

## Student module descriptor:

### Tackling health challenges in internationally linked research HUBs

#### Module details

Module:	Elective module
Module title:	Tackling health challenges in internationally linked research HUBs
Module coordinators:	1) dr. Sandra Crnko <a href="mailto:s.crnko@umcutrecht.nl">s.crnko@umcutrecht.nl</a> University Medical Centre Utrecht 2) dr. Sonia Cantel <a href="mailto:sonia.cantel@umontpellier.fr">sonia.cantel@umontpellier.fr</a> University of Montpellier
Teaching staff:	See teaching and learning schedule
Start date – end date:	18 September 2024 – 18 December 2024
Assessments:	1) Research proposal (40%) 2) Pitch (40%) 3) Reflection report (20%)
ECTS:	3 ECTS

#### Module design and content

In this module students will work in an international network of research HUBs. The HUBs work in a student-centred way to solve a health challenge, while focusing on transversal skills and aiming to teach how to become a good researcher.

#### How does it work?

- **Students from all campuses are split into teams of 5 students each**, coming from different Master programmes and institutions.
- **The whole course is challenge-based and student-led. Each group has a supervisor** (academics, already teaching in a master team for example or PIs identified) that facilitates the students in their path. Their main roles are (i) to follow the progress of the group work by organizing weekly meetings (ii) to endorse the role of a “connector” to put students in contact with experts they could interview/consult.
- All students work on **the same urgent research health-related challenge**, albeit from different (methodological) perspectives, towards the **development of a written research program and its public presentation**.
- **Groups are formed of students from all campuses**. They communicate in a hybrid way with their teammates and the supervisor, and locally they collect information and work hands-on by reaching out to local researchers and stakeholders. They work on their local findings with the team, and **they frame a solution or proposition to the research question**.
- During the module, various workshops on transversal skills with bi-weekly milestones are organized. Students must produce a research proposal, pitch and reflection report.
- In all universities, the learning environment offered by the alliance CHARM-EU will be provided: hybrid or connected classrooms can be used for the weekly meetings and CHARM-EU Moodle and MS Teams platforms for communication.

### Module high-level learning aims

- To provide the students with the **transversal skills and competences a good researcher should have**: critical thinking, effective communication with different groups inside and outside the academia, academic writing abilities, adaptability, creative problem solving and a continuous commitment to learning.
- To provide the students with the knowledge and the skills **to develop interventions from fundamental science discoveries to clinical and societal issues** to address Global Health challenges. 'From bench to bedside to society and back'.
- To translate obtained knowledge and skills into **innovative solutions for a specific challenge** towards achieving health benefit for all.

### Module learning outcomes

On successful completion of the module students should be able to:

- 1.1. Collaborate with stakeholders from different domains, disciplines, and social groups, including scientists, medical specialists, patients, society, industry, and policymakers, to design solutions to health challenges in a transdisciplinary manner.
- 1.2. Develop and translate cross-sectoral, context-specific strategies/interventions within the continuum of fundamental science to pharmaceutical industry, policymaking, and social, economic, cultural, and environmental determinants of health problems.
- 1.3. Demonstrate comprehensive and critical awareness of health challenges and their interconnections with One Health and Environmental & Planetary Health, including ethical approaches, personalized disease management, and societal needs.
- 1.4. Formulate hypotheses based on current literature and cutting-edge data, identify appropriate methodologies.
- 1.5. Analyse the principles of evidence-based translational medicine, including its application from bench to bedside and society, and vice versa.
- 1.6. Summarize the key concepts and theories of the study subject, including the pathophysiology, prevention, diagnosis, treatment, and management of both communicable and non-communicable diseases with high disease burden and mortality, as well as their associated risk factors.

### Mobility in the module

In this elective module students from Utrecht University and University of Montpellier take part. At the start of the module, the University of Montpellier is organising a conference for the students to kick off the module. Students from Utrecht University travel to Montpellier for the conference on the 25<sup>th</sup> of September 2024. For the remaining weeks of the module students are participating from their own universities. They are connected via the hybrid classrooms at both universities.

