



Competition Brno Ph.D. Talent 2011

Guide for Applicants

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Introduction

This Guide for Applicants is related to the Brno Ph.D. Talent Competition announced on July 15, 2011 on the www.jcmm.cz website. The competition is open to students of technical and natural sciences enrolled in the first year of doctoral study program at one of the four partner universities in Brno. The twenty most successful doctoral students will share a financial contribution of 7.2 million CZK.

The financial contribution of 360 thousand CZK per head is paid to the supported students over the first three years of their doctoral study in amounts corresponding to 10 thousand CZK a month. The purpose of this contribution is to eliminate the need for raising extra income to cover the cost of living and to give the students the opportunity to focus fully on their studies and scientific work.

1. Basic Information

1.1 Terms

For the purposes of this competition, the following terms mean:

- 1) **provider** is the Brno City Municipality which provides the financial support of the competition
- 2) **administrator** is the South Moravian Centre for International Mobility which organizes the competition
- 3) **evaluators** are experts in technical and natural sciences working in academia outside of the partner universities as well as professionals from the private sector who provide their expertise to evaluate the applications
- 4) **applicant** is a student of technical or natural sciences enrolled in an accredited doctoral study program at a partner university who applies for the competition
- 5) **beneficiary** is an applicant who is awarded the financial contribution based on the competition results

1.2 Partner Universities

The four partner universities are:

- a) **Brno University of Technology**
- b) **Masaryk University**
- c) **Mendel University in Brno**
- d) **University of Veterinary and Pharmaceutical Sciences Brno**

1.3 Talented Ph.D. Student

The competition aims to support talented doctoral students. Its goal is to identify talented doctoral students, provide them a long-term support and invest in their career development. The selection of beneficiaries is based on excellent academic track record, experience and extraordinary activities of the applicants documented primarily by their professional CV. The quality of the submitted scientific project and the implementation support provided by the applicant's department, supervisor and consultants are also taken into account.

Talented Ph.D. students manifest the following characteristics:

- are hardworking, motivated and creative
- are responsible, reliable and independent
- perform studies faster than the average students
- show excellent study record and competition results
- involve actively in scientific projects
- present clearly their ideas and intentions
- remain critical on their findings and conclusions

Talented Ph.D. graduates should:

- engage in basic or applied research, development or innovation
- have a short adaptation time
- have analytical power, advanced research skills and personal management skills
- be able to work in a team and network internationally
- manage scientific projects with uncertain outcomes in diverse conditions
- have a high level of creative thinking and critical analysis
- be efficient, initiative and independent

1.4 Eligibility Criteria

The competition is open and its rules set no quota of applicants for partner universities, faculties or departments; however, an eligible applicant must meet the following eligibility criteria when applying for the competition.

Eligibility Criteria:

- study full-time at a partner university
- be enrolled in the first year of a doctoral study program
 - enroll in the first or the second semester by October 1, 2011
- study technical or natural sciences

The competition is open only to doctoral students of technical and natural sciences. Doctoral students of social sciences, humanities or arts are not eligible. This criterion applies to the applicant's field of study as well as the scientific project. If you are not sure whether you can apply for the competition, please, contact the administrator.

All applicants declare their compliance with the eligibility criteria before submitting the application. The declaration is part of an electronic form in the registration system. Only the beneficiaries document officially that they have met the eligibility criteria before signing the agreement on financial contribution. Compliance with the criteria can be documented by a confirmation of study issued by the partner university.

All applicants must also grant the administrator their approval to process the data provided in the application and its transfer to third parties in order to evaluate the application. The full name and academic degrees of the applicants and their supervisors, the scientific project title and the department name can be made public.

