

SMASH

machine learning for science and humanities postdoctoral program

SMASH Postdoctoral Fellowship

GUIDE FOR APPLICANTS

CALL 1 – 2023



Univerza v Ljubljani



REPUBLIC OF SLOVENIA
MINISTRY OF THE ENVIRONMENT
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For further information and updates, please visit the website:
<https://smash.ung.si/become-a-fellow/application-procedure/>

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1 Purpose of the Guide for Applicants

This guide provides instructions and practical information to potential applicants to assist in preparing and submitting an application for the SMASH Postdoctoral Fellowship Program. In addition, it provides a general overview of the SMASH program and the assessment process.

2 Overview

SMASH is an innovative, intersectoral, career-development training program for outstanding postdoctoral researchers from anywhere in the world, centered on developing cutting-edge machine learning applications for science and humanities. It is co-financed by the Marie Skłodowska Curie action (COFUND). The SMASH project plans to support **50 postdoctoral fellowships during the project's five year duration.** The first call for applications (Call 1) aims to award **15 post-doctoral fellowships**, to be hosted at five Slovenian implementing partner Institutions, namely the University of Nova Gorica, the University of Ljubljana, the Jožef Stefan Institute, the Slovenian Environment Agency and the Institute for Information Science. The **2-year full time** positions are planned to start **from July 2023 onwards.**

In addition to implementing partners which will host fellows, the SMASH program is joined by a diverse group of 26 Associated Partners, including top SMEs from Slovenia and world-leading academic institutions from EU and beyond, including the UC Berkeley, University of Washington, CERN, Queen Mary University of London, Weizmann Institute.

The aim of the SMASH program is to enhance the research excellence and career perspectives of postdoc researchers from around the world. It will provide the opportunity for researchers to develop their independent research in the scope of an interdisciplinary scientific project and benefit from training. Fellows will be offered extensive mobility opportunities including secondments within SMASH associated academic and non-academic partners.

The core mission of SMASH is to offer our fellows the opportunity to expand their own research ideas using the data-science potential of the Vega HPC supercomputer, the first such facility of the EU's HPC initiative in Slovenia. SMASH will form a close-knit community with a unifying concept: the use of cutting-edge machine learning to answer some of the world's most challenging questions in science and humanities.

Applications are expected from the postdoctoral researchers in those areas, called **Key Research Areas** and defined as:

- 1. Data Science - Machine Learning for Scientific Applications;**
- 2. Fundamental Physics - Machine learning for Particle Physics, Astrophysics and Cosmology;**
- 3. Linguistics - Computing for Human and Animal Communication;**
- 4. Climate - Machine Learning in Climate Research;**
- 5. Precision Medicine - Personalized Medicine and Life Sciences.**

What makes SMASH fellowships stand out?

- A 2-year full-time employment contract as a SMASH MSCA fellow with attractive financial support - gross salary 5449/4882 EUR/PM (with/without family)
- Stimulating working environment at the SMASH hosting organizations and access to HPC infrastructure;
- An interdisciplinary and collaborative research project at one of the SMASH hosting organizations;
- A strong focus on international and intersectoral mobility, with at least 2 secondment periods;
- An opportunity for outstanding recognized researchers to develop their own independent research ideas;
- A rich training program personalized to best fit the needs of each fellow, focusing on different skills;
- An individual budget for research expenses*, travel allowance*, secondments subsistence**.

SMASH project contributes to the overarching ambition to strengthen Europe's human capital base by fostering the academic development of high-profile scientists enabling them to conduct impactful research through **innovative projects** and to prove their capacity to **address major societal challenges** through **five key research areas**, while interacting with the program's wide network of academic and non-academic partners.

* Travel allowance and research costs will have to be approved by the Executive Board and Personal Supervisory Team.

** Secondments subsistence will be used only for secondments¹ at institutions located in cities with some of the highest costs of living in the world. Secondments subsistence will be given upon the request by the applicant and after approval by the Executive Board.

¹ Secondment is a period of research training with another beneficiary or a partner organization implemented to further enrich the training experience of a researcher.

3 SMASH project partnership

3.1 SMASH program

SMASH project is a Marie Skłodowska Curie COFUND Action launched by SMASH project partnership, a network of 5 hosting organizations from Slovenia and 27 associated partners from which 6 are non-academic partners (SMEs).

3.2 SMASH host institutions

The following five project partners will act as host institutions and offer hosting to fellows under SMASH program:

The University of Nova Gorica (UNG) is a relatively young, research oriented university, that provides creative environment which fosters top achievements in cutting-edge fields of science, technology, humanities and art. It promotes multidisciplinary research and contemporary study programs, within six faculties and an academy. Our innovative teaching approaches are designed to build partnerships between industry and academia, securing a high level of employability to home and international students. Science indicators, when normalized to the size, rank UNG among the outstanding research institutions at the national and European level. More than 60% of UNG's total revenue comes from competitive funding that involves national, intra-regional and EU research agencies. UNG is 30% international in staff, 50% international in students and close to 50% gender equal. UNG also has a favorable geographical location. It has three campuses situated in the beautiful Vipava Valley, a renowned tourist destination that extends along the border with Italy. <https://ung.si/en/>; UNG will offer hosting for fellows in 4 departments: **Center for Astrophysics and Cosmology (UNG-CAC)**, **Center for Cognitive Science of Language (UNG-CCSL)**, **Center for Atmospheric Research (UNG-CAR)**, **Laboratory for Environmental and Life Sciences (UNG-LELS)**.

