List of Post-Doctoral Fellowships

A. Center for Economic Research and Graduate Education (CERGE)

Title of the research project:

1. Industrial Organization, Political Economy, and Development Economics

CERGE UK seeks a postdoctoral candidate with focus on theoretically and empirically oriented research in microeconomics, industrial organization, political economy, or development 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.

Title of the research project:

2. Quantitative Economic History, Economic Geography, and Cultural Economics

CERGE UK seeks a postdoctoral candidate with focus on empirically oriented research in microeconomics, economic history, economic geography, or cultural 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.

B. Environment Center

Title of the research project:

Sustainable economic growth in the Czech Republic – an estimation using the Genuine Progress Indicator

Research Proposal – Summary

Indicators of sustainable development belongs to major scientific topic of Environmental Centre of the Charles University. Recently it become more and more clear that Gross Domestic Product (GDP), widely used as a measure of economic welfare, is not a good indicator of sustainable development. The global financial crisis of 2008 underlined the need for new measures to replace or supplement GDP as the all-important compass for continued economic prosperity and human-well-being. The crisis was a reminder of the shortcomings of current methods and the importance for nation-states of seizing opportunities to change course and develop new economic sectors of prosperity. There are many approaches to measuring the sustainability of economic growth and performance, but an increasingly popular alternative measure of economic welfare is the Genuine Progress Indicator (GPI). To date, the GPI has been used mainly by academics as a measuring tool, principally as a means of comparing its outcome against the GDP statistic, and review the scale and trends concerning its various costs components. No attempt has been made to use the GPI as a tool for identifying economy-environment trade-offs, which would be a useful informative to decision-making. In this research project, the first GPI assessment will be carried out for the Czech Republic.

E-mail: jan.frouz@czp.cuni.cz
Phone: +420 220 199 471
C. Second Faculty of Medicine

Title of the research project:

The role of neuronal auto-antibodies in the pathogenesis of disorders of central nervous system (in English)

Applicant: Prof. MUDr. Petr Marusič, Ph.D., Neurologická klinika 2. LF UK

Summary: Recent studies demonstrate the causal role of neuronal auto-antibodies in the pathogenesis of several brain disorders including epilepsy, limbic encephalitis or autism. The main aim of the postdoctoral project is to elucidate the principles of pathophysiological and immunological mechanisms of the interaction between neuronal auto-antibodies and central nervous system. The project should also result in the development of new diagnostic techniques which would reliably determine the presence of auto-antibodies and their pathogenicity to induce limbic encephalitis.

Neuronální protištěpky u autoimunních chorob nervového systému (in Czech)

Rešitel: prof. MUDr. Petr Marusič, Ph.D., Neurologická klinika 2. LF UK

Anotace: Současně studie prokazují, že auto-protištěpky proti neurálním antigenům hrají kauzální úlohu v patogenezi řady onemocnění nervového systému, např. epilepsie, limbických encefalitid, či autismus. Cílem navrhovaného projektu je pochopení patofyziologických a imunologické mechanismy účinku anti-neurálních protištěpek a vývoj diagnostických metod, které umožní prokázat přítomnost a patogeneticky potenciál těchto protištěpek v rámci limbických encefalitid.

D. Third Faculty of Medicine

Title of the research project:

Mechanisms of action of glycolytic enzymes in cancer onset and progression (in English)

Mechanismy účinku glykolytických enzymů ve vzniku a progresii zhoubného bujení (in Czech)

Supervisor: RNDr. Petr Heneberg, Ph.D.
Department: 2nd Department of Internal Medicine, Third Faculty of Medicine
Contact: 00420 775 311 177 (cell), 00420 267 102 914 (phone), 00420 267 162 710 (fax), petr.heneberg@LF3.cuni.cz (e-mail)

Annotation

Background: Metabolic requirements and regulatory processes in proliferating tissues such as fetal and cancer tissues differ from those in most terminally differentiated tissues. Cancer cells often have increased rates of glucose uptake but decreased rates of oxidative phosphorylation, they produce high levels of lactate, regardless the presence of oxygen and fully functioning mitochondria. This reprogramming of energy metabolism in cancer cells is considered one of the hallmarks of cancer and is known as either the Warburg or Crabtree effect. The Warburg effect denotes the long-term reprogramming of the cell, whereas the Crabtree effect denotes the short-term, reversible change in cellular metabolism in the same direction. While most tissues use the standard Embden-Meyerhof-Parnas pathway, mounting evidence suggests that the Warburg cycle is characteristic not only for cancer cells but also for multiple healthy tissues that face hypoxic conditions, particularly during embryogenesis and metamorphosis. Glucose phosphorylation is needed for all the above-described modes of glycolysis, and thus, the hexokinases have emerged as key enzymes needed for a sufficient energy supply in cancer cells. So far, principles how cancer cells alter metabolic phenotype are unknown. Many recently published studies have focused on isoforms of glycolytic enzymes and their regulations, since up-regulation of glycolytic genes was reported in cancer. Among glycolytic enzymes, hexokinases and pyruvate kinases, which catalyze the first and the last irreversible steps of glycolysis, respectively, are significantly up-regulated in cancer. These enzymes play a dual role of key cell metabolism drivers and regulators; however, the research on hexokinase and pyruvate kinase isoforms is still nascent and challenging. Particularly, comprehensive studies that would have described the uniqueness and substitutability of isoforms of hexokinase and pyruvate kinase are lacking. Concurrently, there is no experimental study, which would have focused on somatic cancer variations in glycolytic enzymes. The study on influence of these variations may help to understand how cancer cells may benefit from changes in properties of their key glycolytic enzymes. This post-doc project should thus contribute essential fragments of the mosaic of cellular metabolism in health and disease, and make it less puzzled. Recently, we formed a pipeline allowing effective and straightforward analysis of enzyme kinetics of hexokinases. We also substantially improved in silico predictions and suggested tailoring of state-of-the-art prediction methods, which are to be used in the proposed project. There is a synergy with institutional projects funded by the University, which aim to deliver and analyze a series of hexokinase 1 and hexokinase 2 knock-in cell lines by means of the CRISPR/Cas9 technology and allowed to develop the improvement of specificity of prediction methods and to conduct detailed analyses of diabetes and cancer-associated variations in the glucokinase. This post-doc position is aimed to build upon these projects and focus on the role of hexokinases and pyruvate kinases in cancer onset and progression, to elucidate the effects of cancer-associated variations of these molecules at the cellular level, and to find out the mechanisms that would allow to suppress their role in cancer onset and progression. Details of this post-doc project are to be set up based on the interaction with the candidate and based on candidate’s prior wet lab experience as the ability to propose both ambitious but solvable project on a topic of choice belongs to key competencies used for the evaluation and scoring of the applicants.

