GUIDE FOR APPLICANTS

Neuro-Innovation **Doctoral Programme**

Research and innovation for brain health throughout life

PROGRAMME DESCRIPTION

The Neuro-Innovation training is a novel effort at UEF to integrate the university's world class neuroscience with top-level management; social, legal and computer science and applied physics. This integration will produce unique inter/multidisciplinary competence that contributes to brain health innovation in Europe and beyond by training future leaders in this area of research and practice.

PhD training aims to

- educate innovation leaders who have world-class competence to advance and create brain health innovation in the international, multidisciplinary and intersectoral health care environment
- develop hybrid scientists with unique combinations of academic and practical skills needed in future jobs
- provide a new platform for intensive interaction of experts in different disciplines and research areas
- develop multi-professional insight needed in collaborative efforts with stakeholders
- offer means to advance impact and innovation in science, business, and policy

PhD training offers to ESRs'

- research skills that offer extended possibilities for an academic career and employment to R&D positions in companies
- transferable and multi/interdisciplinary skills that can lead to employment in non-academic sectors and enhanced opportunities for academic entrepreneurship
- knowledge of commercialization processes that lead to the creation of new health products and services, novel treatments, and more effective health care
- strong ethical insight with an excellent ability to engage with various stakeholders and make sustainable scientific, social, and economic contributions to society

We have supervisors from six regular PhD Programmes in three faculties: 1) Molecular medicine; 2) Clinical research in the Faculty of Heath Sciences; 3) Business; 4) Social Sciences; 5) Law in the Faculty of Social Sciences and Business Studies; and 6) Science, Technology and Computing in the Faculty of Science and Forestry. The new training will benefit from and work in close collaboration with the regular PhD Programmes at UEF. Precision medicine concerning epilepsy, traumatic brain injuries and neurodegenerative diseases have a long history as particularly strong, internationally ranked research areas of UEF neuroscience. Drawing from this expertise, the Neuro-Innovation training will address the translation of research results into clinical adaptation and commercial outcomes in three multidisciplinary research areas:

1. The societal impact of prediction and early diagnosis research area aims to understand and improve interdisciplinary, societally impactful research collaborations on novel biomarkers and risk genes, key mechanisms of epilepsy/TBI and neurodegenerative diseases, and the effect of environmental factors on brain

health. To accelerate prediction and early diagnosis, sophisticated machine learning prediction tools will be used and integrated with high- level legal and social science expertise on patient rights, public health ethics and inclusivity. Interdisciplinary impact and innovation management processes will be studied from a holistic perspective.

2. The co-innovation for prevention and treatment research area deals with collaborative innovation across networks and ecosystems where novel therapies are developed, tested and launched for the purpose of preventing and treating neurodegenerative diseases and epilepsy. Together with the key intersectoral partners, the research will focus on new drug candidates, multi-domain lifestyle-based interventions and personalised clinical treatments. For high- level outcomes, machine learning will be used to identify patient groups for specific treatments and predict therapy response. Intersectoral co-innovation processes will be studied, and research designs will be guided by legal expertise on law and medical ethics.

3. The transfer of technologies, methods and models research area aims to understand and improve knowledge transfer processes across research teams and from university to industry. This research area deals with new technologies, such as experimental MRI techniques and multiscale imaging. Novel methods and models include cohorts and population-based trials, as well as the use of human brain tissue samples, genetically modified animal models and human-based disease models. Sophisticated algorithms and competence on inverse problems will be utilised, together with legal expertise on privacy, data protection and data-sharing policies. Entrepreneurial processes will be studied to achieve success in research commercialisation.

EARLY STAGE RESEARCHER POSITIONS

The recruitment process for the 14 ESRs will take place over 12 months, starting in June 2021 and ending when the last ESRs sign employment contracts in May 2022. The plan is to recruit 7+7 ESRs for a four-year (48 months) PhD training in two calls. The first call will open on the 1st of June and the second call will open in mid-August 2021:

> The first call for 7 ESR positions: 1.6.-15.8.2021

> The second call for 7 ESR positions: 16.8.-31.10.2021

The ESR positions will be open for MScs of any nationality in the relevant scientific fields/combinations, as specified in the call. Please see the specific description for positions at https://sites.uef.fi/neuro-innovation/neuro-innovation-esr-positions/.

Applicants after a career break (i.e. maternity/parental leave, working in industry) are encouraged to submit their applications. However, they will need to ensure that the

description of the break and its reason is clearly presented on electronic application form. Any mobility experience or a change from one discipline or sector to another will be considered as a valuable contribution to the professional skills of the applicant. All documents must be prepared in English. The completed application and all required appendices must be submitted by the applicant. Only complete applications by the time of the deadline will be taken into consideration.