Different research HUBs take part in this module:

- 1) **Biomedicine Student Research HUB**: The Biomedicine Student Research HUB is centrally located laboratory in the University Medical Centre Utrecht, embedded within the Faculty of Medicine with short lines to medical specialists, research groups, and other stakeholders including patients and patient organizations. It allows students to perform innovative fundamental and applied research to find interdisciplinary solutions for complex societal challenges in life sciences. Techniques available in the HUB include but are not limited to, for example, advanced 3D *in vitro* models, cell culture, confocal microscopy, immunohistochemistry, killing assays, qPCR, flow cytometry, western blot, xCELLigence,

transfection, molecular biology, and CRISPR/Cas9 gene-editing technology. The principal investigator in this Research HUB is Prof. Dr. Niels Bovenschen.

- 2) **Nanomedicine Engineering Student Research HUB:** The Nanomedicine Engineering Student Research HUB at the Department of Pharmaceutical Sciences (Faculty Betasciences) at Utrecht University has a long-standing interest in targeted delivery of drugs, nucleic acids and proteins using nanoparticles/nanogels based on biodegradable polymers. They have access to fully equipped labs for polymer synthesis and for characterization of polymers, hydrogels and nanoparticles, with facilities for *in vitro* studies. The principal investigator in this Research HUB is Dr. Rene van Nostrum.
- 3) **Biotechnology Student Research HUB:** The Biotechnology Student Research HUB is the (wet) laboratory space where students from the Departments of Biology, Chemistry, and Pharmacy from the Utrecht University Faculty of Science perform innovative and applied research to find interdisciplinary solutions for complex societal challenges in the field of life sciences. They have access to fully equipped labs for producing nanobodies for purposes of, for example, imaging and therapy, including the nanobody-targeted photodynamic therapy as well as conjugating nanobodies to nanocarriers for a more specific target-cell uptake. The principal investigator in this Research HUB is Dr. Sabrina Oliveira.
- 4) **Peptide Engineering and Protein Targeting Student Research HUB:** This HUB at the Department of Amino-Acids Peptides and Proteins at IBMM at University of Montpellier focuses on the conception, design and synthesis of highly specific molecules that target physiological/biological activity of a given receptor and pave the way for pre-clinical studies. Following ligand directed targeted strategies we also develop selective probes (as photoactivatable or chemically reactive probes) to address out of range receptors of interest in complex biological media, relying on specific Fluorescence or Mass Spectrometry assisted tag detection (in vitro, ex-vivo or in-vivo imaging). The development of such compounds gathers expertise and techniques in peptide, pseudo-peptide or non-peptide Chemistry, and Analysis. The principal investigator in this Research HUB is Dr Sonia Cantel.
- 5) **Peptide-Based Polymers and Materials Student Research HUB:** This HUB at the Department of Amino-Acids Peptides and Proteins at IBMM at University of Montpellier envision innovative bottom-up approaches based on peptide building-blocks bearing functions for polymerization or condensation. With their outstanding range of structures, structural and biological activities, peptides are highly attractive molecules to give a tailored function to an existing material but also to design innovative materials with unprecedented properties. Organic polymerization using peptides but also inorganic polymerization methods, using sol-gel process relying on hydroxysilane-derivatized peptides or even auto assembly and printed 3D scaffolds are investigated. The principal investigator in this Research HUB is Dr Cécile Echalié.
- 6) **Chemistry & Molecular Materials for Health Student Research HUB:** This Hub at ICGM at University of Montpellier seeks to position itself at the service of man and sustainable development by addressing biomedical issues (bioactive molecules, biomaterials, formulation and controlled release of active ingredients, biological safety of nanoparticles (NPs), dynamic phototherapy, magneto- or photo-induced hyperthermia, imaging). The department is characterized by an original contribution in a strongly molecular approach to the development of molecular architectures and complex (nano)materials. This approach “from the molecule to the material and its shaping to the device” is based on strong expertise in terms of methodology, organic synthesis and catalysis and combines unique skills in heterochemistry (phosphorus, silicon, fluorine), coordination chemistry and organometallic chemistry. The chemical objects of interest therefore relate to molecules and supramolecular assemblies as

well as nanomaterials and multiscale materials. The principal investigator in this Research HUB is Pr. Joulia Larianova.

