IRP identification code
MSM0021620828

Reviewer's Report e. 2

Questionnaire for the Reviewer of the Institutional Research Plan (IRP)

Provider's code	MSM
IRP identification code	0021620828
Research plan title	Ecological processes in the evolution of selected model taxa
Applicant [1]	Charles University Prague
Institution [2]	Faculty of Natural Sciences
Principal investigator [3]	Prof. RNDr. Petr Volf, CSc

Please kindly complete this box:

Name, Titles	
Institution	
Address	
ZIP/Postal Code	
Phone	
FAX	
E-mail	
Your area of expertise	

Reviewer's Statement

I declare that

a) I will not inform the applicant about the course of evaluation of the research plan proposal,
b) I will not inform any other persons either about the research plan proposal or about the results of its evaluation,
c) I have not copied any of the data submitted for reviewing of the research plan proposal,
d) the materials used for reviewing of the research plan proposal will either be destroyed by myself or I will return them along with the reviewer's evaluation to the provider.

I do also declare that

a) I am not prejudiced towards either the applicant or the research plan proposal,
b) I have applied only objective scientific criteria in this review.

29 July 2004

Date

Reviewer's Signature

[1] Legal name of the applying organisation, legal entity.
[2] Name of the department or applicant's principal organisational unit, which will carry out the research according to the proposal, if different from "applicant". Applies only if more than one proposal of IRP was submitted by the "applicant".
[3] Person in charge, who is responsible, on behalf of the applicant/institution, in scientific and financial matters of IRP.

I. Evaluation of IRP from the Particular Viewpoints

From the characteristics given below, mark kindly always just one statement in each category (by checking the corresponding letter) which is the closest to your opinion on the evaluated IRP. Details to your standpoint shall be explained in the commentary. The commentary, both to the individual criteria and to the overall evaluation in part II, is the necessary component of the reviewer's report.

1.1 Potential Impact of the IRP

Evaluation of significance of the IRP objectives, with respect to the expected contribution to the field, based on paragraphs C1, C2, C5 and C8 of the IRP proposal

A	X	The objectives are laid down clearly and are well defined, they help to create current world trend in the development of the field, they bring new ideas or create new trends, they lay down new interdisciplinary conceptions
B	☐	The objectives are laid down clearly and specifically, they follow up with the long term trends of the field and they develop them further on, they substantially push forward contemporary knowledge
C	☐	The objectives are sufficiently specified, however, they just supplement contemporary knowledge
D	☐	The objectives cover just marginal problems of the field, they are of little importance for future development of the field or they just confirm already known facts
E	☐	The objectives are not defined clearly and/or they are not specific enough, they are not convincing

Commentary:

This project is clearly an interdisciplinary one. Its aim is associating programmes of a set of labs working on evolutionary biology in the same University. It follows and amplifies a previous project which helped to produce interesting scientific results (MSM113100004). The new groups joining the project are important potential contributors for improving the scientific level of the project. Some groups in the project have already reached an international reputation. This kind of project may be very useful for:

a) allowing these leading groups to enlarge their technical and data resources
b) helping other groups in the project to reach an international audience

1.2. Justification of the Objectives and Ability to Achieve Projected Results

Evaluation of the applicant's/institute's preparedness to carry out the IRP

1.2.a. Scientific potential of the applicant/institution

Evaluation of the preconditions for realising IRP with respect to applicant's/ institute's overall R&D concept and the results hitherto achieved

A	X	The applicant/institute occupies prominent position in the field, the results hitherto achieved are on international level, there is a high chance to fully realise the objectives and to achieve anticipated results
B	☐	The applicant/institute is well-established in the field, the results achieved to date are of good quality, though, they may not always reach the highest international level; it is reasonable to expect that the objectives and anticipated results can be achieved
C	☐	The applicant/institute starts to be established in the filed, the results achieved to date are on a good level, though may not be numerous it is a good chance that the institution can carry out the project even though the planned goals are rather ambitious with respect to the results hitherto achieved
D	☐	The applicant/institute is a beginner in the field, the results hitherto achieved are not significant, the objectives and anticipated results could be realized only under certain conditions (to be specified in the commentary)
E	☐	The applicant/institute is not yet established in the field, the results hitherto achieved do not guarantee realisation of the objectives and achieving anticipated results, the planned goals are unrealistic