Working in the ESR position requires moving to Finland.

Important dates

PHASES	FIRST CALL TIMETABLE	SECOND CALL TIMETABLE
Opening and closing of the call	1.6.2021 -15.8.2021	16.8.2021 -31.10.2021
Interviews, planned schedule	Oct-Nov 2021	Dec 2021 – Jan 2022
ESRs will start their studies at UEF	1.2.2022-1.5.2022	1.3.2022-1.5.2022

APPLICATION PROCEDURE

The selection process will follow the Charter and Code for the recruitment and selection of doctoral researchers. Two calls will be organised, with the expectation of selecting seven ESRs from the first call and the remainder from the second call. The selection procedure includes 1) an eligibility check (including an ethics check for topics suggested by the applicants), 2) an external review, 3) interviews, 4) the final selection and 5) feedback (see Figure 1).
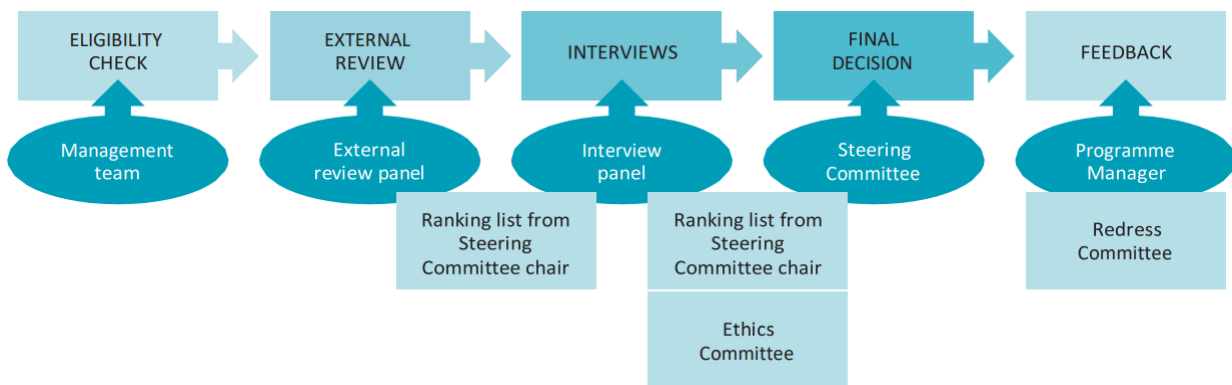

Figure 1: Overview of the selection process and the committees involved

1. An eligibility check

The process will start with the eligibility check to determine whether the candidates fulfil the predefined eligibility criteria. At the time of the recruitment, the candidates must fulfil the following eligibility requirements:

Research experience for doctoral candidates

- hold an MSc degree (or equivalent) and a research thesis (or equivalent) in a relevant area (health, management, social studies, law, computing, engineering, applied physics or a combination of these, see job-specific degree requirements in job descriptions)
- should not hold a doctorate or PhD
- should have less than 4 years of research experience after graduation (Master's Degree or equivalent based on which you are applying for this position) by October 31st, 2021. In this context, the 4 years refer to a net period of time, which does not include maternity leaves, parental leaves or military service.Mobility requirements for doctoral candidates
- fulfil the mobility requirement of the MSCA actions. I.e i.e. ESRs must not have resided or carried out their main activity (work, studies) in Finland for more than 12 months in the 3 years immediately before October 31st, 2021. Compulsory national service and/or short stays such as holidays are not considered
- fulfil the application requirements described in the call

Applications that do not meet the pre-set criteria will not proceed to the next phase, and the candidate will receive information regarding the reason for rejection and instructions for complaint.

The Ethics Committee will pursue the infrastructure check for research topics suggested or modified by the candidates.

2. An external review

The second step is the evaluation of the written applications of the eligible applicants by the external review panel consisting of independent and non-biased external experts. The panel will have a balanced mix of international, national, male and female experts outside the project partnership. The reviewers will have one month to complete the evaluation task.

The reviewers will evaluate candidates' 1) qualifications and merits on the basis of the degree certificates/diploma, Master's thesis summary and CV and 2) motivation and commitment to PhD studies and ability to tackle the chosen or suggested research topic on the basis of their motivation letter. Three reviewers will evaluate and score each application to ensure equitable evaluation.

