jan Scholtens**  
Coach/trainer Career  
Services



**Prof. dr. Federica Russo**  
Professor Philosophy and  
Ethics of Techno-Science



**Dr. Jaap Bos**  
Associate professor Ethics



**Fleur Boelen, MSc**  
Junior teacher Biomedical  
Sciences



**Dr. Marc van Mil**  
Associate professor  
Biomedical Education



**Dr. George Downward**  
Assistant professor  
One Health Epidemiology



**Dr. Kerstin Klipstein-Grobusch**  
Associate professor Epidemiology

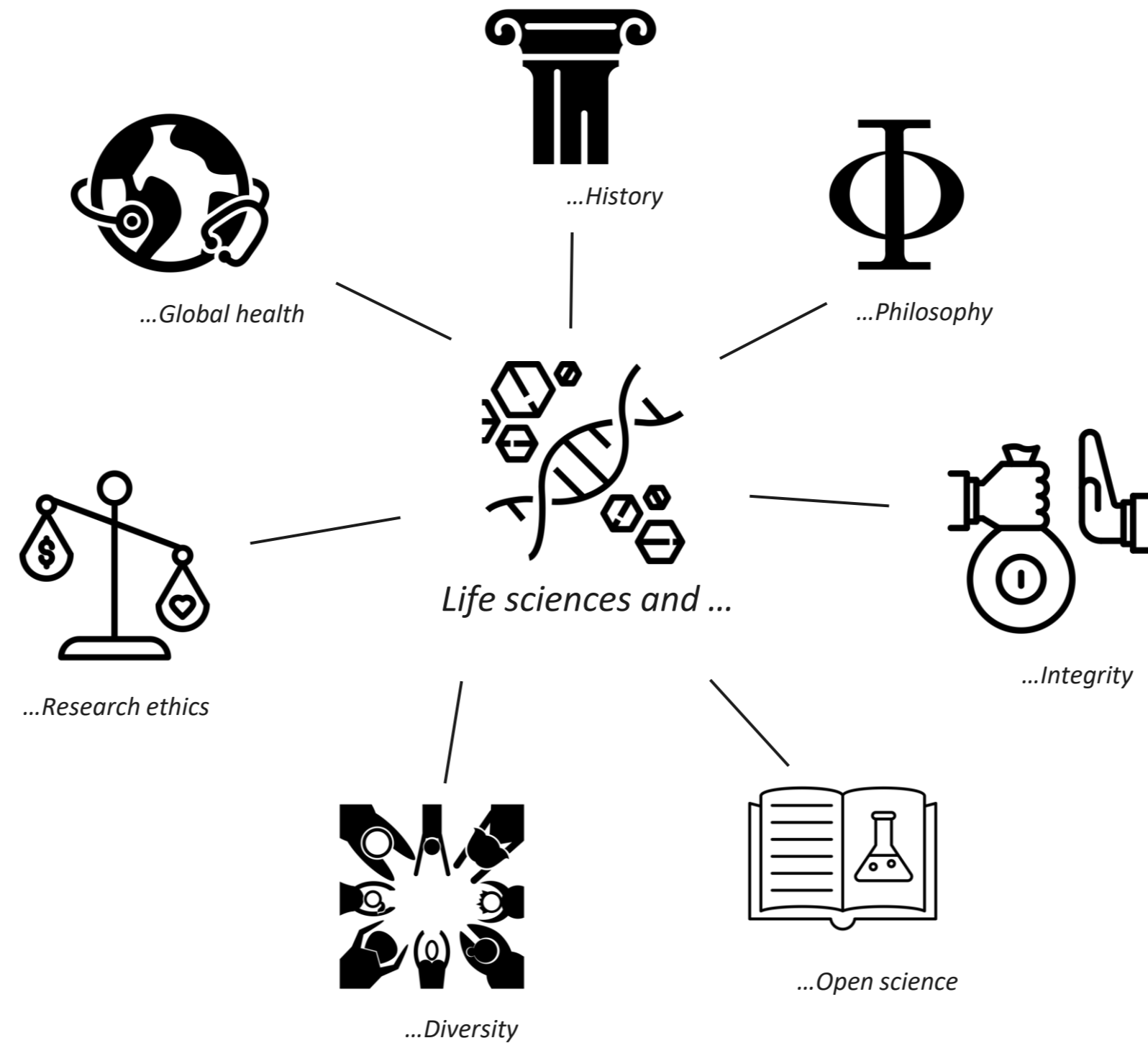


**Dr. Uwe Peters**  
Assistant professor Philosophy



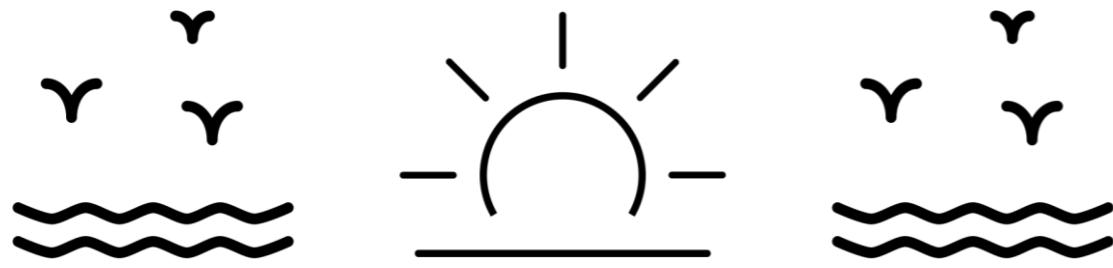


# Topics addressed in the program

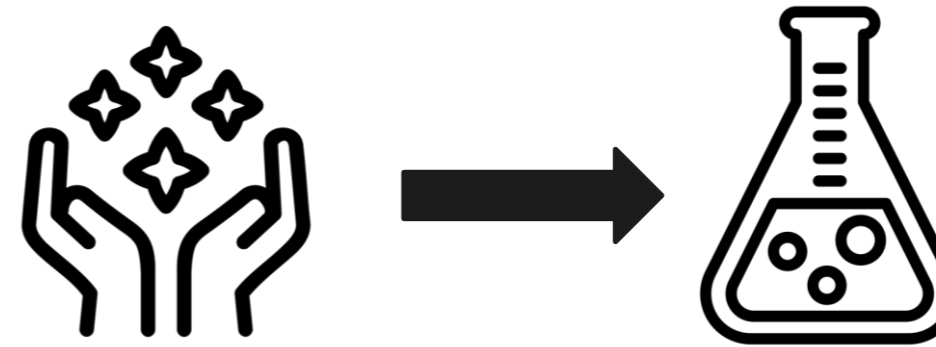




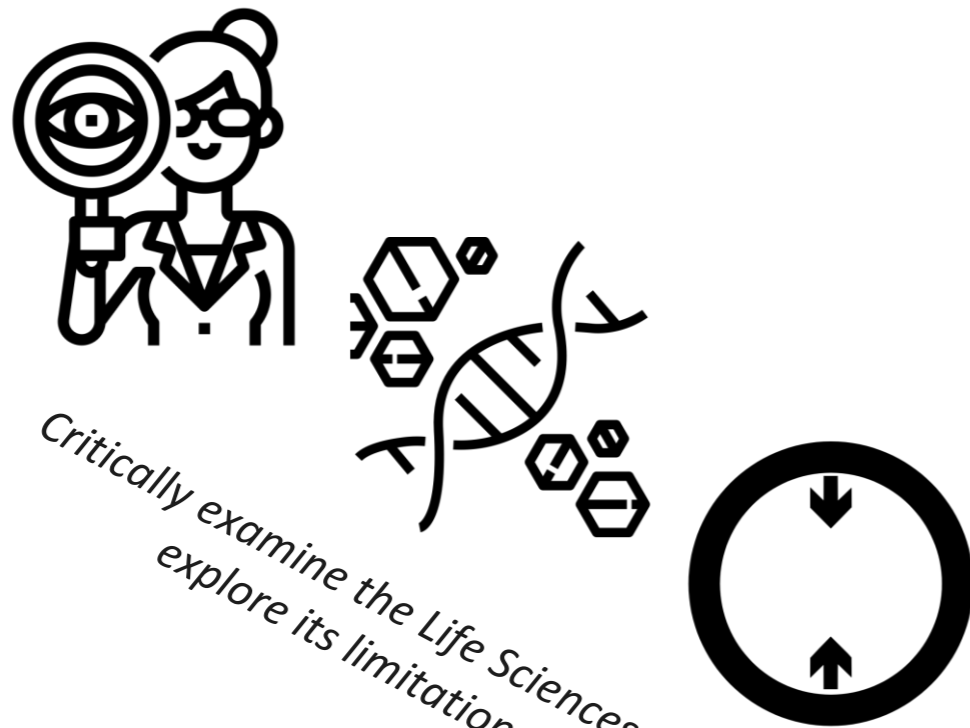
# What students learn



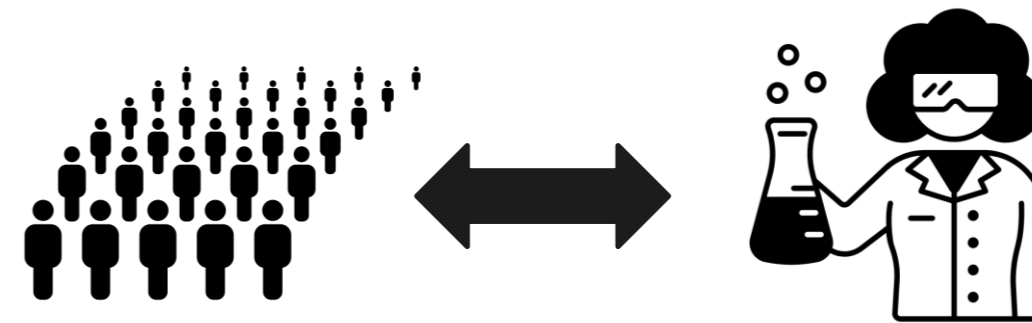