E. Faculty of Medicine in Plzeň

Title of the research project:
1. Regeneration of liver parenchyma and its relation to carcinogenesis of primary liver tumors (in English) - in PDF file

Regenerace jaterního parenchymu a její souvislost s carcinogenezi primárních nádorů jater (in Czech)

Position available from: January 2019
Department: Biomedical Center, Faculty of Medicine in Pilsen, Charles University
Laboratory: Laboratory of Cancer Treatment and Tissue regeneration
Supervisor: Vaclav Liska, M.D., Ph.D., Associate Professor of Surgery
E-mail: vena.liska@skaut.cz
Phone: +420 377 593 800

Input premise

Hepatocellular carcinoma (HCC) is the furthermost common example of primary liver cancer, making it third most common cause of cancer mortality. Generally impaired wound-healing response along with chronic liver injury results in liver fibrosis; a condition caused by extracellular matrix accumulation and scar formation. Advanced stages of liver fibrosis progress to liver cirrhosis, categorized by disruption of liver parenchyma cells, nodule formation, blood flow distortion, and liver failure risk. Continuation of disease gradually results in HCC. A variety of etiologies, such as hepatitis B and C viral persistence, chronic alcohol abuse, non-alcoholic steatohepatitis (NASH), cholestasis, and autoimmune hepatitis can progress to HCC. Despite significant advances in understanding of fibrosis leading to HCC, the exact molecular mechanisms of the disease are yet needed to be described. Various studies suggest central role of IL-22 in regulating pathways underlying HCC. High levels of IL-22 have been implied to promote carcinogenesis within the liver as well as in other organs. Its role in activating varied anti-apoptotic and cell proliferative pathways may play role in development and progress of liver cancer. Hence, it is hypothesized that overexpression of IL-22 can lead to various downstream signaling pathways and can eventually activate genes that result in development of tumor by continuous proliferation of liver cells. For that reason, the possible role of IL-22 and its downstream signaling pathways in HCC needs to be deciphered. IL-22 may possibly increase the metastatic potential of tumor cells through certain pathways including JAK/STAT and PI3K/AKT pathways. In this study the potential role of IL-22 in enhancing Mcl-1 via different pathways (JAK/STAT, PI3K/AKT) will be studied. The effects of inhibitors of these pathways (SOCS3, PTEN) will also be observed. As the role of IL-22 in metastasis of HCC is still unclear, that's why further studies would help to explain the cascade reactions through which it might cause carcinogenesis in liver cells. The proposed study aims to explore the potential role of IL-22 in inducing downstream signaling molecules (PI3K, PDK, AKT) triggered cell proliferation, cell metastasis and ultimately development into HCC.

Qualifications
- Ph.D. (or equivalent) degree in biology or medicine recently graduated
- Technical skills in quantitative histology, liver pathology, immunohistochemistry, experimental work– advanced experience
- High motivation, ability to conduct collaborative research
- Excellent English communication skills both in written and oral form
- Track record of publications in peer-reviewed journals: at least 5 publications in IF journals, two as a first author

The applicants should submit
- Application for post-doc grant at Charles University
- Letter of Reference
- Curriculum vitae
- List of publications
- Copy of university diploma
- Brief description of prior research, skills and experiences

Title of the research project:

2. Repurposing of cardiotonics - in PDF file

Position available from: January 2019
Department: Department of Pharmacology and Toxicology, Faculty of Medicine in Pilsen, Charles University
Supervisor: doc. RNDr. Eva Kmoničková, CSc.
E-mail: eva.kmonickova@lfp.cuni.cz
Phone: +420 377 593 241

Input premise

Drug repositioning or drug repurposing, the application of an existing, and already approved, therapeutic to a new disease indication, holds the promise of rapid clinical impact at a lower cost than de novo drug development. To date there has not been a systematic effort to identify such opportunities, limited in part by the lack of a comprehensive library of clinical compounds suitable for testing. Drug repurposing is a promising strategy in pharmaceutics. It considerably reduces the resources and shorten time needed for developing a known drug for new therapy and thus magnifies the probability

---

that the drug reaches clinical phases and to market delivery for the new indication. Hence, it contributes to the use of new ways of EU economic thinking.


The project investigates in depth the apparent relation between the ionic transport on plasma membrane and cancer cells lifecycle and/or apoptosis/autophagy induction. For this purpose, classic cardiotonic steroids as well as some rare ones isolated from plants will be tested for their cytotoxic potency in cancer cells (non-small lung carcinoma), including multi-drug resistance cancer lines. To increase chemotherapeutic potential, the project will evaluate above-mentioned effects of cardiac steroids (cardenolides) with another lactone-type natural compounds, e.g. sesquiterpenic lactones. They target intracellular membranes and induce ionic flux and apoptosis. Recently, such compounds are under advanced level of clinical trials (thapsigargin-mipsagargin) for a treatment of solid tumours.

This project is based on long-lasting cooperation of two teams, biologists (team of doc. Kmonickova, Dept. Pharmacology and Toxicology, Faculty of Medicine in Pilsen, Charles University) and chemists (team of prof. Drasar, Department of Chemistry of Natural Compounds, University of Chemistry and Technology Prague). Position of post-doc fits well for Dept. Pharmacology and Toxicology, which is currently seeking for a person with readiness to transfer a chemical background skills into medical thinking and performing biological experiments.

**Qualifications**

- Ph.D. (or equivalent) degree recently graduated
- High motivation, ability to conduct collaborative research
- Knowledge: organic chemistry, medicinal chemistry, pharmacology, drug research and development, molecular modelling of compounds, biological screening of small-molecule compounds
- Previous participation in local and international projects, experience with preparing proposals
- Good English communication skills both in written and oral form
- Track record of publications in peer-reviewed journals: at least 5 publications in IF journals, two as a first author
- Traineeship in pharmaceutical company is an advantage

**The applicants should submit**

- Application for post-doc grant at Charles University
- Letter of Reference
- Curriculum vitae
- List of publications
- Copy of university diploma
- Brief description of prior research, skills and experiences

**Title of the research project:**

3. Application of unbiased stereology in quantitative histology

**Position available from:** January 2019

**Department:** Institute of Histology and Embryology, Faculty of Medicine in Pilsen, Charles University

**Supervisor:** doc. MUDr. Mgr. Zbyněk Tonar, Ph.D.

**E-mail:** Zbynek.Tonar@lfp.cuni.cz

**Phone:** +420 377 593 325

**Annotation**

The applicant’s task would be to deals with design-based unbiased stereological techniques applied for quantitative analysis in histopathology. Tissue blocks and organs from animal experiments as well as from studies conducted and approved in human patients will be processed and analysed using systematic uniform random sampling of blocks, sections, and fields of view. The morphometry should be performed using continuous variables. Thus, groups of samples under study may be compared in an unbiased way using standard statistical procedures for testing various biological hypotheses.

