CHEMISTRY RESEARCH FUNDING SCENE IN FINLAND

OVERVIEW

Finnish science policy
Finnish science policy is designed to ensure positive development in science and scholarship. The aim is to raise the level, ensure the comprehensiveness, enhance the social impact and promote the international penetration of Finnish research.

The key aims and priorities in Finnish science policy

- To effect a substantial increase in research funding and maintain the GDP share of R&D at a world top level. The additional funding will be allocated to strengthen basic research, researcher training and research infrastructure, to promote research careers and to boost social innovation.
- To step up the development of centers of excellence;
- To promote national, European and international networking in research: to make use of EU research programmes, other international research schemes and bilateral arrangements;
- To support research especially in fields relevant to knowledge-intensive industries and services, such as biotechnology;
- To intensify cooperation between the users of the research system and research findings and the diffusion of research findings; to promote the commercialisation of research findings and the creation of new business and the utilisation of research findings and technology;
- To make input into impact analysis and the evaluation of the state and performance of the research system.

The Science and Technology Policy Council of Finland, chaired by the Prime Minister, advises the government and its ministries in questions relating to science and technology. The Council is responsible for the strategic development and coordination of Finnish science and technology policy as well as of the national innovation system as a whole. The membership consists of seven other Ministers and ten other members well versed in science and technology.

Funding figures
Finnish research and development expenditure was 4 800 million euros in the year 2003. 71% of this was covered by business enterprises, 18% by universities and 11% by other public sector. Government (state) research expenditure was 1 540 million euros in the year 2004. 30% of this was allocated to universities and university hospitals, 28% to Tekes, 16% to state research institutes, 14% to Academy of Finland, and 12% to others (e.g. ministries' unbound research funding, polytechnics, Sitra etc).

Public research funding
The main ministries responsible for research policy are the Ministry of Education, which is responsible for science policy, and the Ministry of Trade and Industry, which is responsible for technology policy. These ministries allocate almost 80% of public research funding. Science and Technology Policy Council is the main advisory body to the Finnish government and its ministries. The Academy of Finland and the National Technology Agency (Tekes) are the main public research funding organisations. Research in the public sector is mainly performed in universities (20) and

state research institutes (19). State research institutes are allocated their basic funding through the budget of the Ministry in which sector the institute is operating.

The Ministry of Education promotes the development of basic research and its infrastructure (e.g. equipment, data network, scientific computing and libraries). In the administrative field of the Ministry of Education are all the universities and the Academy of Finland, which is the Finnish research council organisation. Universities perform about 20% of Finnish research and development. The Academy of Finland is the central financing and planning body in basic research. The total research funding of Academy was 184 million euros in the year 2003. The majority of Academy funding is channelled to basic research conducted in universities. The 29 polytechnics also carry out R&D relevant to their teaching and to the world of work.

Ministry of Trade and Industry allocates funding to National Technology Agency Tekes that is the main public funding organisation for research and development in Finland. Tekes has a budget of 400 million euros, a source of funding for 2000 projects annually. Tekes offers research and development funding both to companies (grants, capital loans and industrial loans) and to universities and research institutes (grants). University and research institute projects are usually conducted in cooperation with companies.

Tekes especially promotes innovative, risk-intensive projects. The primary objective of Tekes is to promote the competitiveness of Finnish industry and the service sector by assisting in the creation of world-class technology and technological know-how. Specifically, Tekes' activities aim to diversify production structures, increase production and exports, and create a foundation for employment and social wellbeing.

Academy of Finland and Tekes co-operate e.g. in their common research and technology programmes, and in the Centre of Excellence programmes.

Funding for chemistry research

National Technology Agency (Tekes) and Academy of Finland are the most important chemistry research financiers in the public sector. Academy of Finland funds mostly basic chemistry research and Tekes applied research. The Academy of Finland allocated 5.5 million euros to chemistry research in the year 2003 (3% of the Academy's total research funding). Tekes funds research of chemical technology (including pulp and paper, and material technology) with around 10 million euros per year (3% of the Tekes total funding). In addition, Tekes funds industrial development projects.

At universities the chemistry research expenditure was about 33 million euros in the year 2002. Roughly half of this was from universities basic budget funding, and the other half came from external funding (most important funding sources Academy of Finland, Tekes and industry).

The chemical industry's total expenditure for research and development was 286 million euros in the year 2003.

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The Academy of Finland is an expert organisation in research funding. Its mission is to promote high-quality scientific research by means of long-term funding based on scientific quality and by means of reliable evaluation, science policy expertise and extensive international cooperation.