- 7) **The Biology and Cancer Student Research HUB:** The Biology and Cancer Research Student HUB is located at the Institute of Cancer Research of Montpellier (IRCM) and is part of the department Health and Biology of the University of Montpellier. Students at IRCM have the chance to work within a high-performance and innovative environment constituted by about 10 platforms allowing the analysis of patient, animal and cancer cell samples from immunochemistry, imaging, spatial transcriptomic, proteomic and metabolomics. The Hub consists of teams aiming at improving our understanding of the development of tumors and to evaluate the development of new diagnostic and therapeutic strategies to fight cancer. Techniques available in the HUB include cell culture, cell proliferation by XCELLigence and Incucyte, gene expression analysis by qPCR, western blot and immunofluorescence, microscopy and cytometry. The contact PI for this Research HUB is Dr Catherine Teyssier.
- 8) **Therapeutic Antibodies Student Research HUB:** The antibody engineering student Hub is located at the Institute of Cancerologie de Montpellier ([ircm.fr](http://ircm.fr)) and part of the department Health and Biology of the University of Montpellier and nationally, part of the Tours-Montpellier Labex MabiImprove. The use of monoclonal antibodies for the treatment of numerous diseases, including cancer, has generated major medical interest in recent years. The Hub includes teams focusing on the amelioration of antibodies for improved therapeutic activity thanks to antibody paratope and format innovative designs, on antibody combinations or antibody administration. Distinctive techniques available in the HUB include antibody phage and yeast display to isolate antibodies for promising new therapeutic targets, methods to evolve affinity and specificity of lead antibodies and small-scale expression/purification systems of new candidate antibody formats for pre-clinical *in vitro* testing. At IRCM, techniques to test antibodies include *in vitro* 2D and 3D models, cell killing assays, qPCR, flow cytometry, western blot and more specific techniques as chorioallantoic membrane (CAM) of the chicken embryo model, microscopy and cytometry (including imaging mass cytometry for extensive immunophenotyping of samples). An experimental irradiation platform is available. The contact PI for this Research HUB is Pr. Marie-Alix Poul.

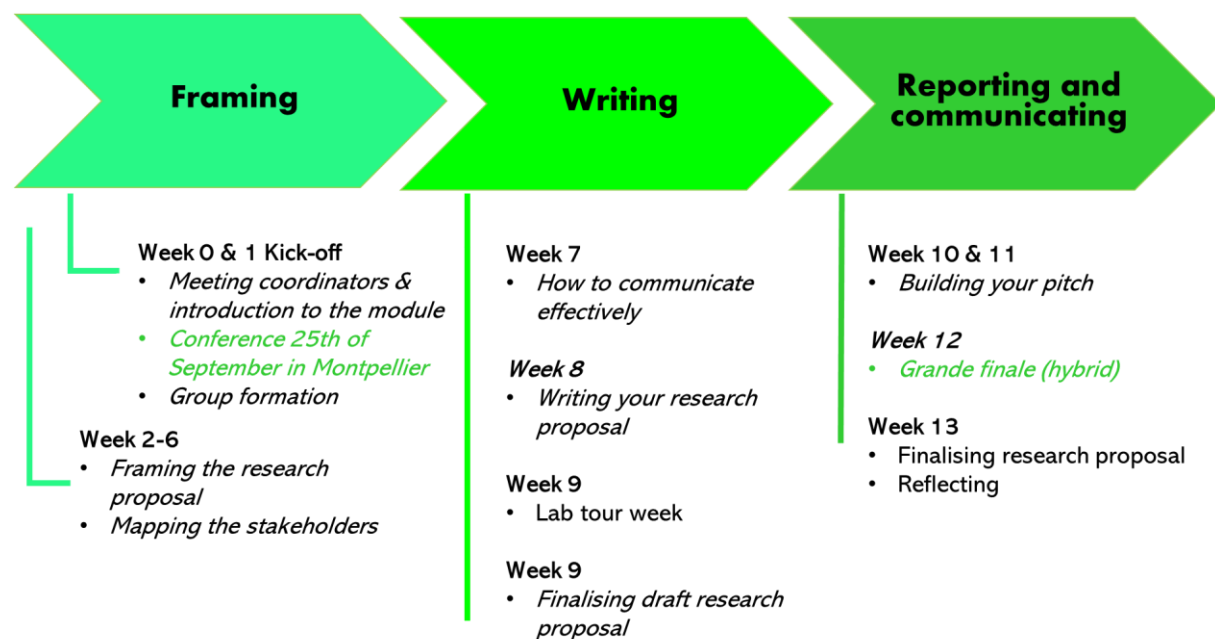
## Inclusiveness

Throughout our module, we believe in fostering an open, welcoming atmosphere where diversity is recognised, respected, and seen as a source of strength and benefit to the student community and beyond. We are committed to creating an inclusive teaching and learning environment where barriers to success are removed, and individuals' access and participation needs are addressed and catered to. Furthermore, all disciplinary backgrounds are welcome in the different Research HUBs.