**Qualifications**

- Ph.D. (or equivalent) degree recently graduated
- Knowledge: biology, histology and embryology, histopathology
- High motivation, ability to conduct collaborative research

---


---

• Good English communication skills both in written and oral form

The applicants should submit
• Application for post-doc grant at Charles University
• Letter of Reference
• Curriculum vitae
• List of publications
• Copy of university diploma
• Brief description of prior research, skills and experiences

F. Faculty of Arts

Title of the research project:
1. Historical, literary and linguistic aspects of Indian religious movements in the late pre-modern era (16th to 18th centuries)

Position available from: January 2019
Department: Department of South and Central Asia, Faculty of Arts, Charles University
Supervisor: Daniel Berounsky, head of the Department of South and Central Asia
E-mail: daniel.berounsky@ff.cuni.cz
Phone: +420-221 619 720

The aim of the project is to bring into common focus three interconnected aspects of religious movements which formed during the middle centuries of the second millennium, gradually acquired forms of ordered communities and have continued to shape the religious life of India till the present day. Study of historical aspects will cover political developments during the last phase of the existence of the Delhi sultanate and the early Mughal empire (ca. 1450–1630), which, perhaps surprisingly, created conditions favourable to development of new institutionalized forms of spiritual activities in the Islamic as well as Hindu religious environments. Looked upon by the established Islamic authorities and Hindu traditionalists as heterodox, they soon acquired popularity and following among the broad middle and lower strata of Indian society. The origin and early development of the Sikh community in Punjab (McLeod 1968, 2000), D?d?panth and N?thayog?S in eastern Rajasthan and elsewhere (Gold 1994, Dvivedi 1996, Mallinson 2011) and the Vaishnava Vallabha samprad?ya in the Braj area (Entwistle 1987) will be brought into comparative perspective to get a clearer picture of their shared underlying cultural matrix.

Gradual process of their institutionalization was accompanied by intensive literary activity in the form of new creations on the part of inspired spiritual thinkers, but also by collecting wise sayings and songs attributed to important religious authorities more or less distant in space or time, but seen as close by their spiritual message. One of the more important, and in part still traceable features of these processes was the emergence of large textual collections and anthologies, some of which tended gradually to acquire shape of more or less binding canons. Here the focus will be on the different degree of openness of these corpora to later additions and modifications: the early closing of the Sikh scripture (Mann 2001, Singh 2003) can be juxtaposed to the more open format of the D?d?panth? Pa?c-v?nis and Sarb?ng?S and still freer growth of the Vaishnava corpus of the S?rs?gar (Bahura 1982, Bryant, Hawley 2015). The formation of the Gorakh-b?n? (Ba?athv?l 1960), so important in the formation of the N?thayog? community, needs to be explored by analysing the old manuscripts particularly of the D?d?panth? community.

The above mentioned textual corpora are of paramount importance for understanding the process of community formation; in addition, they also constitute invaluable material for the study of modern Indo-aryan languages and dialects in the broad area of North India. Some of them (?digranth of the Sikhs) have been already transferred into electronic form (Cailewaert 1996), others (Kab?r-v?n? of the D?d?panth) are currently being digitized and uploaded to publicly accessible websites (University of Lausanne Platform ENIAT) and their language analysed with the help of concordancing software (Strnad 2013). Concordancing, if applied to corpora generated by different communities, can also reveal common phrases, idioms, expressions and so throw more light on the still imperfectly understood common pool of moral and religious ideas formed in continuous interactions of collective memories in the public space (Novetzke 2008), from which the gradually emerging communities, panths and samprad?yas drew their inspiration and popularity.

The broadly based project presented here in its most general outlines will take more concrete shape and yield definite results depending on the scholarly profiles – preferably literary and linguistic – of researchers who will accept the invitation and take part in its implementation. The Institute of South and Central Asia, where the young scholars will be affiliated, will also arrange for their involvement in teaching in the M.A. courses. Articles or papers originating from their research will be dedicated to the hosting Faculty.

Qualifications
• Ph.D. degree (less than 10 years since graduation)
• High motivation, ability to conduct collaborative research
• Previous participation in local and international projects, experience with preparing proposals
• Good English communication skills both in written and oral form
• Track record of publications

The applicants should submit


Ancient Philosophy which is to take place in 2019 at Charles University (the first having taken place 2017 in Budapest):

(a) She/he should actively participate in organizing the second biennial Central European Graduate Conference in international events involving strategic partners of Charles University, including at least the following.

- Publishing at least one high quality article per academic year.
- Organizing various conferences addressed primarily to advanced students, possibly visiting students from institutions abroad.
- Taking part in teaching at the Department of philosophy and religious studies and running 3-4 seminars per academic year (two of which relating directly to the topic of our project and one of which relating to the background of pre-Aristotelian harmonics and the theory of soul as harmonia).
- Creating such a team would enhance considerably the cooperation with institutions abroad (and many strategic partners of CUNI): it would make Charles University an important centre for the study of this prominent topic, attracting scholars to Prague to take part in workshops, and producing significant publications.
- We aim to hire a highly qualified post-doc researcher with an experience in the field who would join the team for two years and work on a topic relating to Aristotle’s theory of sense-perception and its place in his natural philosophy. Ideally, the researcher would explore how the concepts of “ratio” and “mean” contribute to Aristotle’s account, possibly against the background of pre-Aristotelian harmonics and the theory of soul as harmonia.
- According to Aristotle, the harmonia-theory does not fare well as an account of soul itself, but is perfectly applicable to “bodily virtues (or excellences)” (i.e. health and good states of the body). Here, it seems safe to assume that there must be a straightforward connection between perception and perceptual pleasure and pain, on the one hand, and bodily excellences, on the other, and that the harmonia-concept might be a way to spell it out in a more rigorous fashion. An inquiry into these contexts could offer a fresh perspective on Aristotle’s account.
- During her/his time in Prague, the post-doc is expected to lead a research-seminar where the work in progress in the frame of the project would be presented and discussed: the seminar would provide a platform for exchanging ideas and inviting guests from abroad. She/he is also expected to take part in teaching at the Department of philosophy and religious studies and run 3-4 seminars per academic year (two of which relating directly to the topic of our project and addressed primarily to advanced students, possibly visiting students from institutions abroad). She/he is expected to publish at least one high quality article per academic year.