The criteria used in the external review of the application documents are:

SCORING AND CUT-OFF TO PROCEED	EVALUATION CATEGORY	SPECIFIC ITEMS IN EACH EVALUATION CATEGORY
Maximum score 5 points in both categories.	CANDIDATE'S MERITS Weight 50%	• Academic qualifications (MSc thesis grade and summary 40 %) • Previous research experience in the chosen research area and topic (40%) • International experience / Interdisciplinary experience / Intersectoral experience (20%)
Cut-off 3 points in both categories to proceed. Total cut-off 7 points to proceed.	MOTIVATION LETTER Weight 50%	• Commitment and motivation to pursue PhD studies (20%) Understanding of the chosen or suggested research topic (20%) • Understanding of the research methods used in the chosen or suggested research topic (20%) • Understanding of the interdisciplinary and intersectoral aspects in doctoral training (20%) • Prospect of completing PhD studies in the given time frame (20%)

The candidates must reach a threshold score on each evaluation category of the external review to proceed to the next phase. Those under the threshold will not proceed to the ranking phase, and these candidates will receive information about their rejection and instructions for complaint. The candidates who pass the external evaluation procedure will be ranked by the chair of the Steering Committee, who will then select three times as many students as will ultimately be accepted to be invited to the interviews. In cases of two or more similar scores but only a single interview spot, all candidates reaching the similar score will proceed to interviews. Those who will not be interviewed will receive notification of the reason for rejection and instructions for appeal.

3. Interviews

The interview panel will interview the selected candidates online according to a predefined protocol. The Impact manager will provide compulsory training on non-biased evaluation to the interview panel. The interviews will be used to evaluate applicants' 1) understanding of the chosen research area, more specific research topic, and methodological skills; 2) motivation and commitment to PhD training, as well as learning goals and career plans and 3) English language skills. The basis for evaluation is a short pre-prepared presentation given on the Master's thesis summary and the chosen or suggested research topic, as well as joint discussions of candidates' objectives and motivation for pursuing a PhD.

An HR expert will be involved in interviews to secure a fair, non-discriminatory approach to each candidate and the overall transparency of the interview process. The candidates must reach a threshold score on each evaluation category of the interview to reach the final ranking list.

The criteria used in the interviews are:

SCORING AND CUT-OFF TO PROCEED	EVALUATION CATEGORY	SPECIFIC ITEMS IN EACH EVALUATION CATEGORY
Maximum score is 5 in every category. Cut-off is 3,5 points in every category to reach the final ranking list and be selected.	RESEARCH PRESENTATION Weight 50%	• Presenting Master's thesis summary in the given time frame (20%) • Assimilation of research purpose and aims for the chosen or suggested research topic (40%) • Mastering of theory, methods, and ethics for the chosen or suggested research topic (40%)
	MOTIVATION Weight 30%	• Motivation for PhD studies and for the chosen or suggested topic (60%) • Assimilation of learning goals for PhD studies (20%) • Career plans for future (20%)
	LANGUGAGE PROFICIENCY Weight 20%	• English language proficiency (100%)

Based on the interview scores, the chair of the Steering Committee will produce a new ranking list that identifies candidates who are qualified to be offered a PhD position. The Ethics Committee will approve the topics modified or suggested by the PhD students who will reach the main list and the waiting list on the basis of the interviews.

4. Final decision and feedback

Selected will be notified of the selection as soon as the ranking list is confirmed. The remaining interviewed candidates will be on a waiting list until the selected applicants have confirmed acceptance of the position. In case of vacancies, the next person on the list will be offered a position. When all positions have been filled, applicants on the waiting list will be informed. The candidates will receive feedback on the evaluation results when the application process has ended, as well as instructions for appeal. The Redress Committee will handle potential complaints immediately after the appeal deadlines have closed. If any mistakes in the process are detected, the re-evaluation of the application in question will be organised.

HOW TO APPLY?

Description of the research topics and expectations from the candidate are provided on the programme website at https://sites.uef.fi/neuro-innovation/neuro-innovation-esr-positions/ The candidates may modify the research topic given in the call or suggest their own topic in the motivation letter.

The UEF online application system (Saima Rekry) provides an easy-to-access electronic form to be filled out by the candidate. All application documents, written or transcribed in English, must be attached to this electronic form. The electronic application must contain the following documents and information:

- certified copies of BSc and MSc degree diplomas/certificates and copies of these relating to applicant's language proficiency (if not indicated in the academic degree), transcripts of these records in English. If the proof of English language skills has not been demonstrated in an academic degree and the applicant has not taken the English language test, the English language skills will be assessed in the interview for the position. There is no need for officially certified copies, but the scanned copy should be verified by two persons' signature. The officially certified certificates will be asked before the potential eligible candidate will be offered the position.
- curriculum vitae (CV) (CV template at https://tenk.fi/en/advice-and-materials/template-researchers-curriculum-vitae)
- Master's thesis (in any language), electronic copy (in zip file, how to create a zip file, instructions e.g. at https://www.wikihow.com/Make-a-Zip-File)
- two-page summary of the Master's thesis in English (in pdf file, instructions below)
- motivation letter (max three pages, see details below)
- Full name, mobile phone number and e-mail addresses of at least 2 referees