*Broaden their horizon.*



*How our societal values affect our research.*

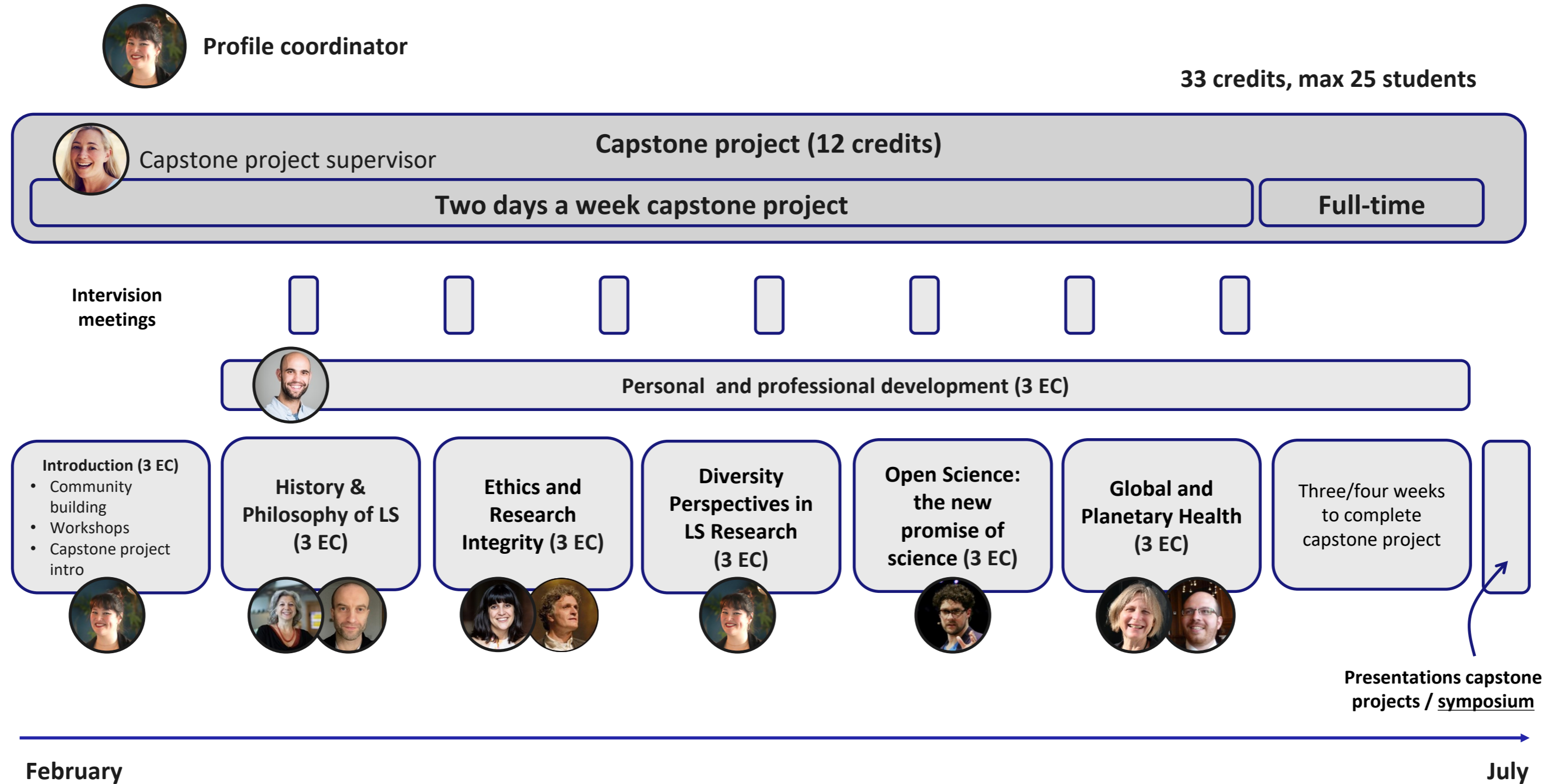


*Critically examine the Life Sciences and explore its limitations.*



*Life Sciences research and society are interconnected and mutually influenced by each other.*

# Overview of the program





# Capstone project



- Research project from external stakeholder
- Societal problem
