

**Jobbnorge ID:** 301900  
**Deadline:** 6/10/2026  
**Website:** <http://www.ntnu.no>  
**Scope:** Fulltime  
**Duration:** Temporary

Department of Philosophy and Religious Studies has a vacancy for a

## PhD Fellowship in Foundations and Philosophy of Entanglement

### This is NTNU

NTNU is a broad-based university with a technical-scientific profile and a focus in professional education. The university is located in three cities with headquarters in Trondheim.

At NTNU, 9,000 employees and 43,000 students work to create knowledge for a better world.

You will find more information about working at NTNU and the application process [here](#).

Video: <https://youtu.be/Xt-yHCN5QSO>

### About the position

Are you interested in interdisciplinary research at the intersection of philosophy and physics? Then you might be the candidate we are looking for. This PhD fellowship is associated with the interdisciplinary research project “Entanglement Metaphysics without Spacetime” (EMwiS). The aim of metaphysics is to give an account of how the world fundamentally is, and many metaphysical theories tacitly assume the fundamental existence of space and time. EMwiS is motivated by the growing body of work in theoretical physics suggesting that spatiotemporal structure may be derivative rather than fundamental. EMwiS explores whether this calls for a corresponding revision at the level of metaphysics: one in which the foundational role of spacetime in explaining physical order, connectedness, and world structure is replaced by patterns of entanglement, information-theoretic constraints, or other non-spatiotemporal structures.

The PhD project is open within this framework, with possible topics including, for example:

- How quantum-theoretic frameworks that relax fixed temporal or causal order should be interpreted, and what they reveal about the status of temporal and spatiotemporal ordering in fundamental ontology.
- The implications of information-theoretic constraints—such as monogamy of entanglement, no cloning, information causality, or entropy inequalities—for the global structure of admissible quantum states, and whether these constraints challenge the possibility of entanglement playing the connective role traditionally played by spacetime.
- The implications of global and robust entanglement structures—such as those encountered in topological phases of matter or many body systems—for metaphysical views that attempt to construct worlds from local states or localised properties.
- The implications of density-matrix-based and open-systems perspectives for entanglement realism, including whether a fundamentally mixed quantum state undermines the distinction between genuine entanglement and mere mixedness, and what this means for treating entanglement as a constitutive feature of world structure.
- Questions concerning subsystem structure and separability in quantum theory, including the non-uniqueness of tensor factorisations, and their impact on how entanglement relations should be understood when spatiotemporal localisation or system individuation is not fundamental.
- Whether recent relational and perspective-dependent approaches in quantum theory—such as quantum reference frame frameworks—pose a challenge to perspective-free accounts of world structure, and whether entanglement-based metaphysical proposals can accommodate or respond to such challenges.
- More general investigations into whether contemporary quantum physics motivates shifting the focus of ontology away from localised entities and spacetime relations toward relational, structural, or constraint-based foundations.

The precise direction and focus of the PhD project will be developed in the initial period of the fellowship in dialogue between the candidate and the supervisors and within the scope of the EMwiS project.

The EMwiS project is led by Dr. Rasmus Jaksland, who will also serve as main supervisor. Jaksland has an interdisciplinary background with a BA and MA, and PhD in philosophy and a BSc and MSc in theoretical high energy physics. The project is situated at the international forefront of research on the foundations and philosophy of entanglement with the advisory board consisting of Prof. Hans Halvorson (Princeton), Prof. Alyssa Ney (Munich), Prof. Matteo Morganti (Rome), and Prof. Vincent Lam (Bern).

The PhD fellowship includes generous travel funds that can, for instance, be used for international conferences and research stays abroad.

The fellowship is open to philosophers who are comfortable engaging closely with the conceptual and formal aspects of quantum theory, as well as to physicists who are drawn to foundational and metaphysical questions. The project provides an environment in which technical competence and philosophical analysis are treated as mutually reinforcing components of a single research programme.

The desired start date for the position is no later than October 1, 2026.

## Duties of the position

Complete the doctoral education until you obtain a doctorate. This includes:

- Carry out research of good quality within the framework described above
- Academic publications and popular science dissemination
- Participate in international activities such as conferences and/or research stays at foreign educational institutions

Be prepared for changes to your work duties after employment.