## Content experts

During the module and writing the research proposal, students can make use of different content experts. They will not supervise but are available to share their expertise if it matches the students' research proposal. The list can be found in the attachment of this document.

## Teaching and learning time schedule



### Phase 1: Framing the research

#### Week 0 > ONLINE Welcome on board! (Information session)

Wednesday 18 September (2 p.m. – 4 p.m. CET)

	WHAT?	WHO?	HOW LONG?
Introduction of the module	Presentation of the module and Q&A time	<ul style="list-style-type: none"> <li>Module coordinators</li> <li>Students</li> <li>Skillz-Up</li> </ul>	2 hours  <b>Online</b>

#### Week 1 > Open conference

#### Breaking down Barriers: Perspectives and approaches on colorectal cancer

Wednesday 25 September (9 a.m. – 5 p.m.)

VENUE: Institut de Recherche en Cancérologie de Montpellier (IRCM)

	WHAT?	WHO?	HOW LONG?
<b>OPEN CONFERENCE:</b> Lecturers and stakeholders	A half day of conference on the chosen challenge/topic. Different stakeholders are involved (patients, patients' associations, doctor, researchers in the fields etc.)	<ul style="list-style-type: none"> <li>A moderator</li> <li>Patients / Patients' associations / doctors and</li> </ul>	5 hours  <b>Local, in Montpellier</b>

	<p>present and answer student's questions:  <a href="https://www.charm-eu.eu/tackling-health-challenges-international-linked-research-hub">https://www.charm-eu.eu/tackling-health-challenges-international-linked-research-hub</a></p> <p>For the 2024 edition the conference will be organized in Montpellier. Students from Utrecht are joining on site.</p>	<p>researchers on the chosen topic</p> <ul style="list-style-type: none"> <li>– Supervisors</li> </ul>	
<b>Team up workshop</b>	<p>Teaming up workshop: interdisciplinary and international teams are formed.</p> <p>Teams match with their supervisors!</p>	<ul style="list-style-type: none"> <li>– Skillz-Up</li> <li>– Students</li> </ul>	<p>2 hours</p> <p><b>Local, in Montpellier</b></p>
<b>Week Milestone:</b>	<ul style="list-style-type: none"> <li>– Understand the topic and its different perspectives</li> <li>– Team up</li> </ul>		

## Week 2 > Framing ideas

Wednesday 2 October (3 p.m. – 5 p.m.)

UU: Bolognalaan room: 1.070

UM: Salle de formations du Collège Doctoral, Triolet Campus Building number 3

<b>Check and refine your preferred topics!</b>	<p>After the conference, students meet within their team and define their interests. The goal is to start discussing the preferred topic / challenge they want to focus on.</p> <p>At the end they meet their supervisor and introduce to her/him those reflections.</p> <p>This is the only online meeting organized; all the others must be student-led!</p>	<ul style="list-style-type: none"> <li>– Module coordinators</li> <li>– Maria Claudia Angel Ferrero (UM)</li> <li>– Students</li> <li>– Supervisor</li> </ul>	<p>1 hour workshop</p> <p>1 hour discussion with the supervisor</p>
<b>Week Milestone:</b>	<ul style="list-style-type: none"> <li>– Draft board with the first ideas (Miro board provided)</li> <li>– Agenda of your team's upcoming meetings (weekly meeting plan in Miro board)!</li> <li>– Scheduled lab tours with HUBs for week 9 (see Week 9 for more details)</li> </ul> <p>DEADLINE: Friday 4 October (5 p.m.)</p> <p>WHERE: Miro board</p>		

## Week 3 > ONLINE - Students meeting

When? Up to students!

