
List of Post-Doctoral Fellowships

A new call for applications has been announced !


Applicants can apply in 2022 for positions in projects announced by following faculties / institutes:

1. [First Faculty of Medicine](#) : 2 projects
2. [Faculty of Education](#) : 3 projects
3. [Faculty of Arts](#) : 5 projects
4. [Faculty of Humanities](#) : 2 projects
5. [Faculty of Social Sciences](#) : 5 projects
6. [Faculty of Mathematics and Physics](#) : 4 projects
7. [Faculty of Science](#) : 7 projects
8. [Faculty of Law](#) : 5 projects
9. [Faculty of Medicine in Pilsen](#) : 1 project
10. [Faculty of Pharmacy in Hradec Králové](#) : 1 project
11. [Center for Economic Research and Graduate Education](#) : 1 project

Deadlines of submitting of applications you will find under each specific project. More detailed information about general conditions of applying for positions funded by JUNIOR Fund you can find on the website: [JUNIOR Fund \(Post-doc\)](#).

First Faculty of Medicine

[1] Title of the research project:

	EYE MOVEMENTS IN THE DEEP PHENOTYPING OF EARLY NEURODEGENERATION
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Description:

Idiopathic rapid eye movement sleep behavior disorder (iRBD) manifested by the absence of muscle atonia and dream enactment behaviors, is a recognized initial form of neurodegenerative disease. After 10 years or more since iRBD diagnosis, up to 3/4 of patients develop alpha-synucleinopathies, including Parkinson's disease (PD), multiple system atrophy, or Lewy body disease. Early detection of neurodegeneration before the clinical onset of symptoms is a prerequisite for studying the mechanisms of disability and/or for early initiation of targeted symptomatic, neuroprotective or neurorestorative therapy. To accurately discern the phenotype of the disease and classify it into one of the forms differing in the degree of impairment of motor, cognitive and autonomic functions, deep phenotyping procedures have recently been introduced (Delude 2015). These consist of a detailed description of the characteristic features that contribute to the recognition of the sub-phenotypes of the disease. While disability may be undetectable by clinical examination in the earliest stages of neurodegeneration, targeted instrumental analyses have been used to study motor stereotypes such as gait and speech (Krupička et al. 2020, Viteckova et al. 2020, Rusz et al. 2022). Since the initial neurodegenerative changes in alpha-synucleinopathies affect the brainstem nuclei, it can be expected that eye movements, in particular saccades and smooth pursuit will also be affected in addition to sleep disturbances. To date, eye movements have only been studied in a single cohort of iRBD patients prospectively followed at our centre, which demonstrated a high rate of antisaccade errors, considered to be a manifestation of prefrontal cortex dysfunction (Hanuška et al. 2019). Thus, the objectives of the proposed Junior project will be to 1) use video-oculography to test whether gaze abnormalities in patients with iRBD can serve as an early predictor of the clinical manifestation of synucleinopathy; 2) to investigate gaze abnormalities in iRBD patients as a biomarker of future cognitive decline corresponding to prefrontal cortex dysfunction; and 3) to investigate the relationships between eye movement abnormalities and gait and speech impairments in iRBD and in early stages of PD.

References:

Delude CM. Deep phenotyping: The details of disease. Nature 2015;527(7576):S14-5.

Hanuška J, Ruzs J, Bezdicek O, Ulmanová O, Bonnet C, Dušek P, Ibarburu V, Nikolai T, Sieger T, Šonka K, Růžička E. Eye movements in idiopathic rapid eye movement sleep behaviour disorder: High antisaccade error rate reflects prefrontal cortex dysfunction. *J Sleep Res* 2019;28(5):e12742.

Krupička R, Krýže P, Neťuková S, Duspivová T, Klempíř O, Szabó Z, Dušek P, Šonka K, Ruzs J, Růžička E. Instrumental analysis of finger tapping reveals a novel early biomarker of parkinsonism in idiopathic rapid eye movement sleep behaviour disorder. *Sleep Med* 2020;75:45-49.

Ruzs J, Janzen A, Tykalová T, Novotný M, Zogala D, Timmermann L, Růžička E, Šonka K, Dušek P, Oertel W. Dysprosody in Isolated REM Sleep Behavior Disorder with Impaired Olfaction but Intact Nigrostriatal Pathway. *Mov Disord* 2022;37(3):619-623.

Viteckova S, Ruzs J, Krupicka R, Dusek P, Růžička E. Instrumental analysis of gait abnormalities in idiopathic rapid eye movement sleep behavior disorder. *Mov Disord* 2020;35(1):193-195.

Qualifications:

- Ph.D. degree in neuroscience or related fields (up to 5 years from graduation)
- Ability to communicate in both spoken and written English, and at least basic Czech (to communicate with patients)
- High motivation, ability to conduct collaborative research

Funding: Position will be co-financed from projects funded by the Ministry of Health of the Czech Republic (AZV) and by Charles University (Cooperatio Neuroscience, Exceles).

Workplace/Institution: Department of Neurology, First Faculty of Medicine, Charles University and General University Hospital in Prague

Supervisor: Prof. Evžen Růžička, MD, DSc.


E-mail of the supervisor: evzen.ruzicka@lf1.cuni.cz

Position available from: January 1, 2023

Deadline date for applications: July 18, 2022

Applicants must submit [required documents](#) **to:** Anna Jezberová anna.jezberova@lf1.cuni.cz

[2] Title of the research project:

	THE BIOLOGICAL RHYTHMS AFFECTED BY MUSCARINIC RECEPTORS
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Description:

Muscarinic receptors (MRs) are typical members of the G protein-coupled receptor (GPCR) family and exist in five subtypes from M1 to M5. MRs are involved in many functions, such as learning [1], spinal locomotor networks [2], locomotion [3], biological rhythms [4], cardiovascular physiology [5], bronchoconstriction [6], and gastrointestinal tract functions [7], and they are also involved in pathologies, such as schizophrenia [8] and Parkinson's disease [3]. Recently, the role of MRs in biological rhythm regulation was determined [9-11].

The project aims to study the specific role of MR subtypes in the biological rhythms, mainly motor activity, temperature, and heart rate. As the differences have been identified between males and females, another aspect of the project will be the role of sex hormones in the regulation of specific biological rhythms. The second part of the project will be the comparison of behavior dependency on biological rhythm. The identification of brain structures responsible for biological rhythm regulation will be another aim of the present project. As another aspect of biological rhythm regulation, the biological rhythm of key cholinergic molecules (MRs, acetylcholinesterases, choline transporter, vesicular acetylcholine transporter) will be studied too. The project will comprise neurochemical, receptor binding, behavioral, and telemetry experiments with specific treatments with sex hormones.

References:

1. Fernández de Sevilla, D.; Núñez, A.; Buño, W. Muscarinic Receptors, from Synaptic Plasticity to its Role in Network Activity. *Neuroscience* 2021, 456, 60-70, doi: <https://doi.org/10.1016/j.neuroscience.2020.04.005> .
2. Mille, T.; Quilgars, C.; Cazalets, J.-R.; Bertrand, S.S. Acetylcholine and spinal locomotor networks: The insider. *Physiological Reports* 2021, 9, e14736, doi: <https://doi.org/10.14814/phy2.14736> .
3. Ztaou, S.; Amalric, M. Contribution of cholinergic interneurons to striatal pathophysiology in Parkinson's disease. *Neurochem. Int.* 2019, 126, 1-10, doi: <https://doi.org/10.1016/j.neuint.2019.02.019> .
4. Myslivecek, J.; Farar, V.; Valuskova, P. M(4) muscarinic receptors and locomotor activity regulation. *Physiol. Res.* 2017, 66, S443-s455.
5. Saternos, H.C.; Almarghalani, D.A.; Gibson, H.M.; Meqdad, M.A.; Antypas, R.B.; Lingireddy, A.; AbouAlaiwi, W.A. Distribution and Function of the Muscarinic Receptor Subtypes in the Cardiovascular System. *Physiol. Genomics* 2017, doi: [10.1152/physiolgenomics.00062.2017](https://doi.org/10.1152/physiolgenomics.00062.2017) .
6. Kistemaker, L.E.M.; Gosens, R. Acetylcholine beyond bronchoconstriction: roles in inflammation and remodeling. *Trends Pharmacol. Sci.* 2015, 36, 164-171, doi: <http://dx.doi.org/10.1016/j.tips.2014.11.005> .

7. Tobin, G.; Giglio, D.; Lundgren, O. Muscarinic receptor subtypes in the alimentary tract. *J. Physiol. Pharmacol.* 2009, 60, 3-21.
8. Dean, B.; Scarr, E. Muscarinic M1 and M4 receptors: Hypothesis driven drug development for schizophrenia. *Psychiatry Res.* 2020, 288, 112989, doi: <https://doi.org/10.1016/j.psychres.2020.112989>.
9. Riljak, V.; Janisova, K.; Myslivecek, J. Lack of M4 muscarinic receptors in the striatum, thalamus and intergeniculate leaflet alters the biological rhythm of locomotor activity in mice. *Brain Struct Funct* 2020, 225, 1615–1629, doi:10.1007/s00429-020-02082-x.
10. Valuskova, P.; Riljak, V.; Forczek, S.T.; Farar, V.; Myslivecek, J. Variability in the Drug Response of M4 Muscarinic Receptor Knockout Mice During Day and Night Time. *Front. Pharmacol.* 2019, 10, doi:10.3389/fphar.2019.00237.
11. Valuskova, P.; Forczek, S.T.; Farar, V.; Myslivecek, J. The deletion of M4 muscarinic receptors increases motor activity in females in the dark phase. *Brain Behav* 2018, 8, e01057, doi:10.1002/brb3.1057.

Qualifications:

Ph.D. in neurosciences, physiology, cell biology, biochemistry or equivalent. Prior experience with behaviour research and neurochemistry will be appreciated.

Funding: Charles University Program Cooperatio

Workplace: Institute of Physiology, 1st Faculty of Medicine, Laboratory of Neurosciences

Supervisor: Jaromir Myslivecek, M.D., Ph.D.


Position available from: January 1, 2023

Deadline date for applications: July 18, 2022

Applicants must submit [required documents](#) **to:** Anna Jezberová anna.jezberova@lf1.cuni.cz

Faculty of Education

[1] Title of the research project:

	COMMUNICATIVE STRATEGIES IN MOTHER TONGUE TEXTBOOKS
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The way the textbook addresses the student influences the whole learning process. Therefore, it is necessary to analyse how the authors of the textbooks formulate their instructions, evaluations and forms of address in the mother tongue textbooks. Communication is the process between the author's intention (illocutionary force) and the addressee's interpretation (perlocutionary effect). The authors have the best intentions but the students' interpretation may be different than expected. The post-doc researcher's topic would be to analyse the communicative strategies used in their mother tongue textbooks and their impact on readers. The analysis will be based on the pragmatic linguistics paradigm and speech act theory. Politeness strategies and directness of speech acts will be analysed in detail.

Workplace: Department of Czech language (Faculty of Education, Charles University)

Supervisor: doc. PhDr. Pavla Chejnová, Ph.D.