University of Ljubljana (UL) is the oldest and largest higher education in Slovenia. UL is also founder of the University incubator and a member of numerous international networks like EUTOPIA European University, Utrecht Network, EUA, and The Guild. It comprises 23 faculties and three academies of art. UL has participated 223 H2020 projects (4 ERC and 36 MSCA) and currently is participating in 84 Horizon Europe projects (5 ERC and 10 MSCA). UL will participate with two of its members, namely Faculty of Computer and Information Science (UL FRI) and Faculty of Mathematics and Physics (UL FMF). Participating departments among the leading higher educational institutions in the respective fields in Slovenia, with the main function of educating undergraduate and graduate experts, as well as engaging in research work which generates new knowledge and uncovers solutions to contemporary problems. <https://www.uni-lj.si/eng/>; **Faculty of Computer and Information Science** <https://www.fri.uni-lj.si/en> and **Faculty of Mathematics and Physics** <https://www.fmf.uni-lj.si/en/>

Jožef Stefan Institute (JSI) is the biggest Slovenian scientific research Institute, covering a broad spectrum of basic and applied research. The staff of about 1050 specializes in natural sciences, life sciences and engineering. The subjects concern production and control technologies, communication and computer technologies, knowledge technologies, biotechnologies, new materials, environmental technologies, nanotechnologies, and nuclear engineering. The mission of JSI is the accumulation - and dissemination - of knowledge at the frontiers of natural science and technology to the benefit of society at large through the pursuit of education, learning, research, and development of high technology at the highest international levels of excellence. The Institute has established a UNESCO Chair on Open Technologies for Open Educational Resources and Open Learning, and is Slovenia's ERAXESS contact point. JSI will offer hosting for

fellows in three of its departments, namely **Department of knowledge technologies (KT)**, the **Department of theoretical physics (F1)** and the **Department of experimental physics (F9)**. <https://ijs.si/ijsw/V001/JSI>;

Slovenian Environment Agency (ARSO) is a body of the Ministry of the Environment and Spatial Planning, and performs expert, analytical, regulatory and administrative tasks related to the environment at the national level. Its mission is to monitor, analyze and forecast natural phenomena and processes in the environment, and to reduce natural threats to people and property. ARSO hosts its own supercomputer HPC facilities, a GPU cluster, a national hydrological and sea level observation network (in-situ and remote sensing), ocean, hydrological and machine learning modelling data infrastructure. <https://www.arso.gov.si/en/>;

The Institute of Information Science (IZUM) is a public institution with a mission of developing and managing information and communications technology infrastructure and systems (ICT) infrastructure for scientific and educational institutions. It has been engaged in providing ICT services for research and academic purposes in Slovenia and the wider region, including the development and operation of library information systems, federating information systems, information databases on research activities and publications, as well as open science information resources. It owns and manages the Vega HPC. <https://www.izum.si/en/home/>;

Applicants can find more information about the SMASH hosting institutions and supervisors on the SMASH website: <https://smash.ung.si/about/>,

3.3 SMASH associate partners

In addition to the host organizations, SMASH project brings together a large number of associate partners, among those many academic and some non-academic. SMASH associate partner organizations do not employ fellows, but offer secondments - short periods of research training implemented to enrich the training experience of a fellow.

SMASH associate partners provide also a wide range of complementary competencies. International academic associated partners contribute with:

- expertise in theoretical modelling or have access to experimental datasets that are critical for SMASH program (University of Washington, Weizmann Institute, CICERO, CERN...);
- theoretical data science and with the improvement of the machine learning algorithms (Queen Mary University of London, KU Leuven...)
- specialised applications of ML (UC Berkley, University of Amsterdam, SISSA...)

SMASH fellows will have an opportunity for secondment and cross-talk also with five non-academic associate partners, leading Slovenian SMEs, for example, Cosylab d.o.o. which was named among the “Ones to Watch” companies at European Business Awards 2019, company Sinergise d.o.o. was chosen as a European Earth Observation Company of the year 2018 and company Arctur d.o.o., which received a Gold award for Innovation.

Applicants can find more information about the associate partners on the SMASH website: <https://smash.ung.si/about/>, as well as about potential secondary supervisors related to them.

4 About SMASH Fellowship Program

4.1 Aims of the program

SMASH fellows will be able to develop and refine their researchers' skills and increase their ability to pursue careers in academia and/or at the interface between academia and the private sector. These skills will be fostered during the SMASH program as it will allow fellows to:

- Engage in research projects to address open scientific questions in the five Key Research Areas (KRAs);
- Implement their research project and career development plan, to go beyond the boundaries of academic disciplines and engage in intersectoral (through regular contacts with non-academic partners, including secondments) and inter-disciplinary exchange and collaboration;
- Develop a versatile research profile, with valuable transversal and research management skills;
- Develop a strong network for future collaborations and integration in the international research community;
- Contribute to the international outreach of the SMASH project, through secondments, the participation to monthly SMASH seminars, workshops, trainings, international conferences and high-quality scientific publications;
- Participate in competitive calls for proposals (including Horizon Europe and national funding agencies)

SMASH program will enable fellows to take full advantage of the host institutions' research environment, integrated mobility periods (min. 2 secondments), training and career development services and attractive employment conditions. The quality of the research environment that SMASH fellows will experience is key for attaining their research objectives.

4.2 Key research areas and sub-areas

SMASH program focuses on **5 key research areas**, with related specific sub-areas. The applicants are expected to develop their research proposals that broadly fit in one (or two, for interdisciplinary projects) of these key research areas and sub-areas, and have to select the relevant key research area in the application platform.

1. [Data Science - Machine Learning for Scientific Applications:](#)

- 1.1 Learning from complex data and computational scientific discovery;
- 1.2 Deep learning and Computer vision;
- 1.3 Beyond supervised learning;
- 1.4 Software and infrastructure for High-Performance Computing.

2. [Fundamental Physics - Machine Learning for Particle Physics, Astrophysics and Cosmology:](#)

- 2.1 Dark matter and gamma-ray astrophysics with Cherenkov Telescope Array;
- 2.2 Cosmology and time domain astrophysics with Vera Rubin Observatory;
- 2.3 New Physics at Large Hadron Collider.

3. [Linguistics - Computing for Human and Animal Communication:](#)

- 3.1 Linguistic knowledge injection into deep learning;
- 3.2 Animal communication;

3.3 Cross-lingual transfer for less-resourced languages.

4. [Climate - Machine learning in Climate Research:](#)

4.1 Extreme weather;

4.2 Role of anthropogenic and natural aerosols and their complex mixtures on the climate;

4.3 Determination of sources of air pollution;

4.4 Machine-Learning-Based Long-Range Atmospheric Forecasting.

5. [Precision Medicine - Personalized Medicine and Life Sciences:](#)

5.1 Early detection and monitoring of diseases, including Parkinson's disease and glioblastoma;

5.2 Research in explainable AI;

5.3 Biomarker discovery.

SMASH is built on the principle that major scientific and societal challenges can only be solved through the collaboration of experts from different areas. Applicants are thus invited to consider the interdisciplinary dimension of their research proposal. Applicants can find more information about SMASH key research areas and related host organizations/research groups [here](#).