	WHAT?	WHO?	HOW LONG?
Team online meeting	<p>Students meet, they prepare some activities through the online learning environment (videos, quizzes etc)</p> <p>Students meet to discuss:</p> <ul style="list-style-type: none"> <li>– On frameworks introduced in the LMS: try to define yours!</li> <li>– First draft of the research question</li> <li>– First list of potential stakeholders</li> <li>– Gaps of your research</li> </ul>	Students	Approx 2 hours / Online
Week Milestone:	<ul style="list-style-type: none"> <li>– Share first ideas and reflections with your supervisor (e-mail)</li> <li>– Completed preparation in Moodle for the workshop</li> </ul> <p>DEADLINE: Friday 11 October (5 p.m.)</p> <p>WHERE: One member of the group uploads their first ideas in Moodle and sends them via e-mail to their supervisor (in .docx format).</p>		

## Week 4 > Framing hypothesis

Wednesday 16 October (1 p.m. – 5 p.m.)

UU: Minnaert 0.14

UM: Salle de formations du Collège Doctoral, Triolet Campus Building number 3

	WHAT?	WHO?	HOW LONG?
How does it work?	<p>Define your research question (rq) workshop</p> <p><b>Topics:</b></p> <ul style="list-style-type: none"> <li>– How to define the rq?</li> <li>– Workgroup to define yours</li> <li>– Stakeholders related to that question</li> <li>– Using AI to frame your research</li> </ul>	<ul style="list-style-type: none"> <li>- Maria Claudia Angel Ferrero (UM)</li> <li>- Module coordinators</li> <li>- Students</li> </ul>	3 hours / Hybrid
Meet your team	Students should update their supervisor and receive	<ul style="list-style-type: none"> <li>– Students</li> <li>– Supervisors</li> </ul>	1 hour

	feedback.		
<b>Week Milestone:</b>	<ul style="list-style-type: none"> <li>– Hypothesis declared (one sentence)</li> <li>– Short description of the research idea (300 words)</li> <li>– Map of stakeholders connected to the team's research question</li> </ul> <p>DEADLINE: Friday 18 October (5 p.m.)</p> <p>WHERE: One member of the group uploads the assignment(s) in Moodle and sends them via e-mail to their supervisor (in .docx format).</p>		

### Week 5 > ONLINE - Students meeting 'Framing research proposal'

When? Up to students!

	WHAT?	WHO?	HOW LONG?
Team online meeting	Students meeting to define: <ul style="list-style-type: none"> <li>– Integrate the supervisor's feedback.</li> <li>– Start looking for literature and thinking about the proposal content and structure</li> </ul>	Students	Approx. 2 hours / Online
<b>Week Milestone:</b>	<p>DEADLINE: Friday 25 October (5 p.m.)</p> <p>WHERE: One member of the group uploads the assignment(s) in Moodle and sends them via e-mail to their supervisor (in .docx format).</p>		

### Week 6 > HOLIDAY Week 28<sup>th</sup> October to 1<sup>st</sup> of November



## Phase 2: Writing

### Week 7 > How to communicate effectively

Wednesday 6 November (1 p.m. – 5 p.m.)

UU: Bolognalaan 2.049

UM: Salle de formations du Collège Doctoral, Triolet Campus Building number 3

	WHAT?	WHO?	HOW LONG?
Writing laboratory	<p>Lecture on how to write efficiently in the research world.</p> <p>In this workshop, students will focus on how to and the different ways to argue.</p> <p>Lecture that illustrates an ERC starting grant.</p> <p>Focus on referencing, methodology etc.</p> <p>To add AI perspective, potential and ethical consideration.</p>	<ul style="list-style-type: none"><li>– Lecturer Maaïke Welling (UU)</li><li>– Students</li></ul>	3 hours
Team meeting and supervisor's meeting	<p>Talk with your supervisor!</p> <p>Let's discuss what you have done and where you want to go!</p>	<ul style="list-style-type: none"><li>– Students</li><li>– Supervisors</li></ul>	1 hour
Week Milestone:	<ul style="list-style-type: none"><li>– First (rough) draft of the research proposal</li></ul> <p>DEADLINE: Friday 8 November (5 p.m.)</p> <p>WHERE: One member of the group uploads the assignment(s) in Moodle and sends them via e-mail to their supervisor (in .docx format).</p>		

## Week 8 > ONLINE - Students meeting 'Writing research proposal'

When? Up to students!

	WHAT?	WHO?	HOW LONG?
Team online meeting	Students meet to define: <ul style="list-style-type: none"> <li>– Integrate supervisor's feedback.</li> <li>– Start writing the proposal based on the given template.</li> </ul>	Students	Approx 2 hours / Online

## Week 9 > Lab-tour week

*Note: Lab-tour needs to be scheduled by students in week 2 already!*

Wednesday 20 November (lab tour time set by labs; hybrid classroom available from 1 p.m. to 4 p.m.)