E-mail: pavla.chejnova@pedf.cuni.cz


Position available from: January 1, 2023

Deadline date for applications: July 31, 2022

Applicants must submit [required documents](#) **to:** Lothar Filip Rudorfer lotharfilip.rudorfer@pedf.cuni.cz (faculty coordinator of the Junior Fund)

[Post-Doctoral Fellowships \(Junior Fund\) at the Faculty of Education](#)

[2] Title of the research project:

	"GOOD QUESTION" IN MATHEMATICS AND SCIENCE EDUCATION
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Communication plays a crucial role in mathematics and science education. One of the methods to support creative and analytical thinking is the Good questions method. Good questions are a specific type of open question that must meet the following criteria (Sullivan and Lilburn, 2010): a) there exist several answers that can be accepted; b) more than a mere reference to known facts is required; c) discussion is provoked; c) includes a motivational function in lifelong education; d) students may learn something when they answer it and/or discuss it; and, e) teachers can learn something about their pupils from the pupils' answers. The method of Good Questions is developed by a team of experts from the Department of Mathematics and Mathematical Education and the Department of Biology and Environmental Studies. We look for a postdoc with experience in qualitative research.


Workplace: Department of Mathematics and Mathematical Education (Faculty of Education, Charles University)
Supervisor: Assoc. Prof. Antonín Jančařík, Ph.D.
E-mail: antonin.jancarik@pedf.cuni.cz
Position available from: January 1, 2023

Deadline date for applications: July 31, 2022

Applicants must submit required documents to: Lothar Filip Rudorfer lotharfilip.rudorfer@pedf.cuni.cz (faculty coordinator of the Junior Fund)

Post-Doctoral Fellowships (Junior Fund) at the Faculty of Education

|3| Title of the research project:

	EDUCATIONAL AND SCHOOL PSYCHOLOGY
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The Department of Psychology is strongly focused on mechanisms of school learning and underlying processes relevant to educational and school psychology. Our research projects focus on different groups of actors (students, teachers, parents, school psychologists, etc.) and on different topics (cognition, communication, identity, development, the conceptualization of failure and success, etc.). Many students have a difficult background or get in trouble during schooling. They face a variety of challenges related to their cognition and emotions, self-esteem, social relationships, and developmental needs. This places also great demands on adults inside (teachers, headmasters, school counselors) and outside the school (parents, local authorities, etc.) who need to be educated and supported. Psychology can help address this challenging situation. As the Department of Psychology, we welcome proposals for postdoc projects that would suit the above focus and complement the existing research developed by our team. Proposals should seek to describe the current needs of schools and their actors, name critical areas, analyze their changes and formulate appropriate recommendations that would increase the effectiveness of learning and teaching. The research proposals can focus on students (different subgroups as socially disadvantaged, with specific cultural background, mentally challenged, learning disabled, gifted, etc.), teachers or parents (their attitudes, competencies, identities, or practices), or it can combine these groups of actors.

Workplace: Department of Psychology (Faculty of Education, Charles University)
Supervisor: Assoc. Prof. Irena Smetáčková, Ph.D.
E-mail: irena.smetackova@pedf.cuni.cz
Position available from: January 1, 2023


Deadline date for applications: July 31, 2022

Applicants must submit required documents to: Lothar Filip Rudorfer lotharfilip.rudorfer@pedf.cuni.cz (faculty coordinator of the Junior Fund)

Post-Doctoral Fellowships (Junior Fund) at the Faculty of Education

Faculty of Arts

|1| Title of the research project:

	SOCIAL AND RELIGIOUS TRANSFORMATIONS IN EARLY MEDIEVAL CENTRAL EUROPE
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The Department of Archaeology invites applications for a postdoc position combining approaches of archaeology, cultural and social history/anthropology, and religious history. The researcher will focus on the relations between social and religious transformations in 9-13th c. Central Europe, with a particular focus on frontier zones and contact zones, or state formation and Christianisation. He or she should be ready to take part in the activities and ongoing projects of the Department, especially in the as well as those of the interdisciplinary Centre for the Study of the Middle Ages at the Faculty of Arts.

The researcher is expected to take part in teaching at least one seminar per semester. He or she is also expected to publish at least one high-quality article in a database journal per academic year, and, by the end of the project, have a substantial research project submitted on behalf of the Faculty of Arts.

What do we offer?

- The post includes a two-year contract in Prague (i.e., 2023 and 2024) Participation in the ongoing projects of the Department (Linguistic and cultural dynamics in a frontier society: 'New perspectives on northeastern Bavaria and western Bohemia in the Early Middle Ages', Empowering the Voiceless. The Role of the Rural Population in State Building and Christianisation in East-Central Europe
- Teaching opportunities in relevant courses
- Training in Digital Humanities connected to the project work

Profile of an ideal candidate:

- Ph.D. degree in archaeology, history or medieval studies (less than 5 years since graduation)
- Research interest and publication track record particularly in the field of social and cultural history and religious studies
- Experience in Digital Humanities, particularly GIS applications
- Teaching experience is welcome
- Excellent knowledge of English (FCE equivalent or better)
- Strong research skills, creativity, motivation and ability to participate in large research networks
- Due to tax specification, the candidate cannot be employed in any other country than Czech Republic in course of the postdoctoral period

The applicants should submit:

- All documents required by the Charles University's Junior Fund
- Research proposal (max. 5 standard pages)
- Sample syllabi of two proposed courses/seminars

Salary: Equivalent to 2000 EUR/month

Workplace: Department of Archaeology (Faculty of Arts, Charles University)

Supervisor: Assoc. Prof. PhDr. Tomáš Klír, Ph.D.

Contact: tomas.klir@ff.cuni.cz


Phone: +420 221 619 437

Position available from: January 1, 2023

Deadline for applications: July 15, 2022

Applicants must submit required documents **to:** tomas.klir@ff.cuni.cz (project supervisor)

[2] Title of the research project:

	POSTDOCTORAL POSITION IN MEDIEVAL PHILOSOPHY
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The Institute of Philosophy and Religious Studies is seeking a highly qualified international post-doc researcher in the field of medieval philosophy. Her/his research project will focus on one or more of these areas of specialization: theories of intentionality and person, doctrines of the soul, will and freedom, readings of the Aristotelian corpus and its transformations up to Modern Age (13th-17thcenturies). Archivistic and paleographic skills as well as the ability to work interdisciplinarily are welcome, but not essential. The successful candidate is expected to carry out independent research and teach one course per semester in English, French or German. She or he is also expected to engage in active cooperation with the host institution, as well as in the organization of international workshops and seminars revolving around her/his research. She or he is also expected to publish a series of high-quality articles in peer-reviewed journals, dedicated to the host institution. Moreover, by the end of the project, the successful candidate will be encouraged to apply for a research grant (to be further discussed with the host institution).

The scheme: The Institute of Philosophy and Religious Studies will select by the end of July the names of three successful candidates. The final decision though will be made by the Charles University's Research Board. The selection will be based upon CV, publications and titles. **For more details about the scheme:** <https://cuni.cz/UKEN-178.html>

The main goal of the fellowship is that of developing a synergy between the candidate and the Institute of Philosophy and Religious Studies. For any questions or doubts, please contact anna.tropia@ff.cuni.cz .

Profile of an ideal candidate:

- Completed PhD degree (no more than 5 years since its obtention).
- Excellent command of English (FCE equivalent or better).
- Strong background in History of Medieval, Renaissance, Early Modern Philosophy.
- Ability to carry out collaborative research.

The applicants should submit:

- All documents required by the Charles University's Junior Fund
- Short research proposal (max 4 pages)
- Curriculum vitae
- Two samples of publications (articles or chapters of book) relevant to the position

Salary: Equivalent to 2000 EUR/month

Workplace: Institute of Philosophy and Religious Studies (Faculty of Arts, Charles University): <https://ufar.ff.cuni.cz/cs/o-ufaru/>


Supervisor: Assoc. Prof. Jan Palkoska, Ph.D.

Position available from: January 1, 2023 (for 24 months)

Deadline date for applications: July 12, 2022

Applicants are expected to submit required documents **to:** anna.tropia@ff.cuni.cz

|3| Title of the research project:

	POSTDOCTORAL POSITION IN IBERO-AMERICAN STUDIES
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Centre for Ibero-American Studies is seeking a qualified post-doctoral researcher oriented towards high quality research, with interest in current culture wars in Latin America. The researcher is expected to focus on the topics that form part of recent changes in political landscape of Latin American countries (either in a broader comparative perspective, or with a focus on a single case, with Brazil being the preferred country in the latter case), i.e. the growth in radical right-wing parties, illiberal and anti-LGBT discourse, radical evangelical and Pentecostal view of the politics, rejection of the "traditional" political actors, anti-indigenist and anti-environmental policies, praising the authoritarian past and authoritarian politics in general. The methodology should be adopted to both discursive and actor based research, as well as neo-institutionalist and structural approach.

At the level of the research, the researcher is expected to publish at least one high quality article in a database journal per academic year (at least one indexed in the WoS), actively collaborate with the researchers from the Centre for Strategic Regions (Faculty of Arts), and participate in some of the activities of the Centre of Ibero-American Studies (active participation in doctoral seminar, workshops, conferences etc.). At the level of teaching she/he is expected to teach one optional course per academic semester.

The main goal of the fellowship is to carry out outstanding research and collaborate with other specialists on the topic of culture wars at Charles University.

Profile of an ideal candidate:

- Completed Ph.D degree (no more than 5 years since its award).
- Excellent command of English and Spanish/Portuguese
- Strong background in contemporary history of Latin America, Latin American politics and either political sociology/ comparative politics, or discourse analysis/cultural studies
- Ability to carry out collaborative research.

The applicants should submit:

- All documents required by the Charles University's Junior Fund
- Short research proposal (max 4 pages)
- Curriculum vitae
- Two samples of publications (articles or book chapters) relevant to the position

Salary: Equivalent to 2,000 EUR/month

Workplace: Centre of Ibero-American Studies, Faculty of Arts

Contact: PhDr. Radek Buben, Ph.D.

E-mail: radek.buben@ff.cuni.cz

Phone: +420 608 925 142

Position available from: January 1, 2023 (for 24 months)

Deadline for applications: July 15, 2022

Applicants must submit required documents **to:** radek.buben@ff.cuni.cz

|4| Title of the research project:



GREEK AND/OR LATIN STUDIES

The Institute of Greek and Latin Studies is seeking a highly qualified international post-doc researcher in the field of Greek and/or Latin Studies (Philology, Cultural and Literature Studies, Linguistics, History). Focus on one of these areas is desirable:

- Ancient Greek History
- Modern Greek Studies, especially Linguistics

The successful candidate is expected to take part in teaching at least one seminar per semester. He or she is also expected to publish at least one high quality article in a database journal per academic year, and, by the end of the project, have a substantial research project submitted on behalf of the Faculty of Arts (to be further discussed with the host institution). She or he is also expected to engage in active cooperation with the host institution, as well as in the organization of international workshops and seminars revolving around her/his research.