1.5 Time Schedule**Table 1: Time schedule of the Brno Ph.D. Talent 2011 Competition**

Competition schedule for the 2011/2012 academic year	Time period	Date
Competition Announcement		15. 7. 2011
Registration of Applicants	2 weeks	12. – 25. 9. 2011
Formal Review of Applications (1st Round)	5 days	26. – 30. 9. 2011
Expert Review of Applications (2nd Round)	2 months	1. 10. – 30. 11. 2011
Final Project Presentations (3rd Round)	2 weeks	5. – 16. 12. 2011
Publication of Competition Results		21. 12. 2011

2. Application Form

The applicants, who meet the eligibility criteria, can apply for the competition by submitting an electronic application. The applications are submitted during the registration period (see the Time Schedule) via a registration system available at <http://www.jcmm.cz/en/doctors/registration-for-applicants-1.html>.

The applicants register at the JCMM website, create a personal account, fill in the available online forms and upload an electronic document with the required information and layout. By the end of the registration period all applicants must confirm their application by clicking on the "submit application" icon. Please, do not leave your registration for the last moment and make sure to confirm your application.

The applicant is responsible for the accuracy and completeness of the information provided in the application. If any part of the application exceeds the maximum length allowed, it cannot be taken into account in the evaluation. If the applicant does not provide all the mandatory information, the application is formally invalid and cannot be accepted for evaluation. If the applicant provides inaccurate or incomplete information, it will reflect in a reduced evaluation score. Applications containing false or unsupported data will be rejected.

The registration system is quite simple and the registration procedure is properly described in the system itself, therefore this guide pays no extra attention to it. In continuation, this chapter describes the structure and mandatory content of the electronic document (also referred to as "application").

Overview of the application layout:

- **Applicant's Professional CV**
 - discipline and the start date of doctoral studies
 - education and qualification for solving the proposed project
 - professional practice, internships, solved scientific projects
 - awards and results of scientific activities
 - other relevant information
- **Scientific Project**
 - objectives and original contribution
 - theoretical framework, methods and techniques, basic references
 - time schedule and key milestones
 - institutions where the project will be solved
 - expert consultants and their contribution to the project
 - relation between the project and the applicant's doctoral thesis
 - applicant's motivation for solving the project
- **Supervisor's Professional CV**
 - education, qualification and employment history
 - main research activities, pedagogical activities
 - selected professional results
 - awards and recognitions
 - other relevant information

All three parts of the application must be **written in English** following the above order. Each part of the application must begin on a new page. The application must be saved in a **single PDF file**. The maximum length of the document is **10 pages in A4 paper size**.

The document must have the following format: font size of at least 10 points; single spacing or higher; all margins at least 2 cm wide; the heading of each page must contain the name of the applicant and the competition title "Brno PhD Talent 2011"; page number must be indicated at the footnote. Other text format a graphic layout depends on the needs and preferences of each applicant.

The application must be uploaded into the registration system. The maximum size of the file is **10 MB**.

2.1 Applicant's Professional CV

The professional CV serves to provide information on education and qualification of the applicant. Highlight the results of your previous studies and scientific activities, particularly those related to your discipline and the topic of your project. You should also mention student awards, language exams and other accomplishments.

Write your structured CV in one of the commonly used forms while keeping in mind the mandatory content. The permitted length of the CV is two to three pages. Be brief and give only relevant and verifiable information. The evaluators can check the information and the administrator may require its documentation.

Mandatory content of the applicant's professional CV:

- 1) **DISCIPLINE AND THE START DATE OF DOCTORAL STUDIES**
Provide the name of your training institution and your field of study, date of admission and date of inscription in the first or the second semester.
- 2) **EDUCATION AND QUALIFICATION FOR SOLVING THE PROPOSED PROJECT**
Specify your education and qualification in logical sequence, so that it clearly explains your competencies and specific qualities. Emphasize those that will help you solve the proposed project. You can also provide a list of special courses you have attended.
- 3) **PROFESSIONAL PRACTICE, INTERNSHIPS, SOLVED SCIENTIFIC PROJECTS**
Mention your experience with scientific projects that you have proposed and solved yourself. You can also provide a list of scientific projects in which you have participated and explain how. Provide information on your professional practice and training including a brief job description. If you do not have any professional practice, you can give a list of your internships or participation in university and professional organizations. Mention also any summer schools and indicate their focus.
- 4) **AWARDS AND RESULTS OF SCIENTIFIC ACTIVITIES**
Provide a list of academic awards and results of your scientific activities. Mention also your previous results in student competitions, including the high-school level.
- 5) **OTHER RELEVANT INFORMATION**
Finally, you can mention the knowledge and skills you have acquired in your every-day activities which are not necessarily evidenced by official certificates and diplomas. In other words, make the list of your skills, knowledge and qualification complete. Describe clearly your language, technical, computer, presentation and other skills and abilities acquired during your studies, through seminars or informal training courses and free-time activities.

2.2 Scientific Project

The scientific project is a basic set of chronological activities necessary to achieve objectives of research, development and innovation formulated by the applicant which is directly linked to his or her doctoral studies.

- a) For the purposes of this competition, the scientific project means:
 - i. Theoretical or experimental work undertaken principally to acquire new knowledge of fundamental principles of phenomena or observable facts, not primarily directed towards the application or use in practice (basic research).
 - ii. Theoretical and experimental work aimed at obtaining new knowledge and skills for developing new or significantly improved products, processes or services (applied research).
 - iii. Acquiring, combining, shaping and using existing scientific, technological, commercial and other relevant knowledge and skills for the design of new or significantly improved products, processes or services (experimental development).
 - iv. Introduction of new or significantly improved products, processes or services into practice (innovation).

- b) The result of the scientific project should be:
- i. In basic research, new knowledge about fundamental principles of phenomena or observable facts, published by the rules common in the given scientific field.
 - ii. In applied research, new knowledge and skills to develop products, processes or services that are protected under the law of copyright protection, results of research or similar activities or used by the professional public or other users.
 - iii. In development, design of new or substantially improved products, processes or services.
 - iv. In innovation new or substantially improved products, processes or services introduced into practice.

The scientific project may have a length from four to six pages in A4 paper size, including all charts, diagrams and basic references. Your supervisor can help you with its elaboration; however, do not forget to highlight your own contribution and share of your work. At the end explain your motivation to addressing the proposed project. Write the text for an expert in your discipline who is not informed about your specific project. Write clearly, be informative and brief.

Mandatory content of the scientific project:

1) OBJECTIVES AND ORIGINAL CONTRIBUTION

Give a short overview of the project proposal. Describe clearly and concisely its objectives and original contribution. Explain your approach to the problem addressed in the project so that the evaluators understand what you intend to achieve. Also explain why your scientific project is important, current and why it should be carried out. The evaluators will want to understand the main idea of the project as well as its importance and innovativeness. The recommended length is 1 page.

2) THEORETICAL FRAMEWORK, METHODS AND TECHNIQUES, BASIC REFERENCES

In this part of the project, describe the project design. Demonstrate the viability and originality of the proposed solution and its professional level. Explain what techniques and methods you chose and why you prefer them. If the methods or techniques are commonly used, they do not require description in detail. Describe briefly the current state of knowledge of the problem addressed in your project and mention the previous work on the topic. There is no need to give redundant references. Focus on the key references to show that you are familiar with relevant literature and that you are able to manage the project in detail. The recommended length is 2 pages.

3) TIME SCHEDULE AND KEY MILESTONES

The project should be divided into stages. Each stage should have its own target and the achievement of all stages should guarantee the accomplishment of the overall objective. Define the milestones and set them in a time line so that you can monitor and evaluate the implementation of the project. The recommended length is 0.5 page.

4) INSTITUTIONS WHERE THE PROJECT WILL BE SOLVED

High quality facilities are crucial for successful implementation of the project. Describe briefly the experience and the most significant achievements of your training institution in the field of the proposed project. If your training institution has limited experience with some special methods or techniques, consider collaboration with other academic institutions or private sector and describe its benefits. Provide a list of planned internships. The recommended length is 0.5 page.