UU: Bolognalaan 2.049

UM: Salle de formations du Collège Doctoral, Triolet Campus Building number 3

	WHAT?	WHO?	HOW LONG?
Methodology and labs	Students define their methods. They visit labs (if not feasible: session in the classroom with the researchers). UU students make 1 video of UU HUBs, and vice versa, UM students make 1 video of UM HUBs.	<ul style="list-style-type: none"> <li>– Hub researchers introduce their labs (to be defined)</li> <li>– Students</li> </ul>	<b>2 hours</b>
Team meeting and supervisor's meeting	Talk with your supervisor! Let's discuss what you have done and where you want to go!	<ul style="list-style-type: none"> <li>– Students</li> <li>– Supervisors</li> </ul>	1 hour (3 p.m. – 4 p.m.)

## Week 9 bis > ONLINE - Students meeting 'Finalise research proposal'

(during the Lab-tour week)

	WHAT?	WHO?	HOW LONG?
Team online meeting	Students meeting to define: <ul style="list-style-type: none"> <li>– Integrate the supervisor's feedback.</li> <li>– Finalize the last draft and send it to your supervisor.</li> </ul>	Students	Approx 2 hours / Online
Week Milestone:	– Second draft of the research proposal, ready for a final supervisor's feedback		

- Video of the lab tour (peer feedback)

DEADLINE: Sunday 24 November

WHERE: One member of the group uploads the assignment(s) in Moodle and sends them via e-mail to their supervisor (research proposal in .docx format). Due to the file size, video should be uploaded to Moodle and Teams for peer feedback.

### Phase 3: Reporting and communicating

#### Week 10 > Build your pitch

Wednesday 27 November (1 p.m. – 5 p.m.)

UM: Salle de formations du Collège Doctoral, Triolet Campus Building number 3

UU: Bolognalaan 2.068

	WHAT?	WHO?	HOW LONG?
Effective communication lab	How to build your presentation	<ul style="list-style-type: none"> <li>– Celine Fabre (UM)</li> <li>– Welling, M.A. (Maaik)</li> <li>– Students</li> </ul>	3 hours
Team meeting and supervisor's meeting	Talk with your supervisor! Let's discuss what you have done and where you want to go!	<ul style="list-style-type: none"> <li>– Students</li> <li>– Supervisor</li> </ul>	1 hour

#### Week 11 > ONLINE - Students meeting 'Finalise presentation video'

When? Up to students!

	WHAT?	WHO?	HOW LONG?
Team online meeting	Students meeting to finalize presentation for the Grand Finale	Students	Approx 2 hours / Online
Week Milestone:	<ul style="list-style-type: none"> <li>– Final presentation video</li> </ul> <p>DEADLINE: Friday 6 December (5 p.m.)</p> <p>WHERE: One member of the group uploads the assignment(s) in Moodle</p>		

#### Week 12 > Grand Finale

Wednesday 11 December (9 a.m. – 1 p.m.)

UU: Bolognalaan 2.049

UM: IRCM

	WHAT?	WHO?	HOW LONG?
OPEN PITCH DAY	An entire day where students present their proposal (5/6 groups, 10 minutes + 10 min Q&A) in front of a jury.	<ul style="list-style-type: none"> <li>– A moderator in each location</li> <li>– Jury (Patients / Patient's associations /</li> </ul>	<b>Whole day</b> / Hybrid in 2 conference rooms

	At the end of the day the jury will declare the 3 teams that win the first edition.	doctors and researchers)  – Supervisors  – Students	
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### Week 13 > ONLINE - Finalise your research proposal

When? Up to students!

	WHAT?	WHO?	HOW LONG?
Team online meeting	Students meet to finalize the written proposal.	Students	Approx. 2 hours / Online
Week Milestone:	<ul style="list-style-type: none"> <li>– Final written proposal</li> <li>– Reflection report (individual)</li> <li>– Peer feedback from the lab tour video assignment (from week 9 bis)</li> </ul> <p>DEADLINE: Wednesday 18 December</p> <p>WHERE: One member of the group uploads the assignment(s) in Moodle and sends them via e-mail to their supervisor (final research proposal in .docx and .pdf format).</p> <p>Each student uploads their reflection report to Moodle and via e-mail to their supervisor (.docx format).</p> <p>Each student uploads peer feedback of the lab tour video assignment to Moodle.</p>		

The final grading will be sent in the week of 6<sup>th</sup> of January 2025.