The main goal of the fellowship is that of developing a synergy between the candidate and the Institute of Greek and Latin Studies. For any questions or doubts, please contact martin.bazil@ff.cuni.cz.

Profile of an ideal candidate:

- Ph.D. degree (less than 5 years since graduation) in Greek/Latin Studies
- Research interest and publication track record
- Previous participation in international projects and interdisciplinary research, experience with preparing project proposals
- Teaching experience is welcome
- Fluent knowledge of English (FCE equivalent or better)
- Strong research skills, creativity, motivation and ability to participate in large research networks
- Due to tax specification, the candidate cannot be employed in any other country than Czech Republic in course of the postdoctoral period

The applicants should submit:

- All documents required by the Charles University's Junior Fund
- A one-page cover letter introducing yourselves
- A two-page description of the proposed project
- Sample syllabi of two proposed courses/seminars

Salary: Equivalent to 2000 EUR/month

Workplace: Institute of Greek and Latin Studies, Faculty of Arts, Charles University (Celetná 20, Prague 1)

Supervisor: Mgr. Martin Bažil, Ph.D. (Head of the Institute)

E-mail: martin.bazil@ff.cuni.cz

Phone: +420 221 619 739

Position available from: January 2023

Deadline for applications: July 15, 2022

Applicants are expected to submit required documents to: eva.zezulkova@ff.cuni.cz

[5] Title of the research project:



LEGAL AND INSTITUTIONAL TRANSLATION

The Institute of Translation Studies, Charles University, Prague, offers a vacant position of a post-doctoral fellow. The area of research is legal and institutional translation in the broad sense. The project may focus on a particular domain such as EU translation, translation for national authorities, sworn translation, legal terminology or legal discourse. Preference will be given to candidates whose first language is English, French or German, and who would be able to study legal translations into one of these languages from the standpoint of the recipient culture. The research may include both quantitative and qualitative research as well as targeted enquiry using surveys and structured interviews. The research findings, after publication, will enrich the understanding of legal and institutional translation at large.

What do we offer?

- The post includes a two-year contract in Prague (i.e., 2023 and 2024), under financial conditions competitive in the Czech Republic

- Teaching opportunities in relevant courses
- Opportunity to get involved in the Institute's Ph.D. study programme as lecturer and/or co-supervisor
- Participation in conferences and training offered by the EMT (European Masters in Translation) network (the Institute is EMT member)
- Possible involvement in a national research project focusing on the translation of legal texts between Czech and French (if granted, the project will start in 2023)

Expectations:

- The researcher will teach at least one seminar on either undergraduate or postgraduate level every semester (topics to be discussed)
- Two publications in IF academic journals
- Drafting and submitting an application for international research funding (subject to availability of funding opportunities and/or specific calls), which will involve other colleagues from the Institute as well
- Involvement in organizing local scientific events

Profile of an ideal candidate:

- Eligibility for a post-doc position (max. 5 years after Ph.D. on Jan 1, 2023)
- Degree and/or thorough qualification in the area of Translation Studies and/or in a related field
- Preference will be given to candidates having English, French or German as their first language
- Due to tax specification, the candidate cannot be employed in any other country than Czech Republic in course of the postdoctoral period

The applicants should submit:

- All documents required by the Charles University's Junior Fund
- A one-page cover letter introducing yourselves
- A two-page description of the proposed project

Salary: Equivalent to 2000 EUR/month

Workplace: Institute of Translation Studies, Faculty of Art, Charles University

Supervisor: PhDr. Bc. Tomáš Svoboda, PhD.

E-mail: tomas.svoboda@ff.cuni.cz

Phone: +420 221 619 535


Position available from: January 1, 2023

Deadline for applications: July 15, 2022

Applicants must submit required documents to: tomas.svoboda@ff.cuni.cz

Faculty of Humanities

[1] Title of the research project:

	<p>ENVIRONMENTAL PHILOSOPHY: ECO-PHENOMENOLOGY AND ECO-HERMENEUTICS</p>
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The Faculty of Humanities of the Charles University of Prague announces an open competition for a Postdoctoral Position in the field of Environmental Philosophy. The successful candidate will work at the Department of Philosophy. He or she must have a high level (C2 language proficiency level) of written and spoken English and French. Knowledge of other languages, e.g., German mainly, or Italian or Spanish, is a plus.

The topic of the natural environment has attracted increasing attention of philosophers working in the continental tradition. Among major philosophical heritages, thinkers working in the field of phenomenology and hermeneutics have developed – and continue to develop – relevant analyses on the being and the meaning of the natural environment. On the one hand, the inclusion of phenomenology in environmental philosophy has opened up the space for the development of the environmental discipline labeled “eco-phenomenology” (Brown, Toadvine). The eco-phenomenological approach, in which are folded both ecological phenomenology and phenomenological ecology (Wood), addresses the possibility to rediscover the natural environment as meaningful and worthy of respect. The natural space arises here as profoundly connected with human being as embodied and embedded. On the other hand, the consideration of the fact that the encounter with nature and the understanding of its sense requires mediation, has led hermeneutical thinkers to study the natural environment as an object of interpretation (Mugerauer, Van Buren). Eco-hermeneutics is, then, concerned with human mediation of the meaning of the natural environment, that is, with the practical mediation of our encounters with nature as a space calling for interpretation. Therefore, eco-phenomenology and eco-hermeneutics awakens us towards

a renewed relationship with the natural environment. These disciplines are not opposed to the study of nature proposed by the natural sciences. Rather, these can be seen as valid attempts to foster an interdisciplinary dialogue between philosophy and the other branches of science attentive to the study of nature.


The interest in the field of environmental philosophy is demonstrated by current research projects and activities at the Faculty of Humanities of the Charles University of Prague. The Faculty is hosting an international research project on cosmology and phenomenology: "Fink and French Phenomenology", directed by Hans Rainer Sepp at the FHS UK and Alexander Schnell at the Bergische University Wuppertal (project supported by the Czech Science Foundation and the Deutsche Forschungsgemeinschaft, Nr. 21-23337J, 2021-2023). Yet, this research work is connected to the scientific project "Face of Nature in the French Phenomenology", directed by Karel Novotný (project supported by the Czech Science Foundation, Nr. 21-22224S, 2021-2024), at the Czech Academy of Science. Directors of these projects, Hans Rainer Sepp and Karel Novotný, are developing their own contributions to the field of environmental philosophy focusing their attention on oikological philosophy (H. R. Sepp, ed. *Phänomenologie und Ökologie*, 2020) and on the relation between life and world (K. Novotný *Welt und Leib*, 2021) respectively.

The successful candidate is expected to develop his or her own research project through the use of the phenomenological and the hermeneutical methodologies applied to the study of the natural environment. Rather than choosing either eco-phenomenology or eco-hermeneutics, the candidate has to work on the continuity between them. As such, by enlarging the movement of hermeneutic phenomenology (Heidegger, Gadamer, Ricoeur) to the analysis of the natural environment, in his or her research the candidate will mainly focus on the interplay between embodiment and nature, on the connection between life and the symbolic structures of nature, and on the relationship among lived space, dwelling, and nature. The phenomenological hermeneutical approach will enable the candidate to offer valuable methodologies and resources to discuss some central issues of the current environmental debate, such as the problem of sustainability and biodiversity preservation.

Faculty: Faculty of Humanities
Department: Department of Philosophy
Supervisor: prof. Karel Novotný, M.A., Ph.D.
E-mail: karel.novotny@fhs.cuni.cz
Deadline date: July 15, 2022
Position available from: January 1, 2023

Applicants must submit [required documents](#) **to Research Administration Office:** veda@fhs.cuni.cz (CC: karel.novotny@fhs.cuni.cz)

[2] Title of the research project:

	ART ANTHROPOLOGY
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The anthropology of art is a sub-discipline of social-cultural anthropology and concerned with understanding the material culture and arts of various social, cultural, and political contexts globally. It combines the qualitative methods of anthropology, primarily ethnographic field research, with the visual theories and methods of art history and its related disciplines. Art anthropology is always an inter-and transdisciplinary endeavor and is especially suited for research projects that require this interdisciplinary set of theories and methods.

While earlier anthropological studies on art focused on key debates within this sub-discipline, including the differences between material culture and art, questions of agency, primitivism, aesthetics, and iconography, newer art-anthropological questions have turned to the collection and display of modern and contemporary art, art's circulation in global art worlds, as well as the provenance and restitution politics of art and material culture. Especially the latter two aspects have received heightened attention due to recent societal debates about the provenance and restitution of major non-European collections kept in Europe, including the colonial theft of art such as the Benin bronzes, the showcase of human remains from different world regions, the theft of cultural heritage from museums in war zones, and many more issues. Therefore, art anthropologists have recently concerned themselves with the history, politics, and ethics of ethnographic and art collections in museological contexts. Topics have included the roles that anthropologists assume in institutions exhibiting ethnographic collections, the anthropologist's role as curator, or how anthropologists can help in building relationships with indigenous communities whose collections are showcased worldwide, and where repatriation surfaces as an important issue and demand.

The project to be undertaken in this context will focus on recent debates on decolonizing museums by focusing on two core aspects: provenance research to understand the biographies of objects and their rightful owners or authors and, secondly, processes of restituting/repatriating objects. A focus should be placed on strategies of decolonization and actively engaging with the social life of objects, their pasts, and their futures. This focus is inspired by the call by art historian Bénédicte Savoy and economist Felwine Sarr on the restitution of material culture looted during colonial

times and what restitution must entail for it to become effective. The project should also assess current debates on restitution and provenance research in light of earlier concerns articulated by art historians, anthropologists, and post-colonial scholars.

Faculty: Faculty of Humanities

Department: Department of Social and Cultural Anthropology

Supervisor: doc. PhDr. Zuzana Jurková, Ph.D.

E-mail: zuzana.jurkova@fhs.cuni.cz


Deadline date: July 15, 2022

Position available from: January 1, 2023

Applicants must submit [required documents](#) **to Research Administration Office:** veda@fhs.cuni.cz (CC: zuzana.jurkova@fhs.cuni.cz)

Faculty of Social Sciences

|1| Title of the research project:

	DATA SCIENCE IN FINANCE
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The Institute of Economic Studies at Faculty of Social Sciences invites applications for a postdoctoral fellow in the research area of Data Science in Finance. The position is in the group strongly dedicated to data-driven research in the intersection of finance and machine learning. The research group focuses mainly on development of mathematical models and statistical methods for the analysis of financial data. An ideal candidate has a PhD in empirical finance, economics, econometrics or data science and a desire to work with a strong research group in quantitative finance. The candidate also has strong interest in computational techniques for modelling problems in finance, strong data science and machine learning skills, and proven ability to autonomously conduct research at a post-doctoral level. In addition, we welcome strong interpersonal and communication skills for effectively communicating complex research issues. In Economics and Econometrics, Charles University currently ranks in global top 150 (ShanghaiRanking's Global Ranking of Academic Subjects 2021, US News Global Ranking of Universities 2022, QS World University Rankings 2022). For an overview of the Institute Economic Studies, kindly visit: <http://ies.fsv.cuni.cz>

The candidate should hold a Ph.D. degree by the date of the application or is expected to defend by end of August 2022 at the latest.