(b) She/he is expected to organize various international events involving strategic partners of Charles University, including at least the following.

- She/he should actively participate in organizing the second biennial Central European Graduate Conference in Ancient Philosophy which is to take place in 2019 at Charles University (the first having taken place 2017 in Budapest):

- Submit applications with all other documents to marketa.krizova@ff.cuni.cz.

#### Title of the research project:

2. Aristotle’s account of sense-perception (as a challenge for modern thought) - [in Doc file](#)

#### Position available from:

January 2019

#### Department:

Department of Philosophy and Religious Studies, Faculty of Arts, Charles University

#### Supervisor:

Jakub Jirsa, Deputy Director of the Department of Philosophy and Religious Studies

#### E-mail:

Jakub.Jirsa@ff.cuni.cz

#### Phone:

+420-221 619 369

Since decades, Aristotle’s theory of sense-perception has played an important role in contemporary debates, being taken as a source of inspiration by one side (Aristotle being seen as a precursor of functionalism) and as a particularly telling point of contrast by another side (Aristotle’s theory of sense-perception revealing more than anything else how far modern science got from the Aristotelian science of nature). Several controversies have arisen among scholars concerning the nature of Aristotle’s theory, especially the way in which the “psychological” side of sense-perception relates to its “physical” or “material” side. Certain aspects of that theory have only recently begun to be coming to light thanks to contribution of various scholars. One of these aspects is the pivotal role in Aristotle’s account of the notions of “ratio” and “mean” used by Aristotle to explain the activity of sense-perceiving as a certain kind of “measuring” or “discriminating”. It is on this issue which our project wants to shed new light, and so enhance our knowledge and understanding of Aristotle’s theory that provoked thinkers throughout the ages and continues to do so nowadays.

At the Department of philosophy and religious studies, there is a strong tradition of Aristotelian studies and two scholars who have been working specifically on the topic of sense-perception. Karel Thein has published a book in 2017 which offers a detailed reconstruction of Aristotle’s account of sense-perception as a part of human nature. Robert Roreitner has written dissertation (submitted at the Humboldt University in Berlin, now being prepared for publication) on Aristotle’s view of sense-perception as a passive activity. Inviting a post-doc researcher from abroad would allow the department to create a powerful research team which would be in position to contribute significantly to the current state of art. Moreover, creating such a team would enhance considerably the cooperation with institutions abroad (and many strategic partners of CUNI): it would make Charles University an important centre for the study of this prominent topic, attracting scholars to Prague to take part in workshops, and producing significant publications.

We aim to hire a highly qualified post-doc researcher with an experience in the field who would join the team for two years and work on a topic relating to Aristotle’s theory of sense-perception and its place in his natural philosophy. Ideally, the researcher would explore how the concepts of “ratio” and “mean” contribute to Aristotle’s account, possibly against the background of pre-Aristotelian harmonics and the theory of soul as harmonia.

According to Aristotle, the harmonia-theory does not fare well as an account of soul itself, but is perfectly applicable to “bodily virtues (or excellences)” (i.e. health and good states of the body). Here, it seems safe to assume that there must be a straightforward connection between perception and perceptual pleasure and pain, on the one hand, and bodily excellences, on the other, and that the harmonia-concept might be a way to spell it out in a more rigorous fashion. An inquiry into these contexts could offer a fresh perspective on Aristotle’s account.

During her/his time in Prague, the post-doc is expected to lead a research-seminar where the work in progress in the frame of the project would be presented and discussed: the seminar would provide a platform for exchanging ideas and inviting guests from abroad. She/he is also expected to take part in teaching at the Department of philosophy and religious studies and run 3-4 seminars per academic year (two of which relating directly to the topic of our project and addressed primarily to advanced students, possibly visiting students from institutions abroad). She/he is expected to publish at least one high quality article per academic year.

Besides that, we expect the researcher to organize various international events involving strategic partners of Charles University, including at least the following.

(a) She/he should actively participate in organizing the second biennial Central European Graduate Conference in Ancient Philosophy which is to take place in 2019 at Charles University (the first having taken place 2017 in Budapest):

---


the aim of this event is to foster cooperation in ancient philosophy between Central European universities (including strategic partners of CUNI: Humboldt-Universität Berlin, Uniwersytet Jagielloński Krakow and Universität Wien).

(b) She/he is further expected to organize (in 2020) at Charles University a thematic conference on sense-perception in Aristotle, involving scholars (with whom contact has already been established) from universities, including those which are in strategic partnership with CUNI, mainly the University of Oxford, Humboldt-Universität zu Berlin, and Leiden University.

Qualifications

• Ph.D. degree (less than 10 years since graduation)
• High motivation, ability to conduct collaborative research
• Previous participation in local and international projects, experience with preparing proposals
• Good English communication skills both in written and oral form
• Track record of publications

The applicants should submit

• Application for post-doc grant at Charles University
• Letter of Reference
• Curriculum vitae
• List of publications
• Copy of university diploma
• Brief description of prior research, skills and experiences

Submit applications with all other documents to marketa.krizova@ff.cuni.cz.

Title of the research project:

3. Empirical Perspectives on Communication and Cognition

Position available from: January 2019

Department: Department of Linguistics, Faculty of Arts, Charles University

Supervisor: Mirjam Friedová, Director of the Department of Linguistics

E-mail: fried@ff.cuni.cz

Phone: +420- 221 619 334

The Department of Linguistics of Faculty of Arts, Charles University, seeks an international postdoc with a degree in linguistics, and especially one with demonstrated interest and experience in cognitively and functionally oriented linguistic research; ideally, we envision a two-year appointment.