## Assessment descriptor

Assessment	Deadline	Individual / group
Active participation (pass/fail)	-	Individual assessment
Research proposal (40%)	1 <sup>st</sup> draft version: 8 <sup>th</sup> of November 2024 2 <sup>nd</sup> draft version: 24 <sup>th</sup> of November 2024 Final version: 18 <sup>th</sup> of December 2024	Group assessment
Lab-tour video (peer-feedback) (pass/fail)	24 <sup>th</sup> of November 2024 (video); 18 <sup>th</sup> of December 2024 (peer feedback)	Group assessment (video); Individual assessment (peer feedback)
Pitch (40%)	11 <sup>th</sup> of December 2024	Group assessment
Reflection report (20%)	18 <sup>th</sup> of December 2024	Individual assessment

*\*The final grading will be provided in the week of the 6<sup>th</sup> of January 2025.*

### List of assessors

Academic supervisors	<ul style="list-style-type: none"> <li>Sandra Crnko (UU) <a href="mailto:s.crnko@umcutrecht.nl">s.crnko@umcutrecht.nl</a></li> <li>Sonia Cantel (UM) <a href="mailto:sonia.cantel@umontpellier.fr">sonia.cantel@umontpellier.fr</a></li> <li>Cecile Echali�r (UM) <a href="mailto:cecile.echali�r@umontpellier.fr">cecile.echali�r@umontpellier.fr</a></li> <li>Marie-Alix Poul (UM) <a href="mailto:marie-alix.poul@inserm.fr">marie-alix.poul@inserm.fr</a></li> <li>Catherine Teyssier (UM) <a href="mailto:catherine.teyssier@inserm.fr">catherine.teyssier@inserm.fr</a></li> </ul>
Second readers	<ul style="list-style-type: none"> <li>Sandra Crnko (UU) <a href="mailto:s.crnko@umcutrecht.nl">s.crnko@umcutrecht.nl</a></li> <li>Niels Bovenschen (UU) <a href="mailto:n.bovenschen@umcutrecht.nl">n.bovenschen@umcutrecht.nl</a></li> <li>Sonia Cantel (UM) <a href="mailto:sonia.cantel@umontpellier.fr">sonia.cantel@umontpellier.fr</a></li> <li>Gilles Subra (UM) <a href="mailto:gilles.subra@umontpellier.fr">gilles.subra@umontpellier.fr</a></li> </ul>

### Assessment #1 Active participation

To pass this module, students must fulfil the following criteria:

- Attend all three plenary meetings, and
- Pass all assessments that are graded with fail/pass, and
- Both the pitch and the report should be graded 5.5 minimum.

When one of the criteria mentioned above is not met, the student may appeal for a re-exam, by means of an individual substitute assignment.

## Assessment #2 Research proposal

### Deadline

- Draft version 24<sup>th</sup> of November 2024, 23.59 h CET
- Final version 18<sup>th</sup> of December 2024, 23.59 h CET

The research proposal is based on the framework of a European Research Call.\* The research proposal should be outlined using the provided template.

Students will write a proposal meant for a 6-month research project, which will take place in one of the research HUBs at UU or UM. The research proposal is assessed on the content, argumentation, methodology and research design, understanding of the challenge, interdisciplinary solutions, structure, usage of relevant references and proper in-text citation. See rubrics for more detailed information.

*\*Please note that, for purposes of this module, the template is made based on simplified guidelines and requirements of 'NWO Open Competition Domain Science – M-1 application form' and 'European Research Council (ERC) Starting Grant' (e.g., applicant's details and budget justification have been removed).*

### Criteria

The research proposal consists of the following elements:

1. Title
2. Abstract, summary (suited for non-specialists) + key words (must fit on one page).
3. Theoretical background + research question + hypothesis
4. Approach (methods)
5. Visualization of the approach
6. Integration of UU & UM research HUBs
7. Scientific and societal impact
8. Literature/References

### Requirements

- Calibri font at font size 10, black colour, single line spacing and do not change the margins (2 cm in either direction)
- Max 2000 words
- Title, abstract and key words must fit on one page.
- Main body of text is limited to a maximum of 5 pages.
- Proper and consistent usage of referencing system.
- English level is acceptable. Student manages to communicate effectively, with few grammar/spelling errors.