Deadline for applications is July 19, 2022. Candidates should be available for an online interview between July 20 and July 27, 2022.

The applicants should submit:

- [All documents](#) required by the Charles University's Junior Fund (application form, CV, list of publications, a single letter of reference, a copy of the PhD diploma)
- Research statement
- Job market paper

Workplace: Institute of Economic Studies (Faculty of Social Sciences, Charles University)

Supervisor: doc. PhDr. Jozef Baruník, Ph.D.


E-mail: jozef.barunik@fsv.cuni.cz

Position available from: January 1, 2023 (24 months)

Deadline for applications: July 19, 2022

Applicants must submit [required documents](#) **to:** jozef.barunik@fsv.cuni.cz

|2| Title of the research project:

	POPULISM(S) AND DEMOCRACY IN THEORY AND PRACTICE
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During the first twenty years following the 1989 revolutions in Central Europe, we witnessed and analyzed the consolidation of democracy (construction and stabilization of institutions, institutionalization of the parties and the party system, establishment of the rule of law and so on). During this period, political science research in many subfields focused mainly on questions such as the transition from the communist regime to democracy, Europeanisation, etc.

However, the situation has dramatically changed during the last decade - since the onset of the economic and financial crisis, but also strongly influenced by the migration crisis, the COVID-19 pandemic crisis and now the Russian aggression of Ukraine, the region and the scholars studying it are faced with some new questions, while many initial questions about democracy in the region gained new urgency.

Thus an opportunity emerges to revisit traditional themes and study new ones while redefining the scope of our research. The quality of democracy, linkages between parties and citizens, varieties of populism(s) regained prominence. And new phenomena emerged - including but not limited to new concepts such as illiberal democracy, democratic backsliding and swerving. Especially the rise of populism in Western and Central-European countries offers the opportunity for new comparative research - broadening the scope beyond the post-communist space and bridging the East-West divide prevailing in comparative politics.

Revisiting the classical paradigms about populism and democracy (cf. Canovan 1981) is a possible starting point in reconsidering the extent to which (some forms of) populism might be considered antithetic to democratic pluralism due to the emphasis on the supremacy of the general will (cf. Urbinati 2018). At the same time, the nature of populism is contested and multifaceted (Zulianello 2020). The definitions of populism and its effects (both positive and negative) on democracy vary according to the author's views of democratic politics. Scholars analyze the relationship between populism and democracy differently, and we wish to encourage further research in this area. The researcher will join the people already working on such topics at the Department of political science.

We are searching for a post-doc candidate that would focus on the general topic of populism in its complexity, but the candidate should focus on specific aspects of this large phenomenon, and he/she has to address the relationship of populism(s) to democracy. The candidate is expected to be equipped with a strong theoretical and methodological background.

Contact: Assoc. Prof. Michel Perottino, Ph.D.

Email: michel.perottino@fsv.cuni.cz

Deadline for applications: July 19, 2022

Position available from: January 1, 2023 (24 months)

Applicants must submit [required documents](#) **or queries to:** Michel Perottino: michel.perottino@fsv.cuni.cz

[3] Title of the research project:



	INTERNATIONAL RELATIONS IN THE TIME OF UNCERTAINTY
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During several previous decades, world politics rested on an evolving, but still rather persistent type of an international order. This order was to a large extent based on the dominant position of the United States (USA). Yet it also involved several important normative elements, represented by liberal principles, intensive global economic cooperation, or international institutions. To a high extent, the US-led order was sustained by the demand coming from the other states, which saw it as an enabling arrangement for dealing with global problems such the spread of weapons of mass destruction, terrorism, global economic crises, or environmental degradation.

At this moment, this order that has so far characterized international politics is facing several important challenges. One of the factors that weaken it is the changing distribution of power in the international system, marked by the decreasing position of the USA and the strengthening of the so-called rising powers. Furthermore, developing countries often hold different views about the appropriate form of international order, putting a greater emphasis on the principles of sovereignty and justice. Simultaneously, a part of the turbulent development can be attributed to social and ideological changes taking place in the developed countries. Last but not least, Russia's invasion of Ukraine challenges the basic respect for the principles of collective security.

Within this topic, we are searching for a post-doc candidate that would identify and explore an important issue that has to do with the contemporary transformative processes in international politics. The candidate should definitely dispose with a strong theoretical and methodological background. This background should enable him/her to contribute to the international academic debates. As for a concrete research topic, we are rather flexible. The concrete topic would need to be in some way connected with the changing characteristics of world politics. In this context, we welcome proposals that may deal with the cooperative, as well as conflictual aspects of world politics. In terms of issue areas, we are ready to consider proposals that may be concerned with security issues, international economic relations, or any other substantive field of the contemporary international relations.

Contact: Assoc. Prof. Jan Karlas, Ph.D.


Email: jan.karlas@fsv.cuni.cz

Deadline for applications: July 19, 2022

Position available from: January 1, 2023 (24 months)

Applicants must submit [required documents](#) **or queries to:** jan.karlas@fsv.cuni.cz

|4| Title of the research project:

	RESILIENCE OF DEMOCRACY IN DIGITALLY DIVIDED SOCIETIES
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Department of Security Studies and Department of Journalism at the Faculty of Social Sciences consistently and systematically pursues advanced research at the crossroads of security, technology, and media. To continue and expand this effort, the departments now seek a candidate with outstanding research skills and provable track record in these areas. The candidate is expected to carry out research on resilience of democracy in digital societies. The research can involve the study of online extremism, radicalisation, misinformation, disinformation, fact-checking and medial literacy, and related areas.

Expected outcomes of the post-doctoral fellowship include two high-quality journal articles (Jsc or Jimp), partial involvement in the training of Ph.D. candidates and mutually enriching interaction with other members of the Department. Upon further agreement, the post-doctoral fellow will also have an opportunity to be involved in existing teaching activities.

Workplace: Institute of Political Studies/Institute of Communication Studies and Journalism

Contact: doc. PhDr. Vít Strítecký, M.Phil., Ph.D.


E-mail: vit.stritecky@fsv.cuni.cz

Deadline for applications: July 19, 2022

Position available from: January 1, 2023 (24 months)

Applicants must submit [required documents](#) **or queries to:** vit.stritecky@fsv.cuni.cz

|5| Title of the research project:

	A POSTDOCTORAL FELLOWSHIP IN ISRAELI STUDIES
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The Herzl Center for Israel Studies (HCIS) is a teaching and research center at Charles University, which is closely affiliated with the Faculty of Social Sciences. The HCIS pursues advanced research at the crossroads of political science, international relations, sociology, and history. To strengthen and further expand our research, the HCIS now seeks a candidate with outstanding research skills in research areas related to Israel Studies.

We are looking for a scholar who would contribute to at least one of the research projects of the HCIS. First, for the PRIMUS project, we seek a candidate who can contribute to a team of political scientists and historians who work at the intersection of memory studies, populism, and foreign policy. Especially, we look for a candidate who has expertise in relations between (some) European countries/the EU and Israel in the methodological framework of memory studies.

Second, the HCIS is preparing a research project on democratic erosion and resilience which will compare the impact of COVID-19 on institutions in Israel and the Czech Republic. In this project, we will focus on the role of political elites, the role of media, and the resilience of institutions (the Parliaments and the Courts). For this project, we seek a political scientist or a sociologist with a strong background in Israeli politics, society, and institutions. The candidate is expected not only to contribute with their research but also to further develop this research agenda at the HCIS, including participation in activities to secure additional funding for the endeavour.

Expected outcomes of the postdoctoral fellowship include at least two high-quality journal articles (Jsc or Jimp), participation in activities of the HCIS, including the training of Ph.D. candidates, and participation in teaching activities. A successful candidate is expected to prepare at least two general courses on the core topic of the HCIS with a focus on Israel Studies. A successful candidate is expected to be physically present in Prague for the duration of the postdoctoral fellowship.

Workplace: The Herzl Center for Israel Studies, Faculty of Social Science, Charles University Prague

Contact person: Irena Kalhousová, Ph.D.

Email: irena.kalhousova@fsv.cuni.cz


Deadline for applications: July 19, 2022

Position available from: January 1, 2023 (24 months)

Applicants must submit [required documents](#) **or queries to:** irena.kalhousova@fsv.cuni.cz

Faculty of Mathematics and Physics

|1| Title of the research project:

	CALL FOR JUNIOR (POSTDOC) POSITION IN THE AREA OF APPLIED MATHEMATICS
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Post-doc position for two-year period from 1st January 2023

Applications are invited for a postdoc position at School of Mathematics, Faculty of Mathematics and Physics, Charles University in Prague, Czech Republic. The position is for two years starting from January 1, 2023.

We are looking for strong candidates in any area of applied mathematics, namely mathematical modelling, numerical analysis, high-performance computing, stochastics, econometrics, and financial mathematics.

The candidate has to have PhD in the relevant area not longer than 5 years and he/she cannot be the holder of the citizenship of the Czech Republic.

Workplace: School of Mathematics, Faculty of Mathematics and Physics, Charles University, Sokolovská 83, Prague

Contact person: Pavla Kučerová


E-mail: kucerova@karlin.mff.cuni.cz

Position available from: January 1, 2023

Deadline date: July 15, 2022

Applicants must submit required documents **to:** kucerova@karlin.mff.cuni.cz (project supervisor) and in a copy to ovzs@dekanat.mff.cuni.cz (faculty coordinator of the Junior Fund)

|2| Title of the research project:

	PHYSICS-BASED MODELING OF EARTHQUAKE GROUND MOTIONS
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Post-doc position for two – years period from the 1st January 2023

Understanding the physics of earthquake rupture initiation, propagation, and arrest is driven by advances in laboratory experiments, observational capabilities, and modeling approaches. Dynamic source models couple laboratory-derived friction along faults with seismic wave propagation in the Earth. Despite considerable progress, validation of empirical friction laws, including spatial heterogeneity of the controlling dynamic parameters, against seismic data represents a significant challenge in present-day earthquake physics.

Classical so-called kinematic source inversions trace observed seismic motion from the near-fault stations back onto the fault to calculate how the fault rupture has evolved. These conventional techniques are well known for providing strongly non-unique solutions and being limited to low frequencies. Dynamic source inversions, recently developed at our department, seek for heterogeneous distribution of the governing stress and frictional parameters. They have the potential to overcome the non-uniqueness of the kinematic inversions due to the incorporation of a physically consistent earthquake rupture model, eventually permitting new tectonic and mechanical interpretations. They also have the potential to physically model the high-frequency source radiation for strong-motion engineering applications, provided appropriate heterogeneity of the rupture process is incorporated.

We seek an enthusiastic PostDoc with experience in numerical simulations of earthquakes to join the team and work on dynamic rupture modeling. The subjects cover a challenging breadth of i) software development focused on improvements of our GPU enabled simulation codes or parametric studies related to the rupture and ground motion variability and waveform modeling, and ii) real data inverse modeling in a Bayesian framework to infer driving parameters for suitable earthquakes. More on the team's research can be found in the references listed below.