- Deliverable > Advisory Report
- Presentation during symposium



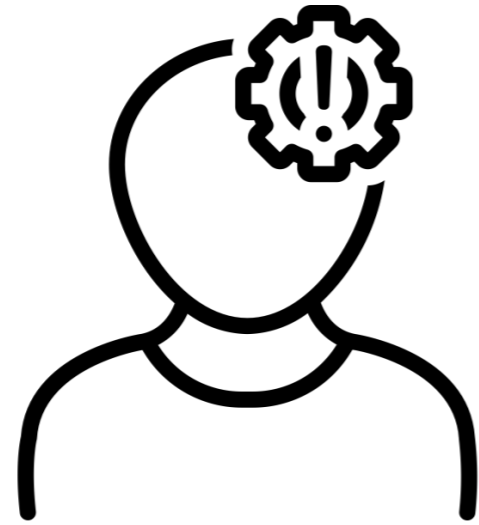
Transgender Intimacy and  
Sexuality  
Trangenderzorg Utrecht

Pharmacogenetics  
passport at UMC  
Utrecht  
Department of Genetics and  
Hospital Pharmacy

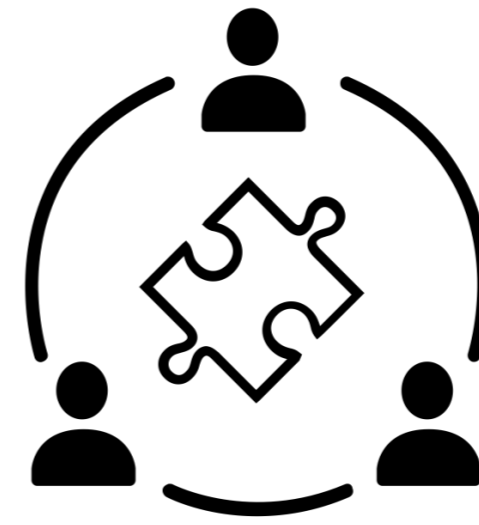
Women and pesticides in  
floriculture  
Pathways to Sustainability - Women, Water,  
Health project