The motivation for our search is three-fold: (i) we expect the postdoc to bring fresh ideas and new research topics that will enrich the research conducted by members of our small staff, particularly in the area of syntax with respect to language variation and change; (ii) the postdoc’s main contribution will be in joining and strengthening our newly formed research team (badatelský tým); and (iii) we hope to engage the postdoc in offering some courses in his/her area of specialization.

The postdoc’s involvement in each of these three areas can be summarized as follows:

(i) The research areas covered by members of our department include typological studies, multilingualism and language contact, psycholinguistics (esp. language acquisition), diachronic studies, and cognitive linguistics based on constructional approaches to language. Collectively, this creates an environment for a multidisciplinary perspective on human language – its organization, its interactional functions, its cognitive grounding – and on the way languages change over time. It is especially the latter area (general issues of language evolution) that needs strengthening and this is where the incoming postdoc’s contribution would be particularly welcome.

(ii) The research team Empirical Perspectives on Communication and Cognition (EpoCC, https://sites.google.com/view/epoc) led by Mirjam Fried is composed of mostly junior academics primarily from the Linguistics Dept. and the Czech Dept. (Ústav českého jazyka a teorie komunikace). The group’s main objective is to build itself as a strong research unit focused on the study of language as a uniquely human phenomenon grounded in our general cognitive abilities and social practices. The group’s research is based on cutting-edge theoretical advances in cognitive linguistics, including its emphasis on firm empirical grounding, and combines research in syntax, discourse, and phonetics of spoken language; multimodal constructions; and gesture studies. The multilayered, multimodal, variable, and seemingly intractable nature of spontaneous interaction has been traditionally rather neglected and yet, it is a great source of invaluable insights concerning (i) the cognitive processes involved in the emergence and evolution of grammatical systems; (ii) the principles of verbal and non-verbal interaction in specific socio-pragmatic contexts; and (iii) the ways human mind processes information. As the team’s ultimate goal is not just to enhance cognitively oriented linguistic research at Charles University, but also to develop an internationally competitive research project, the active involvement of an international postdoc would strengthen the team’s potential tremendously. Of particular interest will be work on the emergence of constructions, cognitively based syntactic analysis, and generally grammaticalization and constructionalization research.

(iii) Our course list already includes several courses that are regularly taught in English and we would very much welcome the opportunity to expand the selection further, as our students respond to these additional opportunities with interest. We thus expect the postdoc to get engaged with our students as well, through teaching one course per semester. Within our regular curriculum, particularly helpful would be a course based on case studies in grammaticalization and or pragmatization (as a supplement to our regularly offered elective), a course on semantic change, and anything focused on syntax. But we’re open to any topic(s) that will help stretch our students’ horizons and will showcase the
postdoc’s specialization. We expect that some of these courses will be attractive and of great benefit also to students from various language departments, not just from linguistics.

**Qualifications**

- Ph.D. degree (less than 10 years since graduation)
- High motivation, ability to conduct collaborative research
- Previous participation in local and international projects, experience with preparing proposals
- Good English communication skills both in written and oral form
- Track record of publications

The applicants should submit

- Application for post-doc grant at Charles University
- Letter of Reference
- Curriculum vitae
- List of publications
- Copy of university diploma
- Brief description of prior research, skills and experiences

Submit applications with all other documents to marketa.krizova@ff.cuni.cz.

---

**G. Faculty of Science**

**Title of the research project:**

1. Modeling of branched weak polyelectrolytes in solution - in PDF file

Weak polyelectrolytes are charged polymers with a variable ionization which can be controlled by pH, external electric potential, or by other stimuli. Exploiting the stimuli-responsive ionization in applications requires understanding how the ionization is related to the macromolecular architecture and to polymer-solute interactions. The postdoc project entails the use of coarse-grained molecular simulations to obtain molecular-level understanding of ionization of branched weak polyelectrolytes. We target two specific problems connected by the star-branched architecture of the weak polyelectrolytes: (i) their application in redox-flow batteries, and (ii) their interaction with hydrophobic and ampholytic solutes, such as drugs, peptides or proteins.

Redox-flow batteries (RFB) present a promising alternative for a large-scale energy storage which is desired for efficient exploitation of renewable energy sources such as solar or wind. Solutions of branched weak polyelectrolytes have been proposed as an affordable, safe, non-toxic and scalable solution for RFBs [Nature 78, 527 (2015)]. Our team has recently joined an international collaboration aimed at development of polymer systems for RFB applications. The goal of this project is to employ coarse-grained simulations to study changes in the solution properties which occur upon charging of polymers due to the electric potential applied at the electrode. The results will help understanding the relation between the polymer architecture and its energy storage capacity, solubility, and solution viscosity. In collaboration with experimentalists doing synthesis, characterization, and commercial implementation of the studied materials, the simulation results will be used for fundamental understanding of the physical process, as well as for interpretation of experimental results from collaborating teams.


Profile of an ideal candidate:

- Completed PhD or a fixed date of PhD defense
- Good knowledge of English (FCE equivalent or better)
- Strong background in soft matter and statistical mechanics
- Experience with molecular simulation, programming and Linux OS

**Project supervisor:** Dr. Peter Košovan

**Contact:** peter.kosovan@natur.cuni.cz +420-221-591-290

Soft Matter research group (http://web.natur.cuni.cz/~kosovan1/softmatter/)

Department of Physical and Macromolecular Chemistry

Faculty of Science, Charles University, Prague

Hlavova 8, 128 43 Prague, Czech Republic
Title of research project:

2. Sugar and pH-responsive multicompartment nano-assemblies for dual-drug solubilization and delivery - in PDF file

The concept of Multicompartment Micelles (MCMs), i.e., self-assembled aggregates with moieties of different chemical properties, that mimic biological molecules such as proteins was derived by Prof. H. Ringsdorf almost twenty years ago and theoretically described by de Gennes. Figure 1 represents a rather futuristic view of multifunctional smart nanoparticles that possess various sub-domains and functions that coexist and perform in close proximity without mutual interference or with controlled interactions, as it works in nature. The self-assembly process of amphiphilic polymers in water is an attractive platform for preparation of such multi-compartment nanoparticles, due to the mutual incompatibilities of the polymers involved.