The Academy's organisation consists of the Academy Board, four Research Councils and the Administrative Office. The Councils are: Research Council for Biosciences and Environment; for Culture and Society; for Health; and for Natural Sciences and Engineering. The Councils as well as the Academy Board are appointed by the Council of State for a three-year term. The Academy operates under the administration of the Ministry of Education.

Funding figures

The total research funding of Academy of Finland (AKA) was 184 million euros in the year 2003. The funding allocated to chemistry research was 5.5 million euros. Around one fourth of the funded chemistry projects were interdisciplinary in the years 2002 and 2003. In these projects chemistry was combined with pharmacy, biochemistry, physics, and process and materials technology.

Position, aims, strategies

In Finland, National Technology Agency (Tekes) and Academy of Finland are the most important chemistry research financiers in the public sector. AKA funds mostly basic chemistry research and Tekes strategic basic research and applied research. Tekes funds research of chemical technology (including pulp and paper, and material technology) with around 10 million euros per year. AKA and Tekes co-operate e.g. in their common research and technology programmes, and in the Centre of Excellence programmes.

The Academy of Finland funds all disciplines. The AKA operates within the administrative sector of the Ministry of Education and receives its funds from the State budget. The AKA negotiates every year with the Ministry of Education an agreement that defines the main science policy lines and the Academy’s goals for the next year. The AKA also has to pay attention to the definitions of policy prepared by the Science and Technology Policy Council of Finland. This Council, chaired by the Prime Minister, advises the government and its ministries in questions relating to science and technology. Both these documents are on general level and cover only a part of the activities of the Academy. AKA can decide independently on its funding principles, instruments, research programmes and allocation of funding to Research Councils.

The Academy has prepared many strategic guidelines for its operations, e.g. Academy of Finland Strategy 2003, Academy of Finland International Strategy 2002, and Research Programme Strategy 2003-2007, National Strategy for Centres of Excellence in Research 1997. Most of these can be found www.aka.fi/eng -> Publications -> Key publications. Depending on the strategy, different ministries, National Technology Agency, industry, and Science and Technology Policy Council may be involved in the preparation of strategies.

Most of the research funding is allocated through open competition i.e. researchers may propose a research plan on any topic and the scientifically best ones are funded. Around 20% of the funding is allocated through thematic research programmes. Also researchers can make initiatives for new research programmes. In addition, the Academy’s four research councils consist of researchers.

There are no specific priorities and strategies for chemistry funding. General strategies of AKA are following: developing high-quality research environments; improving the career opportunities of professional researchers, and women and young researchers in particular; and making the best possible use of global opportunities for cooperation in all areas of research, research funding and science policy. Published in 2000, the Academy's science policy agenda identified eight main points that will receive priority attention: supporting the development of creative research environments, securing a sufficient supply of professional researchers, deepening funding and research cooperation, utilising the new opportunities for European research cooperation, strengthening the globalisation and international cooperation of Finnish research, placing accent on the quality and effectiveness of research, emphasising research ethics and good scientific practice, and increasing awareness of scientific research and highlighting its significance.

Decision making bodies

The highest executive organ of the Academy is its Board, whose seven members are responsible for the Academy's science policy line and the allocation of research appropriations to research councils. The Board is chaired by the President of the Academy of Finland. Other members are the four chairs of the research councils, and two other members (the other one currently representing industry) nominated by the Government.

AKA has four research councils, which make all funding decisions within their respective scopes of expertise. The four research councils are the Research Council for Biosciences and Environment, the Research Council for Culture and Society, the Research Council for Natural Sciences and Engineering, and the Research Council for Health. Each research council has a chair and ten members. These are positions of trusts that the members are involved part-time only. Members are usually professors or other highly distinguished scientists. There is one chemist in the Research Council for Natural Sciences and Engineering. The Academy's Board may set up a subcommittee to make decisions on matters pertaining to the scope of two or more research councils.

The most important strategic decisions are made by the Board and individual funding decisions are made by research councils. The research councils also propose new research programmes to the Board. The President, Board and research councils are appointed for a three-year term by the Government based on the proposal of Ministry of Education. These appointments are made with a specific view to ensuring that a diverse and high level of scientific expertise are represented.

Funding instruments

Research appropriations for research projects are an important form of Academy funding that is designed to promote diversity and innovation in research. The aim is to attain as high a scientific standard of work as possible. Teams including young and senior researchers, as well as researchers working on their doctoral dissertations, are given preference. Research projects are in general required to provide researcher training.

Research programmes may by motivated by concerns arising from science and/or society in general. Initiatives for a research programme may be prompted by internal development needs within a research field or by needs to support a new, emerging field. An initiative may also arise from an issue that is considered to be of societal import. Objectives of research programmes include also promotion of multidisciplinary, internationalisation and networking of researchers. In general, other Finnish and foreign funding bodies are involved. Other researcher financiers and researchers can suggest research programmes to AKA.

