NeuroTrans
NEUROtransmitter TRANSporters:
From Single Molecules to Human Pathologies

## 15 PhD positions within the MSCA-ITN-ETN NeuroTrans:

## NEUROtransmitter TRANSporters: From single molecules to human pathologies

The European Training Network (ETN) NeuroTrans (NEUROtransmitter TRANSporters: From single molecules to human pathologies) announces 15 PhD candidate **positions for Early-Stage Researchers** (ESRs) with the option of being awarded a doctoral degree. NeuroTrans is an Innovative Training Networks (ITN) from the Marie Skłodowska-Curie (MSCA) Actions Programme (https://ec.europa.eu/programmes/horizon2020/en/h2020-section/marie-Skłodowska-curie-actions), funded by the European Commission under the framework of Horizon 2020. The NeuroTrans ETN (Grant number 860954) will establish an international training programme by forming a highly interdisciplinary team of world-leading European researchers from 9 universities and 5 industrial partners. NeuroTrans makes ample use of existing cutting-edge methods to reach this goal, but also develops enabling techniques in biophysics, molecular and structural biology.

The vision of the NeuroTrans project is:

- to reach a comprehensive understanding of neurotransmitter:sodium symporter (NSS) function ranging from the molecular level to human pathologies,
- to investigate how psychoactive substances target these transporters,
- to elucidate how disruption of transporter function contributes to neuropsychiatric disease pathobiology.

To accomplish our vision, NeuroTrans will establish an interdisciplinary training school that includes most important subdisciplines in quantitative biology, including molecular modelling, computer simulations, biophysics, biochemistry, neurobiology, human pathology, molecular and structural biology, but also engineering and programming. Through the training offered by NeuroTrans, PhD candidates will develop a cutting edge set of skills ranging from computer simulations to membrane protein structural biology, dynamics and thermodynamics to human diseases, pathologies and instrument development. By integration of the industrial sector in the training, NeuroTrans will offer training in entrepreneurship, product development and commercialisation to prepare the NeuroTrans students for acquiring leading positions in academia and industry.

Details on the NeuroTrans programme and the recruitment can be found on the NeuroTrans homepage (www.neurotrans.org). The positions are available at 9 universities and 3 companies in 8 different European countries. Employment is according to the regulations by the hosting university or company and the rules of the Marie Skłodowska-Curie Actions. All Marie Skłodowska-Curie Actions funded ESR position positions are limited to a duration of 36 months, but can be extended according to national regulations. The PhD candidate will enroll in a university PhD programme.

## Applicants should consult the homepage of NeuroTrans (www.neurotrans.org) for complete information.

Applications need to be directed to the NeuroTrans consortium (office@neurotrans.org).

## The 15 projects of NeuroTrans are:

**Project 1) Molecular insights into the role of lipids and regulatory proteins on sodium coupling and inhibition of the GABA transporters BGT1 and GAT1.**

Hosting institution and working location: **University of Regensburg, Germany**
Principal investigator: **Christine Ziegler**

**Project 2) NMR based structural and dynamic investigation of the transport cycle of NSS transporters**

Hosting institution and working location: **NOVA University of Lisbon, Portugal**
Principal investigator: **Eurico Cabrita**

**Project 3) Purification, functional characterization and reconstitution of DAT and LeuT.**

Hosting institution and working location: **University of Copenhagen, Denmark**
Principal investigator: **Claus Løland**

**Project 4) Development of a comprehensive model of GABA transporter function**

Hosting institution and working location: **Medical University of Vienna, Austria**
Principal investigator: **Thomas Stockner**

**Project 5) Electrophysiological characterization of NSS transporters and formulation of an overall kinetic model**

Hosting institution and working location: **Nanion, Munich, Germany**
Principal investigator: **Andre Bazzone**

**Project 6) Electrophysiological approaches to study, ion coupling and transport by NSS transporters**

Hosting institution and working location: **University of Insubria, Italy**
Principal investigator: **Elena Bossi**

**Project 7) Kinetics of substrate transport for deduction of mechanistic models of the transport cycle**

Hosting institution and working location: **University of Groningen, The Netherlands**
Principal investigator: **Dirk Slotboom**

**Project 8) Development of a cloud-based data pipeline to enable data-driven analysis for the determination of transporter-ligand binding thermodynamics**

Hosting institution and working location: **Nanotemper, Munich, Germany**
Principal investigator: **Julia Baldauf**

**Project 9) Integrative modelling of ligand binding, transporter stability and the transport cycle**

Hosting institution and working location: **Medical University of Vienna, Austria**
Principal investigator: **Thomas Stockner**

**Project 10) Time resolved structural studies of membrane transporters**

Hosting institution and working location: **University of Hamburg, Germany**
Principal investigator: **Arwen Pearson**

**Project 11) Single-molecule studies of secondary-active transporters and their environmental dependence.**

Hosting institution and working location: **Ludwig-Maximilans University Munich, Germany**
Principal investigator: **Thorben Cordes**

**Project 12) Resolving coarse-grained dynamic distance constraints of the transport cycle of NSS transporters using EPR spectroscopy**

Hosting institution and working location: **University of East Anglia, UK**
Principal investigator: **Fraser MacMillan**

**Project 13) Characterization of the molecular mode of action of novel psychoactive substances**

Hosting institution and working location: **Medical University of Vienna, Austria**
Principal investigator: **Harald Sitte**

**Project 14) Development of a microfluidic cell perfusion station for controlled compound delivery and real time fluorescence monitoring**

Hosting institution and working location: **Elvesys, France**
Principal investigator: **Christa Ivanova**

**Project 15) Assessing the molecular determinants of novel disease causing mutations in DAT**

Hosting institution and working location: **University of Copenhagen, Denmark**
Principal investigator: **Ulrik Gether**

## Application

Applicants should email the completed application form and all other requested documents and information to the NeuroTrans office: office@neurotrans.org. The language for applying to NeuroTrans is English. At the time of application, applicants do not need to have finished their Master's study (or equivalent) that allows for enrolling in a PhD programme, but it must be completed at the time of recruitment to the hosting institution. Applicants may apply for a maximum of three positions and must indicate their preference in the application form.