Motivation letter

Motivation letter describes the applicant's motivation to pursue PhD studies in the chosen research area and topic. It explains why you would be the best candidate for an Early Stage Researcher position. Carefully read instructions and write the motivation letter as follows:

1. Start with a brief explanation specifying the PhD Programme you are applying for and outline your interest in the Neuro-Innovation research project.
2. State a clear career objective of your PhD studies and the reasons for choosing the particular research topic (as given in the call, modified or your own topic).
3. Summarize key information about your previous academic and professional experience, knowledge and competence related to the chosen PhD Programme and the research topic. Include relevant research experience, international experience, and your work outside the academic sector and volunteering.
4. Specify in detail how your academic and professional achievements make you a valuable candidate for the PhD Programme, the Neuro-Innovation project, and the research topic you applied to.

When suggesting your own research topic or modifications to the given topic, the research idea needs to be described as part of the motivation letter (see details below). You can write these changes on the third page of your motivation letter. If you do not want to propose changes to a given research topic, the length of the motivation letter is two pages.

Please follow the technical requirements:

- Standard-sized paper A4 (8 ¼" x 11 ¾" or 210 mm x 297 mm), with 1"(2.54 cm) all around
- Clear font such as sans serif fonts 11-point Calibri, 11-point Arial, or 10-point Lucida Sans Unicode of serif fonts 12-point Times New Roman, 11-point Georgia, or normal (10-point) Computer Modern (the default font for LaTeX).
- Single-space the paragraphs. A space between each paragraph.
- No need to handwritten signature

Two-page summary of your graduation thesis (Master's Thesis) in English.

A summary highlights the major points covered, and concisely describes the content of the graduation thesis. A summary includes:

- a title of the thesis in English
- the main topic of the thesis
- the purpose of the thesis
- the methods used to research information
- further sub-sections within the thesis
- results, conclusions, or recommendations

A summary includes introduction, body, and conclusion to present the purpose, results, conclusions, and recommendations. Length of summary is max 2 pages. Please follow the same technical instructions as in your motivation letter.

If your previous degree does not include a Master's Thesis, use information from another thesis or research paper that demonstrates your research expertise. Attach this thesis or research paper to your application as "Master's Thesis".

SUGGESTING YOUR OWN OR MODIFYING THE GIVEN RESEARCH TOPIC

When suggesting your own research topic or modifications to the given topic, your research idea needs to be described as part of the motivation letter (i.e. on the third page) and research ethics and infrastructure form must be attached to the application (i.e. 'other attachment of the electronic application form).

1. Instructions for the third page of the motivation letter

In one page:

- Describe your research topic and its relevance
- Shortly summarize existing research
- Position your own research approach
- Detail your research problem and methodology
- In case any ethical issues arise in your proposal, please describe them

2. Instructions concerning research ethics and infrastructure

Fulfil the research ethics and infrastructure form (available at www.uef.fi/neuro-innovation and attached at the end of this document) and attach it to your application in Saima Rekry system. If you cannot complete the form provided, you can copy the questions and provide your answers in a separate sheet. Please note, that only when suggesting modifications to the given topic the research ethics and infrastructure attachment is needed.

The ethics and infrastructure questions must be answered for all modified or own topics. The Ethics Committee will check your answers as part of the eligibility check.

HOW TO FILL APPLICATION FORM

The electronic application forms will be published in the SaimaRekry portal at https://www.uef.fi/en/open-positions

When filling in the electronic application form, you will need to provide the following information in it:

- Contact details
- Education. If you have completed the MPhil degree, select the licentiate degree from the menus. If the degree/other education is in progress, please indicate what percentage you have completed.
- Language skills.
- Work experience. Provide only the relevant information for the position you apply. Explain other work experience shortly in your Curriculum vitae.
- Number of publications, if any.
- Expert tasks (e.g. acting as referee for scientific publications)
- Other research merits (e.g. awards and honours granted for scientific merits, positions of trust in scientific communities, cross-disciplinary expertise, international research expertise)
- Other societal merits (e.g. promoting open science and research, appearing as an expert in the media, intersectoral experience)
- Referees. Provide full name, mobile phone number and e-mail addresses of at least 2 referees
- Possible start of the work.
- Details on how many months you have resided or carried out your main activity (work, studies, etc.) in Finland during 1.11.2018-31.10.2021? Compulsory national service and/or short stays such as holidays are not taken into account.
- Title and the grade of your Master's Degree Thesis in English.