The Centre of Excellence programme aims at promoting the development of creative research environments and researcher training. All Centres of Excellence represent the cutting edge research of their field. A unit selected as a Centre of Excellence is a research unit and researcher training unit which comprises one or several high-standard research teams with shared, clearly defined research goals, and which is at, or has good potential for reaching the international forefront in its field. The National Strategy for Centres of Excellence in Research has been jointly developed with the National Technology Agency (Tekes), which also contributes to the funding of Centre of Excellence programmes. Prerequisite for funding is that the host institutes have also to support the Centres of Excellence.

The Academy's research posts are Academy Professor and Academy Research Fellow. Researchers holding these posts have a contract of employment with the Academy of Finland, but they work in their own organisations. Posts are filled for a maximum of five years at a time. Successful applicants to the post of Academy Research Fellow are expected to have published and engaged in scientific work after earning their doctorate. The post is intended for independent scientific work according to a research plan.

In order to be considered for appointment to an Academy professorship, applicants shall have demonstrated their skills and competencies in research and be regarded as contributing to the progress of research within their field. Academy Professors supervise the research of their team and provide guidance to junior scientists.

Appropriations for hiring postdoctoral researchers. The purpose is to advance the professional competence and independence of young researchers who have recently earned their doctorate. The Academy is phasing in a system of three-year funding for all postdoctoral researchers. Applications are invited from individual researchers, research teams, universities or other public research organisations cooperating with a business company or public administration.

Appropriations for hiring senior scientists. These grants are intended for professors or other distinguished researchers working full-time in research in Finland or abroad generally one year.

Other funding instruments are e.g. subsidy to graduate schools and national researcher training courses, researcher training and research abroad, research exchange grants, doctoral studies for employed persons, subsidy for a researcher's return to Finland, and start-up money for young researchers. In addition membership fees for international organisations are paid by the AKA.

Most of the Academy funding is project-based. In the year 2003, the largest funding categories were following: research projects (including research expenses for personal grant holders) 36% of the total funding, research programmes 23%, post-doctoral positions 10%, Academy Research Fellow posts 8.4%, membership fees for international organisations 6%, senior scientist positions 4%, Academy Professorships 2.6%. Concerning chemistry funding the largest categories were: research projects (including research expenses for personal grant holders) 48%, post-doctoral positions 19%, Academy Research Fellow posts 16%, Academy Professorships 8.5%.

There will be changes in Academy funding instruments and times for calls in the year 2006.

Research projects (general call for research appropriations)

Funding principles

In the year 2003, the average size of the funded chemistry projects was 30 000 – 50 000 euros per year. The AKA aims at funding period of 4 years. Also 3-year projects and sometimes 2-year projects are funded.

Additional funding is not generally awarded to a project mid-term. The funding period may be extended only for a special reason, such as maternity or parental leave of a researcher working on the project, or military or non-military service, or a chronic disease, in case that no substitute for the researcher has been hired. The funding period cannot be extended on the grounds that the money has not been used. When the research project has finished, the project leader can make a new application that is processed according the usual rules.

Salaries and fees, social charges, personal grants, travel expenses, costs of equipment, expenses incurred from the invitation of a foreign researcher, and other direct expenses caused by the implementation of the research project can be covered with AKA funding. In practice, funding is granted mostly to salaries, but the salaries of permanent staff cannot be paid. Value-added tax is paid from the awarded subsidy. With the exception of the overheads, Academy funding must not be used for indirect costs of the research.

The Academy finances research projects only if the site of the research guarantees basic requisites for the implementation of the project. Funding covers overheads that it is 12.5 % of the funding. The site of the research (university or research institute) can decide if it uses the overheads share (partly or all of it) or not. The overheads share covers expenses for conventional basic requisites, incurred from the research work, such as the costs of premises, equipment, laboratory, telephone, mailing, copying, library, remote library and data processing.

Research funding may only be used for the purpose specified in the funding decision i.e. for the implementation of the research plan. However, the cost specification presented in the funding decision is not binding, i.e. the researcher can use the money for other costs than originally planned but the money has to be used for the implementation of the research plan.

Applications are invited from professors and researchers with a PhD. Applicant's salary is paid only in special cases. The applicant needs a signature from his/her site of research, i.e. he or she needs to have a background organisation, usually an university or a research institute, that provides the work premises and equipment. The research funding is allocated to the researcher's background organisation.