## Required selection criteria

- You must have a relevant Master's degree in philosophy, physics, mathematics, or equivalent. Your course of study must normally correspond to a five-year Norwegian course, where 120 credits have been obtained at master's level. Master's students can apply, but the master's degree must be obtained and documented before starting the position.
- You must have a strong academic background from your previous studies and have an average grade from your Master's degree study, or equivalent education, which is equal to B or better compared to [NTNU's grading scale](#).
- You must meet the requirements for admission to the [PhD-programme in Historical and Cultural Studies](#). Applicants with all above-mentioned master's degrees are eligible, as long as the education include a MA thesis of at least 30 ECTS and the applicant's academic record is in line with the admission requirements.
- Good oral and written presentation skills in English.

**PLEASE NOTE: For detailed information about what the application must contain, see paragraph "About the application".**

The appointment is to be made in accordance with [NTNUs guidelines for recruitment positions](#) for general criteria for the position.

## Preferred selection criteria

- Expertise in one or more of the following areas: metaphysics, philosophy of science, quantum mechanics, quantum information theory, quantum gravity, many-body physics.
- Knowledge of entanglement and/or Lewisian metaphysics broadly construed, e.g., Humeanism, world-mate relations, individuation, laws of nature.
- Demonstrated ability for academic work.
- Ability to formulate clear and intellectually promising research questions within the scope of the EMWiS project, to understand their significance and difficulty, and to show good judgement about how they might be investigated.

## Personal characteristics

To complete a doctoral degree (PhD), it is important that you are able to:

- Work independently and take initiative
- Collaborate and engage constructively across disciplinary boundaries
- Present and discuss your research with other professionals
- Show curiosity and a strong motivation for the subject

Emphasis will be placed on personal qualities.

## We offer

Evaluate and remove/add what is relevant for the position.

- An exciting job with an important [mission](#) in society
- Developing tasks in a strong and international professional environment
- Career guidance and [follow-up during the PhD period](#)
- Open and inclusive working environment with committed colleagues
- [Working capital](#) that can be used to implement the project
- [Mentor programme](#) as a [new employee at NTNU](#)
- Favorable terms as a member of the [Norwegian Public Service Pension Fund \(SPK\)](#).
- Free Norwegian language training at a basic level ([A2](#)).

As a PhD Candidate at NTNU, you will have access to [employee benefits](#).

## Diversity

Diversity is a strength, and at NTNU we aim to be an employer that reflects the diversity in society and that makes use of the potential of the population's collective skills. Our vision is [Knowledge for a better world](#) and [our values are creative, critical, constructive and respectful](#). We believe that an organization that is equal, diverse and gender-balanced is essential for us to achieve our goals.

We strive to attract employees with different skills, life experiences and perspectives to contribute to even better problem solving of our societal mission in research and education.

If you think this position is relevant and interesting, we encourage you to apply, regardless of gender, functional ability and cultural background, or whether you have been out of work for a period of time.

## Salary and conditions

In the position of PhD Fellow, code 1017, your gross salary will normally be NOK 550 800,- per annum depending on qualifications and seniority. A 2% statutory contribution to the State Pension Fund is deducted from the salary.

The employment period is 3 years for the doctoral work.

For employment as a PhD Fellow, it is a prerequisite that you gain admission to the PhD programme within three months of your employment contract start date, and that you participate in an organized doctoral programme throughout the period of employment.

As an employee at NTNU, it is important that you keep yourself up to date with academic and organizational changes and adapt to them.

For the necessary professional and social interaction, it is a prerequisite that you are physically present and available to the institution on a daily basis.

The appointment is carried out in accordance with the principles of the [State Employees Act](#), and [Export control](#) (legislation that regulates the export of knowledge, technology and services). Candidates who, after assessment of the application and attachments, are considered to be in conflict with the criteria in the latter act, will not be able to be employed.

## About the application

The attachments must accompany the application as these documents form the basis of the application assessment. The documents must be in Norwegian, another Scandinavian language or English.

