



# INSTITUTE OF DENDROLOGY

## POLISH ACADEMY OF SCIENCES

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Kórnik 16th July 2021

### **Announcement about recruitment to the Poznań Doctoral School of Institutes of the Polish Academy of Sciences at the Institute of Dendrology Polish Academy of Sciences No. 13/2021/ID/PSD**

**I. Position type:** doctoral student

**II. Number of vacancies:** 1

**III. Discipline:** biological sciences

**IV. Application deadline:** 31/08/2021

**V. Detailed information about recruitment process can be found on the website:**  
<http://www.idpan.poznan.pl/index.php/doctoral-school-pds-ipas/information-on-recruitment-at-the-institute-dendrology-pas> and <https://www.ibch.poznan.pl/pl/main-pl/st-doktoranckie/psd-ipan/>

**VI. Research topic:** Functional traits intraspecific variability of forest herbaceous species: sources and consequences

**VII. Principal Investigator / Research group:** prof. Andrzej M. Jagodziński, Department of Ecology

#### **VIII. Project Description:**

One of the most promising tools for predicting future ecosystem changes are plant functional traits: morphological, physiological, and phenological traits that affect the growth, reproduction, and survival of individuals and populations. In our research project, we aim to study the intraspecific trait variability (ITV) of forest herbaceous plant species. This group of species is crucial for macro- and microelement cycling in forest ecosystems yet remains poorly recognized. On the other hand, ITV allows for a better understanding of plants' adaptive capacities, which will significantly affect species' responses under changing environmental conditions. The two main aims of the project are to provide the missing data about functional traits and to study the less addressed ITV as an important source of the total variability of plants' functional diversity. During the project we will test the following hypotheses:

1. The size of ITV is proportionally dependent on the spatial scale studied.
2. Climate-related factors and competition-driven factors affect ITV at a similar level.
3. ITV of evolutionarily younger species is higher than in the case of the older ones, which shows that phylogenetics determines the ITV of the species studied.

4. ITV of the species studied affects their functioning (germination, decomposition, and net production), simultaneously influencing ecosystem functioning.
5. Increasing sample size due to ITV assessment will broaden the known range of trait values and will lead to showing higher variability of the species traits and to the shift of currently used mean trait values.
6. Different traits will vary to a different extent.

We will focus on measurements of the six following traits: height, leaf area, leaf nitrogen content, seed mass, specific leaf area, and stem-specific density. As part of the study on the ITV sources, we planned to check how the ITV is affected by the season, aspect, elevation, light availability, phylogenetics, climate continentality, within-habitat, and among-habitats interactions, and intraspecific competition. As a consequence of ITV, we plan to study decomposition, biomass production, and seed germination. We will compare the impact of different factors on the ITV and we will assess what are the consequences of ITV for the functioning of the ecosystem. A significant product of our project will be a robust database covering over 100 forest herbaceous species.

Ph.D. student's tasks will cover the selection of a significant part of study plots, plant material collection, functional traits measurements, analyses of ITV sources, and consequences of ITV for the functioning ecosystems. During the research project, the Ph.D. student will learn differentiated tools from the field of functional ecology. The Ph.D. student will learn to establish study plots in the field and how to describe them, to identify plant species occurring in temperate forests, to collect and analyze plant material, to measure plant functional traits. The Ph.D. student will gain new analytical skills, including phylogenetic analyses. After collecting the data, the Ph.D. student will perform models to check the impact of environmental factors on the ITV and to study the impact of ITV on forest ecosystem functioning. We expect that we will publish the results in the best international scientific journals regarding functional ecology, forest ecology, and plant biology. We also aim to disseminate the results during the most relevant international conferences. In the project, we planned the participation of the Ph.D. student in at least two international conferences.

During the research project, we offer collaboration with a research group characterized by a wide range of interests, including plant ecology and nutrient cycling in forest ecosystems. Joining our research team will allow for participation in extensive research which aims to understand the functioning of the forest ecosystems under changing climate. We offer the ability to freely exchange ideas and to develop scientifically in a dynamic, permanently growing research team with significant experience in publishing in the best scientific journals.

#### **IX. Additional information:**

1. Research and doctoral dissertation will be conducted under research project: Functional traits intraspecific variability of forest herbaceous species: sources and consequences (2020/39/B/NZ8/03296, National Science Centre).
2. The doctoral student will receive a doctoral scholarship in the amount of ca. 4180 PLN gross pay (ca. 3789,00 PLN net pay) monthly during the entire doctoral studies (48 months).
3. The doctoral student will have the social insurance costs referred to in art. 6 clause 1 point 7b of the Act of October 13, 1998 on the social insurance system (Dz. U. z 2019 r. poz. 300, 303 i 730).