4.3 Selection of the host organization and secondments

Each SMASH fellow will be hosted by one of the five SMASH hosting organizations where they will carry out the major part of the research project. Host organisations are presented here: <https://smash.ung.si/about/partners/> and have to be selected by the applicant in the application platform. In case of strongly interdisciplinary projects, the applicant can propose up to 2 possible host organizations in the application platform.

The applicant has to contact the primary selected host organisation and identify primary host supervisor already in the application phase. The primary host supervisor can be identified here: <https://smash.ung.si/about/supervisors/> by using appropriate filters (by host institution, by research area) and contacted via email. At the time of application, the applicant and the supervisor will discuss the project idea in order to check the fit with the host organisation (department/lab/group) and with the identified primary host supervisor.

Once the primary host supervisor agrees on applicant's proposed project, they should work together to refine the proposal and to decide on the plan for secondments (see below). To request the necessary letter of support from the primary selected host organisation, the applicant has to insert the email address of the selected primary supervisor in the application platform and send a request. This will result in an automatic request to the supervisor to provide and upload the host organisation's letter of support (signed by head of the department/research group) to the application platform, not later than the call deadline.

In case the applicant selects 2 host institutions, he/she also needs to provide letter of support from the 2nd host organization.

The applicants will have mobility opportunities within SMASH partnership during their fellowship. **At least two compulsory secondments** will allow fellows to take full advantage of the SMASH project network, from the numerous academic and non-academic partner organisations of the SMASH project. This stimulating environment, combining a wide range of disciplines accessible to the fellows, will enable them to interact across academic disciplines and with the non-academic sector.

As part of the SMASH mobility program fellows have to undertake:

- **A secondment in Slovenia:** will be performed in one of the Slovenian academic or non-academic institutions, partners of the SMASH program. See the list of Slovenian academic and non-academic institutions here: <https://smash.ung.si/about/partners/>
- **An international secondment:** will be performed in organization relevant to the fellow's research project among SMASH associated partners abroad. See possible organizations here: <https://smash.ung.si/about/supervisors/> (select filter "associated partner").

At least one of those secondments has to be intersectoral or interdisciplinary. The cumulative duration of the secondments is limited to a maximum of one third of the actual months spent implementing the research training activities under the SMASH program.

Already in the project proposal description the applicants have to provide information in which organisations they plan to spend their two secondments, approx. time period and how they relate to their research project and selected key research area(s). Applicants should also mention the suggested secondary supervisors from the proposed list of associated partner organisations and supervisors here: <https://smash.ung.si/about/supervisors/> .

Fellows can receive an extra **secondment subsistence** for secondments taking places in institutions located in cities where cost of living is significantly higher than the EU average. Secondment subsistence will only be given upon request by the applicant and after approval by the Executive Board.

Note - the selected fellows will be employed by one of the following host organizations: UNG, UL (FRI, FMF) and JSI. Fellows who will select IZUM or ARSO as their host organisation, will be employed by UNG, but will carry out their research projects at selected host organizations and have the affiliation of the host institution.

4.4 Supervisors

Each fellow will have a primary supervisor from the host organization who will guide the fellow in the conduct of their research program, act as an active mentor and help the fellow identify and revise their research development and training goals as well as in implementing strategies to address them. The supervisor is expected to introduce the fellow into the host organization's life and activities, e.g. contributing to seminar series, participating in staff meetings, etc. and assist the fellow in establishing contact with other partners. The list of possible primary supervisors is available here: <https://smash.ung.si/about/supervisors/>

Each fellow will also have secondary supervisors from each of the foreseen secondment organizations. Secondary supervisors will provide complementary guidance, facilitate the integration of the fellow during their mobility. Secondary supervisor(s) have to be identified by the applicant among the associated or other hosting partner institutions/companies. The list of possible secondary supervisors is available here: <https://smash.ung.si/about/supervisors/>

4.5 Training and career development

Fellows in the SMASH program will conduct research on a topic of their choice within the 5 Key Research Areas. The SMASH program promotes the independence of the fellows in order to enable them to develop original, innovative, cross-sector and potentially disruptive research projects, while still providing high-level personalized supervision. Recognized international scientists will mentor the fellows' research projects and career development. The **academic supervision** and **individualized career mentoring** will help each fellow to define an ambitious yet feasible professional pathway towards a successful career. By exploring different options with their supervisors, fellows will be able to define their short and long-term goals in a Personal Career Development Plan, which they will develop shortly after the start of their fellowship. This will provide them with valuable tools to plan and manage their career and reinforce their independence. It will also improve their ability to recognize career, research, entrepreneurial and innovation opportunities.

To raise their profile as leaders in the field, fellows will join a rich training program which focuses on general research skills and non-research-oriented transferable skills that complement their disciplinary skills. The training program will consist of scientific lectures, academic and professional skills training, and career and leadership mentoring.

Training events

SMASH training events will include:

- SMASH International conferences – to introduce SMASH to the community and showcase its main results;
- SMASH workshops – smaller participant events, with the main goal to present the progress of fellows and to brainstorm on follow up directions, and to develop and strengthen collaboration between the fellows and partners;
- SMASH monthly seminars - SMASH fellows or invited lecturers present work on topics related to SMASH research area(s);
- SMASH yearly training events - typically three-day workshops with key transferable-skills lectures in the areas listed in the table below
- SMASH exhibition - large-scale exhibition on the SMASH research areas where the main results will be presented

Training on research skills

The scientific training is based on the principle of “training through research”, and takes place through the actual implementation of the individual research project, where fellows learn new methodologies, procedures and software, while exercising problem solving and gaining independence. The envisaged scientific training and respective research-skills milestones will be specified in the Personal Career Development Plan (PCDP), which will be developed with supervisors in the first months after starting the fellowship. Together with training through research, the fellows will be offered courses on research topics that are of mutual interest within SMASH host institutions.