Health disparities and its  
interrelation with ethnic and  
racial backgrounds  
Pharos Expertise Centre for Health Disparities

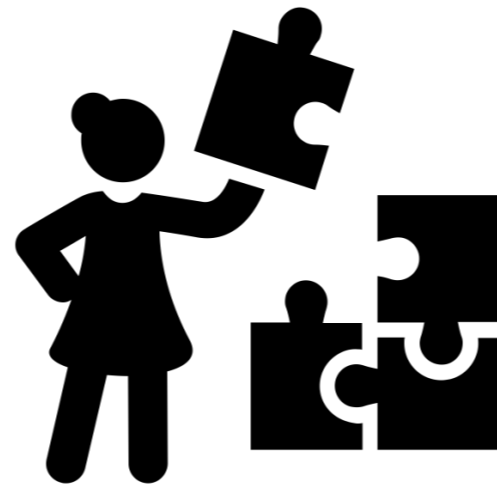
# Capstone project



*Societal problem from external stakeholder  
RIVM, NWO, Sanquin, etc.*



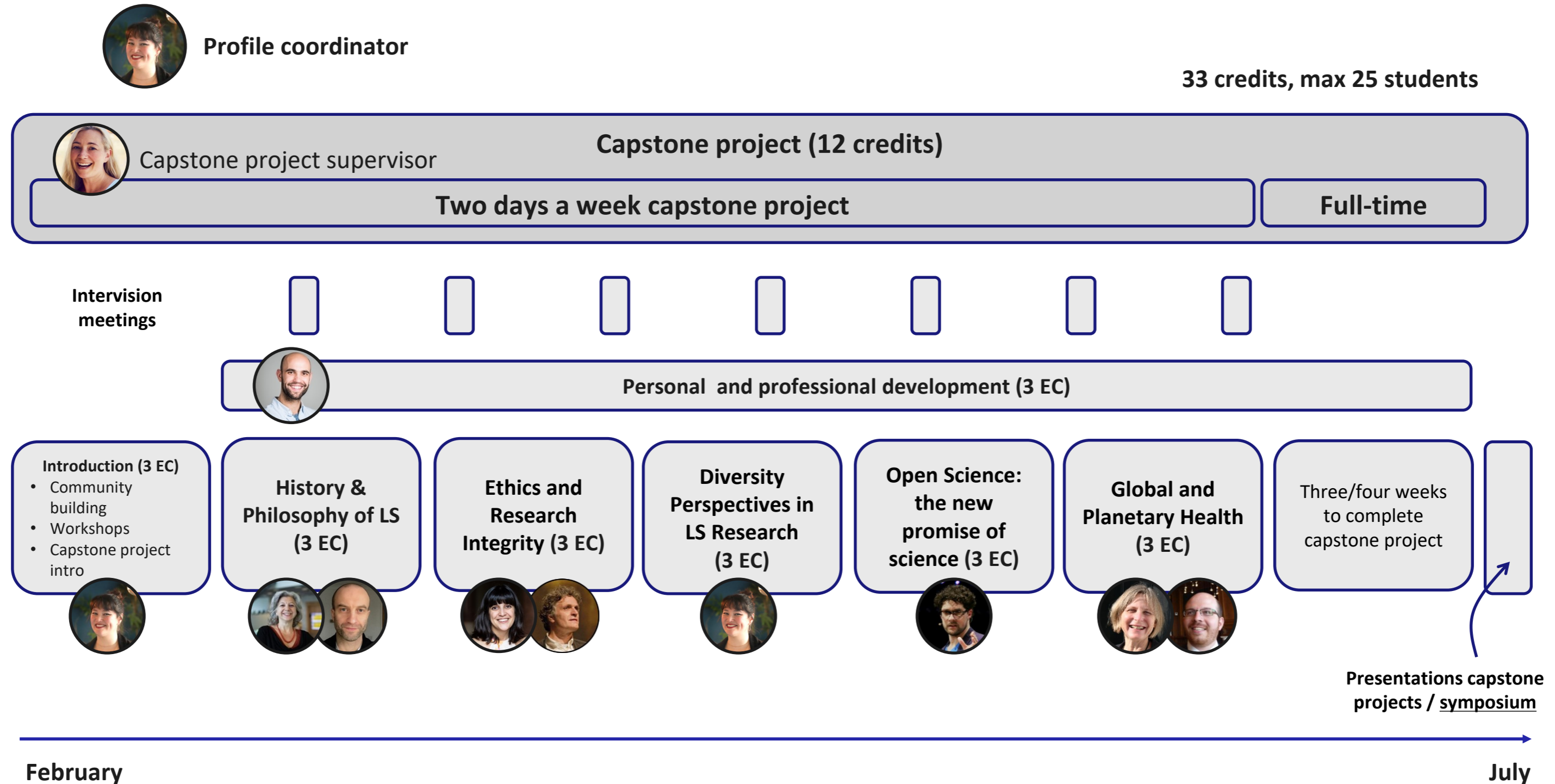
*Work on research project in small groups.*