The overall goal of this proposal is to gain new information on nanostructure and dynamics of newly designed MCMs based on biodegradable and biocompatible ABC triblock terpolymers. The most often used ABC terpolymers in the research of the MCMs consist of highly incompatible hydrocarbon and fluorocarbon blocks that ensure compartmentalization of nanoparticles, however the lack of responsive functional groups to biologically relevant environment is the main drawback of such MCMs. Much less is known about MCMs that contains hydrocarbon blocks only and boronic acid derivatives. This is why we will focus on synthesis and self-assembly of new ABC triblock terpolymers having at least one boronic acids (bezoxaborol or Wulff-type boronic acids) containing block combined with a hydrophilic and hydrophobic one. By incorporating boronic acids, amphiphilic nanoparticles can be prepared that reversibly bind to 1,2- or 1,3- diols and catechol-containing molecules as well as they are responsive to subtle changes in solution pH (relevant in cancer therapy) and saccharide concentration (relevant for diabetes - related applications). In addition the hydrophobic core forming block will accommodate hydrophobic drugs or fluorophores. The neutral hydrophilic block forms the stabilizing corona of the micelles.

The subdivided core of MCMs serves as a microcontainer for a variety of different active agents. This is why the next goal is to broaden the knowledge on selective solubilization of aromatic compounds (drugs) and their sequential release from MCMs to achieve a synergistic antitumor effect and improve the therapeutic index. Fluorescence techniques will allow us to provide information on local physicochemical properties like micropolarity, microviscosity, local electrostatic potential or accessibility of the fluorophore's (drugs) neighborhood by certain molecules like quenchers.


Profile of an ideal candidate:
- Completed PhD or a fixed date of PhD
- Strong publication record
- Good knowledge of English (FCE equivalent or better)
- Strong background in polymer chemistry and/or phenylboronic acid synthesis and characterization
3. Construction and application of new reactors for ultraviolet vapor generation coupled to atomic spectrometry

- in PDF file

Introduction:

Sample introduction is the Achilles heel of the atomic spectrometric methods. The sample introduction system has to convert the solid or liquid sample into gaseous phase suitable for analyte atomization. The prerequisites for ideal sample introduction system are: compatibility with all atomic spectrometric methods, high analyte transport efficiency, low sample consumption, freedom from non-spectral interferences, selectivity for analyte of interest, ruggedness and reproducibility. However, some of the above mentioned criteria are incompatible resulting in design compromises. Volatile species generation is an advantageous way of highly efficient delivery of the analyte into the detection device and the interest in this method has been growing recently, because it can be coupled to any atomic spectrometric method. This technique offers the separation of volatile compounds from liquid matrix reducing interference. In addition, it decreases the energy necessary for atomization or ionization of the analyte.

The volatile species can be formed using chemical, electrochemical and photochemical reactions. Chemical hydride generation using borohydrides is routinely used as a method of choice for the determination of hydride forming elements (As, Se, Sb, Bi, Pb, Sn, Te) and mercury. However, it suffers from instability of the reducing agent, high blanks due to reagent contamination and need for sample preparation in case of analytes in higher valence states. Electrochemical generation suffers from electrode passivation and resulting memory effects. UV-photochemical volatile species generation (UV-PVG) is currently the most promising method due to its instrumental simplicity and possibility of using techniques.
photocatalysts for the pre-reduction of analytes in higher valence states. Other advantages include broader scope of element coverage and simple hyphenation with separation techniques (HPLC, GC) for speciation analyses. Last but not least, photochemical methods reduce the production of toxic waste making UV-PVG an environmentally friendly method.

In the last decade photochemical vapor generation has been applied for the determination of mercury as well as transition metals (Co, Fe, Ni) and hydride forming elements (As, Sb, Se, Te) in various matrices. It seems that a crucial factor for further development of UV-PVG may be the construction of photochemical reactor, because reactors of different constructions described in the literature produced contradictory results. The aim of this project is to design and build new types of highly efficient flow-through UV reactors and apply them for sensitive determination of selected environmentally and toxicologically important elements (As, Hg, etc.).

**Objectives:**

The goal of this project is to design and test highly efficient flow-through reactors for UV-photochemical generation and develop sensitive methods for environmental analysis. The goal is divided into three steps.

**Step 1:** To design and build flow-through UV reactors with the quartz reaction coil located inside of the mercury lamp, where the sample will be irradiated more efficiently then in usual UV-PVG reactors. The design will be based on the reactors of Qin and coworkers and Zheng and coworkers, who proved high efficiency of such reactor on the determination of mercury, iron and nickel. At least one of the designs should be miniaturized. Recent studies using light emitting diode (LED) UV sources suggest that even low power sources can generate mercury or selenium volatile species with sufficient efficiency to achieve sensitive analysis when coupled with AFS equipment. Development of small low pressure lamps opens the field for new easy interchangeable bench peripherals that can be used with AAS, AFS, ICP OES or ICP-MS systems.

**Step 2:** To tune the UV lamp emission spectrum for selective and sensitive determination of different analytes. Composition of gaseous atmosphere and pressure inside the lamp affects the UV lamp.

---

emission spectrum. Almost all works described in literature use commercial low-pressure mercury lamps filled with small drop of mercury amalgam in argon inside the discharge tube resulting in line spectrum with maximum emission at 253.7 nm. Our aim is to test different compositions of gas filling the UV lamp and, therefore, different emission profiles. Two approaches can be employed: either filling the lamp with different discharge gasses emitting in UV range (hydrogen, deuterium, helium) or filling the lamp with amalgam modifying mercury emission spectrum (e.g. CdHg) to produce more lines in UV-C region. Articles discussing the mechanism of reactions during photochemical formation of volatile species suggest that lower wavelengths could improve the efficiency of generation for some elements.

**Step 3:** To apply the built reactors for determination of mercury, arsenic and other elements in various matrices including environmental and biological samples to test their efficiency and applicability. Dissolution procedures for sample preparation compatible with UV-PVG will be developed to achieve this goal. This aim is consistent with extension of knowledge about applications of UV-PVG.

**Risk Management:**
Based on literature research, step one should be feasible leading to the construction of highly efficient flow-through reactors, which would allow sensitive determination of both intended analytes (As, Hg). Step two is a novel approach, which is, nevertheless, based on a sound principle. Even if step two does not yield the expected increased generation efficiency, the feasibility of step three is not at risk.

**Outcomes:**
The project will result in at least two publications dealing with very sensitive determination of environmentally interesting elements using the UV-PVG technique. The papers will be published in journals from first quartile. The developed reactors will be used in future research as well.