5) EXPERT CONSULTANTS AND THEIR CONTRIBUTION TO THE PROJECT

Give a list of expert consultants who will significantly contribute to the project and will ensure its professional quality. It is not necessary to mention all the consultants or collaborators. The recommended length is 0.25 page.

6) RELATION BETWEEN THE PROJECT AND THE APPLICANT'S DOCTORAL THESIS

The title and the content of the project do not have to match fully the name or topic of your doctoral thesis. However, the project must be related to the thesis, e.g. it may be its sub-project. Explain the link between the proposed project and your thesis. The recommended length is 0.25 page.

7) APPLICANT'S MOTIVATION FOR SOLVING THE PROJECT

To conclude, describe briefly your motivation for addressing the proposed project. In particular, explain why you chose the topic. Avoid empty phrases and general statements. Furthermore, it is possible to provide other relevant information that you want to emphasize and which cannot be mentioned in other parts of the project. The recommended length is 0.25 page.

2.3 Supervisor's Professional CV

An effective supervision over the applicant's project and training guarantees that he or she completes both successfully. Elaborate the supervisor's professional CV in a similar way as your own CV. The permitted length is two to three pages A4.

Mandatory content of the supervisor's professional CV:

- name, academic degree, position and function
- education and academic qualification
- a brief employment history
- main research activities and its results (publications, citations, patents, etc.)
- pedagogical activities and its results (tuition, number of supervised students, etc.)
- the most significant academic awards and recognitions by the scientific community
- other relevant information

2.4 Preparing the application

The number of applications will certainly exceed the number of financial contributions to be awarded. Therefore a selection of beneficiaries must be carried out. Dedicate enough time to writing the application to gain a high evaluation score and pass to the final round of the competition. The evaluators will focus on your general knowledge of the chosen topic, including the state-of-the art knowledge. The evaluators will also examine whether your project addresses an important and current scientific problem. The project design is also a very important criterion.

You must give answers to the following questions:

- What problem is addressed in the project?
- Why are you interested in this topic?
- How do you plan to solve the problem?
- What are the expected results of the project?

Keep in mind that the evaluators decide whether your project is worthwhile and well-designed, whether you are able to solve it and the proposed outcomes are real. The addressed problem must be important, but not overly ambitious. It is important to clearly distinguish between what you intend to do yourself what will be done by your collaborators.

Your goal is to "sell" your previous results and achievements and to highlight your exceptional qualities in comparison to other applicants. Avoid inaccurate or misleading data. Remember that vague or incomprehensible information may be the cause for a reduced score or even disqualification.

All of the above will be judged only upon your application. **The evaluators will only know the facts you provide them in your application.** Therefore, pay extra attention to the content and its clarity. Ask yourself whether each sentence is really necessary for understanding the project. Let your colleague or friend, who is not familiar with the project, read the proposal. Ask whether he or she understood your intentions. This informal criticism can be very helpful.