Selected Publications:

- Galovič, F., J. Zahradník, V. Plicka, E. Sokos, Ch. Evangelidis, I. Fountoulakis & F. Turhan (2020). Complex rupture dynamics on an immature fault during the 2020 Mw 6.8 Elaz?? earthquake, Turkey, *Commun. Earth Environ.* 1, 40.
- Premus, J., F. Galovič, L. Hanyk & A.-A. Gabriel (2020). FD3D_TSN: Fast and simple code for dynamic rupture simulations with GPU acceleration, *Seism. Res. Lett.* 91, 2881-2889.
- Galovič, F. & L. Valentová (2020). Earthquake stress drops from dynamic rupture simulations constrained by observed ground motions, *Geophys. Res. Lett.* 47, e2019GL085880.
- Galovič, F., L. Valentová, J.-P. Ampuero, A.-A. Gabriel (2019). Bayesian Dynamic Finite-Fault Inversion: 2. Application to the 2016 Mw6.2 Amatrice, Italy, *Earthquake, J. Geophys. Res. Solid Earth* 124, 6970-6988.

Workplace: Department of Geophysics (Faculty of Mathematics and Physics, Charles University)
Contact person: František Gallovič
E-mail: frantisek.gallovic@matfyz.cuni.cz
Position available from: January 1, 2023
Deadline date: July 15, 2022

Applicants must submit required documents to: frantisek.gallovic@matfyz.cuni.cz (project supervisor) and in a copy to ovzs@dekanat.mff.cuni.cz (faculty coordinator of the Junior Fund)

[3] Title of the research project:

	THE GAME THEORY ON GRAPHS
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Post-doc position for one-year period from 1st January 2023

Research Project

Applications are invited for a postdoc position at Department of Applied Mathematics, Charles University in Prague, Czech Republic. The position is for one year, and the starting date is negotiable between October 1, 2022, and January 1, 2023, with a possibility of one-year renewal.

The Graph Packing was extensively studied several decades ago as an essential part of the Matching Theory, one of the most developed areas of the Graph theory. This effort culminated in the work of Loebel and Poljak. Recently, new variants of the vertex-weighted Graph Packing reappeared in diverse parts of the Discrete Mathematics such as the theory of Discrete Optimisation (Arc-routing problems) or related to the Topological Methods of Fairness considerations. The research of this project will be conducted in particular in some of the following directions and their applications:


- vertex-weighted graph packing problem
- matroidal property of graph packing
- enumeration of graph packings

Candidates should have a completed PhD in Mathematics or Computer Science, and demonstrate strong potential for excellence in research. Strong background in broad aspects of graph theory is a plus. Skills in programming are appreciated as well.

Workplace: Department of Applied Mathematics
Contact person: Martin Loebel
E-mail: loebel@kam.mff.cuni.cz
Position available from: January 1, 2023
Deadline date: July 15, 2022

Applicants must submit required documents to: loebel@kam.mff.cuni.cz (project supervisor) and in a copy to ovzs@dekanat.mff.cuni.cz (faculty coordinator of the Junior Fund)

[4] Title of the research project:

	PURE MATHEMATICS
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Post-doc position for two-year period from 1st January 2023

Applications are invited for a postdoc position at School of Mathematics, Faculty of Mathematics and Physics, Charles University in Prague, Czech Republic. The position is for two years starting from January 1, 2023.

We are looking for strong candidates in any area of pure mathematics, namely logic and algebra (broadly interpreted), number theory, geometry, harmonic analysis, functional analysis, ordinary and partial differential equations and dynamical systems, descriptive set theory.

The candidate has to have PhD in the relevant area not longer than 5 years and he/she cannot be the holder of the citizenship of the Czech Republic.

Workplace: School of Mathematics, Faculty of Mathematics and Physics, Charles University, Sokolovská 83, Prague
Contact person: Pavla Kučerová
E-mail: kucerova@karlin.mff.cuni.cz


Position available from: January 1, 2023

Deadline date: July 15, 2022

Applicants must submit required documents **to:** kucerova@karlin.mff.cuni.cz (project supervisor) and in a copy to ovzs@dekanat.mff.cuni.cz (faculty coordinator of the Junior Fund)

Faculty of Science

[1] Title of the research project:

	IS ANTHROPOGENIC CLIMATE CHANGE OR CLIMATE VARIABILITY TO BE BLAMED FOR THE RECENT CENTRAL EUROPEAN PRECIPITATION DEFICIT?
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Great public attention has been paid to precipitation deficit to have occurred in recent couple of years in central Europe, mainly during the vegetation period. The precipitation deficit, that is, meteorological drought, combined with high temperatures, resulting in enhanced evapotranspiration, transformed into the lack of surface and underground water (hydrological drought), as well as low soil moisture (agricultural drought), with considerable societal and economic ramifications.

As drought of any kind is among the most severe natural hazards, it is important to understand processes causing it. The scientific objective of the stay is thus setting the recent precipitation deficit in central Europe into a longer-term context and analysis of two most relevant potential causes of it: anthropogenic climate change and natural climate variability, which is materialized in the variability of atmospheric circulation.

The proposed project will consist of four major tasks:

1. Identification and spatio-temporal localization of the precipitation deficit; that is, finding the area, period (years), and part of year where and when the deficit occurred.
2. Framing the precipitation deficit in a wider context. Impacts of the precipitation deficit on hydrosphere and biosphere, that is, induced hazards in terms of hydrological and agricultural drought will be described and quantified.
3. Analysis of suitable characteristics of atmospheric circulation and of their potential contribution to the precipitation deficit in observed data. The characteristics include (i) modes of low-frequency variability (teleconnections; all modes affecting central Europe will be considered, that is, the analysis will not be limited to the North Atlantic Oscillation as the most widely studied one); (ii) blocking events (assuming blocking anticyclones are conducive to dry weather conditions); (iii) classifications of circulation patterns (several classifications based on different methods will be used in order to avoid method-specific biases to be mistaken for real signal). This step will allow the quantification of influence of atmospheric circulation on the precipitation deficit, that is, to evaluate to what degree atmospheric circulation is responsible for the deficit.
4. Context with anthropogenic climate change. Climate change projections by regional climate models (RCMs) will be scrutinized with the objective to quantify the likelihood of the observed precipitation deficit under changed (potential future) climate conditions and the likelihood of the circulation anomalies related to the observed precipitation deficit. This will make it possible to determine the effect of anthropogenic climate change on the occurrence of precipitation deficit, as well as to quantify whether, and to what extent, the circulation variability causing the observed precipitation deficit may itself be a manifestation of anthropogenic climate change.

In summary, the project will tell us (i) when and where the precipitation deficit occurred, (ii) what are its consequences in hydrosphere and biosphere, (iii) whether the deficit is a manifestation of anthropogenic climate change or climate variability (variability of atmospheric circulation) or both, and (iv) whether the atmospheric circulation anomalies conducive to precipitation deficit are themselves rooted in anthropogenic climate change.

Data from open sources will be used, including databases of station data (ECA&D) and gridded datasets (E-OBS, CRU TS) for precipitation, atmospheric reanalyses for data on atmospheric circulation (sea level pressure and 500 hPa heights), and outputs from RCM simulations within EURO-CORDEX (Coordinated Downscaling Experiment) initiative for future climate conditions.

We expect publication of results in leading climatic and/or environmental journals, such as Environmental Research Letters and Journal of Climate.

Salary: co-founding 1000 EUR/month is ensured

Co-founding resources: Dpt. of Phys. Geography and Geoecology budget

Department: Dept. of Physical Geography and Geoecology

Supervisor: Prof. RNDr. Radan Huth, DrSc.


E-mail: radan.huth@natur.cuni.cz

Position available from: January 1, 2023

Deadline date for applications: July 25, 2022

Applicants must submit required documents **to:** radan.huth@natur.cuni.cz (project supervisor) and in a copy to katerina.mlynarova@natur.cuni.cz (faculty coordinator of the Junior Fund)

[2] Title of the research project:

	CURSE OR BLESSING? EVOLUTIONARY SIGNIFICANCE OF ADAPTIVE INTROGRESSION IN WHOLE GENOME DUPLICATION
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Whole genome duplication (WGD, polyploidization) is a ubiquitous genome-wide mutation and a dominant force in sympatric speciation, particularly in plants including many crops. It is usually assumed that polyploidy poses an instant barrier to gene flow between diploid and its polyploid derivative. Our genomic survey in wild *Arabidopsis*, however, recently demonstrated rampant gene flow across the presumable ploidy 'barrier'. Yet evolutionary consequences of such unexpected genome permeability and generality of this finding across plant diversity remain elusive.

Here, we aim to determine genomic signatures of the action of selection during inter-ploidy introgression in seven plant species varying in ploidy, i.e. cases of incipient polyploid speciation. We will test the hypothesis that selection promotes inter-ploidy introgression in certain genomic regions while it operates against gene flow in different parts of the genome. Firstly, based on available short-read data from all species backed by long read data in three cases, we will infer the strength and directionality of the inter-ploidy introgression. Then, we will test if selection shapes the differentiation landscape of admixed polyploid genomes using the state-of-the art population genomic tools. Finally, we will test for congruence across the species in order to provide a general synthesis on the strength, direction and evolutionary consequences of interploidy gene flow. The results have the potential to shift our perception of polyploidy towards speciation-with-gene-flow scenarios and inform breeding programs involving polyploid crops.

We seek a highly motivated, independent early career researcher interested in developing a research program within the context of an ERC-funded project. Keen interest in leading an independent research program and a strong background in structural, statistical, and/or population genetics/genomics are required. There will be possibility to expand to analyses towards experimental validation of the findings of population genomic analyses (crossing experiments, transformation of candidate genes) in some of the studied species. Alongside head-start with available data, the candidate is expected to be fully involved in the overall project design and lead the analytical part of the project. Student (co-)supervision and lecturing at the faculty is not required but supported as well as the development of further independent self-funded research projects.

The successful candidate will join the team of Ecological Genomics lead by Filip Kolář (<https://botany.natur.cuni.cz/ecolgen>). This project will involve close collaboration with other labs focused on ecological and evolutionary genomics of polyploidy and introgression: Levi Yant (University of Nottingham, UK) and Simon Martin (University of Edinburgh, UK).

Salary: co-funding 1000 EUR/month is ensured

Co-funding resources: ERC Starting grant, European Research Council (850852) DOUBLE ADAPT: Whole genome duplication – the gateway to adaptation?