Training in non-research oriented transferable skills

To complement the training on research skills, SMASH will provide a number of training opportunities in non-research skills and aim to set examples of such practices in Slovenia. Such training will be provided locally, via dedicated transferable-skill workshops and outreach events (provided largely by Slovenian non-academic partners) and as well, by benefiting from existing programs in associated partner institutions which have experience with such activities (for example, the Learning Hub at CERN and the Interdisciplinary lab at SISSA, see Table below).

Topic	Courses	Institution
Ethics and integrity	Ethos of science, standards of good scientific practice, data management, conflicts of values and interests between stakeholders, ethical, legal and professional frameworks, responsibilities and relations between science and society, continuous debate on research ethics and research integrity.	External Independent Ethics Adviser, Dr Jana Javornik
	Ethics in ML and AI! (The seduction of AI, Information inequality & feminism, Responsible AI development, Technochauvinism)	SISSA-ILAS, Dr. Roberto Trotta
Leadership Portfolio	Guiding myself (personal SWOT analysis, building trust, first contact with the team)	HRM One
	Start-ups, from business idea to business model; Business idea pitching to investors and customers; Risk and finance management	ARCTUR
	Getting to Grips with Supervision: Fast forward – guide to productivity; Resilience for Researchers	CERN
Development & Communication	Strategies for winning grants such as MSCA PFs and ERC Starting Grants	McGuinness d.o.o.
	Agile mindset (i.e. What is agile thinking and why is especially important in the modern world? How to stay flexible?) Resilience (i.e. What is resilience in the workplace? Can resilience be developed and how?)	HRM-One
Implicit biases, equality and diversity	Regular panels and dedicated talks at Slovenian Commission for Equal Opportunity in Science	MIZS
	Taking the Lead; Active Bystander (empowering staff to challenge poor behaviours, and bring about cultural change through the reinforcement of messages defining the boundaries of unacceptable behaviour)	CERN
Impact and knowledge exchange	‘Science on the stage’, ‘How to tell a good story?’ Preparation of a hands-on SMASH exhibition in the largest Slovenian scientific exhibition space, ‘The science center’	ZnC
	‘How to write popular science articles for the press/internet? How to tweet?’ Data-based journalism; How to communicate risk;	SISSA ILAS
	Communication: Science & Art; Effective Cross Culture Communication	CERN

Fellows will be able to choose training opportunities from the SMASH portfolio or make their own suggestions from on-demand courses provided by associated Partners and external providers.

4.6 Conditions of the fellowship

Start date and duration of the fellowship

Fellows will be awarded a position for 24 months, **starting from July 2023** onwards.

Researchers will devote full-time to research activities and training related to the SMASH fellowship. However, parental, sick and care leaves will be accepted.

Employment conditions

Fellows will be employed according to the regular fixed-term salaried employment contract in accordance with national regulations. Fellows will be entitled to the statutory benefits granted by national regulations

and hosting institution rules for working hours, flexi-time, paid annual leave, sick leave, parental leave, social security coverage, pension insurance and family allowance.

Fellows will be compensated with a monthly gross salary of 5449/4882 € (w. or w/o. family allowance). This sum includes all taxes and other statutory payments. The net salary of the fellow results from deducting all compulsory employee social security contributions and direct taxes. The researcher will be contracted to work for 40 hours per week, with approx. 10 national (bank) holidays and 25–30 personal days (depending on previous working experience, social circumstances such as number of children, etc.).

The institution will pay a salary in compliance with national legislation, common practice and offer the same working conditions, rights and obligations as for other employees and researchers. Employment conditions will be in line with [the European Charter and Code for Researchers](#).

To support SMASH activities, fellows will be entitled to the following allowances and endowments for the 2 years of fellowship:

Table 1 – Allowances and endowments for SMASH fellows (gross amounts)		
Allowance	Description	€/PM
COFUND allowance	The monthly living allowance paid to the fellow during the contract, subject to national taxes and regulations.	4882 EUR (without family allowance) / 5449 EUR (with family allowance)
Mobility Allowance	added to the living allowance of the fellows to cover private mobility-related costs (e.g., travel and accommodation costs)	
Family allowance*	will be paid to fellows who have (or acquire) family obligations during the program, i.e., have persons linked to him/her by marriage, or a relationship with equivalent status (as recognized by the legislation of the country where this relationship was formalized). It will also be paid if the fellows has dependent children	
Travel allowance**	will cover work related travel (to meetings, seminars etc). This sum will be cumulative, but can be used only if travel takes place.	400 EUR
Secondment subsistence**	for secondments to places with a high cost of living	200 EUR
Research costs**	For costs associated with research project (incl. computer equipment, workshop organization, submission fees, consumables and other expenses).	300 EUR

*The entitlement to Family Allowance will be checked during the preparation of the employment contract and will be revised in case the fellow's status changes.

**Travel and research costs and secondment subsistence of researchers will have to be approved by Executive Board and fellow's supervisors.

Special needs and disability allowance

Fellows requiring additional assistance because of disabilities will be able to request additional financial support in the form of a special needs allowance from the Governing Board. The MSCA Special Needs Allowance will cover additional costs (e.g. adaptation of work environment, mobility) entailed by long-term physical, mental, intellectual or sensory impairments of researchers with disabilities, certified by a competent national authority, and of such nature that their participation in the action may not be possible without them (e.g. assistance by third persons, adaptation of work environment, additional travel/transportation costs). These special needs items or services must not have been funded from another source (e.g. social security or health insurance). Both long-term leave and special needs allowances should be requested when the need arises.

Working and living conditions

Fellows will have the opportunity to conduct their research activities in stimulating working environment in each of the five SMASH hosting organizations in Slovenia. All fellows will be provided with office space, computer equipment and access to technology platforms within the academic department or research group relevant to their subject area. Remote working will be possible to some extent in accordance with the rules of each institution/department.

The SMASH Beneficiary and all hosting Partners are members of the EURAXESS Network and closely collaborate with [EURAXESS centre](#). Euraxess Slovenia provides necessary information that can help the fellows and their families to plan and organize their move, provide assistance in all matters related to mobility and administrative issues. All EURAXESS Network services are free of charge.

In addition, the HR departments at the hosting organizations will assist the fellows before and after their arrival at the host institution with administrative matters like visas, working permits, registrations and health insurance, etc.