It is possible to grant funding to a foreigner working in Finland but the Research Council usually wants to be sure that the foreigner is more or less permanently in Finland. Granting funding to a foreign institute is possible but not a usual practice. The transfer of funding to a foreign institute e.g. requires agreements between AKA and the foreign institute. Further, the Research Council has so far preferred not to fund foreigners in foreign institutes because the research funds should benefit Finland and Finnish research.

For changing the site of the research within Finland, a written application must be submitted to the Academy and all the parties should agree on the transfer. It is also possible to transfer the granted funding to foreign institute but it is not a usual practice.

Application processing

There is a special call once a year. The deadline is in mid May and the call is opened one month earlier. It takes about six months from application to decision.

Following documents should be included in the application: application form, research plan with a separate abstract, curriculum vitae and list of publications of the person in charge of the research and of the researchers for whom salary funding is applied, abstracts of study plans of persons pursuing postgraduate studies, a separate research report form on each Academy funded project led by the person in charge of the research, statement of an ethical committee or experimental-animal committee regarding experiments to be carried out on human subjects or animals if there is reason for such a statement, and list of the appendices.

There is an application form in Finnish, in Swedish and in English. Instructions to prepare the proposal are in the end of the application form. Since applications are increasingly reviewed by foreign experts, applicants are requested to submit their applications, including all appendices, in the English language. AKA has an electronic service for submitting a proposal. For the time being, the application can be submitted also as a hardcopy.

Applications received by the Academy are registered and allocated to the appropriate research councils for processing. Administrators check that all the required attachments are included and search for reviewers and plan the review process.

Evaluation of the proposals

The Academy maintains a list of the outside experts who are regularly asked to evaluate applications. This list is called the expert circle. Reviewers for the expert circle are suggested by research council members, any other researchers and mostly by administrators. Experts outside the circle are also used. Concerning an individual call, administrators choose the reviewers and the Research Council meeting accepts them. All the scientists are welcome to propose reviewers that can be used in future calls but the applicant cannot propose a reviewer for his/her own application

Reviewers usually need to have a doctoral degree. They are distinguished researchers in their own fields of expertise. In the year 2003, 42 % of the chemistry panel members (3 out of seven) were international. In the year 2004, half of the chemistry panel members were international.

In 2004, individual evaluators are paid 55 euros for each statement. Panel members are paid 18 euros for each draft statement and 280 euros for each panel meeting day, the chair of the panel is paid 370 euros for each panel meeting day.

There is a specific evaluation form and instructions for reviewers in English, Finnish and Swedish. The criteria that the reviewers are asked to use are following: scientific quality and innovativeness of the research plan, feasibility of the research plan, competence and expertise of the research team, collaboration networks of the research team and their significance to the project, the significance of the project to researcher training and to the development of the research environment. They also rate the application in a scale 1-5.

Usually all the chemistry applications are evaluated by expert panels. In principle, statements from individual experts are used if the number of applications does not warrant the appointment of a panel. When the expertise of the review panel does not cover a specific proposal (e.g. multidisciplinary proposal), an extra evaluation statement outside the panel can be asked.

Individual reviewers

When the reviewer has promised to evaluate the proposal(s), the reviewer is sent the proposal(s), evaluation instructions, evaluation form, reviewer's declaration, and a personal data sheet (by mail). Reviewer sends back to the Academy the signed evaluation statement(s), signed reviewer's declaration and personal data sheet. In a reviewer's declaration the reviewer affirms that (s)he has acquainted her/himself with the "Instructions for evaluating research proposals" and will abide by them. Further, (s)he affirms that (s)he has no conflict of interest in the proposals. Reviewers are given about one month for the evaluation. One reviewer can review from 1 up to 10 proposals. At least two evaluations are given for one proposal.

Review panel

Each proposal is sent to at least two panel members who are asked to prepare preliminary evaluation statements. They are given about one month time to read the proposals and prepare the draft statements. All preliminary evaluation statements and the abstracts of all proposals are sent to the panel members before the panel meeting. The panel meeting usually takes one working-day. Panel meets at the Academy of Finland, Helsinki. The panel prepares one joint evaluation statement for each proposal, based on the panel discussions and the preliminary evaluations. Administrators assist the panel in the preparation of the final evaluation. Panel members are asked to sign the above described reviewer's declaration. If the panel member has a conflict of interest in a proposal (s)he leaves the meeting while that proposal is processed.

In some cases (particularly multidisciplinary proposals), a proposal may be sent to a special expert who is not a member of the panel but who can provide additional knowledge pertaining to a particular field.