3. The competition

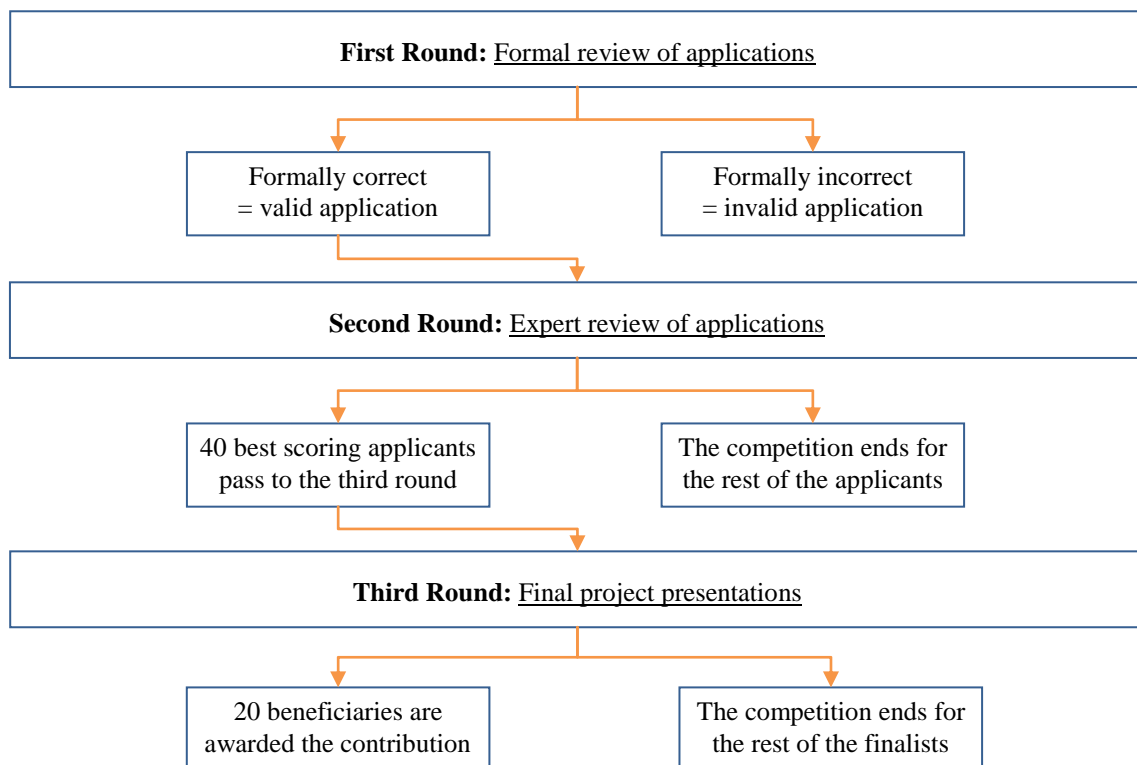
The competition has three rounds:

1. Formal review of applications
2. Expert review of applications
3. Final project presentations

In the first round of the competition the applications are formally reviewed. In the second round the content of the applications is evaluated. Forty applicants with the highest score pass to the third round and present their projects in front of an expert committee. See Figure 1: Scheme of the competition rounds.

The evaluation process is anonymous; the names of the evaluators are not public. The results of each round are announced via the registration system and the administrator notifies the applicants by e-mail.

Figure 1: Scheme of the competition rounds



3.1 Formal review of applications

In the first round of the competition the administrator carries out a formal review of applications. Only the applications that meet the all the formal criteria pass to the second round for expert review. An application, which does not meet the formal criteria, is invalid and cannot be accepted for further evaluation.

The application is checked against the following formal criteria:

- The application was submitted via the registration system during the registration period
- The application contains all the mandatory information specified in the second chapter of this guide
 - the application is complete and contains all the required information
 - the application has the required layout and length

As a part of the formal review, the applicant's field of study as well as the project is checked against the criterion of technical and natural sciences. If at least three evaluators conclude that the proposed project or applicant's field of study does not meet the criterion, the application is rejected.

3.2 Expert review of applications

In the second round of the competition the applications are reviewed. The expert review is carried out by evaluators. The administrator ensures that each application is reviewed by at least 2 evaluators in order to establish the ranking of applicants in the second round of the competition. The administrator assigns the applications to the evaluators according to their area of expertise.

In the first phase, the evaluators review all assigned applications independently by scoring and commenting each evaluated area. The aim of the comments is to provide feedback to the applicants which they may use to improve their projects regardless of their success in the competition. The evaluators record the results of each reviewed application in a protocol.