5 Application procedure

5.1 Introduction

The application procedure requests the applicant's registration to be able to access the application platform, complete application on-line forms, and upload obligatory documents. The templates of the obligatory documents are available on the SMASH website and accessible on the application platform. Applicants must submit their **complete application before the call deadline, 15th April 2023, 23:59 CET.**

5.2 Eligibility criteria

The fellowship positions are open to any researcher with a doctoral degree. Applicant must comply with the Marie Skłodowska Curie mobility rule (table 2). No age or nationality conditions apply.

Table 2 – Eligibility criteria	
Criterion	Rule

PhD certificate	Doctoral (PhD) certificate in English or non-certified English translation OR a provisional statement on headed paper from the academic institution signed by the legal representative confirming that all the requirements related to the PhD program are fulfilled but the doctoral degree has not yet formally been awarded until the deadline of the call.
MSCA Mobility Rule	Researchers must not have resided or carried out their main activity (work, studies, etc.) in Slovenia for more than 12 months in the 3 years prior to the call deadline. Compulsory national service, short stays (<i>e.g.</i> holidays), and time spent applying for refugee status under the Geneva Convention are not considered. The mobility rule need not apply to hosts of secondments. Researchers from underrepresented groups ² are especially encouraged to apply.
Nationality	The call is open to researchers of any nationality.
Formal proposal criteria	Complete application including all required support documents submitted before the deadline of the call. All submitted documents must comply with the specifications detailed in the templates and guide for applicants.
	Application must be submitted in English.
	Only one application per call and per applicant is permitted.
<u>Applicants who do not meet these criteria are not eligible to apply for a SMASH fellowship.</u>	
Applicants who are offered a fellowship will be required to provide documentary evidence to prove they meet these criteria or the fellowship offer will be withdrawn.	

5.3 Overview of the online application procedure

Complete application **must be submitted online**, via the dedicated application platform available at the website: <https://smash.ung.si/>. Incomplete applications or those that do not follow the instructions in the Guide for Applicants and obligatory templates will not be taken into consideration.

- **The submission of applications starts from: Tuesday, 14th February 2023**
- **The deadline for submission: Saturday, 15th April 2023, 23:59 CET**

How to access the online application platform and start the application procedure:

- The applicant needs to register on the SMASH application portal, by creating an application account using the applicant's email address and a personal password. It is important that an applicant uses a valid email address since all further correspondence will be communicated to this email address.
- Once the applicant creates the account, he/she receives an automatic email message with the link to the application platform and can start completing the application.
- The applicant has to fill in the application online forms and upload the requested documents using obligatory templates available on the SMASH website and in the application tool. When a template is not provided, the applicant can use a free-form document. Applicants should always upload documents in PDF format.

² With this term indicate groups under-represented with respect to e.g. gender, sexual orientation, geographical, cultural, socio, racial and religious backgrounds, disabilities or refugee status.

- The applicant has to ensure 2 reference letters (non-mandatory) are uploaded by 2 referees and 1 letter of support (mandatory) is uploaded by a supervisor from the selected **primary** host institution.
- Once the application is complete, the applicant can submit the application.
- The applicant receives an automatically generated message when the application is submitted successfully.
- Until the call deadline the applicant can update and resubmit the application. After the call deadline, the application can no longer be edited or updated.
- **Only applications which are completed and submitted on time will be considered valid.**

If the applicant encounters any problems when registering on the platform or later during the application procedure, please write to: smash@ung.si

5.4 Detailed application procedure

By the call deadline – Saturday, 15th April 2023, 23:59 CET, the applicant must submit a complete application proposal which comprises **on-line application forms and uploaded required documents on the templates provided**. The complete application proposal has four sections, detailed below:

- **Administrative Data:** In this section, an applicant will be asked to insert the requested administrative data in an online form. A special application ID code is assigned to each applicant which replaces the first and last name of the applicant and will be used for the anonymized part of the application (Research proposal part).
- **Eligibility criteria compliance:** In this section the applicant has to upload a proof of their PhD certificate OR a statement from the applicant's academic institution and signed by the legal representative proving that the applicant has successfully defended the doctoral thesis but have not yet formally been awarded the doctoral degree. The applicant should also complete a table on the compliance with MSCA mobility rule, providing the information of the applicant's place of residence in the last 3 years period (prior to the call deadline).
- **Academic and professional experience:** in this section applicants have to upload their **CV** with standard academic and research record, including list of publications on obligatory template submitted as PDF; **Documents that explain any career breaks**, if applicable (no template provided), submitted as PDF, **2 Reference letters** (optional, not mandatory, template provided) provided and uploaded to the application platform by 2 referees, not later than 1 week after the call deadline), submitted as PDF.

Requesting a reference letter

2 reference letters are suggested but not obligatory. The applicant has to insert email addresses from 2 referees into the application platform and from the application platform send an email message to the selected referees, who will receive automatically generated email message with request and link to upload the reference letters in pdf format to the application platform.

The reference letters (template provided), must clearly assess the applicant's previous research activities, research capacity and work experience.

The reference letter must be signed and uploaded by the referee as PDF not later than one week after the application deadline! After that date, the upload will no longer be possible.

- **Research Proposal: The information provided in this section has to be anonymized** (see details below). In this section, the applicant will need to fill in online forms e.g. research proposal summary online form with acronym, title, abstract, keywords, selection of key research areas and subareas, selection of (up to 2) host institutions and suggestion of 3 experts-referees, who are able to make an expert assessment of the applicant's proposal and should not have any direct or indirect conflict of interest³. In this section the applicant has to upload the following obligatory documents:
 - **Research proposal description:** (max. 10 pages, mandatory template to be used, available on the website and application platform addressing all the aspects related to the project's excellence, implementation and feasibility, dissemination and impact. The proposal must include also a work plan including two secondments, a financial plan for research and travel-related costs during the entire research project, Ethics self-assessment and a Gantt chart. Submitted as PDF.
 - **Ethics statement:** Applicants should fill in the Ethics statement on the template provided and upload it as a separate PDF document only in case their research proposal includes ethical matters and the applicant marks them in the Ethics Self-assessment. Even though the statement is not evaluated directly as one of the evaluation criteria it is meant to offer applicants the possibility to show their awareness of the Ethical implication of their research. If the applicant is selected, the policy related to ethics will be developed under the guidance of the SMASH Ethics advisor. Submitted as PDF.
 - **Motivation letter** - maximum 2 pages, based on a predefined set of questions provided on obligatory template, submitted as PDF.
 - **Letter of support of the selected host organization** (mandatory template) signed and uploaded to the application platform (as PDF) by the host supervisor following the request sent by the applicant from the application platform (detailed instructions are given below). It is recommended to contact the potential supervisor(s) at an early stage, not only because of the required letter of support supervisor needs to upload in the application platform, but also to discuss the design of the research project and how it fits to the supervisor's research group/lab/department.