In the year 2004, AKA had two panels in chemistry. The other one consisted of organic, bio-organic and polymer chemistry, and the other one of inorganic, physical and analytical chemistry. In both panels were 34 proposals and 4 experts. In the years 2001- 2003, there were 52-71 proposals in chemistry in each year, and the chemistry panel had 7 members each year.

Feedback to applicant

Applicants are sent the written decision and full evaluation statement concerning their proposal. If funding has been allocated the applicant will receive with the letter 'General conditions of funding' in which basic rules concerning the use of funds and reporting are described.

The applicant can see the names of the panel members on the evaluation statement form. However, applicants are not told who of the panel members have written the draft statements. The individual evaluations are sent without the reviewer's name, but on request, the applicant is entitled to know the evaluator's name. No other persons can receive the evaluations or the name of the evaluators. Applicants are not given the chance to improve their proposal based on the reviews or comment the reviews. They can only apply next year again.

Decision-making

The applications and the expert statements obtained are processed in discipline-specific drafting groups that consist of the Research Council members. In the same drafting group with chemistry there are process and materials technology, mechanical engineering and manufacturing technology, industrial design, industrial engineering and management. Each proposal is sent to two Research Council members who should familiarize themselves with the proposal. List of all applications, all abstracts and all evaluation statements are sent to all Research Council members.

The drafting groups submit to the executive group a proposal on the projects to be funded. An executive group made up of the chair of the research Council and the three chairs of drafting groups prepares together with the administrators a proposal on the projects to be funded. The final decisions are made by the Research Council on the basis of proposals prepared by the executive group. Decisions in favour of funding will usually be posted on the Academy's website no later than the next working day (in Finnish only). Each applicant will receive notification of the council's decision in writing.

Scientific quality is the most important decision-making criterion. When funding decisions are made, attention is also paid to other Academy science policy objectives, such as the goal of improving the position of young researchers and women researchers, developing creative research environments and supporting the internationalisation of research. Further, the Academy funding that the applicant already has may influence on the decision.

Usually the budgets are cut. The budgets are cut because they are unrealistic. Further, competition of funding is very hard and research council wants to fund several projects. In the years 2002 and 2003, the budget cuts in chemistry projects were 3-73% of the applied budget. If the budget is cut there are no negotiations with the applicant.

When the Research Council makes the funding decisions on individual projects, it usually likes to fund the salary of PhD student(s) or/and post-doc(s) and allocate some money for travel and other costs. Only binding sums in the funding decision is the total sum and the annual instalment (within 15% frame).

In the years 2002 and 2003 about 21-24% of the chemistry proposals were funded. In these years, 12.5-15% of the total applied sum was granted.

Almost all the proposals that have got the best marks in the scientific evaluation are funded. Sometimes a highly rated proposal is not funded if the same applicant has several proposals in the same call and another one of them is funded, or the applicant already has a lot of Academy funding. Sometimes there also are so many applications that get the best marks that the budget does not allow to fund them all.

Follow-up of projects

Scientific progress of the funded projects is not actively followed up but the researchers are given freedom to do research. The accounting offices have to report on the use of the funds, indicating the income and expenses of the activity funded by the Academy, cumulatively on a quarterly basis. The person-years are to be reported annually.

The annual funding instalments specified in Academy decision must be complied with so that the maximum deviation is no more than +/-15%. If the responsible leader wants to change the distribution of annual instalments this can be done within 4 weeks from the decision. If the project's annual expenditure is more or less than 15% of the specified annual instalment, the Academy sends the responsible leader a letter asking clarification.

The Academy can interrupt or terminate funding or order that the funding has to be recovered, if the subsidy has been used for a purpose substantially other than the purpose for which it was granted, or the regulations of the use of the funding have been substantially violated, or if wrong information has been presented or information has been concealed with the purpose of receiving the funding. Terminating or recovering of funding, however, happens very seldom. Misuse of the funds can appear from the final scientific reports. However, the final reports are not screened very carefully.

The responsible project leader has to submit a final report. There is a specific report form and instructions for reporting (in English, Finnish, Swedish). The aim of the Academy is that all the scientific reports would be submitted through the electronic service when it would be easy to calculate some key figures from the reports. At the moment the Research Council for Natural Sciences and Engineering gathers information from the reports into a database. Database is used to calculate key figures and to assess the impact of the Academy funding.

Administrators check that the reports are sufficient. If not, they ask for extra clarifications. Research Council accepts the final reports in the meeting (without seeing or reading them).

When the researcher applies funds from Academy again, (s)he is requested to attach the reports of ongoing and recently ended projects. The reviewers as well as research council members are sent these reports. The evaluators then decide how the progress influences on the evaluation, and council members decide how the progress influences on the funding decision.