*Two days a week throughout profile and three  
weeks full-time at the end to finish project.*



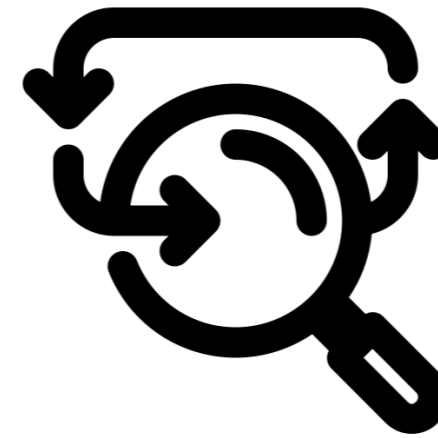
# Overview of the program





## Personal development

- Collaboration
- Energy management
- Time management
- Communication styles
- Working styles
- Personality types
- Personal pitching
- Job market

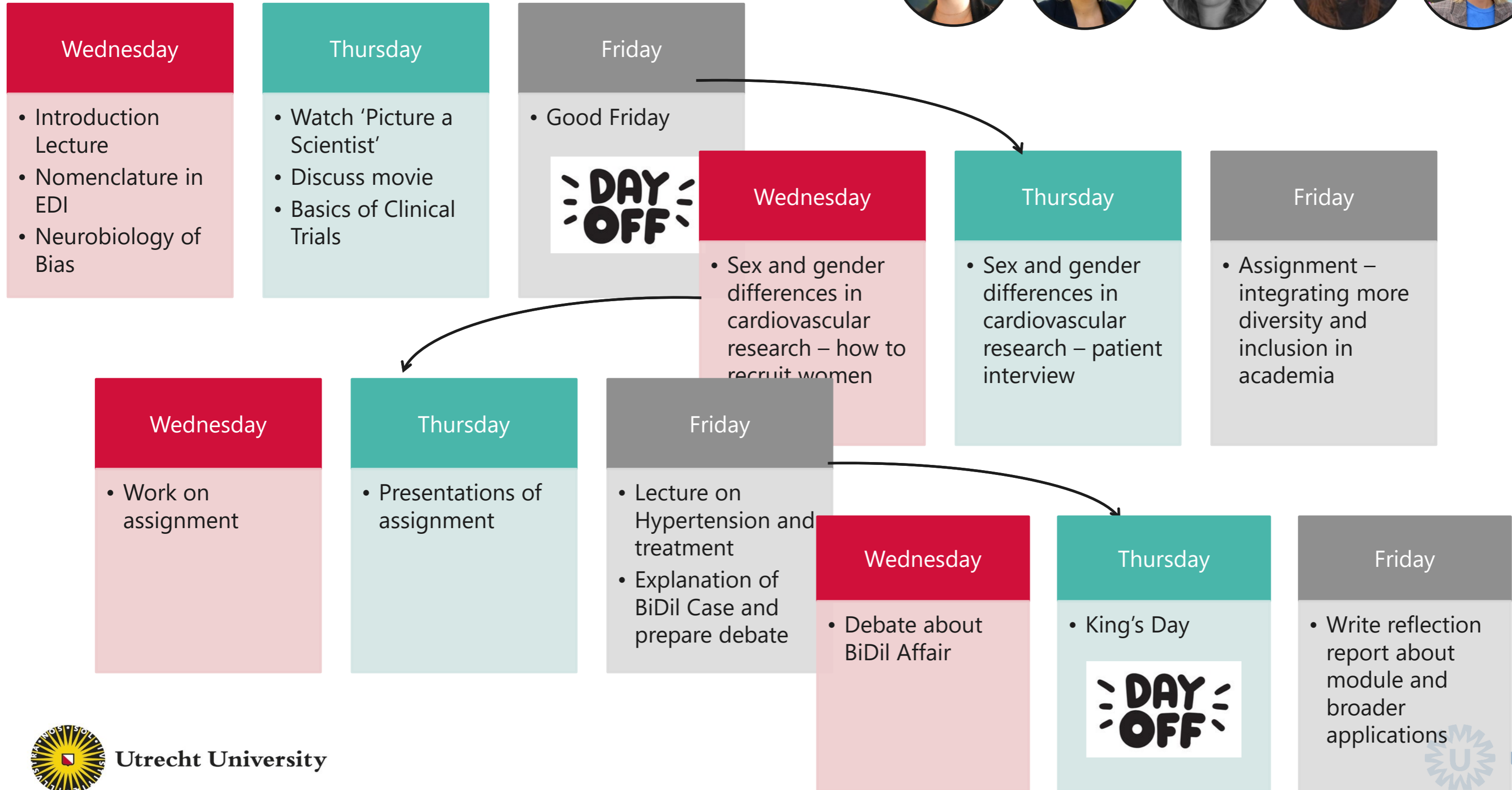


## Research

- Paradigms
- Methodologies
- Bias awareness
- Decreasing bias in your methodology
- Quantitative and qualitative research methods
- Data analysis
- Writing an advisory report



# Example: Diversity Perspectives



# Intervision and reflection

Define personal learning goal at start of profile.

Six intervision meetings with a supervisor.

Students from each project group.

Exchange views and offer advice.

After each intervision meeting:

- Write a short reflection of progress on personal learning goal
- Share it with supervisor
- Supervisor gives feedback
- Use it for final reflection at the end of the program



# Assessment

- Different types of assignments, e.g. debate, reflective essays, presentations, communication products, workshop design
  - Apply learned knowledge
- Discussions on topics to exchange perspectives
- Capstone project – research, communication, collaboration, written advisory report, presentation



What is the effect of this program on students?

# Effect of program on students?

- Average grade from students = 8 (out of 10)
- Feedback from alumni → emphasis on personal and professional development coupled with hands-on experience:
  - beneficial for their personal and professional growth
  - aided in defining how they wanted to dedicate their careers

"I really liked the variety of topics discussed and the environment in which this was done. The size of the group and the people helped with this a lot as well. The different forms of assessment was also really nice, as we tend to do things the same way over and over during our studies. Profile coordinator was easily approachable and very helpful."

"The open atmosphere. In the beginning the workshops helped with this a lot. It felt really like a safe place to be and to speak and try to formulate thoughts. I also liked that a lot of courses didn't do grading - that feels appropriate for doing stuff for so short only and also makes me feel more comfortable to focus on the experience and to try this or that, instead of worrying about what the grade will be. Almost all teachers were also really interested in hearing what we thought, which felt really stimulating too."

# Influence of program on next steps

- It confirmed my idea of working outside academia, and that was quite a relief
- Missing a maybe/I don't know option here. But it definitely displayed possible directions of occupation by the variety of experts that made an appearance during the profile. The profile also confirmed my preference for an occupation on the intersection of science and society rather than something fully focused on science.
- More of an idea what there could be outside of research
- I really enjoyed doing the interviews in the capstone project and the lecture with the patient during the diversity course. This is something I had not worked with before and something I will definitely want to do in my job.
- I found my writing assignment topic because of the courses. I learned a lot about the things I find important in my future career.