Table 2: Evaluated Areas

EVALUATED AREAS:

- APPLICANT: 0 to 100 points
 - Qualification for solving the proposed scientific project
 - Previous results and achievements
 - Motivation
- SCIENTIFIC PROJECT: 0 to 100 points
 - Potential scientific contribution
 - Project design
 - Quality of the proposal
- IMPLEMENTATION SUPPORT: 0 to 100 points
 - Supervisor
 - Department
 - Consultants

Table 3: Evaluation Scale

SCORING SCALE (0 to 100 points):

- EXCELLENT APPLICATION (81 to 100 points)
 - *Applicant*: demonstrates excellent results, his or her level is unique compared to other applicants. The applicant shows great qualification for doctoral studies and motivation for reaching the project objectives. Expectations of obtaining original and scientifically valuable results.
 - *Scientific Project*: The proposed project is very well designed, based on an original idea, with clear objectives. In terms of originality, importance and proposed solutions, the project proves an extraordinary quality which well exceeds the common level. The results promise a significant original contribution to the scientific knowledge.
 - *Implementation Support*: Supervisor, external consultants and department facilities provide a supportive and inspiring environment. Their experience and excellent results guarantee the success of the applicant.
- ABOVE AVERAGE APPLICATION (61 to 80 points)
 - *Applicant*: demonstrates very good results, which are above average compared to others; great motivation for successful studies and accomplishment of the project objectives. Expectations of acquiring original and scientifically valuable results.
 - *Scientific Project*: very well designed, based on a new idea, with clear objectives. In terms of originality, importance of ideas and proposed solutions, the project's quality is above average. The results may be useful for further development of scientific knowledge.

- *Implementation Support:* Very good department facilities and reputable supervisor and external consultants with necessary experience and significant results. It can be considered as a guarantee for the applicant's successful training.
- **AVERAGE APPLICATION (41 to 60 points)**
 - *Applicant:* demonstrates average results. Well motivated to complete the degree and the project. Expected results may be a useful addition to the current knowledge.
 - *Scientific Project:* based on correct assumptions, contains interesting ideas, the proposed solution is viable, its quality is average compared to other projects. The project design is generally correct but not fully clear in details and requires additional work. The project objectives can be achieved.
 - *Implementation Support:* Department facilities, supervisor and consultants are at average level, with standard results and experience. The support is sufficient for successful completion of the applicant's project and training.
- **BELOW AVERAGE APPLICATION (21 to 40 points)**
 - *Applicant:* The information provided shows that results and experience of the applicant are below average. It can be assumed that the applicant is not sufficiently qualified and motivated to complete the project and training and to obtain scientifically valuable results.
 - *Scientific Project:* The proposed project does not reach the standard level. Some of these objections can be made: the original contribution of the project is unclear, the expected results of the project have minimal impact on the development of scientific knowledge, methodology is incomplete and the objectives cannot be achieved without additional adjustments, not based on correct assumptions; the design and the time schedule are not suitable for achieving the objectives; etc.
 - *Implementation Support:* The information provided shows that the results of the department, supervisor and/or consultants are below the average level and demonstrates minimum international experience and collaboration. The support does not provide a credible guarantee for successful completion of the applicant's project and training.
- **POOR APPLICATION (0 to 20 points)**
 - *Applicant:* The information provided shows very poor results and experience of the applicant. It can be assumed that the applicant is not qualified and motivated to complete the project and to obtain scientifically valuable results.
 - *Scientific Project:* The proposed project is well below the average and demonstrates many deficiencies: the original contribution of the project is negligible or none, the project is just a variation on a known solution; the methodology does not allow the achievement of the objectives, the time schedule is inadequate, it is not based on correct assumptions, etc.
 - *Implementation Support:* The information available suggests that the results of the department, supervisor and consultants are very poor, shows negligible or no experience. The support does not guarantee applicant's successful completion of the project and training.