Research programmes

A research programme consists of individual research projects within a special topic or theme. The application processing and evaluation are very similar to the research project funding described above. Thus in following section only specific features of research programme funding are described. Academy launches 2-4 research programmes per year.

Application processing

The funding period of a research programme is four years. The amount of funding to each individual research project within the programme varies between programmes. In some programmes the average funding is around 300 000 euros for 4-year period, in others around 200 000 euros or less.

There is a special call for each research programme. The call is usually in connection with other calls of Academy which currently are four times per year. The call is opened one month before the deadline of call. The researchers are usually asked at first to submit the plans of intents (outline proposals). The applicants chosen to the 2nd stage are invited to send the full applications. They are given about 2 months to write the full application.

It takes about 2 months from the outline application to the decision which ones will be chosen for the second stage, and about 4-5 months from this to the final decision. So, it takes roughly 6 months from the outline application to the final decision.

Following documents are required within an outline proposal: an application form; a research plan of no more than three (or five) pages; the CV(s) of the project's principal researcher(s) of no more than two pages in length; and a list of no more than 20 scientific publications most directly relevant to the research project by the principal researcher or other senior researchers involved in the project. For the full proposal, the applicant needs to submit the same documents as in the above described call for research projects.

AKA has only one general application form that is used both for outline and full proposals. In case of a consortium, the research plan should include a common part describing the whole consortium as well as a separate part describing the contribution of each component project. Each component project shall complete its own application form, but only one research plan shall be attached to the application. There are instructions to write both the outline and full proposal (at least in English and Finnish).

Evaluation of the proposals

The programme steering group proposes to the sub committee the applications to be selected to the 2nd stage and the sub committee takes the decision. At this stage the scientific peer review is not usually used but sometimes the second opinion is asked. The steering group consists of the representatives of the Research Councils involved in the programme, the Board of Academy, other financiers and end-users. The sub committee is nominated by the Board of Academy and consists of representatives of the Research Councils involved in the programme.

The applicants chosen to the 2nd stage are invited to send the full applications. These full proposals are peer reviewed. Administrators together with the programme steering committee choose the reviewers and they are officially accepted in the sub committee meeting. Almost all the reviewers are international. The evaluation criteria are the same as for individual research projects (described above). In addition the reviewers are asked to evaluate the relevance of the project to the research programme. There is an evaluation form and instructions for reviewers in English and Finnish.

Usually all the research programme applications are evaluated by expert panels. When the expertise of the review panel does not cover a specific proposal (e.g. multidisciplinary proposal), an extra evaluation statement outside the panel can be asked.

In most research programmes, all the proposals are evaluated in one panel. There might be around 40 applications and 5-7 members in the panel. One panel member reads around 10-15 applications. If the programme covers many disciplines, there can be several review panels. In some cases the administrators write up the final statements after the panel meeting based on the preliminary statements and the discussions in the panel meeting. Sometimes the final evaluation statements are written during the panel meeting.

Decision-making

The sub committee decides on the applications to the 2nd stage and on the funding of the full proposals based on the recommendation of the programme steering group. If only one of the four research councils of the Academy is involved in the programme, the research council in concern decides on funding.

The most important decision making criteria are the scientific quality and how the project fits in the themes of the programme. As well, the research programme is intended to have balanced structure and so the main themes and issues should be covered. Attention is also paid to Academy science policy objectives.

In the years 2000-2002 about 19-26% of the outline proposals and 44-40% of the full proposals of all research programmes were funded. In the years 2000-2002 about 12-16 % of the total sum applied in the outline proposals was granted, and around one third of the total sum applied in full proposals.

Follow-up of projects

A follow-up and evaluation plan is drawn up for every research programme by the steering group and the coordinator. Scientific advisory boards may be appointed to support the programme steering group and the coordinator and to help them with developing the contents of the programme and with making sure it produces added value.

The projects report on their progress in the seminars arranged by the programme coordinator. The coordinator may also visit the projects and follow their progress. An interim evaluation can be conducted if it is necessary to obtain information on how the programme is progressing for instance for purposes of redirecting or complementing the programme or for purposes of planning the second stage.

After the funding period the whole research programme is evaluated by a review panel composed of foreign and domestic experts. The review panel writes an evaluation report. This evaluation provides information on how the objectives of the programme were attained, on its success in generating new knowledge and on the impacts and added value it produced. The main focus is on the performance of the programme as a whole, but evaluations shall also be carried out at the level of individual thematic areas and projects.

The material provided for the final evaluation includes e.g. short scientific reports and self-evaluations of the individual projects. The project leaders are given detailed instructions to write the scientific report and usually they are provided a specific form for the self-evaluation. In addition, the project leader usually needs to report according to Academy general reporting rules (a specific report form with detailed instructions).