# Research project

- What about their view on their role towards society?
- Research questions
  - What effects did the LSS program have on the attitudes of the alumni towards their role as scientist within society?
  - What learning mechanisms contributed to their professional identity formation?



Dr. Janine Geerling



Dr. Christine Fox



Dr. Marije Lesterhuis



Dr. Gisela van der Velden

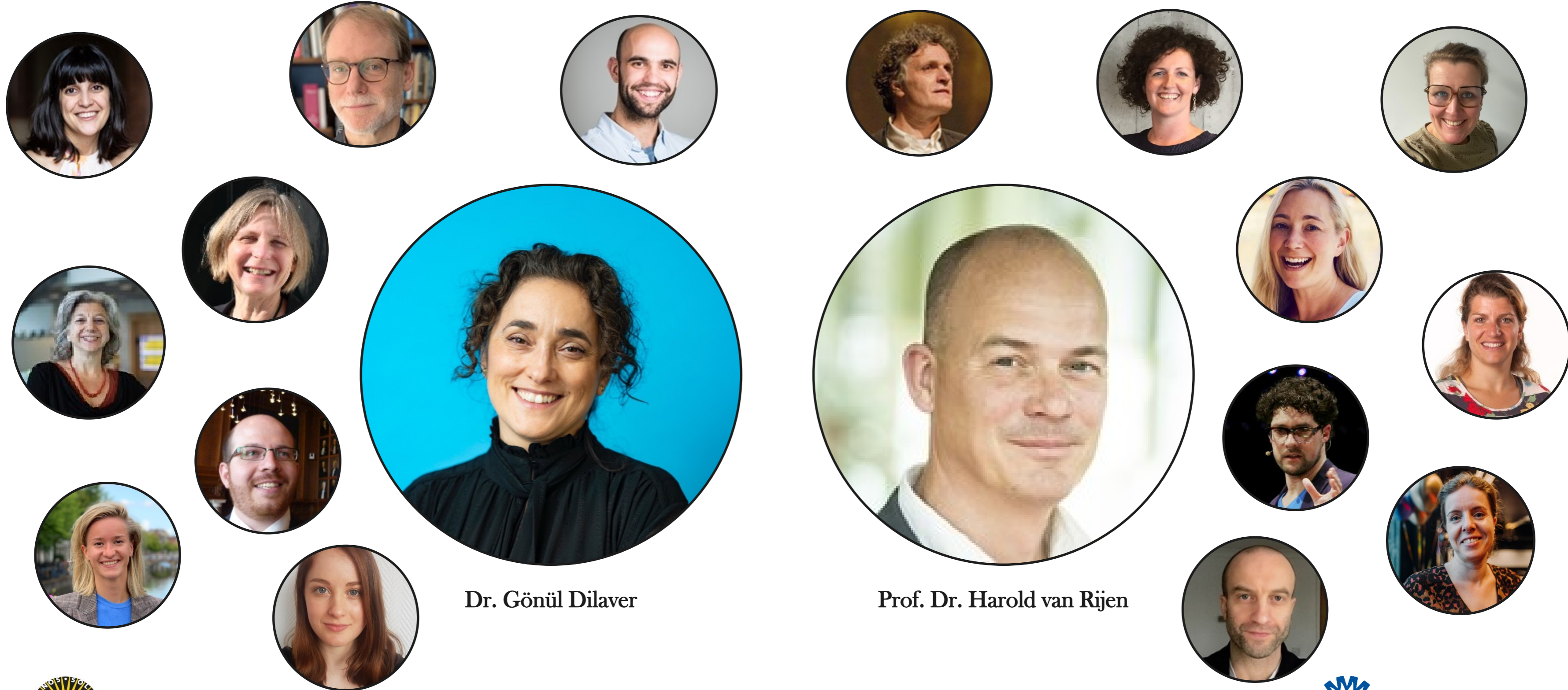
# Theoretical framework

Dynamic Systems Model of Role Identity (Kaplan and Garner, 2017)<sup>1</sup> and Critical Incident Theory (Flanagan, 1954)<sup>2</sup>





# Acknowledgements



Dr. Gönül Dilaver



Prof. Dr. Harold van Rijen





# Questions?

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