Department: Department of Botany, Faculty of Sciences

Supervisor: Filip Kolář

E-mail: filip.kolar@natur.cuni.cz

Phone: +420 221 95 1645


Position available from: January 1, 2023

Deadline date for applications: July 25, 2022

Applicants must submit required documents to: filip.kolar@natur.cuni.cz (project supervisor)

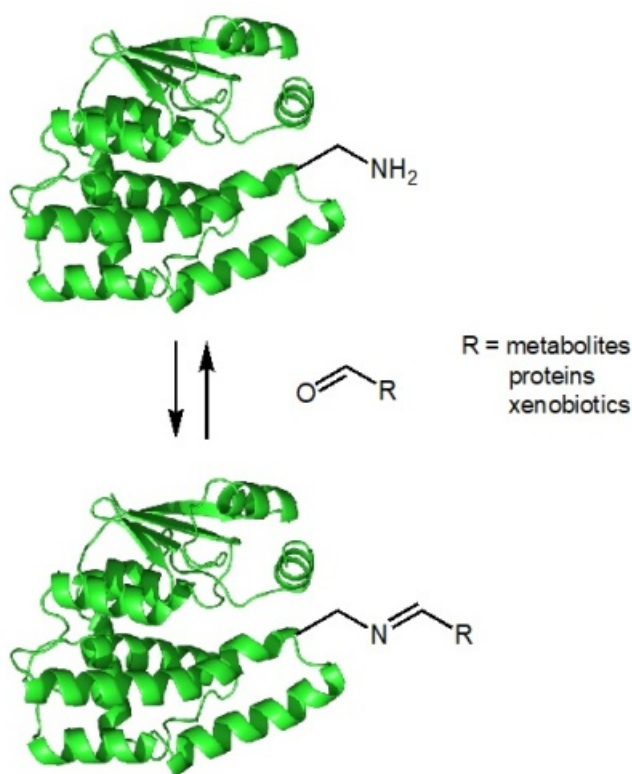
and in a copy to katerina.mlynarova@natur.cuni.cz (faculty coordinator of the Junior Fund)

[3] Title of the research project:

	NEW CHEMICAL TOOLS FOR BIOLOGICAL PROFILING OF UNDEREXPLORED IMINE-BASED POST-TRANSLATIONAL MODIFICATIONS
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Transient post-translational modification that is largely neglected in proteomic approaches is the formation of imines (Schiff bases) of lysine residues with carbonyl (aldehyde and ketone) containing metabolites (Fig.1). A prototypical example of this interaction is pyridoxal phosphate and retinal cofactor binding in transaminases and opsins.[1,2] However, recent research indicates that this type of interaction might be more prevalent and important than previously thought. For instance, the intimate interaction of MHC-like proteins with carbonyl-containing metabolites can have a major effect on the immune response to microbial infections and malignant tumors.[2,3] The full scale of the possible metabolites presented to T-cells through this interaction is largely unknown.

Figure 1: PTM mediated by imine formation between lysine residues and carbonyl containing metabolites.



Underexplored imine-based PTM

The aim of the proposal is the development of a chemical probe for selective labeling of imines in proteomes and the identification of specific proteins and metabolites involved. The design relies on the chemical reaction of imines with organic phosphites that generates a covalent adduct that can be further processed. Such a tool would enable fundamental insight into the metabolic surveillance of immune system that has also a significant translational potential.

References:

- [1] A. C. Eliot, J. Kirsch, *Annu. Rev. Biochem.* 2004, DOI 10.1146/ANNUREV.BIOCHEM.73.011303.074021.
- [2] L. O. Björn, *Photobiology: The Science of Light and Life*, Springer, 2015.
- [3] L. Kjer-Nielsen, O. Patel, A. J. Corbett, et al., *Nature* 2012, 491, 717.
- [4] A. J. Corbett, S. B. G. Eckle, R. W. Birkinshaw, et al., *Nature* 2014, 509, 361.

Salary: co-founding 1000 EUR/month is ensured

Department: Dept. of Organic Chemistry, Faculty of Science, Charles University

Supervisor: Jiří Mišek, PhD.

E-mail: misek@natur.cuni.cz

Phone: +420 777 148 178

Position available from: January 1, 2023

Deadline date for applications: July 25, 2022

Applicants must submit required documents **to:** misek@natur.cuni.cz (project supervisor) and in a copy to katerina.mlynarova@natur.cuni.cz (faculty coordinator of the Junior Fund)

[4] Title of the research project:



EVOLUTIONARY BASIS OF AUXIN PERCEPTION IN GREEN LINEAGE

The mechanism of action of auxin, a plant hormone with numerous morphogenic effects, has been investigated since pioneering Darwins' experiments. Upon auxin binding, the TIR1/AFB F-box complex steers specific gene expression changes that are required for the response to developmental and environmental cues. In addition, the TIR1/AFB F-box proteins also stimulate very rapid responses leading to changes in ion fluxes and specific protein modifications, including their phosphorylation. We still do not know how plants adopted in their evolutionary history this complex mechanism.

In both early and late diverging streptophyte algae, there is now quite good evidence for the auxin biosynthesis and metabolism, auxin effects on the cell division and morphogenesis, as well as the presence of homologs of auxin influx and efflux carriers. However, these algal relatives lack clear homologs of TIR1/AFBs and AUX/IAAs, although in some of their clades, there are reported TIR1/AFB precursors with domains related to hormone receptor domains from land plants.

Based on the available evidence, the aims of this postdoc project are the following. First, the candidate will focus on the analysis of the dynamics of rapid responses of both early and late diverging streptophyte algae and selected bryophytes to the phytohormone auxin. In particular, growth and physiological responses (ion fluxes), as well as subcellular responses (such as calcium transients), will be monitored. Further, the task will be to address the physiological relevance of such responses for the particular organism. Finally, the signalling pathway underlying such responses will be reconstructed using bioinformatic evo-devo and proteomic approaches. This project will be carried out under the shared supervision and mentoring of the Jan Petrasek and Matyas Fendrych laboratories. In the Petrasek lab, representatives of streptophyte algae are well-established, including sequenced strains of complex shape *Chara braunii* and single cells models of *Mesotaenium* (late-diverging) and *Mesostigma* (early-diverging). It holds expertise in LC/MS analysis of auxinic compounds, transgenesis of selected algae strains and in vivo time-lapse microscopy, image analysis and micromanipulations. The Fendrych laboratory has the know-how and equipment to study rapid cellular responses of plants, including the microfluidic accessories and spinning disk microscopy. The postdoc will benefit from the shared mentoring of Jan Petrasek, Matyas Fendrych and Stanislav Vosolsobe, who is an expert on in silico phylogenetic approach. We plan to challenge biolistic transformation of germinating protonema or direct introduction of transgenic mRNA into the *Chara* cells by micromanipulation. We will attempt to introduce calcium reporters (GcAMP, rGECO1) for the observation of fast cellular response on auxin application in *Chara*.

Figure 1: *Chara braunii* – stunning model for evolutionary study of plant complexity



Salary: co-funding 1000 EUR/month is ensured

Co-funding resources: Department of Experimental Plant Biology (Charles University)
Cell Growth Laboratory (Matyáš Fendrych)

Department: Department of Experimental Plant Biology

Supervisor: Jan Petrášek

E-mail: petrasek@ueb.cas.cz

Phone: +420 22 195 1695

Position available from: January 1, 2023

Deadline date for applications: July 25, 2022

Applicants must submit required documents to: petrasek@ueb.cas.cz (project supervisor)
and in a copy to katerina.mlynarova@natur.cuni.cz (faculty coordinator of the Junior Fund)

[5] Title of the research project:



**EVOLUTIONARY SIGNIFICANCE OF THE GERM-LINE
RESTRICTED CHROMOSOME IN SONGBIRDS**

In multicellular organisms, all cells of an individual normally contain the same genetic information and cell differentiation is controlled by turning on or turning off different combinations of genes. An alternative but rare way to change the developmental fate of cells is the loss of specific DNA sequences. A striking example of such programmed DNA elimination occurs in birds, where a whole chromosome is eliminated from somatic cells during early embryogenesis and is maintained only in the germline. Although the existence of this germline restricted chromosome (GRC) has been known for more than two decades from zebra finch (*Taeniopygia guttata*), only recently it has been demonstrated that this chromosome is very likely present in all songbirds, the largest and most diverse group of birds, comprising more than 5000 species, making them the largest taxonomic group with obligatory programmed DNA elimination. The function and evolutionary significance of this enigmatic chromosome is, however, still unknown.

The songbird GRC is an unusual chromosome in many respects. In male germ cells, it normally occurs as a single copy, while females contain two GRC copies, although many exceptions have been observed. Although the GRC has long been believed to only be maternally inherited, recent findings suggest that paternal inheritance can also occasionally occur. These observations indicate that the GRC often shows unstable meiotic and mitotic inheritance, similar to what has been observed in parasitic B chromosomes. And yet its presence in all songbird species analyzed so far indicates that it has not been lost from the genome for over 30 million years of songbird evolution. This suggests that, unlike B chromosomes, it has some essential function preventing its loss, which is, however, still unknown. In stark contrast to the evolutionarily stable chromosomes of birds, the GRC shows extremely dynamic evolution manifested by unusually large variation in its size as well as gene content among species and sometimes even within species. This suggests an intriguing possibility that the GRC could contribute to the relatively rapid radiation of songbirds compared to other bird lineages.

The aim of this project will be to determine the essential function of the GRC for songbirds and study its potential role in speciation in two model systems: (i) two closely related species of nightingales (*Luscinia* sp.) and (ii) multiple estrildid finches of the genus *Lonchura*. The selected candidate can utilize whole-chromosome GRC assemblies for these species, which we have generated during our ongoing research on the GRC. In addition, we will generate single-cell transcriptomic data from embryonic tissues and gonads to study the GRC gene expression during ontogeny.

The project will be realized at the Department of Zoology, Faculty of Science, Charles University in the lab of Population and speciation genetics under the supervision of Radka Reifová (<http://web.natur.cuni.cz/~radkas>). Furthermore, the project will be realized in close collaboration with the group of Alexander Suh, (University of East Anglia, Norwich, UK). The ideal candidate should have experience with bioinformatic analyses of genomic and transcriptomic data.

Our recent publications on this topic:

Schlebusch SA et al. (2022). Rapid gene content turnover on the germline-restricted chromosome in songbirds. *Nature Communications* (in revision). <https://doi.org/10.21203/rs.3.rs-1359388/v1>

Sotelo-Muñoz M, et al. (2022). Germline-restricted chromosome shows remarkable variation in size among closely related passerine species. *Chromosoma* 131(1-2):77-86.

Borodin P et al. (2022): Mendelian nightmares: The germline-restricted chromosome of songbirds. *Chromosome Research*. In press. <https://doi.org/10.1007/s10577-022-09688-3>

Johnson Pokorná M and Reifová R (2021). Evolution of B chromosomes: from dispensable parasitic chromosomes to essential genomic players. *Frontiers in Genetics* 12:727570.

Salary: co-funding 1000 EUR/month is ensured

Co-funding resources: The causes and evolutionary consequences of programmed DNA elimination in songbirds. (23-07287S, GAČR project proposal, 2023-2025). Internal resources of the Department of Zoology if the GAČR project is not successful.

Department: Department of Zoology

Supervisor: RNDr. Radka Reifová, Ph.D.