An evaluation may involve components that are implemented at different points of time (e.g. impact assessment). In jointly funded research programmes the different interests of the funding bodies are reflected in their different expectations with regard to the evaluation and its use value. The suggestions of the evaluation reports are used for improving the research areas in concern as well as for improving the research programme funding instrument.

Legal and administrative considerations

Granting funding abroad. There are no legal obstacles for AKA to grant funding to foreign institutes or foreign persons as long as granting the money abroad benefits Finnish research. When granting funding to foreign institutes, AKA needs to enter into an agreement on the remittance of funding, inspections, returning and recovery of funding with the foreign recipient.

Conflict of interest. The Administrative Procedure Act contains regulations on conflict of interest. It lays down the general principle that an official who is disqualified shall not participate in the consideration of a matter or be present during such consideration. This rule is applied not only to making the decision itself, but also to the presentation and preparation of a matter (requesting statements, hearing a party, obtaining information). Reviewers that AKA uses are required to declare any conflict of interest. Otherwise AKA follows the law on these matters.

Reviewers are given the following instructions: “You must disqualify yourself if you can in any way benefit from the approval or rejection of the proposal. You must also disqualify yourself in the following circumstances: you have close collaboration with the applicant (e.g. have co-authored an article with the applicant during the past three years, have been involved in the preparation of the application, or are involved in the publication or exploitation of the results); you have been a superior or subordinate or instructor of the applicant during the past three years; you are currently applying for the same post as the applicant; you are currently applying for funding from the Academy from the same funding instrument; the applicant is a close person to you (instructions include a definition for a close person, relatives).”

Reviewers are asked to sign the reviewer’s declaration in which they affirm that they do not have a conflict of interest with the applicants they are evaluating (according to the above mentioned criteria). Decision makers and administrators are also required to declare any conflict of interest. Administrators handling the proposals try to find out if a reviewer does have a conflict of interest with the applicant.

Publicity. Publicity is regulated in the Act on the Openness of Government Activities (621/1999) that applies to application documents and expert evaluation statements. According to this Act, research plans and evaluation statements are confidential documents. However, applicants will receive the statements concerning their proposal after the funding decisions have been made. The applicant is also entitled to know the evaluators' names. The grant receivers and the titles of their projects are published in internet after the decision-making.

Reviewers are advised to handle and store the application documents with due care and confidentiality. Reviewers are given the following instructions: "As a reviewer, you are not allowed to disclose to outsiders any information concerning application documents or evaluations, nor are you allowed to use this confidential information to your own benefit or anyone else's benefit or disadvantage. In addition, you may not reveal to outsiders that you are assessing the research plans of particular researchers… Once the evaluation has been completed, you are required to destroy all application documents and any copies made of them, or return them to the Academy…Confidentiality must also be maintained after the evaluation process has been completed."

Intellectual property rights. According to the Act on Employee Inventions the employer usually has a right to employee inventions. This Act, however excludes university researchers who own their inventions. New legislation is under preparation and will probably be approved in 2005. The new law will bring some changes, e.g. in most cases the university will have the right to the inventions. The Academy of Finland has prepared IPR Handbook for researchers. It can be found at www.aka.fi/eng > Publications.

In the guide for applicants it is stated: "Applicants shall pay special attention to the rights of using research results and making relevant agreements. The research plan shall detail the contents of the research and the mutual rights and obligations of the parties involved. It is advisable that before submitting their research plan, researchers and research teams clarify whether the research might generate inventions with commercial application… To avoid problem situations, it is essential that researchers and research teams determine the rights and obligations of different parties and draw up the necessary agreements. A patentable invention should not be described in an application or its appendices or anywhere else in public before a patent application has been filed."

Good scientific practice. National Advisory Board on Research Ethics has prepared ethical guidelines in cooperation with the Finnish science community. Issued under the title "Good scientific practice and procedures for handling misconduct and fraud in science", these guidelines are available on the Advisory Board's website at pro.tsv.fi/tenk/english1.htm.

Based closely on the guidelines issued by the National Advisory Board, the Academy of Finland has adopted guidelines on research ethics. The guidelines are published on the Academy's website at www.aka.fi/eng > Publications. The Academy requires that in all research funded by it, the guideline of the National Advisory Board on Research Ethics as well as the corresponding research-ethical guidelines of the Academy shall be observed.