### Module learning outcomes

- 1.6 (Theoretical background)
- 1.4 (Theoretical background, approach, visualization of the approach)
- 1.2 (Approach)
- 1.1 (Integration of UU & UM research HUBs)
- 1.3 (Social and scientific impact)
- 1.5 (Social and scientific impact)

### Assessors

- First reader: academic supervisor
- Second reader: supervisor from other partner university (e.g. if academic supervisor is from UU, second reader is from UM)

### Assessment #3 Lab-tour video (peer feedback)

**Deadline video:** 24<sup>th</sup> of November 2024, 23.59 h CET

Deadline peer feedback: 18<sup>th</sup> of December 2024, 23.59 h CET

In week 7 students visit multiple labs at their local university. During the visit a video is recorded for fellow students in another country (1 video in UU and 1 video in UM labs). The video will be watched and assessed by peers (each student needs to provide with peer feedback of the video from another country). This is a formative assessment and will not be considered for the final grade, but it is mandatory to pass the course. The video will focus on the methods and instruments used in the labs.

#### Criteria

The lab-tour video contains the following elements:

- The video shows the instruments and techniques that are used in the lab
- The video shows possibilities of research that can be performed using the available equipment

#### Requirements

- Video must be max. 5 minutes
- Recording of the video is verbally agreed by the researchers being filmed (if applicable)

#### Module learning outcomes

- 1.4 (focus on methodologies)

#### Assessors

- The module coordinators check if the video is uploaded
- The module coordinators check if the peer assessment is uploaded
- Peers provide peer feedback and assessment on each other's video using the provided instructions (each student should upload their peer feedback to Moodle)

### Assessment #4 Pitch

**Deadline:** 11<sup>th</sup> of December 2024

In the pitch students will convince a committee of specialists to fund their research proposal. The pitch is assessed on the content, structure, argumentation, and understanding of the challenge, and on the visual representation and the ability to convey the main message clearly and compellingly (also to extra-academic stakeholders). See the rubrics for more detailed information.

#### Criteria

The pitch consists of the following elements:

1. A good integration of the elements of the research proposal
2. A visualization supporting the pitch (format is free of choice)

#### Requirements

- The pitch is min. 3 and max. 5 minutes long.
- The pitch is presented by one or two group members.
- After the pitch there will be a 15-minute discussion with the committee. All group members participate in the discussion and answer questions.



### **Module learning outcomes**

- 1.2
- 1.3
- 1.4

### **Assessors**

- Academic supervisor
- The committee consisting of HUB supervisors and stakeholders from UM and UU will provide feedback and advice to the academic supervisor on the assessment. The committee will choose the winning pitch.
- English Teacher

### [Assessment #5 Reflection report](#)

**Deadline:** 18th of December 2024, 23.59 h CET

The reflection report is an individual assignment in which academic and reflective skills are assessed. It contains personal end reflection based on learning experiences acquired during the module, both content-related and focused on personal development. In the reflection report, students should describe how they took in feedback from peers in the module and reflect on their actions and how they developed from the experience. Student's individual contribution during the group assignments (in relation to the contribution of team members and potential challenges or insights from the collaboration) should be addressed and their personal points for improvement highlighted. Also the aspects of interdisciplinary collaboration should be addressed. If helpful, students should note down situations they encounter which are relevant to their reflection from the very start of the module. See the rubrics for more detailed information.

### **Criteria**

The reflection report contains the following elements on which is reflected:

- The research proposal (content)
- Group management and group dynamics (including the intercultural and interdisciplinary aspects of collaboration)
- Personal and professional development
- Personal development in boundary crossing

### **Requirements:**

- Calibri font at font size 10, black colour, single line spacing and do not change the margins (2 cm in either direction)
- 600-800 words
- Description of at least two “critical incidents” of powerful learning, of which at least one has to relate to learning from other practices/disciplines a student has experienced during this challenge
- English level is acceptable. Student manages to communicate effectively, with few grammar/spelling errors.

### **Module learning outcomes**

- 1.1
- 1.7

### **Assessors**

- Academic supervisor

Attachment: list of content experts (to be sent)