³ For detailed information about possible direct or indirect conflicts of interest related to the proposed referees see the following document: https://smash.ung.si/documents/17/SMASH-Conflict_of_Interest-Evaluators_qqXXzYQ.pdf

Requesting a letter of support from the host organization

A support letter from a primary selected SMASH host organization (department/lab/research group) is requested. The applicant has to insert the supervisor's email address into the application platform and from the application platform send an email request to the selected supervisor, who will receive automatically generated email message with a request and link to upload the support letter as PDF format to the application platform.

The letter of support, (obligatory template), should not disclose the name and surname of the applicant to assure the anonymity for the unbiased assessment procedure. Instead of using name & surname, supervisor has to use the unique applicant's ID code provided in the automatically received email message.

The letter of support must be signed by the head of the department/research group from the selected host organization and uploaded by supervisor as PDF not later than the call deadline! After that date, the upload will no longer be possible and application without the letter of support will be disqualified.

In case the applicant wants to submit strongly interdisciplinary project, he/she may select in the application platform also the 2nd host organization. In that case a Letter of Support from the 2nd host institution is also obligatory to provide, following the same procedure as described above.

In case of difficulties in communication with selected supervisors, applicants may seek advice with the relevant Host organizations' contact persons (see Chapter 8).

IMPORTANT! All information provided in RESEARCH PROPOSAL section in the application platform (on-line forms and uploaded documents) must be anonymized to assure the unbiased assessment. Concretely:

- **applicant must avoid any mention of the name, surname, gender and other identifying personal information in on-line form and uploaded documents. Instead of that, applicant's ID code must be used.**
- **Applicant must not mention explicitly his/her past affiliated institutions**
- **Applicant must not mention explicitly the names of his/her scientific collaborators or their affiliations**
- **References must be written in a form of a number in a square bracket, e.g. [1], which will then correspond to the citation in the reference list. Citations must consist of the title of the publication and publication details (journal, publication year, etc.) but must not include any names of the authors**
- **Applicant must follow the instructions in the templates!**

5.5 Ethics

The SMASH program endorses the ethical principles of Horizon 2020 as outlined in Regulation (EU) No 1291/2013 of the European Parliament and of the Council of 11 December 2013 establishing Horizon 2020. In particular, all activities shall comply with ethical principles including the European Code of Conduct for Research Integrity and must comply with relevant national, EU and international legislations.

Funding will not be granted for activities carried out outside of the EU if they are prohibited in any of the or all EU member states. Research activities will have an exclusive focus on civil applications and the following

fields of research will not be financed:

- Research activity aiming at human cloning for reproductive purposes;
- Research activity intended to modify the genetic heritage of human beings which could make such changes heritable;
- Research activities intended to create human embryos solely for the purpose of research or for the purpose of stem cell procurement, including by means of somatic cell nuclear transfer.

Ethical issues will be addressed at different stages in the application and selection process:

- As part of the application documents applicants are requested to fill out an Ethics Self-assessment - a checklist provided in the detailed research description template, to identify ethical matters relating to their research proposal, and if needed, to complete the Ethics Statement document.
- All applicants invited for an interview will be asked to reiterate the ethics implications of their proposed work (if marked in the project proposal) in order to gauge their understanding of the Ethical implication of their research;

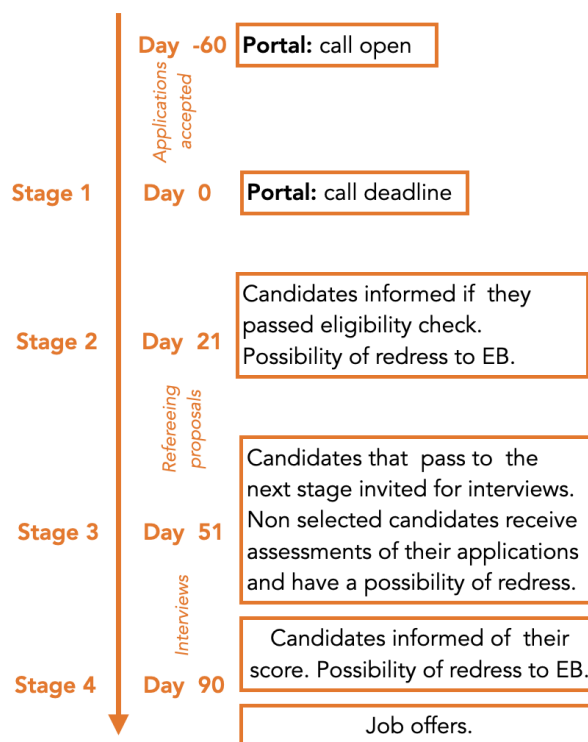
Successful applicants will follow up on the ethical issues with their host organization via the procedures existing in each institution:

- Successful applicants will be required to review their initial ethics checklist with their academic supervisor within the first month of their fellowship start date. The supervisor will confirm whether ethical approval is required and validate the checklist, guiding the fellow through the appropriate ethical approval process by filling out a Research Ethics Application form;
- The Research Ethics Application form will be checked by the relevant committee of each host organization (if exists) focusing on scientific merit, competency, social value, risks & benefits, harm – the likelihood of occurrence and severity, informed consent, confidentiality, conflict of interest, honest reporting of results;
- Finally, the SMASH External Ethics Advisor, will review the report of the relevant ethics committees. Any project assessed to necessitate ethical approval, must be in receipt of ethical authorization by SMASH External Ethics Advisor, before the corresponding element of the project can start.

