

Application form



Der Wissenschaftsfonds.

Application for funding of a

I - International Projects

Call (only for an international cooperation project or a Joint Seminar)

see <http://www.fwf.ac.at/de/forschungsfoerderung/fwf-programme/internationale-programme/>

FWF – GACR 2016 Lead Agency Call for Czech-Austrian Joint Research Projects

German title (max. 60 characters incl. spaces)

Visuelle Analyse von Protein -Protein-Interaktionen

English title (max. 60 characters incl. spaces)

Visual Analysis of Protein-Protein Interactions

Applicant

Family name

Viola

First name

Ivan

Co-applicant / GROW awardee

Applicable only for Hertha Fimberg, Lise Meitner Position and GROW-Position

Family name

First name

1. Personal data

Applicant

Family name

Viola

First name

Ivan

Title/acad. degree

Dr.

Date of doctorate

09.07.2005

Country of doctorate

A - Österreich

University of doctorate

TU Wien

Nationality

SLK - Slowakei

Sex

male

Date of birth

25.06.1977

ORCID No.

0000-0003-4248-6574

Date of birth of children

1.

04.08.2014

2.

3.

4.

Contact

Phone

+436769077967

Fax

E-mail

viola@cg.tuwien.ac.at

www site

http://www.cg.tuwien.ac.at

Please complete the following for statistical reasons**Highest academic degree/position**

- ☐ PhD
- ☐ Associated Professor
- ☒ Full Professor
- ☐ Assistant Professor
- ☐ others, namely:

Highest present professional position

- ☐ Scientific Collaborator
- ☐ Head of department
- ☒ Project leader
- ☐ Head of Institute
- ☐ others, namely:

- ☐ Currently no professional position at a university or non-university research institut

Applicant's research institution

Name of research institution

TU Wien

Institute/Clinic

Institute of Computer Graphics and Algorithms

Department

Head of research institution (title/acad. degree, first name, family name)

Prof. Dr. Werner Purgathofer

Address of research institution

Street/nr.

Favoritenstrasse 9-11 / E186

Postcode

1040

City

Vienna

Applicant's postal address (only if project-related correspondence is not to be sent to research institution)

Family name

Viola

First name

Ivan

Title/acad. degree

Dr.

Street/nr.

Postcode

City

Phone

Fax

E-mail

www site

2. Project Information

Duration

Not applicable to Joint Seminars, Stand-Alone-Publications or translation and foreign language editing of stand-alone publications.

36

months

☐ Independent applicant

Not applicable to Erwin Schrödinger, Elise Richter and Elise Richter-PEEK, Lise Meitner, Hertha Firnberg, Doctoral Programme, GROW-Position, Joint Seminars, Stand-Alone-Publications or translation and foreign language editing of stand-alone publications, Top Citizen Science and Partnership in Research.

Please consult the "explanations and definitions" for the appropriate funding programme.

Estimated share of requested funding in % to be spent at the research institution

Not applicable to Erwin Schrödinger, Lise Meitner, Hertha Firnberg, GROW-Position, Joint Seminars, Stand-Alone-Publications or translation and foreign language editing of stand-alone publications.

100

%

Estimated percentage of total working time the applicant expects to devote to the research project

Not applicable to Erwin Schrödinger, Hertha Firnberg, GROW-Position, Joint Seminars, Stand-Alone-Publications or translation and foreign language editing of stand-alone publications.

20

%

Up to 6 key words for the project (English)

Please separate each keyword by using the return key.

molecular visualization

visual analysis

protein-protein interaction

Scientific disciplines relevant to the project

(at least one, not more than 4 categories; sum must equal 100 %; use categories in Statistik Austria code)

Main scientific discipline Percentage %

102008 - Computer graphics

100

Other scientific discipline Percentage %

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Other scientific discipline Percentage %

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Other scientific discipline Percentage %

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☒ **Resubmission** of a rejected project, rejected publication

Project number Title

I 2383-N33

Expressive Visualization of Protein-Protein Interactions

☐ **Previous Project(s)** (only if the proposed project is the direct extension of one or more FWF projects. In this case, list these projects and include the summary report of the most recent project). Top Citizen Science: Please indicate the name of the ongoing FWF-funded projekt on which this application is based (main project). Not applicable to GROWPosition.

Project number Title

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Project number Title

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☐ **Additional funding** (Funds related to the proposed research topic that have been applied for or already awarded by the FWF or other funding agencies, e.g. EU, OeNB, Ministries etc.)