**References:**
- Chemical Monthly, 147(8), pp.1447-1454.


Project supervisor: RNDr. Václav Červený, Ph.D.
Contact: cerveny2@natur.cuni.cz; Tel.: 221 951 220
Department of Analytical Chemistry
Faculty of Sciences, Charles University
Hlavova 8, 128 43 Prague

Title of the research project:

Key words: suburbanisation; urban sprawl; social environment; spatial planning; regional policy

Suburbanisation - and its negative form urban sprawl - is the most intensive spatial process within the European settlement system. Satellite suburbs have important consequences on living environment, economy and society with significant impact on sustainable development of cities, commuting and social ties within newly emerging suburbs. Practical consequences on insufficient technical and social infrastructure (capacities of kindergartens and elementary schools, social services and retail) belong to the priorities of spatial planning and regional policy on national and European level. The project investigates the spatial extent and intensity of suburbanisation in Europe and identifies its effects on sustainable development of landscape and society. The aim is to find a system of indicators to evaluate extent and negative impacts of suburbanisation and to propose instruments to prevent and mitigate its negative consequences. From the geographical point of view, the main territory of interest will be the large cities of post-socialist (post-transformational) Europe.

Interdisciplinary approach combines methods of land use monitoring, land conversion remote sensing, GIS analyses, and changes of physical and social structures. The project therefore enables joint research of geographical departments and research teams across the Geographical Institute of the Faculty of Science. Urban and Regional Laboratory as coordinating team belongs to the top research groups which contribute to international research of metropolitan regions with the specific focus on suburbanisation. The project aims to present the research result to international audience and to produce comparative analyses within the post-socialist urban studies. It would set-up an international cooperation within the field and serve as starting point for application i.e. within the INTERREG Central Europe grant scheme. The practical outcomes of the project will be useful for regional planning and policy within the metropolitan regions of European cities. The research team has sufficient resources on co-financing and plans to incorporate new colleague into the two running projects of Czech Science Foundation and Technology Agency of CR (see below).

Relevant research project held during the last 10 years:
2018–2020 "Contemporary changes of social environment within the Czech suburbs" Czech Science Foundation: project number GA14-00393S. PI: Martin Ouředníček
2018-2020 "Real populations in Prague and Central Bohemia region: daily mobility monitoring and population prognosis" Technology Agency of the Czech Republic (Éta): project number TL01000170. PI: Martin Ouředníček
2014-2016 "Dynamics of social environment and spatial mobility in metropolitan regions of the Czech Republic" Czech Science Foundation: project number GA14-00393S. PI: Martin Ouředníček
2012-2013 "Prognosis of demographic development and its consequences for the quality of life in dynamically changing municipalities within hinterlands of the Czech cities: application to regional development and administration" Technology Agency of the Czech Republic (Omega): project number TD010049. PI: Martin Ouředníček
References relevant to research topic (last 3 years):

Project supervisor: doc. RNDr. Martin Ouředníček, Ph.D.
Contact: martin.ourednicek@natur.cuni.cz +420 221 95 1415, +420 221 95 1378
Urban and Regional Laboratory
Department of Social Geography and Regional Development
Faculty of Science, Charles University
Albertov 6, 128 43 Prague 2

Title of the research project:
5. Synthesis of Helical Indenofluorenes and Derivatives Thereof

Annotation: The main theme of the project is development of new synthetic approaches to spiroindenofluorenes possessing [7]-helical structure and their chiral derivatives. The synthetic approaches are expected to be based on transition-metal catalyzed intramolecular cyclotrimerization of tryines that should furnish molecules with the required indenofluorene skeleton. The subsequent transformations should provide the target compounds. It is expected that chiral spiroindenofluorenes will be obtained by using chiral transition-metal catalysts. The integral part of the project will be also a study of their photo-physical properties, because the target compounds are highly fluorescent substances in the blue light region as indicated by preliminary results. Last but not least, it is also envisioned that judicious decoration of the basic indenofluorene scaffold with various electron-donating or accepting functional groups should allow tuning of fluorescent emission wavelength.

Contact:
Prof. Martin Kotora
Department of Organic Chemistry, Faculty of Science
Charles University in Prague
Hlavova 8, 128 43 Praha 2, Czech Republic
Phone: +420 221 951 058
Fax: +420 221 951 326
E-mail: kotora@natur.cuni.cz

H. Faculty of Mathematics and Physics

Title of the research project:
1. Interval methods for global optimization

Post-doc position for one-year period from 1st January 2019
Faculty of Mathematics and Physics, Charles University

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 January 1, 2019, with possibility of one renewal. Interval methods play a crucial role in designing algorithms for solving global optimization problems. They are used for handling numerical errors, finding bounds on objective functions, computing tight convex enclosures of nonconvex
functions, and reduction of feasible domain, among many others. The research of this project will be conducted in particular in some of the following directions:
- interval linear algebra for global optimization
- properties of interval matrices, complexity issues
- theory and methods for checking properties of functions on feasible domains
- convex underestimators and the corresponding relaxation properties
- investigation of enclosing objects, relaxation on these objects
Candidates should have a completed PhD in Mathematics or Computer Science, and demonstrate strong potential for excellence in research. It is expected to have strong background in optimization. Skills in interval computation, matrix analysis, operations research and programming are appreciated as well.

Contact person: doc. Mgr. Milan Hladík, Ph.D., Charles University, Faculty of Mathematics and Physics, Department of Applied Mathematics; e-mail: hladik@kam.mff.cuni.cz.

Applicants should submit:
- Application Form
- Letter of Reference
- Detailed CV
- List of publications
- Copy of university diploma

Deadline date: July 15, 2018

Title of the research project:

2. Mathematical analysis of models of chemically reacting mixtures

Post-doc position for one-year period from 1st January 2019
Faculty of Mathematics and Physics, Charles University

Research Project
We look for a postgradual research fellow to join the project focused on mathematical analysis of systems of partial differential equations describing chemically reacting mixtures.
A PhD. degree in mathematical analysis or applied mathematics connected with mathematical analysis of partial differential equations is required, knowledge in continuum mechanics, thermodynamics or chemistry is welcome.
The project will be supervised by Dr. Milan Pokorný, associate professor at the Mathematical Institute of Charles University together with dr. Michal Pavelka from the same institute.

Contact person: doc. Mgr. Milan Pokorný, Ph.D., Charles University, Faculty of Mathematics and Physics, Mathematical Institute of Charles University; e-mail: Milan.Pokorny@mff.cuni.cz.