6. Evaluation and selection procedure

6.1 Main steps of the evaluation and selection procedure

The following scheme shows the steps and tentative timetable of the evaluation and selection process:



The main steps of the evaluation and selection process are described stage by stage in more detail below:

Stage 1. THE ELIGIBILITY CHECK

After the closing of the call, applications undergo the eligibility check. This includes checking whether the applicant fulfils the eligibility criteria and the completeness and formal correctness of the submitted application documents. All the applicants will be informed about the status of their application following the eligibility check. All eligible applications go to the evaluation stage. Non-eligible applicants are informed about the redress procedure.

Stage 2. EVALUATION OF SUBMITTED APPLICATIONS

Step 1. Each application will be evaluated by five independent referees. Two from the applicant's key research area(s) and two from associated research areas. The fifth referee will be selected by the Governing Board (GB) among the referees suggested by the applicant.

Step 2. To assure unbiased assessment, each of the 5 referees will evaluate first the anonymized research proposal section of the application following the guidelines for referees and score the proposal according to the predefined evaluation template and evaluation criteria presented in the table 3 (see below).

Step 3. In this step, the non-anonymized part of the applicant’s academic and professional experience will be evaluated. In the review (and later at the interview stage), proposals and applicants will be evaluated according to the criteria indicated in the tables below. All items in the review and interview stage will be evaluated on the standard scale (5.0-10.0). The overall score at each stage will be computed using weights indicated in the tables below. Scoring corresponds to the following options (decimal values of 0.1 possible):

- 5.0 - Proposal fails to address the criterion or cannot be assessed due to missing or incomplete information.
- 6.0 – Poor. The criterion is inadequately addressed, or there are serious inherent weaknesses.
- 7.0 – Fair. Proposal broadly addresses the criterion, but there are significant weaknesses.
- 8.0 – Good. Proposal addresses the criterion well, but a number of shortcomings are present.
- 9.0 – Very Good. Proposal addresses the criterion very well, but a small number of shortcomings are present.
- 10.0 – Excellent. Proposal successfully addresses all relevant aspects of the criterion. Any shortcomings are minor.

Step 4. After the individual evaluation is done by each referee, the consensus meeting will be organized for the referees evaluating the same project proposal. The referees will meet online to reach a consensus for the scores and write the evaluation summary report. After the consensus meetings are completed, the ranking list will be made.

Step 5. The applicants will be notified about the status of their applications. About 30 applicants with the highest scores will be invited for the interviews. In order to assure high quality of selected proposals, only applicants who pass the threshold of 8.0 points out of 10.0 will be invited. Short interview guidelines will be sent to selected applicants to prepare themselves in accordance with the evaluation criteria. The applicants which will not be selected for interviews will receive the evaluation report and will be informed about the redress procedure. They will be invited to improve their application and re-apply to the next calls.

Table 3. Evaluation criteria applied to the applicant and the research proposal at Stage 2.

Table 3 – Evaluation criteria - proposal review stage		
Overall threshold is 8.0		
Evaluation items	Weight	Criteria
Evaluation of the PROPOSAL		
Excellence	25%	<ul style="list-style-type: none"> ● State of the art description ● Clarity of research objectives and research methodology ● Relevance for the Key Research Area ● Originality and pertinence of the proposed research
Implementation and Feasibility	15%	<ul style="list-style-type: none"> ● Quality and effectiveness of the work plan ● Feasibility within given time-frame and available budget ● Appropriateness of the researcher’s professional experience competencies and skills to carry out the research project; ● Match between the project and the selected SMASH host research group(s)

Dissemination and Impact	10%	<ul style="list-style-type: none"> Dissemination and exploitation plan (range/diversity of dissemination activities including conference attendance, conference organization, seminars, outreach activities, etc.); Expected impact on the research field; Expected Impact on the strengthening the SMASH network
Evaluation of THE APPLICANT		
Track record	20%	<ul style="list-style-type: none"> Research experience and past achievements Professional Recognitions and Services;
Leadership qualities and Motivation of the Applicant	15%	<ul style="list-style-type: none"> Clarity and quality of research and career goals Demonstrated leadership qualities and ability to go beyond disciplinary specialisms
Career development	15%	<ul style="list-style-type: none"> Relevance of the project for the applicant's career development; Expected new partnerships and relevance of potential cross-sectoral collaboration

Stage 3. THE INTERVIEWS

The applicants will be interviewed online. Each interview lasts 50 mins, with 20 minutes being allocated to the applicant's presentation, 15 minutes for project-related questions and 15 min to the assessment process focused on future potential. To ensure an objective, comprehensive and unbiased assessment, the interview will be conducted in the presence of psychologist specialized in hiring process. The referees at the interview will apply the evaluation criteria presented in table 4 (see below).

After each interview, the panel of referees will discuss the presentation, and the applicant, give a score and justify their decision in a report that follows the predefined form.

Table 4: Evaluation criteria applied to the applicant in the interview at Stage 3.

Table 4 – Evaluation Criteria - interview stage		
Evaluation Items	Weight	Criteria
PROJECT		
Presentation	25%	<ul style="list-style-type: none"> Quality and clarity of the presentation, research objectives and methodology Extent to which the project goes beyond the state of the art
Discussion	25%	<ul style="list-style-type: none"> Knowledge of the proposal research field and how it fits in the broader scientific context Coherence and effectiveness of the workplan

		<ul style="list-style-type: none"> • Awareness of risks and appropriateness of mitigation plans
RESEARCHER		
Expected career impact	25%	<ul style="list-style-type: none"> • Motivation • Career path plans
Potential of the applicant	25%	<ul style="list-style-type: none"> • Potential for leadership • Communication skills • Independent thinking, ability to propose excellent research • Creativity, originality of ideas

Stage 4. THE FINAL RANKINGS

After all the interviews will be completed, evaluation summary reports will be finalized and the ranking list will be compiled based on the scoring of the proposal review and interview stage (total score = 40% of final review score + 60% of interview score). All applicants will be informed about their score. Applicants will have the possibility for redress, following the defined redress procedure within 7 days. After that period, all pending redress issues will be solved, and the ranking list will be sent to the Governing Board. The Governing Board will make the final shortlist of the candidates to be hired, based on the ranking list, and the available capacities of the host institutions. Approx. 15 applicants will be selected for a fellowship. A reserve list will be compiled in case any of the initially selected applicants withdraw their application. The selected applicants will be asked via email message to confirm their acceptance of the postdoctoral position in 2 weeks' time to the email address: smash@ung.si. After the confirmations are received, hiring organizations start the official procedures for the employment of the selected applicants. Applicants will have to provide the necessary documents to substantiate the claims regarding eligibility criteria. Those applicants who will not be selected for fellowship will be informed and invited to re-apply for the next call.