Project number Title

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Funding agency Sum requested EUR

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Status

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Project number Title

--	--

Funding agency Sum requested EUR

--	--

Status

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Are the publications of project members regularly or at least partly stored in the PUBMED archive of biomedical articles (<http://www.ncbi.nlm.nih.gov/journals?itool=sidebar>)?

☒ Yes ☐ No

If yes, the project members are asked to make the publications arising from this project freely available in the UKPMC full text archive -
see http://www.fwf.ac.at/files/Open_Access/pubmed.pdf

Affirmation of applicant

I shall inform the FWF if I request support for this project from the FWF or from other organizations, or if additional support is granted. The FWF must be immediately informed of substantial changes of the project's general setting as described in the application, e.g. change of research institution.

The FWF is entitled to process all project-related data by computer, to publish excerpts of them in annual reports and to pass them on to third parties in anonymous form for statistical purposes or purposes relating to science politics.

The applicant is responsible for informing all project workers named in the application that their personnel data will be stored and processed by computer and that the FWF will not pass the information on to third parties unless there is a legal requirement for it to do so or if the passing on of these data is not covered by the approval given below.

The applicant gives his/her consent that in case a (co-)financing by other funding institutions is possible (in particular through Austria's federal states or other European funding institutions) all data related to the application as well as the outcome of the evaluation process might be passed on to these funding institutions.

The applicant gives his/her consent that the FWF will inform his/her research Institution about the decision concerning the application under consideration.

The applicant is authorised to withdraw her/his affirmation any time by a written request to the FWF. In case an affirmation to pass on project related data to third parts is withdrawn the FWF will as soon as the withdrawal is received stop forwarding project related data that may not be passed on without specific consent to third parts.

The applicant gives his/her consent that in the event that funding is granted, the German and English summaries of the application as well as the amount of the funds granted and subsequently the summaries of the final project report will be published on the FWF's web site.

In the case of an approval, the applicant consents to the use of his/her e-mail address as well as his/her first and last name for FWF newsletter subscriptions and registration for FWF forum lists. Users can unsubscribe from FWF newsletters and forums at any time by e-mail or on the FWF website.

☒ I certify with my signature that the information provided herein is accurate and complete. I also confirm that all co-authors named in the attachment are familiar with the application's contents and that they agree with them.

Programme specific data



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ERA-Net Calls or other coordinated programmes

role of applicant

name of project coordinator

acronym & title of collaborative research project

Joint Project

country and name of foreign funding agency

name of the foreign project partner

Joint Project - Lead Agency Procedure

name of the foreign project partner

Dr. Barbora Kozlikova

Lead agency

☒ FWF

☐ DFG

☐ SNF

☐ other

name of funding agency

other participating funding agencies

☐ DFG

☐ SNF

☒ other

name of funding agency

GACR - Czech Science Foundation

Cost breakdown



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	1 st year	2 nd year	3 rd year	Sum
Personnel costs - total	36.660,00	36.660,00	36.660,00	109.980,00
N.N.	36.660,00	36.660,00	36.660,00	
Equipment costs - total	11.826,77	0,00	0,00	11.826,77
Graphics workstation Dell Precision 7910	11.826,77			
Expendables costs	500,00	500,00	500,00	1.500,00
Travel costs	3.000,00	3.000,00	3.000,00	9.000,00
Other costs	1.500,00	1.500,00	1.500,00	4.500,00
Service contract costs - total	0,00	0,00	0,00	0,00
Interim total				136.806,77
General costs 5%				6.840,34
Total sum				143.647,11

Academic abstract



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English text

Understanding the biological functions of proteins is a basal knowledge that contributes to advances in medicine, pharmaceuticals, but also agriculture and even energy sectors. The ultimate goal of proteomic research is to describe functions of all protein complexes in cellular space and life time. Protein interaction patterns are, however, very complex and revealing these is a challenging and time-consuming scientific process. Studying interaction between proteins is related to the identification of an appropriate spatial conformation in which these proteins are interacting. These studies span from investigating interactions between two proteins up to exploring large multi-molecular complexes. Then the complexity becomes enormous and suitable visualization technology, which could aid the analytic workflow, does not exist to this date.