Commentary:

This project gathers teams with complementary abilities and large and complementary data sets and tools. The experience of the teams allows interesting complementary approaches on different biological models (micro-organisms, plants and invertebrate or vertebrate animals) and different disciplines of ecology (paleo-ecology, genetics, autecology, physiology, etc). On the other hand, the age pyramid of participants is very promising, with numerous young and competent scientists.

Some groups in the project are internationally renowned and may help to raise the entire project a very interesting scientific level. For future developments, more attention could be paid to population dynamics (or epidemiology), population genetics and modelling.

1.2.b. International Co-operation

Relates to paragraphs B4.a. through B4.e. of the IRP proposal

A	☐	Broad and long-lasting co-operation with prominent foreign research sites, regular direct participation in international projects and large participation in joint prestigious publications
B	X	The international co-operation is significant but rather on the level of individual contacts, numerous joint results (publications) were created
C	☐	Some contacts with foreign research sites have already been established, there is an effort to formulate joint projects
D	☐	More significant contacts with foreign research sites dealing with the similar problems have not been established yet, the existing contacts are rather incidental and short-term
E	☐	Existing international co-operation does not relate to IRP or it does in a marginal way only

Commentary:

The applicant teams have already developed different levels of international collaborations. For some of them, important scientific results have been published through such collaborations. However, all in all the international positioning is poorly developed in the project. It could be improved in order to: (i) facilitate international insertion of the teams having less international collaboration and (ii) develop the University as an international pole of competence for evolutionary biology. Such an ambition is suggested in C8 part but could have been a lead trait of the project.

1.3. Practicability of the IRP

Evaluation of preconditions to realise the objectives of IRP from the viewpoints of research strategies and methods, the quality of the research team, the infrastructure, instrumentation and equipment, adequacy of financial requirements and the time schedule

1.3.a. The Strategy and Methods of IRP Realisation

Relates to paragraph C6 in relation to paragraphs C5 and C8 of the IRP proposal

A	☐	The strategy, methodology and methods of realisation bring new approaches or create new trends in the filed, the success in achieving of the anticipated goals is very realistic
B	X	The strategy, methodology and procedures of solving scientific problems are those commonly used in the field, the realisation of the projected goals is realistic
C	☐	The strategy, methodology and procedures of solving scientific problems are commonly used in the field, though some of them may be out-of-date, it is still possible to realise anticipated goals
D	☐	The strategy, methodology and procedures of solving scientific problems do not enable realisation of the planned goals in full extent
E	☐	The strategy and methodology of solving scientific problems are not sufficiently and clearly defined

Commentary:

The project is justified by the opportunity of using new and common tools (biomolecular techniques and large databases). This is important support for an IRP, gathering teams that work on different biological models. The aim is to develop the interfaces between the disciplines. However, the current presentation of the program is often more descriptive than deductive. It could be useful and possible to increase the ambition level of this project: theoretical bases of evolutionary biology are well developed for most of the subjects but could be expanded to provide a common framework to the different teams. For example, working on micro-organisms, plants and invertebrate or vertebrate animals may allow to differentiate the main evolutionary processes they follow. This is an up to date and important debate. Concepts of community ecology, population interactions and population autecology could be more precisely differentiated and related to the different parts of the project. Several parts of the project are related to specialization or plasticity aspects, as related to speciation processes vs. intraspecific variability. They could gain from using the large body of theoretical work recently published on this subject. Several questions deal with spatial (dispersal, invasion) or temporal (paleoevolution vs. contemporaneous responses to selective pressures) scales. A common conceptual approach could help the different groups to organize the program and choose, for the different biological models, the appropriate families of traits to be studied, as related to peculiarities of these models, in order to gather basic biological information that is lacking. A more conceptual approach could also help to better relate population characteristics to genetic and physiological or behavioural mechanisms and biodiversity patterns to ecological processes. Modelling could help to formalize hypotheses to be tested and to build the common framework. As the University has large and valuable collections and datasets at its disposal, the meta-analysis approach that has already been engaged in could be developed.