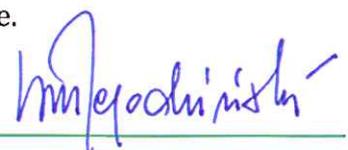
#### **X. Requirements for candidates:**



1. Master degree in discipline of biological sciences, forest sciences, Earth and environment sciences or related or meeting the conditions specified in art. 186 section 2 of the Act of July 20, 2018 Law on Higher Education and Science (Dz. U. z 2018 r., poz. 1668 z późn. zm.).
2. Very good skills in spoken and written English, allowing for preparing manuscripts of scientific publications and oral presentations during international conferences
3. Ability to conduct field investigation during the entire season and prior experience in fieldwork.
4. Ability to determine basic plant species from forest ecosystems of Poland.
5. Experience in research studies in biology and ecology of trees or forestry, documented by prior scientific activity (e.g. conferences or publications).
6. Basic data analyses skills using statistical software (preferably R or other open source software)
7. Favorably: experience with specialized R packages for vegetation analyses (vegan, FD, ade4), experience with advanced statistical methods (mixed-effects models, machine learning), spatial analyses skills and experience in spatial data processing in QGIS, driving license.

#### **XI. Required documents:**

1. An application to PDS IPAS, including consent for the processing of personal data for the purposes of the recruitment procedure, and a declaration of familiarity with these rules - the current application form is available at <http://www.idpan.poznan.pl/index.php/doctoral-school-pds-ipas/documents-for-candidates-and-ph-d-students>.
2. A copy of the degree certificate confirming graduation or a certificate of graduation; in the case of degree certificates issued by foreign higher education institutions, the certificate referred to in Article 326(2)(2) or Article 327(2) of the Act, giving the right to seek to obtain a doctoral degree in the country under whose higher education system the issuing institution operates. A candidate who does not have the aforementioned documents will be obliged to supply them before being admitted to PDS IPAS. Additional information on foreign diplomas is available on the website: <https://nawa.gov.pl/en/recognition/recognition-for-academic-purposes/applying-for-admission-to-doctoral-studies>
3. A curriculum vitae showing previous education and employment, information on involvement in scientific activity (membership of student scientific groups, participation in scientific conferences, completed internships and training courses, prizes and distinctions received) a list of publications.
4. A motivation letter, containing a short description of interests, scientific accomplishments, and reasons for wishing to study at the doctoral school.
5. Certificates or other documents confirming the candidate's knowledge of English, if the candidate has such.
6. Contact details of at least one previous academic supervisor or other academic employee who has agreed to provide an opinion regarding the candidate.



The application should be sent by e-mail to the address [psd.idpan@man.poznan.pl](mailto:psd.idpan@man.poznan.pl) with the subject "**Competition for the position of doctoral student No. 13/2021/ID/PSD**" in the form of a pdf attachment. If sending by electronic means is not possible, applications sent to the address Institute of Dendrology, Polish Academy of Sciences, Parkowa 5, 62-035 Kórnik, Poland with the note on the envelope "**Competition for the position of doctoral student No. 13/2021/ID/PSD**" are also accepted. Please do not send original documents.

**XII. Application deadline: 31/08/2021**

Incomplete applications and applications submitted after the deadline will not be considered.

**XIII. Criteria for assessing candidates:**

1. The candidate's academic accomplishments, based on grades attained during studies, scientific and popular science publications, scholarships, awards and distinctions resulting from research or student activity, and other achievements.
2. The candidate's academic and professional experience, based on participation in conferences, workshops, training courses and internships, participation in research and commercial projects, involvement in scientific groups and associations, international and professional mobility, and experience in other fields.
3. Candidate's knowledge in the biological science discipline.
4. Knowledge of the topics listed in the recruitment notice.

**XIV. Competition results: until 30/09/2021**

**XV. A description of the recruitment process can be found in the Recruitment Regulations for PDS IPAS. After the recruitment is completed, unaccepted candidates will be informed of the scores obtained at each stage of the competition.**

**XVI. Admission to PDS IPAS is refused by administrative procedure. The decision may be appealed with to the Director of the Institute of Dendrology of the Polish Academy of Sciences.**

**XVII. Additional information may be provided Principal Investigator / Research group: prof. Andrzej M. Jagodziński.**

  
DYREKTOR  
INSTYTUTU DENDROLOGII  
POLSKIEJ AKADEMII NAUK  
prof. dr hab. inż. Andrzej M. Jagodziński