Comments (briefly for each evaluated area):

- STRENGTHS
- WEAKNESSES
- RECOMMENDATION

Table 4: Score calculation

Evaluated Area	Partial score	Weight	Expert review
Applicant	0 – 100 points	0,3	0 – 30 points
Scientific Project	0 – 100 points	0,4	0 – 40 points
Implementation Support	0 – 100 points	0,3	0 – 30 points
Total	–	1,0	Max. 100 points

In the next phase, the second reviews are made available to the evaluators for calibration of score and comments. At this stage the evaluators can correct their reviews having seen the opinion of the second evaluator. If two expert reviews of one application still differ in more than 20 points in total or more than 30 points in the same evaluated area, the application is reviewed by a third evaluator.

When all the applications are reviewed, the administrator sets up the final ranking of applicants after the second round of the competition. The ranking of applicants is determined by the overall score of their application. The overall score of an application is a simple average of two expert reviews. If there are three reviews, the overall score of the application is the simple average of two reviews with closer score.

Forty applicants (finalists) who receive the highest overall score pass to the third and final round of the competition. However, in order to pass to the final round, the applicant must receive at least 50 points in both counted expert reviews and also achieve a minimum of 60 points in the overall score.

3.3 Final project presentations

In the final round of the competition the 40 finalists present their scientific project in front of an expert committee. The committee has three to five members, evaluators with corresponding qualifications. The expert committee proposes the final ranking of the finalists. The administrator confirms the beneficiaries of the financial contribution and announces the final results of the competition on the JCOMM website.

Division of finalists into committees:

In the last round of the competition a required number of expert committees will be set up. The division of finalists into committees will be done by the administrator to match the scientific projects with the expertise of the committee members. The minimum number of finalists per committee is two and the maximum number is twenty. The number of finalists per committee is usually even.

The presentation organization:

One presentation lasts about 15 minutes, maximum of 10 minutes to present the project and approximately 5 minutes for a discussion. The expert committee ensures an impartial assessment of the applicants with regard to the expert reviews from the second round. The committee members take into account the applicant's professional knowledge and the overall expression (motivation, reaction time, assertiveness, presentation skills, etc.). The presentations are not public. The provider and the administrator may have their observers without voting rights.

The final ranking of applicants:

The final ranking of applicants is based primarily on the consensus of all committee members. If the consensus is not reached, the committee decides by the absolute majority of its members. The committee is quorate only in the presence of at least three members.

The committee assesses the level of individual presentations and proposes the final ranking of finalists. The top twenty finalists are nominated beneficiaries of the financial contribution. If the committee members conclude that less than twenty finalists meet the competition requirements, they may propose that fewer beneficiaries are awarded the financial contribution. The committee may appoint substitute beneficiaries from within the remaining finalists. In the event of withdrawal or additional disqualification of a beneficiary, his or her position passes to the next substitute. A disqualification of a beneficiary is possible only if he or she fails to prove the information provided in the application or withdraws him or herself voluntarily from the competition.

Conclusion

The applicants who succeed in the competition will sign an agreement on financial contribution in January 2012. One of the prerequisites of signing the agreement is to provide a confirmation of study and, if requested by the administrator, other documents referred to in the application. An individual study plan will form an annex of the agreement.

The financial contribution of 360 thousand CZK is awarded for the period from September 2011 till August 2014. The contribution will be paid to the beneficiary periodically (quarterly) in amounts corresponding to 10 thousand CZK for each preceding calendar month. The beneficiary is not required to provide evidence of his or her expenses to the administrator.

However, the beneficiary must fulfill a series of commitments stated in the agreement; otherwise the financial contribution will be withdrawn. The main commitment is the submission of monitoring reports for every semester. Furthermore, the beneficiary agrees to study without interruption and notify the administrator of any substantial changes in the scientific project. The beneficiary also confirms that he or she will observe the rules of publicity and will cooperate with the administrator.

If you have any further questions regarding the competition, please, do not hesitate to contact the administrator.

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