1.3.b. Research Team

Evaluation of adequacy of research capacity as well as the qualification and age structure of the research staff, especially, from the viewpoint of presumed long-term perspective of the team to carry out the IRP – points D1-D4 of the IRP proposal

A	X	There is a number of outstanding scientific personages in the research team, the present creative capacity as well as the long-term perspective of the research team, even beyond the IRP duration, are very good
B	☐	There are leading scientific personages in the research team, the capacity of the team is sufficient and it has perspective for the duration of IRP
C	☐	There are experienced scientists among the members of the research team, the present research capacity of the team is sufficient but a long-term perspective of the team is not ensured
D	☐	The team has already some previous experience, further professional growth of the leading scientists can be expected, however, the creative capacity of the team is not sufficient with respect to the demands of the IRP goals
E	☐	The qualification structure and the research capacity of the team do not correspond with envisaged activities and IRP objectives; outstanding scientific personalities are not present or their working load dedicated to IRP is insufficient; the age and qualification structure of the team does not guarantee its long-term stability and further development

Commentary:

The scientific level of the participants is heterogeneous. Some teams have reached an international leader position. In particular, the new teams joining the project have significantly improved the global scientific level. Some other groups have disseminated their results locally. This heterogeneity is illustrated by journals in which results are published. However this variability is an opportunity rather than a handicap for a project based on interfaces between disciplines: it helps to define one of the main objectives of the project because leader teams may help the others to reach an international level. This situation allows the participant to plan a dynamic scientific situation for the University to be acknowledged as a competence pole in evolutionary biology.

1.3.c. Infrastructure

Evaluation of material preconditions for realisation of the IRP, such as the facilities, instrumentation and equipment presently available as well as those to be acquired – points E1 and E2 of the IRP proposal

A	X	Facilities, instrumentation and equipment are on high level and they are being upgraded systematically; the financial support planned within the frame of the IRP will help to further upgrade or at least maintain the high technical standard of the research site
B	☐	Facilities, instrumentation and equipment are on good level and they suit well to the current needs of the research site, the financial support planned within the frame of the IRP will help to upgrade the equipment of the research site to level with the leading research institutions in the field
C	☐	Facilities, instrumentation and equipment are on an average level, the technical improvement of instrumentation and/or facilities made possible by financial support provided within the frame of the IRP will enable the realization of IRP
D	☐	Facilities, instrumentation and equipment are on low level, though the planned financial support provided within the frame of the IRP will help to improve the present state, the volume of necessary financial support to achieve this is too high with respect to significance and practicability of IRP
E	☐	Facilities, instrumentation and equipment are poor and insufficient to carry out the IRP and it is very unlikely that further invested financial support could be used efficiently

Commentary:

Geographical grouping of the teams facilitates sharing of tools and collaborations. Historical wealth of the Charles University, in term of collections, databases and basic biological knowledge is a very solid basis for such a project. Another important advantage is the previous project (MSM113100004) that prepared the current program and already proved the interest and importance of the present one and its potential for continuity. Methodological platforms already exist and will be developed, insuring efficient technical support for the scientific projects.

1.3.d. Time Schedule of Research Plan

Evaluation of adequacy of time planning and milestones set up in point C7 of IRP proposal

A	☐	The time planning of IRP realisation is well designed with respect to the scope and significance of the project goals; the milestones for each project stage are well reasoned
B	X	The time plan of IRP is designed adequately; the successive stages of the plan are realistic
C	☐	The total time span of IRP realisation is adequate to the project goals; the plan specification into successive stages is not realistic
D	☐	The proposed time schedule does not correspond with the objectives and the effort needed to achieve anticipated results

Commentary:

As usual, the time schedule of such a large project is rather approximate. However, here again, the precision of schedules associated with different teams is heterogeneous as is the level of experience of the teams. The interaction of the groups will help the less experienced ones to improve their capacity for planning questions and experiments.

