



UNIVERSITY
OF WARSAW



Doctoral School of
Exact and Natural
Sciences

Competition notice

PRELUDIUM BIS

Project title: Evolutionary patterns and colonization of new environments: understanding the evolution and functional morphology of freshwater chelicerates

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Project description

This project aims to provide a comprehensive examination of transitions to freshwater environments in aquatic chelicerates combining phylogenetics, functional morphology and sedimentological data to identify evolutionary patterns and factors associated with habitat shifts in arthropods.

Following research tasks are planned for this project:

- Description and documentation of new fossil material from Poland with comparison to material from other localities to encompass specimens from a wide range of habitats and morphological examination employing computed tomography (CT) and 3D surface scans;
- Analysis of chelicerate phylogeny with detailed examination of horseshoe crab and eurypterid relationships, implementing different state-of-the-art total evidence approaches and data sets (based on both discrete and continuous morphological traits and incorporating stratigraphic information), to evolutionarily and temporally constrain the transitions to freshwater environments;
- Analysis of localities and matrix of samples containing the suggested freshwater forms to accurately reconstruct their paleoenvironments;
- Functional morphology studies using computational fluid dynamics (CFD) and comparisons with similar fossil and extant taxa to understand the morphological adaptations associated with shifts to freshwater habitats.

This project will greatly enhance our understanding of the past diversity and ecology of chelicerates, the evolutionary patterns associated with habitat shifts, and factors that influence evolutionary transitions to freshwater environments and radiations in arthropods and animals more generally. By examining drivers of morphological and ecological change we will also uncover the limitations restricting the diversity and disparity of modern taxa viewed as 'living fossils' (e.g., their close limulid relatives or more distant freshwater notostracans). This research will also contribute to the discourse on chelicerate phylogeny, particularly the position of Xiphosura within it, utilization of modern phylogenetic, computational and imagining methods, and the influence of mass extinction events on the evolution and diversity of major arthropod groups.

Requirement

The call is open to all those who are not PhD holders and are not students at the doctoral schools.

- MSc in Evolutionary Biology, Paleobiology or related discipline

- Languages: High proficiency in written and spoken English.

Desired skills:

- Paleontological or geological field experience
- Skills in quantify traits, phylogenetic analyses and/or modelling
- Evidence of a research focus on aquatic arthropods.
- Experience with arthropod anatomy and biology
- Practical experience in fossil preparation
- Previous experience in museum research

Discipline: Biological Sciences

Admission limit: 1

Recruitment schedule

- registration in the Internet Registration of Candidates, referred to as "IRK", submitting an application to the IRK: **12.07 - 26.07.2023**
- qualification procedure: **31.07 - 4.08.2023**
- announcement of the ranking list: **until 25.08.2023**
- accepting documents from qualified candidates: **21.09.2023 do godz. 14.00**
- announcement of the list of accepted candidates: **until 30.09.2023**

Recruitment fee

200 PLN

Form of the qualification proceedings

Qualification proceedings include the assessment of the following items:

- 1) the candidate's scientific activity, based on their CV or Resume, documented by scans of materials attached to the application for admission to the School;
- 2) an interview with the candidate;
- 3) other achievements.

Language of the selection process, including the interview

The interview shall be carried out in Polish or English – in accordance with the candidate's preferences presented in IRK. If the Polish language is selected, the interview may include parts in English.

Required documents

The candidate shall submit a School admission application only through the IRK. The application shall include the following:

- 1) indication of the selected discipline in which the candidate plans to pursue education or in the case of applying for the Interdisciplinary Doctoral School – fields of science with the specification of the leading field (and where there is no leading field – at least two equivalent disciplines), PESEL number or passport number, nationality, contact information (residence address, e-mail address, telephone number), information whether the candidate agrees to receive administrative decisions by means of electronic communication, consent for processing of personal data for the purposes of the admissions procedure;
- 2) a scan of the graduation diploma of uniform master's degree or postgraduate studies or an equivalent diploma obtained under separate regulations or in the case of candidates pursuing education within the European Higher Education Area – a certificate of obtaining a Master's degree or a declaration that the diploma or certificate of obtaining a Master's degree shall be provided by 21.09.2023 – declaration form. In case the diploma was issued in a language other than Polish or English, the candidate shall attach its certified translation;
- 3) a resume or CV outlining the candidate's scientific activity, including scholarly interests and achievements during the five calendar years preceding the application (if a candidate became a parent during this time, as evidenced by a scan of the child's birth certificate attached to the application, this period shall be extended by two years for each child), including, but not limited to:
 - publications,
 - research and organizational work at student research groups,
 - participation in scientific conferences,
 - participation in research projects,
 - awards and honorable mentions,
 - research internships,
 - research skills training programs completed,
 - activities promoting science,
 - activity in science movement representative bodies,
 - average of their university grades,
 - professional career,
 - level of proficiency in foreign languages;
- 4) scans of materials evidencing scientific activity mentioned in their CV and/or resume;
- 5) a document confirming at least B2 proficiency level in English or a declaration of the level of proficiency in English allowing education at the School;
- 6) the scan of a declaration by the planned supervisor, confirming their agreement to undertake the duties of a supervisor and of the number of doctoral students, for whom they perform the duties a designated supervisor, in accordance with the template constituting Appendix no.4 to the Resolution no. 17 of the Senate of the University of Warsaw of 20th January 2021 on rules of admission to doctoral schools at the University of Warsaw (the University of Warsaw Monitor of 2023, item 43), the candidate may also attach a scan of their planned supervisor's opinion and opinions of other academics about the candidate and their scientific activity and/or proposed research project;
- 7) the photograph of a candidate's face that allows for their identification;
- 8) a declaration confirming whether the candidate was or is a doctoral student or a participant of doctoral studies or whether they have initiated a doctoral dissertation process or whether proceedings to award them a doctoral degree have been initiated – and if yes, the title of their doctoral dissertation or the research project prepared by a candidate, including the name and last name of the candidate's tutor or supervisor;
- 9) a declaration confirming that they have reviewed the Resolution no. 17 of the Senate of the University of Warsaw of 20th January 2021 on rules of admission to doctoral schools at the University of Warsaw (the University of Warsaw Monitor of 2023, item 43) and Articles 40 and 41 of the Code of Administrative Procedure;

- 10) scanned transcripts of records of the graduate and postgraduate studies or the uniform Master's degree studies, or equivalent documents (e.g. diploma supplement);
- 11) abstract of the master's thesis or master's project in English (up to 3,000 characters with spaces);

Evaluation criteria

- a) competencies to perform specific tasks in a research project (70% of the final score)
 - 3 points - very good
 - 2 points – good
 - 1 point – poor
 - 0 points - no competencies
- b) publication track record, including publications in renowned scientific papers / magazines (30% of the final score)
 - 4 points – prominent
 - 3 points - very good
 - 2 points – good
 - 1 point – poor
 - 0 points - no publication track record

Education program

The education lasts 4 years. It includes obligatory classes (no more than 300 hours in total during the whole period of education) and the implementation of an individual research program, carried out under the supervision of a supervisor. Beginning of education – October 1, 2023.

Scholarships

PRELUDIUM BIS doctoral scholarships shall amount to:

- PLN 4266.00 gross per month, until the month in which a PhD student's mid-term evaluation is performed at the doctoral school and
- PLN 5119.00 gross per month, after the month in which a PhD student's mid-term evaluation is performed at the doctoral school and

shall be awarded pursuant to the Act on Higher Education and Science of 20 July 2018.