Applicants should submit:
- Application Form
- Letter of Reference
- Detailed CV
- List of publications
- Copy of university diploma

Deadline date: July 15, 2018

I. Faculty of Education

Department for Research and Scientific Activities, Faculty of Education
Contact person: Mgr. Helena Rambouskova (helena.rambouskova@pedf.cuni.cz)

Research Topics:

1. Value-added assessment in education, longitudinal data analysis and structural equation modelling
Institute for Research and Development of Education
contact person: PhDr. David Greger, Ph.D. (david.greger@pedf.cuni.cz)
2. Test development, psychometric analysis and IRT
Institute for Research and Development of Education
contact person: PhDr. David Greger, Ph.D. (david.greger@pedf.cuni.cz)
3. Early tracking and transition between school levels in comparative perspective
Institute for Research and Development of Education
contact person: PhDr. David Greger, Ph.D. (david.greger@pedf.cuni.cz)

4. Social justice, social stratification and education, multicultural education Accountability, assessment and school inspections - its mechanisms and (side)effects
Institute for Research and Development of Education
contact person: PhDr. David Greger, Ph.D. (david.greger@pedf.cuni.cz)

5. Using of virtual and augmented reality in education
Department of Information Technology and Technical Education
contact person: PhDr. Tomáš Jeřábek, Ph.D. (tomas.jerabek@pedf.cuni.cz)

6. Developing computational thinking and digital competence of pupils of elementary education
Department of Information Technology and Technical Education
contact person: PhDr. Tomáš Jeřábek, Ph.D. (tomas.jerabek@pedf.cuni.cz)

7. Evaluation and Self-reflection in Virtual Learning Environments
Department of Information Technology and Technical Education
contact person: PhDr. Tomáš Jeřábek, Ph.D. (tomas.jerabek@pedf.cuni.cz)

8. Word problems as a critical feature of school mathematics
Department of Mathematics and Mathematical Education
contact person: doc. RNDr. Náda Vondrová, Ph.D. (nada.vondrova@pedf.cuni.cz)

9. Use of ICT tools in the teaching of mathematics
Department of Mathematics and Mathematical Education
contact person: doc. RNDr. Náda Vondrová, Ph.D. (nada.vondrova@pedf.cuni.cz)

10. Czech studies
Department of Czech Language
contact person: doc. PhDr. Martina Šmejkalova, Ph.D. (martina.smejkalova@pedf.cuni.cz)

11. L1 and/or L2 teaching and learning
Department of Czech Language
contact person: doc. PhDr. Martina Šmejkalova, Ph.D. (martina.smejkalova@pedf.cuni.cz)

12. Music Theory and Education
Department of Music Education
contact person: prof. PaedDr. Michal Nedělka, Dr. (michal.nedelka@pedf.cuni.cz)

J. Faculty of Social Sciences

Title of the research project:

1. Macroeconomics and Finance
Contact: doc. PhDr. Martin Gregor, Ph.D.
Email: martin.gregor@fsv.cuni.cz

We are looking to hire a postdoc in the fields of macroeconomics and finance to carry on research activities in some of the following topics: financial institutions, financial intermediation, financial regulation, central banking, household finance, and public finance. The postdoc will be part of the Institute of Economic Studies at Faculty of Social Sciences, Charles University and will become an active member of the Institute, including attending research seminars, and a member of the economics and finance community at Charles University. In addition, the postdoc will support teaching and research activities of the department.

Charles University currently ranks in global top 100 in Economics, top 200 in Finance (both Shanghai Ranking's Global Ranking of Academic Subjects 2017), and 104th in Economics and Business (the US News Global Ranking of Universities 2018). For an overview of the Institute Economic Studies, kindly visit: http://ies.fsv.cuni.cz

Starting date: January 1, 2019

The candidate should hold a Ph.D. in Economics or Finance by the date of the application. The funding is for 2 years. It is expected to lead to a full-time Assistant Professor placement after the postdoc period.

The gross salary is in the range around 2,100 euro/month, which is rather high relative to the costs of living in Prague. There are also research bonuses based on the quality of publications.

Applications include CV, a job market paper, a short research statement, a single letter of reference, and a copy of the PhD diploma. Deadline for applications is July 19, 2018. Candidates should be available for a Skype interview.
Title of the research project:

2. International relations in the time of uncertainty

Contact: doc. PhDr. Jan Karlas, M.A., Ph.D.
Email: jan.karlas@fsv.cuni.cz

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 increasing activism and influence of some of the developing countries. Those countries often hold different views about the appropriate form of international order, putting a greater emphasis on the principles of sovereignty and justice. The unipolar arrangement is also questioned by 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. Last but not least, a part of the turbulent development can be attributed to social and ideological changes taking place in the developed countries.

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.

Title of the research project:

3. Conflict Studies and Political Violence

Contact: JUDr. PhDr. Tomáš Karásek, Ph.D.
Email: tomas.karasek@fsv.cuni.cz

"The post-doctoral researcher in Conflict Studies and Political Violence is conceived as a reinforcement of the research profile of the Department of Security Studies (Institute of Political Studies) at the Faculty of Social Sciences. Since the beginning of 2018, the department has been running a new University Research Centre (UNCE) on Human-Machine Nexus and International Order. Research of political violence is an integral and important component of the centre’s design. The sought-after researcher is expected to contribute by her or his expertise to the study terrorism, insurgency and/or radicalization, both by individual research effort and in collaboration with other colleagues at the department.

Expected outcomes of the post-doctoral fellowship include high-quality publications, grant proposals (individual or collective), 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 would also have an opportunity to participate in teaching activities at M.A. level, specifically in courses focusing on conflict studies, theory of security, (counter)insurgency or terrorism and radicalization."

Title of the research project:

4. Photojournalism and visual communication in digital media

Contact: doc. Mgr. MgA. Filip Láb, Ph.D.
Email: lab@fsv.cuni.cz

The Institute of Communication Studies and Journalism invites applications for a post-doctoral research position in the field of visual communication and photojournalism.
The candidate must have a PhD. from Media / Communication Studies, but he/she will have a track record of research focused on visual communication / photojournalism / photography. The degree should be obtained in 2017 or earlier. The successful candidate will become an essential part of a team researching role of visual communication in digital environment. We are interested in changing roles and functions and ethics of photojournalistic content, iconicity / iconic images in digital realms.

**K. Faculty of Physical Education and Support**

**Title of the research project:**

1. Zdravotně orientovaná zdatnost a předpoklady dětské populace pro sportovní aktivitu

**Title of the research project:**

2. Molekulárně-genetické determinanty pohybové zátěže