Applications (provided as a single PDF file) should include the following documents:

- Curriculum Vitae (Europass format preferred)
- Contact information of two senior referees. Note that you must contact your referees and make sure that they independently send a reference letter to office@neurotrans.org. The reference letters should be on institutional headed paper and come from the referee's institutional rather than personal email address. We will not contact your referees; it is your responsibility to ensure that references reach us by the application deadline.
- Completed Application Form of the European Training Network (ETN) NeuroTrans can be downloaded from the NeuroTrans homepage (www.neurotrans.org).
- Certificates of university degrees and intermediate certificates. If a Master's degree (or equivalent) has not been obtained, this must be stated and the estimated date of completion must be provided. The degree allowing for enrollment in a PhD programme needs to be completed at the time of commencing the employment contract.

- Academic record: University transcripts, including photocopies of transcripts of marks (academic record).
- University transcripts documenting your career must be sent in one of the NeuroTrans languages, preferably English (Danish, Dutch, English, German, French, Italian, and Portuguese are also accepted).
- Additional documents (if available) supporting your applications that can include language certificates, additional education certificates or training certificates. The complete application requirements are described on the homepage of NeuroTrans (www.neurotrans.org).

After the deadline, applications will be evaluated by the supervisory board. Interviews with shortlisted candidates will be conducted through videoconferencing. Candidates will be selected by an evaluation panel and the supervisory board of NeuroTrans. Selected PhD candidates will be hired by the hosting institution and enroll in a university PhD programme. All Marie Skłodowska-Curie Actions funded ESR positions are limited to a duration of 36 months, but can be extended according to national regulations. See the NeuroTrans homepage for further details.

## Eligibility Criteria

The PhD candidates must fulfill the following conditions to be eligible as PhD candidate for NeuroTrans:

- Excellent oral and written English language skills
- At the date of commencing their employment, be in the first four years (full-time equivalent research experience) of their research careers, including any period of research training. The time is measured from the date when the PhD candidate obtained the first degree entitling him/her to embark on a doctorate (either in the country in which the degree was obtained or in the country in which the PhD candidate is recruited, even if a doctorate was never started or envisaged).
- At the time of recruitment be in possession of a university degree that allows for enrolling in a PhD programme, but have not completed a PhD. Being already enrolled in a PhD programme (unfinished) does not constitute an exclusion criterium. Date of commencing their employment means the first day of the employment of the PhD candidate (i.e. the starting date indicated in the employment contract or equivalent direct contract).
- PhD candidates must not have resided or carried out their main activity (work, studies, etc.) in the country of the recruiting university of company for more than 12 months in the 3 years immediately before the recruitment date. This time is measured from the date of signing the employment contract. Compulsory national service, short stays such as holidays, and time spent as part of a procedure for obtaining refugee status under the Geneva Convention are not taken into account. Compulsory national service, short stays such as holidays, and time spent as part of a procedure for obtaining refugee status under the Geneva Convention are not taken into account.
- Have a Master' s degree (or an equivalent diploma allowing to pursue a PhD) in the fields as requested for each NeuroTrans projects. See further details at the homepage of NeuroTrans (www.neurotrans.org)

- Additional recruitment criteria for each project/PhD position can be found on the NeuroTrans homepage (www.neurotrans.org).
- The PhD candidate can be of any nationality.

See further details in the Guide for Applicants Marie Skłodowska-Curie Actions Innovative Training Networks.

## Remuneration

The successful candidates will receive a 36-month, full-time employment contract as per Marie Skłodowska-Curie Actions (MSCA) regulations for Early Stage Researchers (ESRs). The gross salary is comprised of the following three standard EU allowances: Living allowance: €3270; Monthly allowance: €600; Family allowance: €500. The listed gross living allowance are adjusted through the multiplication with the country correction coefficient (Austria=1.067; Denmark=1.350; France=1.157; Germany=0.970; Italy=1.044; Portugal=0.842; The Netherlands=1.079; United Kingdom=1.398) according to Marie Skłodowska-Curie Actions regulations.

### Living Allowance

The PhD candidates will be appointed according to the applicable employment contracts of the hosting institution / company. The monthly gross living allowance is subject to deductions of employer' s and employee' s contributions to National Insurance, income tax, etc. . This adjustment reflects the average difference in living cost between European countries.

### Monthly Allowance

All eligible PhD candidates recruited within NeuroTrans are entitled to receive this gross allowance. It contributes to the mobility related expenses.

### Family Allowance

A gross family allowance will be paid should the researcher have family, regardless of whether the family will move with the researcher or not. In this context, family is defined as persons linked to the researcher by (i) marriage, or (ii) a relationship with equivalent status to a marriage recognised by the national or relevant regional legislation of the country where this relationship was formalised; or (iii) dependent children who are actually being maintained by the researcher. The family status of a researcher will be determined at the date of their (first) recruitment in the action and will not evolve during the action lifetime.