REDRESS PROCEDURE

Any applicant has the right to appeal to the Executive Board (EB) via email smash@ung.si using the template provided at the website. Appeals will be restricted to procedural errors. Claims against the verdicts of the expert reviewers will not be upheld. All redress procedures must be initiated within 7 days of informing the applicant of their score. This allows to resolve redress issues before the selection procedure is finalized. In case that procedures were not followed correctly, the Executive Board will reconsider the application. After that, the EB's decision will be binding.

6.2 The provisional call timeline

Provisional Call timeline:	
14th February 2023	Opening of the SMASH call 1 – 2023
15th April 2023, 23:59 CET	Deadline for submission of the complete project proposals
22nd April 2023	Deadline for submission of the 2 reference letters

May 2023	Information to the applicants on the outcome of the eligibility check
May – June 2023	Project proposals evaluation period
June 2023	Results of the project evaluations and ranking list of the proposals/applications sent for approval to the Governing Board – Information to shortlisted applicants selected for the interviews, evaluation reports and redress procedure sent to non-selected applicants
June – July 2023	Interviews phase with the selected applicants
July 2023	Results of the interviews phase and ranking list of the applicants sent for approval to the Governing board. Information to shortlisted applicants selected for fellowships, evaluation reports and redress procedure sent to non-selected applicants. Redress issues resolved.
July 2023 onwards	First fellows hired. Start of the fellowship positions

7. Information on processing personal data in the application platform

During the application and selection process of the SMASH program, personal data are collected and safely stored from all the applicants. The personal data provided in the application platform are anonymized for the purpose of the evaluation procedure to assure unbiased assessment. SMASH Executive Board and Governing Board, will only use the data for managing the application procedure, and in the approval of the ranking lists and award process to sign the employment contract between the fellow and the selected host organization. Therefore, in accordance with the provisions of General Data Protection Regulation (EU) 2016/679 (GDPR) on data protection:

- the applicants are asked for consent that their data are collected and processed by the SMASH respective boards, in order to participate as an applicant in the selection process.
- the applicants are asked for consent for communications about the activities and services of SMASH program that may be of their interest.
- Applicants can exercise their rights to access, rectify and/or suppress their data, according to the General Regulations of Data Protection, using the contact details provided at the time they submit the information.
- Applicants' data will not be transferred unless legal obligation.
- After the submission of the application, each applicant will be invited to voluntarily complete the Diversity Monitoring Survey to enable the SMASH project to monitor the effectiveness of the SMASH approach to equality and diversity and to ensure that SMASH delivers the best possible outcomes. Information that applicants will provide will be used solely to help SMASH project monitor the diversity of applicants for posts advertised and the success of the SMASH project's dissemination strategy. In accordance with the Data Protection Act, all information provided will be treated in the strictest confidence.

8. Contact Information

In case you have questions, please make sure you first check out the FAQ section of the SMASH webpage. In case you do not find the answer, questions about the SMASH program can be sent to the following contacts:

- **SMASH Executive Board:**
 - For general enquiries and questions concerning the call (eligibility, deadlines, access to the application platform, problems with application platforms, templates, etc.) via email: smash@ung.si
- **The SMASH program host organisations' contact persons:**
 - For specific questions regarding each host organisation (research groups, related supervisors, etc.)

SMASH Program Host organisations' contact persons		
UNG	Gabrijela Zaharijas	gabrijela.zaharijas@ung.si
UL FRI	Danijel Skočaj	danijel.skocaj@fri.uni-lj.si
UL FMF	Gregor Skok	gregor.skok@fmf.uni-lj.si
JSI (KT)	Sašo Džeroski	saso.dzeroski@ijs.si
JSI (F9)	Borut Kerševan	borut.kersevan@ijs.si
JSI (F1)	Jernej F. Kamenik	jernef.kamenik@ijs.si
IZUM	Dejan Valh	dejan.valh@izum.si
ARSO	Matjaž Ličer	matjaz.licer@gov.si

Annex 1 - Eligibility check list

Applicants may use the following checklist of obligatory and non-obligatory documents before submitting their application.

PhD certificate	Copy of PhD certificate in English or a non-certified English translation if the original document is not in English, uploaded as PDF document OR a provisional PhD certificate — statement on headed paper from applicant’s academic institution and signed by the legal representative, proving that applicant has successfully defended the doctoral thesis but have not yet formally been awarded the doctoral degree until the deadline of the call, submitted as PDF document. Obligatory to provide.
CV	CV (max 4 pages) on template provided, submitted as PDF document. Obligatory to provide.
Career break documents	Documents that explain any career breaks (no template), submitted as PDF document. Not obligatory to provide.
Reference letters	2 reference letters (template provided) from applicant’s chosen referees to give their assessment of applicant’s previous research activities, research capacity and work experience (uploaded no later than 1 week after the call deadline), submitted as PDF document. Reference letters are not obligatory to provide.
Research proposal description	Detailed research proposal description (max. 10 pages) without any changes to the layout and conforming strictly with the specifications (eg. length, etc.) given in the template provided. Please assure that the document is readable and submitted as PDF document. Obligatory to provide.
Ethics statement	Ethics statement, using the template provided in case ethics issues are indicated in the project proposal – marked in Ethics self-declaration in the research proposal description, submitted as PDF document. Obligatory to provide only if ethics issues appear.
Motivation letter	2-page document describing the motivation, personal and career development objectives, where the applicant explains their interest in the SMASH program and the reasons behind their application, including a section on how they expect the program to enhance their career goals (template provided), submitted as PDF document. Obligatory to provide.
Support letter from Host organization	Letter of Support (template provided) from selected primary host organization, uploaded by the supervisor to the application platform as PDF document (until the call deadline). Obligatory to provide.