Make sure that your application clearly shows how your skills and experience meet the criteria described above. The application and all attachments must be sent electronically via [Jobbnorge.no](#). If you are invited to an interview, you must bring certified copies of certificates and diplomas upon request.

The application must include :

- Transcripts and diplomas for Bachelor's and Master's degrees
- CV
- A list of your scientific work (if any)
- Names and contact information of two relevant referees
- Writing sample (maximum 10000 words/25 pages excluding reference list). The writing sample can be any published or unpublished work by you that you think displays your general academic qualifications. Joint work will be considered, but if it is difficult to identify your contribution to joint work, you must attach a brief description of your participation.
- A research reflection (maximum 2500 words) in which you:
  - identify one or more research questions you would be interested in exploring and why they are relevant within the thematic scope of the fellowship;
  - indicate how you would begin to approach the questions, including relevant literature, frameworks, or methods where appropriate;
  - explain how your academic background, training, and skills prepare you for this work.

The writing sample is intended to demonstrate your general academic qualifications, while the research reflection is intended to demonstrate your ability to think productively about a possible PhD project within the fellowship's thematic scope. The research reflection is not expected to be a full research proposal, and applicants are not expected to apply with a fixed dissertation plan. The research reflection should display your potential for research within the EMwiS project, broadly construed. In the application portal, you can either insert the research reflection in the field "Application text" or upload it as a PDF (in the latter case you write, "See [name].pdf" in the application text field). A separate cover letter should not be submitted.

If all, or parts, of your education has been taken abroad, we also ask you to attach documentation of the scope and quality of your entire education, both Bachelor's and Master's education, in addition to other higher education. If your institution uses "diploma supplement" (normal for most European institutions), you must attach this. A description of the documentation required can also be found here: [Documentation requirements for education obtained outside Norway - NTNU](#). If you already have a statement from [Norwegian Directorate for Higher Education and Skills \(HK-dir\)](#), please attach this as well.

When assessing the best qualified, we emphasize necessary qualifications such as education, experience and personal suitability.

Motivation for the position, ambitions, and potential for research will also count when assessing the candidates.

NTNU recognizes a wide range of academic contributions and has committed itself to The San Francisco Declaration on Research Assessment and CoARA (responsible assessment of research and recognition of a greater breadth of academic contributions in accordance with NTNU's social mission).

## General information

A public list of applicants with name, age, job title and municipality of residence is prepared after the application deadline. If you wish to be exempt from entry on the public applicant list, this must be justified. Assessment will be made in accordance with [current legislation](#). You will be notified if the exemption is not granted.

If you think this position looks interesting and in line with your qualifications, you are welcome to apply.

If you have any questions about the position, please contact Project Manager Rasmus Jakslund, e-mail [rasmus.jakslund@ntnu.no](mailto:rasmus.jakslund@ntnu.no). If you have any questions about the recruitment process, please contact HR Adviser Elisabeth Leite, e-mail: [elisabeth.leite@ntnu.no](mailto:elisabeth.leite@ntnu.no).

**Application deadline: 10.06.2026**

For practical information about [working at NTNU](#), please visit [this webpage](#).

[The city of Trondheim](#) is a modern European city with a rich cultural scene. [Trondheim is the tech capital of Norway](#) with a population of 200,000. The Norwegian welfare state, including healthcare, schools, kindergartens and overall equality, is probably the best of its kind in the world. Professional subsidized day-care for children is easily available. Furthermore, Trondheim offers great opportunities for education (including international schools) and possibilities to enjoy nature, culture and family life and has low crime rates and clean air quality.

## **NTNU - knowledge for a better world**

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The Norwegian University of Science and Technology (NTNU) creates knowledge for a better world and solutions that can change everyday life.

### **Department of Philosophy and Religious Studies**

We conduct research and teaching in philosophy and religious studies, and offer education at bachelor's, master's and doctoral level in both subject areas. We are also responsible for the introductory course examen philosophicum for all of NTNU. The Department has an active and international research environment. [The Department of Philosophy and Religious Studies](#) is one of six departments in the [Faculty of Humanities](#).

### **Additional information**

#### **Place of service:**

Dragvoll 7491 Trondheim (Trondheim Municipality)