- Name of your Thesis supervisor.
- The length of research experience after graduation. The length is calculated from the completion of the Master's degree or equivalent on the basis of which you are applying for this position until 31 October 2021. In this context, the years of research experience refer to a net period of time, which does not include maternity leaves, parental leaves or military service.
- Do you hold a doctoral degree? (Yes/no/currently studying for)
- Which of your degrees is the one you are applying for the position?
- Whether this degree qualifies for postgraduate studies in your country? (Yes/no)
- Details of your previous research experience including methodological expertise in the chosen research area and topic.
- Details of research visits and secondments (if applicable). What was the name of the organization, the location and the length of the visit? Explain the purpose of the visit and the gained knowledge. In this question, describe your international, cross-sectoral and interdisciplinary experience.

Careful completion of the form will take at least an hour. You can modify and complete your application during the application period. Some of the questions are marked as mandatory and the application cannot be sent without answering the mandatory questions. However, if the required questions do not apply to you, write "does not apply to me" or express the same in another way.

Any questions?

For further information on research topics, supervision, and application procedure, please visit www.uef.fi/neuro-innovation

In case of further questions or problems:

Study Frequently asked questions https://sites.uef.fi/neuro-innovation/2021/05/25/frequently-asked-questions/

Contact neuroinno@uef.fi

Call the project manager +358 50 367 5236

APPENDICE 1. RESEARCH ETHICS AND INFRASTRUCTURE FORM

Fulfil this research ethical and infrastructure form and attach it to your application in SaimaRekry system. If you cannot complete the form provided, you can copy the questions and answer them in another document.

Research Ethical Issues Table (if applicable, not included in the 1page limit of your own proposal)

In case any ethical issues arise in your own proposal, please **mark all fields where "YES" is applicable to your own project proposal**. The information asked in this table must be included into your application even if the proposal does not raise any severe ethical issues.

Research Ethical Issues Table		
RESEARCH ON HUMAN EMBRYO/FOETUS	**YES**	**NO**
Does your research involve human embryos?		
Does your research involve human foetal tissues/cells?		
Does your research involve human embryonic stem cells (hESCs)?		
Does your research on human embryonic stem cells involve cells in culture?		
Does your research on human embryonic stem cells involve the derivation of cells from embryos?		
I CONFIRM THAT NONE OF THE ABOVE ISSUES APPLY TO MY PROPOSAL		
RESEARCH ON HUMANS		
Does your research involve children?		
Does your research involve patients?		
Does your research involve persons not able to give consent?		
Does your research involve adult healthy volunteers?		
Does your research involve human genetic material?		
Does your research involve human biological samples?		
Does your research involve human data collection?		
I CONFIRM THAT NONE OF THE ABOVE ISSUES APPLY TO MY PROPOSAL		
PRIVACY		
Does your research involve processing of genetic information or personal data (e.g. health, sexual lifestyle, ethnicity, political opinion, religious or philosophical conviction)?		
Does your research involve tracking the location or observation of people?		
I CONFIRM THAT NONE OF THE ABOVE ISSUES APPLY TO MY PROPOSAL		
RESEARCH ON ANIMALS		
Does your research involve animals?		
Are those animals transgenic small laboratory animals?		
Are those animals transgenic farm animals?		
Are those animals non-human primates?		
Are those animals cloned farm animals?		
I CONFIRM THAT NONE OF THE ABOVE ISSUES APPLY TO MY PROPOSAL		

RESEARCH INVOLVING DEVELOPING COUNTRIES	YES	NO
Does you research involve the use of elements that may cause harm to the environment, to animals or plants?		
Does your research deal with endangered fauna and/or flora and/or protected areas?		
Does your research involve the use of elements that may cause harm to humans, including research staff?		
I CONFIRM THAT NONE OF THE ABOVE ISSUES APPLY TO MY PROPOSAL		
DUAL USE		
Does your research have the potential for military applications?		
Does your research have the potential for malevolent/criminal/terrorist abuse?		
I CONFIRM THAT NONE OF THE ABOVE ISSUES APPLY TO MY PROPOSAL		

Infrastructure Table

Answer the following questions in detail. The information asked in this table must be included into the application when the given topic has been modified or own topic suggested.

Infrastructure table
1) What kind of equipment is needed for the research topic you suggested/modified?
2) What kind of software is needed for the research topic you suggested/modified?
3) What kind of data bank or other data is needed for the research topic you suggested/modified?
4) What other resources, services, or other is needed for the research topic you suggested/modified?