In our project we propose to investigate novel visualization techniques in order to fill this gap. These techniques will focus on effective visual explorations, comparisons and ranking of data obtained from algorithms for predicting 3D spatial conformations and protein-protein docking. Moreover, we extend the solutions for protein-protein docking to more general molecular complexes, where many molecules are mutually interacting – this process is called multidocking. Further we will integrate the proposed techniques into the visual analysis environment and based on the features of the highly structured input data, we will design a formalization of visual analysis systems in order to provide a systematic exploration of the visualization design space with respect to user tasks. All proposed techniques will be designed in tight cooperation with the proteomic domain experts involved in the project. The techniques will be then tested on data from their currently ongoing research on SMC complexes. All proposed techniques will be integrated into the CAVER Analyst software tool. This visualization tool will serve also for fast prototyping of new ideas.

Co-authors



A co-author of an application is any person who in addition to the applicant has made a creative contribution to an application, or in case of the FWF-programme "Stand-alone publications" someone who has written parts of the publication. The FWF has defined the following requirement for co-authorship:

- Substantive work during the process of conceiving or preparing a research application, irrespective of whether this took the form of contributing ideas, of performing experiments or theoretical work, of gathering, analysing or interpreting data etc.
- In case of the FWF-programme "Stand-alone publications": someone who has written a text or parts of a text of the publication.

In future, all persons who meet this requirement must be mentioned as co-authors. Persons who do not meet this requirement may be neither the applicant nor the co-author of an application.

☐ I confirm that there are no co-authors for this application.

Name and contact details

Brief description of the contribution

Barbora Kozlikova
Faculty of Informatics, Masaryk University
Botanicka 68a
602 00, Brno, Czech Republic

project idea
proposal writing
visualization expertise

Jan Palecek
Faculty of Science, Masaryk University
Kotlarska 267/2
611 37, Brno, Czech Republic

project idea
proposal writing
functional genomics and proteomics expertise

International cooperation



Please fill in a form for each cooperation partner.

Data of cooperation partner

Family name

Kozlikova

First name

Barbora

Title/acad. degree

Dr.

Sex

female

Nationality

CZ - Tschechien

Name of research institution

Masaryk University

Institute/clinic

Faculty of Informatics

Department

Department of Computer Graphics and Design

Street/nr.

Botanicka 68a

Postcode

60200

City

Bmo

e-mail

kozlikova@fi.muni.cz

www site

http://decibel.fi.muni.cz

Role of foreign cooperation partner

AERA-Net Calls or other coordinated programmes

B Joint Project or Joint Project - Lead Agency

foreign project partner

☐ Coop.partner in a developing country, to be financed by FWF

International cooperation



Please fill in a form for each cooperation partner.

Data of cooperation partner

Family name

Palecek

First name

Jan

Title/acad. degree

AssistentIn/DozentIn

Sex

male

Nationality

CZ - Tschechien

Name of research institution

Masaryk University

Institute/clinic

Faculty of Science

Department

Department of Functional Genomics and Proteomics

Street/nr.

Kotlarska 267/2

Postcode

611 37

City

Brno

e-mail

jpalecek@sci.muni.cz

www site

http://sci.muni.cz

Role of foreign cooperation partner

AERA-Net Calls or other coordinated programmes

B Joint Project or Joint Project - Lead Agency

☐ Coop.partner in a developing country, to be financed by FWF

Equipment data



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Project-specific equipment

Equipment designation (as quoted in Itemization of requested funding)

Graphics workstation

Product

Type/model

Dell Precision T7910

Supplier

Dell

Price quoted

Currency

Sum

EUR - Euro

11.826,77

Requested sum (EUR incl. VAT)

11.826,77

☐ Own design☒ Commercially available☐ Partial financing planned**Installation site** (if other than applicant's research institution)

Free-form application



Description

Final version of the proposal with attached CVs

Uploaded file

proposal_and_CV.pdf

PR abstract (german)



Description

PR Abstract DE

Uploaded file

Abstract_de__PR.docx

PR abstract (english)



Description

PR abstract

Uploaded file

Abstract_en__PR.docx

Userdefined attachment



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Description

Annex Revision A

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Annex__Revision_A.docx

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Description

Annex Revision B

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Annex__Revision_B.docx

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Description

Annex Overview Revision

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Annex_Overview_Revision.docx

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Description

Annex Reviewers

Uploaded file

Annex_Reviewers.docx

Userdefined attachment



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Description

Note on Cover Letter delivery by post

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Annex_Note.docx