E-mail: radka.reifova@natur.cuni.cz

Phone: +420221951852

Position available from: January 1, 2023

Deadline date for applications: July 25, 2022

Applicants must submit required documents to: radka.reifova@natur.cuni.cz (project supervisor) and in a copy to katerina.mlynarova@natur.cuni.cz (faculty coordinator of the Junior Fund)

[6] Title of the research project:



ANALYSIS AND COMPARISON OF THE IMPORTANCE OF SRC IN BONE FORMATION OF HIGHER VERTEBRATES

Project description:

The product of the *c-src* proto oncogene, tyrosine kinase Src, is an essential regulator of cellular physiological processes ranging from cell adhesion, migration to mitogenic and anti apoptotic signaling. Thus, finding the precise regulation of Src in living cells is key to both understanding Src-dependent signal transduction and developing effective Src-targeted therapeutic approaches. Although Src is ubiquitously expressed, targeted disruption of *c-src* in mice leads to only one major phenotype, osteopetrosis. This is the result of excessive accumulation of bone matrix caused by defective osteoclast function. The bones of mammals and birds differ in their inner structure and the role of Src in bird bone formation has not yet been analyzed.

The main research objective of this project is the elucidation of the role of Src in osteoclasts and the comparison of the specific role of Src in bone formation and osteoclast physiology between mammals and birds. The research will focus on description of the role of Src in bone formation *in vivo* and on osteoclasts physiology *in vitro*.

The *in vivo* experiments will include comparison of *src*^{-/-} phenotype between murine and chicken. In collaboration with group of Dr. Hejnar (IMG, Prague) *src* / chicken will be prepared and analyzed for potential abnormalities in bone formation and bone resorbing activity of *src* / osteoclasts. These results will be compared to published phenotype of *src*^{-/-} mice.

The *in vitro* experiments will focus on analyses of Src activation dynamics in correlation to bone resorbing activity of isolated osteoclasts. Src-FRET biosensor technology developed in our lab will be used. Both chicken and mice osteoclasts expressing Src-FRET biosensor will be prepared. The main focus will be on specific osteoclasts structures called sealing zones. These structures are responsible for bone resorption and cannot form when Src activity is inhibited. The dynamics of Src activation during formation of the sealing zones will be evaluated and correlated to bone resorption activity of the osteoclasts.

Candidate profile:

The candidate should have a strong background in molecular cloning, biochemical analyses, cell-based assays and experience with live-cell fluorescence microscopy. Experience with FRET imaging is of further advantage.

Suggested reading:

Koudelková L, Pataki AC, Tolde O, Pavlik V, Nobis M, Gemperle J, Anderson K, Brábek J, Rosel D. Novel FRET Based Src Biosensor Reveals Mechanisms of Src Activation and Its Dynamics in Focal Adhesions. *Cell Chem Biol.* 2019 Feb 21;26(2):255-268.e4. doi: 10.1016/j.chembiol.2018.10.024.

Salary: co-founding 1000 EUR/month is ensured

Co-funding resources: National Institute for Cancer Research (LX22NPO5102) – program EXCELES of the Ministry of Education, Youth, and Sports of the Czech Republic

Department: Department of Cell Biology

Supervisor: Doc. RNDr. Daniel Rösler, Ph.D.

E-mail: rosel@natur.cuni.cz

Phone: +420 32587 3900

Web: <http://web.natur.cuni.cz/cellbiol/invalab/>

Position available from: January 1, 2023

Deadline date for applications: July 25, 2022

Applicants must submit required documents to: rosel@natur.cuni.cz (project supervisor) and in a copy to katerina.mlynarova@natur.cuni.cz (faculty coordinator of the Junior Fund)

[7] Title of the research project:



SYNTHESIS OF SELAGIBENZOPHENONE B DERIVATIVES AS CANDIDATES FOR SELECTIVE ANTI-PROSTATE CANCER DRUGS, WITH NOVEL MODE OF ACTION.

Abstract

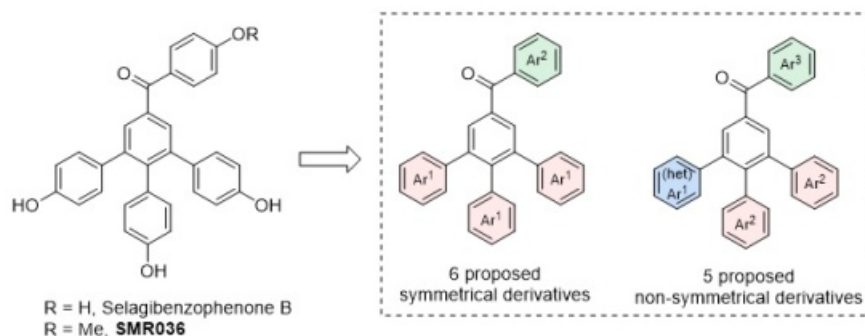
Prostate cancer (PC) is the most common cancer in man (*Int. J. Urol.* 2018, 25, 220). It is therefore desirable to understand the biological mechanisms, identify new targets for a development of new strategies to combat PC, and last but not least to develop medicaments, which would show a selective cytotoxicity via interaction with these targets, preferably with no interference with healthy cells. During this project, new molecules will be prepared and evaluated for their selective cytotoxicity towards castration resistant metastatic PC carcinoma (PC-3). It is hypothesized that a novel mode of action is responsible for the effect of the molecules. The hypothesis and the design of the molecules results from our preliminary wet laboratory and *in silico* studies.

Preliminary results

Natural products selagibenzophenones A, B, and C (*Catalysts* 2021, 11, 708. *Eur. J. Org. Chem.* 2022, e202200014) were prepared in our laboratory as well as 11 unnatural derivatives. Compounds were evaluated for their cytotoxic

properties at prostate (PC-3), colon (HT-29), breast cancer (MCF-7), and healthy cells (HUVEC). A lead candidate SMR036 was identified with cytotoxicity towards PC-3 cell lines with the activity in low micromolar range a low toxicity towards healthy cells, and with selectivity index up to 19 (cytotoxicity towards healthy/PC cells). In silico studies were carried out resulting into identification of two possible molecular targets, namely PDE42D and PARP1. A series of novel dual inhibitors of the above enzymes was designed, using molecular docking. The proposed derivatives are expected to bind to both receptors and should have a good druggability resulting from ADMET analysis (Figure 1, *unpublished results*).

Figure 1:



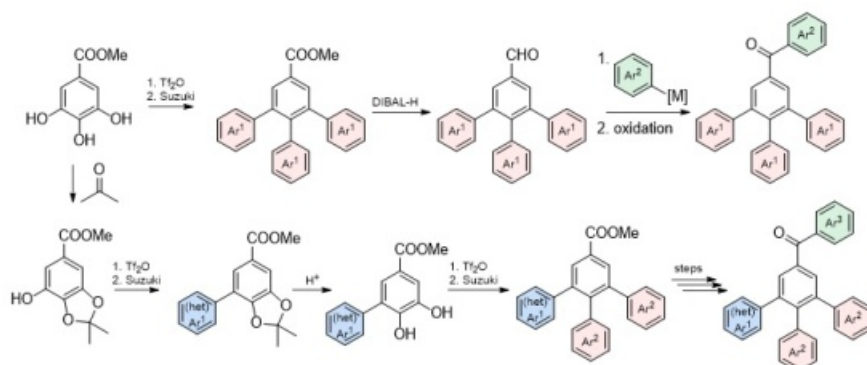
Aims of the project

The proposed symmetrical as well as non-symmetrical derivatives will be prepared in the laboratory of the applicant by the postdoc and evaluated for the cytotoxic properties in the laboratory of collaborator (prof. Tugba Tumer). The inhibitory properties towards the identified targets will be evaluated. The role of the dual inhibitory effect on the selective cytotoxicity will be examined.

Design of the research

In the first stage, the designed molecules will be synthesized. The experience, previously gained, will be utilized within the preparation of the molecules with the symmetrical substitution pattern. The synthesis will commence from methyl gallate, which will be converted to triflates and cross-coupling reaction, followed by reduction of the ester moiety to aldehyde, addition of organomethylated species and oxidation to ketone (Scheme 1, upper sequence). For the synthesis of the non-symmetrical molecules, masking of the ortho-phenolic groups as acetals (e.g. in the reaction with acetone), further cross-coupling for introduction of moiety Ar1, deprotection, and decoration with moieties Ar2 will assure the access to the desired non-symmetrical derivatives (Scheme 1, bottom sequence).

Scheme 1:



In the later stage, the derivatives will be evaluated for their cytotoxic properties, as well as for their inhibitory properties towards the both targets of interest, in order to evaluate the above stated hypothesis. The evaluation will be carried out in a collaboration with prof. Tugba B. Tumer, who is (Çanakkale Onsekiz Mart University) with whom the collaboration was established and the preliminary data were collected.

Significance


The fulfilling the aims of the project will have an impact on the treatment of the castration resistant metastatic PC. First, successful demonstration that the dual inhibition of the PDE42D and PARP1 leads to a selective toxicity towards PC cells will represent a new therapeutic strategy and a novel treatment approach for the PC. The synthesized compounds will be new potential anti-cancer drugs with such a mode of action.

Salary: co-founding 1000 EUR/month is ensured
Department: Department of Organic Chemistry
Supervisor: Dr. Lukas Rycek, MSc.
E-mail: rycekl@natur.cuni.cz
Phone: +420 22195 1981
Position available from: January 1, 2023
Deadline date for applications: July 25, 2022

Applicants must submit required documents **to:** rycekl@natur.cuni.cz (project supervisor) and in a copy to katerina.mlynarova@natur.cuni.cz (faculty coordinator of the Junior Fund)

Faculty of Law

|1| Title of the research project:

	TRANSNATIONAL ADMINISTRATIVE LAW IN THE POST-PANDEMIC ERA
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Transnational Administrative Law has attracted much attention so far by academicians in Europe and Beyond. The fact is, however, that the COVID Pandemics seems to produce new realities in various regimes of public law. These new realities include, inter alia, the (i) the phenomenon of reterritorialization of administrative law, (ii) increasing role of tailor-made administrative measures and (iii) massive emergence of circumvention of existing measures and their non-enforcement. In respect, research must be focused on these new realities and their impact on the existing scholarship in the field of Transnational Administrative Law. It is envisaged that the post-doc will address outlined questions (or other problems, arising during and in the aftermath of the Pandemics) in his/her research at the Department of Administrative Law and Administrative Science.

Workplace: Department of Administrative Law and Administrative Science)
Contact/supervisor: Prof. Jakub Handrlica
E-mail: jakub.handrlica@prf.cuni.cz
Position available from: January 1, 2023
Deadline date for applications: July 19, 2022
Applicants must submit required documents **or queries to** international@prf.cuni.cz .


|2| Title of the research project:

	WATER LAW AND PROTECTION IN THE CZECH REPUBLIC AND ISRAEL (DE LEGE LATA AND DE LEGE FERENDA) IN THE INTERNATIONAL AND EUROPEAN CONTEXT
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The research and the final monograph should be focused on the problems with the protection of water (both quantity as well as quality) in the valid legal regulations of Czechia and Israel. Israel is taken as the world leader in the water management and its legal regulation. The problems of the floods and dry seasons are general problems caused especially by the climate change. The monograph should be concentrated on the question of the good practice and its inspiration from the Czech Republic and whole EU. Both aspects - mitigation as well as adaptation of the water management and treatment - should be taken in account. The results may even be some drafts for the Czech and European legislation and decision making.