1.3.e. Financial Support (points F1 a F2 of the IRP proposal)

A	X	Financial support is adequate and well justified from the viewpoint of its amount, itemized structure and time layout; it provides a reasonable basis for economic backup of the IRP realization
B	☐	Total planned financial support is adequate and well reasoned from the viewpoint of total amount and its itemized breakdown, but the time allocation of expenses in individual years is not supported by the demands of IRP realization in corresponding stages
C	☐	The plan of total financial support is estimated adequately; the itemized breakdown of planned expenses does not correspond reasonably with the material and personal demands of the anticipated goals
D	☐	Plan of financial support is overvalued or some items are justified insufficiently, with respect to the significance of IRP goals and strategies used in realisation of IRP (the items in question shall be specified in the commentary)
E	☐	Plan of financial support is unreasoned, it is overvalued as a total or insufficient for the realisation of IRP (the items in question shall be specified in the commentary)

Commentary:

II. Overall Evaluation of the IRP Proposal

The following paragraphs provide predefined characteristics describing the overall quality of IRP. Please fill into the little frame bellow just **one** of the letters **A** to **E**, corresponding to the characteristic which is the closest to your opinion on the IRP evaluated. If you wish, give a more detailed standpoint in a commentary (part III.).

A

A Outstanding

The concept and the scope of research fully correspond to and/or co-determine recent trends in the development of the scientific discipline. The institute maintains very good and active contacts with a number of leading research institutions worldwide and actively participates in international joint research projects. The research staff comprising a sufficient number of leading scientific personages, as well as the results achieved so far, guarantee a highly significant contribution of the institute to solution of scientific problems of the field in the upcoming years. The issues of scientific strategy and future development of the institute are well addressed. Preconditions for high-quality realisation of the IRP are undoubted.

B Very good

The concept and the scope of research respect the long-term trends in the field. The institute maintains sufficiently frequent contacts with foreign research institutions. The research staff, involving several leading scientific personages, and the results achieved so far guarantee a significant contribution of the institute to solving scientific problems of the field in the upcoming years. The formulation of the plan provides sufficient and complete information on the future development of the Institute. Good realisation of the research plan is very probable.

C Good

The concept and specification of the scope of research address the fundamental problems solved in the field. The institute maintains certain contacts with foreign research institutions and/or has a capacity to establish new ones. The research staff and the results currently achieved give good promise that the institute could contribute to solving scientific problems of the field. The formulation of the plan provides rather limited information on the future development of the institute. Realisation of the IRP in its full scope does not seem to be fully guaranteed.

D Satisfactory (with stipulation)

The concept and specification of the scope of research follow known trends in the field. The Institute maintains only scarce contacts with foreign research institutions. The research team is short in leading scientific personages. The results achieved so far indicate a chance to improve the research potential in the years to come but the issues of future development of the Institute are not adequately addressed in the IRP. Successful realisation of the IRP in full extent of the submitted project is unlikely.

E Unacceptable

The IRP suffers from one or more following drawbacks:

- the institute's personnel lacks creative scientific personages,
- the results of the research staff so far achieved have received a very low or no response (neither in scientific community nor in the area of practical applications),
- the formulation of the research plan is unclear, not scientifically reasoned and does not provide sufficient information substantial for evaluating the feasibility of the plan.

Commentary – Textual Part of the Evaluation of IRP

Here you can give your opinion on the further aspect of the IRP proposal, which are not included of part 1 of the reviewer's report, or specify more precisely your opinion in the overall evaluation.

This project is globally very interesting. Despite the diversity of the biological models studied and some weakness to be improved in conceptual approaches, it will help to coordinate the numerous teams of the Charles University working on evolutionary ecology and to develop this University as an international pole of competence in this discipline. The fact that internationally renowned groups agree to share a project with other teams having produced more basic results and the youth of most of the applicants are additional guarantees of success.