Adherence to the principles of good scientific practice is primarily the responsibility of each individual researcher and research group, but that responsibility is also shared by the director of the research team and the management of the organisations conducting research. The Academy ethical guidelines apply to cases where a researcher is suspected or found to have been in breach of good scientific practice. The organisation conducting the research undertakes to inform the Academy if an inquiry or investigation is launched against the researcher involved in an Academy-funded project or a tenured Academy researcher. In each case the Academy will give separate consideration to how the violation affects its funding decisions.

According to Academy instructions, the researcher responsible for the project should to indicate, where relevant, how ethical questions and intellectual property rights have been taken into account in the research plan.

Other ethical issues. Applicants need to include in their proposal a statement of an ethical committee or experimental-animal committee regarding experiments to be carried out on human subjects or animals if there is reason for such a statement. There are several laws regulating the need for an ethical statement.

Gender equality and equality of minorities. New legislation on gender equality is under preparation and AKA is revising its gender equality plan. According to the law, authorities should promote gender equality. Academy promotes gender equality by seeking to use both female and male reviewers. The gender balance is also considered when appointing Academy decision-making bodies. Further, if there are two equally good applications, the minority gender should be preferred when the funding decision is made.

General. There is no legislation preventing AKA´s participation in transnational programmes.

Obstacles and best practices for transnational research programmes

Experiences. Academy participates in common-pot funding in the Nordic Centres of Excellence programmes. AKA has many jointly funded research programmes both on national (Tekes, ministries) and international (foreign funding agencies) level. Generally the experiences are good but there have been some problems concerning administrative procedures (different kinds of decision making processes, funding periods, time schedules, overhead shares etc.).

Obstacles. The main obstacles for transnational chemistry research programmes within Europe would be the extra work at funding agencies as well as the different timetables, evaluation systems and administrative procedures of each organisation. For common pot programmes the main obstacle would be the lack of political will to put the funding to the same pot.

To overcome the obstacles there should be discussions and workshops to agree common procedures. As well, strong will to implement the agreed procedures is needed. Concerning AKA, there are no major obstacles for joining transnational programmes. AKA is flexible and ready to changes in its procedures.

Best practices. Best practices for transnational programmes include jointly agreed topic/themes for the programme as well as jointly agreed procedures and criteria for call, processing, peer review, decision making and follow up. There should be a common call for proposals handled by joint management office. Peer review should be international and preferably performed by review panels.

OTHER MAJOR FUNDING BODIES IN FINLAND

National Technology Agency of Finland, TEKES
Postal address: P.O.Box 69
Visiting address: Kyllikinportti 2, Länsi-Pasila
FIN-00101 Helsinki
phone: +358-105 2151
Fax +358-9-694 9196
Email: firstname.surname@tekes.fi
tekes@tekes.fi

Tekes, the National Technology Agency is the main public financing and expert organisation for research and technological development in Finland. Tekes finances industrial R&D projects as well as projects in universities and research institutes. Tekes especially promotes innovative, risk-intensive projects. The primary objective of Tekes is to promote the competitiveness of Finnish industry and the service sector by assisting in the creation of world-class technology and technological know-how. Specifically, Tekes' activities aim to diversify production structures, increase production and exports, and create a foundation for employment and social wellbeing.

Tekes funds come from the state budget via the Ministry of Trade and Industry. Tekes has a budget of 400 million euros, a source of funding for 2000 projects annually.

The yearly average funding budget for chemistry of Tekes amounts to 50 million euro including chemistry, pulp and paper and bio-and polymeric materials.

Main characteristics of funding policy and procedures

Selective project funding is the basis of Tekes operations. Funding and expert services are channelled to technological R&D projects run by companies, research institutes, and universities. The involvement of an industrial partner is not mandatory but recommended. The drive of projects is usually bottom-up and there are top-down approaches in some technology programmes. Tekes also funds laboratories or departments inside universities, but funding is always given to projects and the agreement is done with the university. Proposals have to be written in Finnish, sometimes in Swedish or English and may be submitted electronically. The average processing time between submission and decision of a proposal is 75 days. There is no international peer review system in place. Eligible costs include salaries, overheads, consumables, equipment, travels, necessary outside services but everything must be related to the project and its target. Success rates range from 60% by number and 45% by volume for universities and 80% by number and 70% by volume for companies. Relatively high figures are partly explained by the way Tekes works. There are frequent discussions with the applicants and therefore not all project ideas are finalised as project proposal. Tekes technology programmes are always evaluated at the end of the programme and often also halfway through. The aim of the evaluation is to provide feedback on how the programme aims have been realized, to find out how relevant the programme is and to produce information to support the strategic development of programme activities and the activities of Tekes in general. Tekes is in principal interested in tansnational research funding programmes, but at the moment on the basis that all projects will be funded by applicants own national system.