Workplace: Department of Environmental Law, Law Faculty of the Charles University
Contact/supervisor: Prof. JUDr. Milan DAMOHORSKÝ, DrSc., Head of the DEL
E-mail: damohors@prf.cuni.cz
Position available from: January 1, 2023
Deadline date for applications: July 19, 2022
Applicants must submit required documents **or queries to** international@prf.cuni.cz .

|3| Title of the research project:

	CARPATHIAN CONVENTION AND ITS APPLICATION AND ENFORCEMENT IN CZECHIA AND UKRAINE FROM THE LEGAL POINT OF VIEW
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The research and the final monograph should be focused on the problems with the protection of forests, water, land, nature and landscape in the valid legal regulations of Czechia and Ukraine.

Both countries are the member parties of the Carpathian Convention (The Framework Convention on the Protection and Sustainable Development of the Carpathians), adopted in Kyiv (May 2003 - next year would be the 20. anniversary) together with five other countries of the region (Hungary, Slovakia, Poland, Serbia and Poland). Carpathian Convention is a good example of regional international cooperation of the sustainable development and management of one of the largest European mountain system (the total area of 190 000 km²).

There are some troubles caused by climate change, bad forest management, tourism, water dry seasons etc. in the practice.

The monograph should be concentrated on the question of the good practice and its inspiration from the Czech Republic (western part of Carpathians Mountains) and Ukraine (the most eastern part of the Carpathian Mountains) and vice versa in Europe. Both aspects – legal regulation and its enforcement - should be taken in account. The results may be even some drafts for Ukraine (or vice versa) from the Czech and international law for its future legislation and decision making.

Workplace: Department of Environmental Law, Law Faculty of the Charles University

Contact/supervisor: Prof. JUDr. Milan DAMOHORSKÝ, DrSc., Head of the DEL

E-mail: damohors@prf.cuni.cz

Position available from: January 1, 2023

Deadline date for applications: July 19, 2022

Applicants must submit [required documents](#) **or queries to** international@prf.cuni.cz .

|4| Title of the research project:



WHAT CAN (SHOULD) THE STATE OFFER TO FORCED MIGRANTS AFTER THE END OF TEMPORARY PROTECTION OR SIMILAR STATUS?

We are looking for a colleague to join our Refugee and Migration Law research team to work on the topic "What can (should?) the state offer to forced migrants after the end of temporary protection or similar status?".

In 2022, the Council of the EU declared temporary protection (under the relevant EU Directive) in response to the influx of people from Ukraine. This status is explicitly temporary; the Directive allows for its extension up to a total maximum period of three years. So the question for the state is: what next? It is possible to draw inspiration from the approach of states in the past, particularly in the 1990s, when, after the end of temporary refuge for persons from the former Yugoslavia, some states (including the Czech Republic) allowed access to residence status in addition to voluntary returns. A sub-theme here may be, among other things, that other protection statuses are also temporary, but permanent solutions are considered: voluntary return, resettlement or local integration.

Workplace: Center for Migration and Refugee Law of the Department of International Law

Contact/supervisor: JUDr. Věra Honusková, Ph.D.

E-mail: honuskov@prf.cuni.cz

Position available from: January 1, 2023

Deadline date for applications: July 19, 2022

Applicants must submit [required documents](#) **or queries to** international@prf.cuni.cz .

|5| Title of the research project:



COMPENSATION IN INTERNATIONAL LAW

We are looking for a colleague to join our research team to work on the topic "Compensation to individuals in international law".

Reparation (indemnification) belongs to the topics of international law that are both classical and very modern. The classical aspect relates to restitution and compensation as two major forms of the reparation obligation, which forms the content of the responsibility of States for internationally wrongful acts. The modern dimension of the topic also relates to the right of individuals and various non state actors to reparations. The internationalist doctrine has only started to analyse this aspect. However, the dynamic nature of international law should be taken into consideration. The recent developments in this law seem to open a direct access of individuals to reparation. While individual claims increase in number, inter state disputes based on the diplomatic protection are less frequent. The individualization and depolitization

of international disputes is generally considered as a positive trend, taking place mostly in the international law of human rights and international investment law. Even the recent development in international criminal law has contributed to this trend, in particular since the establishment of the International Criminal Court. It aims not only at punishing perpetrators of crimes but also at indemnifying victims of such crimes, in the forms of restitution, compensation and rehabilitation. The developments in the area of international humanitarian law are less definite, as most States show reluctance to grant reparation to individuals harmed by the actions of their armed forces within armed conflicts. The research aims at verifying whether the practice of international courts, criminal tribunals and other institutions acting in the field just results in the creation of special regimes, thus contributing to the fragmentation of international law, or whether it could actually bring about deeper structural changes of general international law.

Workplace: Department of International Law

Contact/supervisor: prof. JUDr. Pavel Šturma, DrSc.

E-mail: sturma@prf.cuni.cz


Position available from: January 1, 2023

Deadline date for applications: July 19, 2022

Applicants must submit [required documents](#) **or queries to** international@prf.cuni.cz .

Faculty of Medicine in Pilsen

[1] Title of the research project:

	INJECTABLE HYDROGELS FOR CARTILAGE AND BONE TISSUE ENGINEERING
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Input premise

Bone tissue engineering is an important field of the improvement, repair, or replacement, of damaged cartilage and bone tissue. Hydrogels in the form of 3D scaffolds have shown great potential for these applications. Due to their ability to absorb significant amount of water, high similarity to the natural extracellular matrix and biocompatibility, they are finding increasing applications in biomedicine. All these properties depend on the composition and morphology of the hydrogel and type of its crosslinking. The specific use of a hydrogel requires tailoring its properties to the environment where it becomes a carrier for cells and other substances important for their growth. Ideally, such scaffolds should be sufficiently porous, highly biocompatible, non-toxic, encourage cell proliferation, and differentiation and the formation of new tissue. They should also have stable mechanical properties, degrade in response to new tissue formation, facilitate diffusion of nutrients and metabolites, adhere to and integrate with surrounding tissue to fill the wound site properly. Recently, injectable hydrogels have attracted the attention of biomaterials scientists in the field of cartilage and bone tissue engineering, as they enable to facilitate surgery and implantation using non-invasive injection method. The used material should create the desired shape and fill irregular defects perfectly.

Injectable hydrogels can be prepared using biomaterials based on natural or synthetic polymers or their composites. The aim of the research will be to prepare an injectable hydrogel with an optimal composition that will meet all the important requirements for 3D scaffolds for bone and cartilage tissue engineering. Both *in vivo* and *in vitro* methods will be used for verification the properties of hydrogels. An indivisible part of this research will be the publication of obtained results and their presentation at scientific seminars and conferences.

Qualifications

- Ph.D. (or equivalent) degree in chemistry, biochemistry or medicine, max. 5 years from graduation
- Excellent English communication skills both in written and oral form
- Technical skills in chemistry, biochemistry, molecular biology and cell biology (e.g. basic chemical synthesis, cell cultures, biochemical assays, immunocytochemistry, real time quantitative PCR, RT-PCR and related molecular biology methods) – advanced experience
- High motivation, ability to conduct collaborative research
- Track record of publications in peer-reviewed journals: at least 5 publications in IF journals, two as a first author

The applicants should submit

- [Letter of Reference](#)
- [Application for post-doc grant at Charles University](#)
- Curriculum vitae
- List of publications
- Copy of university diploma

- Brief description of prior research, skills and experiences

Gross wage: 40 000,- CZK per month (approx. 1 600 €)

Department: Faculty of Medicine in Pilsen, Department of Medical Chemistry and Biochemistry

Supervisor: Mgr. Jana Dvořáková, Ph.D.

E-mail: Jana.Dvorakova@lfp.cuni.cz

Phone: +420 377 593 286

Position available from: January 1, 2023

Deadline date for applications: July 17, 2022

Applicants must submit [required documents](#) to: Jitka Černohousová - Jitka.Cernohousova@lfp.cuni.cz

Faculty of Pharmacy in Hradec Králové

[1] Title of the research project:



BIOINFORMATIC ANALYSIS OF TRANSCRIPTOMIC AND LIPIDOMIC DATA FROM PRECLINICAL DEVELOPMENT OF NOVEL DRUGS FOR THE TREATMENT OF LIVER AND METABOLIC DISEASES

Description (Annotation):

The postdoc/junior researcher position is open for a motivated researcher for nuclear receptor research employing omics methods. The applicant will be mainly involved in data analysis of transcriptomic data and interpretation of the data with respect to metabolic effects of novel nuclear receptor ligands.

Requirements for applicant:

We are seeking a talented and highly motivated individual with a strong interest and expertise in Next Generation Sequencing (NGS) technologies to support R&D projects on the development and characterization of novel nuclear receptor ligands. Knowledge of and/or experience with sequencing platforms (e.g., Illumina), and experience with data analysis tools and programming languages would be beneficial.

The candidate will analyze the transcriptomic effects of nuclear receptors using both RNA-seq and RT-PCR assays.

Applicant should have experience with the methods and his/her data have been published in a good journal.

The applicant should have expertise with basic molecular biology techniques (i.e., PCR, and qPCR), total RNA isolation and analysis, NGS-based library preparation, DNA fragment analyzers, etc.

In addition, the applicant will work on different cellular models and assays to analyze the effect of nuclear receptor activation using TF-FRET or luciferase reporter assays.

Applicant should be able to work independently in a pharmacological laboratory and perform data and statistical analyses.

Applicant should be able to work in a team of students and postdocs, she/he should have good written and verbal communication skills in English.

Workplace/Institution:

Research Group of Clinical and Molecular Pharmacotherapy, Charles University, Faculty of Pharmacy in Hradec Králové.

Supervisor: prof. PharmDr. Petr Pávek, Ph.D.

Email: pavek@faf.cuni.cz

Phone: +420 495 067 334

Position available from: 1st of January 2023

Deadline date for applications: 11th of July 2022

Applicants must submit all [required documents](#) including description of prior research, technical skills and scientific experience, to the project supervisor, prof. PharmDr. Petr Pávek, Ph.D. (pavek@faf.cuni.cz)

Center for Economic Research and Graduate Education

[1] Title of the research project:



INSTITUTIONAL ECONOMICS, ECONOMIC HISTORY AND APPLIED ECONOMICS

CERGE UK seeks a postdoctoral candidate with focus on theoretically and empirically oriented research in institutional economics, economic history or applied economics. Preference will be given to candidates pursuing research spanning across the above fields. Applicants should demonstrate the capacity to pursue a research project at the frontier of current knowledge as well as the ability to achieve a strong publication record in leading scholarly journals.

Supervisor: doc. Sergey Slobodyan, Ph.D.

E-mail: hr@cerge-ei.cz

Position available from: January 1, 2023

Deadline for applicants: July 25, 2022.

Applicants must submit all required documents to hr@cerge-ei.cz