



National Graduate School in
Informational and Structural Biology

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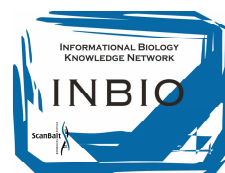
“from the masters degree to the Ph.D. in 4 years”

ISB Handbook, 3rd Edition

A concise guide to obligations and commitments of both doctoral students and research supervisors within the graduate school, containing information and instructions related to application and reporting procedures for both students and research groups

This document is available as a PDF file on the ISB Internet site:

www.abo.fi/isb



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ISB Handbook, 3rd Edition

A concise guide to obligations of the school for both students and research groups. The handbook contains information and instructions related to application and reporting procedures for both students and research groups

Revisions subject to approval by the Board of ISB

The material in this Handbook represents general guidelines approved by the Board of ISB. The Board of ISB reserves the right to amend statements in this Handbook at any time, as well as to use their judgment in applying these guidelines under different circumstances.

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Key Changes in the 3rd Edition of the ISB Handbook

Summary of changes, subject to approval by the Board of ISB, and introduced to make the school efficient, effective and improve the quality of the school.

✎ Important Deadlines

Clearly listed on the back page of the handbook.

✎ Electronic forms: reporting, activity funding requests

Forms, available from the ISB at www.abo.fi/isb, have been created to ease reporting of activities, funding, publications, etc., as well as for applications.

✎ E-mail submission, applications to join ISB: students and supervisors

Forms and instructions are available from the ISB website at www.abo.fi/isb. One signed copy by snail-mail to ISB.

✎ Yearly research reports

Research reports are now extended from 3 pages to a maximum of 5 pages.

✎ What to do in the rare case that a serious problem is encountered?

General guidance is provided.

✎ Career advice, postdoctoral training, funding

Its easy to give advice, but will you take advantage of it?

✎ ISB support of activities – conference support for graduate students

ISB only supports applications where a oral or poster presentation is made.

✎ Web-based plagiarism – zero tolerance policy

Plagiarism continues to be a problem. Guidelines are given.

✎ 4-year support for ISB funded students – Academy of Finland changes

The Academy of Finland changes to our funding now permit more flexibility. Students joining ISB for the period 2007-2010 can be funded for 4 complete years but studies must begin within 12 months of the starting date (i.e., activated by 1 January 2008 and used before 1 January 2012). The only exceptions concern students on maternity and military leave.

FORWARD to the 3rd edition

Over the past 2 years, we (Kaija Söderlund, Fredrik Karlsson, Markku Kulomaa, Reijo Lahti and myself) have participated in a large number of meetings sponsored by the Ministry of Education and the Academy of Finland on the Finnish graduate school system. I have also presented ISB to the evaluation panel of the Ministry of Education, which is seeking to improve the quality of the Finnish graduate school system. This has been a useful exercise because it has led us to reassess the school's achievements over the past years, evaluate our present situation and develop plans for the future. We have now successfully applied for the 4-year renewal of the school (2006-2009) and 5-year renewal (2007-2011).

Several important points were revealed from these discussions.

1. We must begin graduating our students within a 48-month period and our participating supervisors must make commitments to do so.
2. We must provide 4-years of funding for students accepted into the school no matter the source of funding, thus our supervisors are obligated to do their best to guarantee funding for that period of time.
3. We must reduce the age of our graduates.
4. Gender parity has been attained across schools.
5. We must maximize internationalization, including encouraging mobility (international courses, research visits and presentations at conferences) and using foreign researchers as thesis committee members and as co-supervisors.
6. We are encouraged to attract good foreign students.
7. We must prepare our students for their future careers.
8. We must give formal guidance on ethics to our doctoral students and not rely on them receiving such education informally within research groups.
9. We should focus our attention (funding) on good productive groups, both from well-established researchers and from junior researchers.
10. We need to improve the quality of our students' education and training, giving them the skills needed so that they can compete for the available jobs.
11. Excellent Ph.D.s are sought after; mediocre ones may have trouble in getting funding and in establishing a career.

Our school has been repeatedly rated “excellent” by the Academy of Finland but it is clear to us that we can improve the school further. The only comment for improvement from the 2006 evaluation is that **we need to reduce the time it takes to obtain the degree and this reflects on the quality of the supervision.** In other words, supervisors get the blame and credit for the time it takes their students to graduate. It also means that each supervisor must do her/his best to

see that students remain on-track to graduate within about 4 years.

We clearly need to monitor the progress of our students better and especially to make sure that starting students get off to a good start in the school. Four years is a short time (pray that we do not adapt the three-year system as part of the Bologna process). **Thus, we will now require that the newly appointed thesis committee meets with newly accepted doctoral students within about 2 months after full-time research begins.** New students should have had time to complete a literature survey on their topic of study and formulate their research and educational goals. The thesis committee should consider the study plan that has been accepted by the university, modifying it if required. This means that first-year students will meet with their thesis committees twice during the first year, but this should help to get each student off to a good start.

In the Summer of 2004, ISB became the first school in Finland to begin implementing a quality assurance program. We do not aim for certification at this time: paraphrasing the Academy of Finland, “quality is continuously revealed by the yearly reports that ISB makes and the excellent rating received from review panels.” Instead, we are using the ISO guidelines to improve the efficiency, effectiveness and fairness of our operations. Dr. Robin Manelius helped us in preparing a draft management guide detailing the procedures that we use. As a part of our quality assurance program, we have revised this handbook; it is larger than previous editions and we have tried to place as many of our operating guidelines as possible into print. Furthermore, we have added sections on plagiarism and on the doctoral student career and career planning.

We are now developing electronic forms that can be obtained from our web site and E-mailed to ISB. The forms include those needed to apply to join ISB, report information to us that is required for reporting to the Academy of Finland, the Ministry of Education, and to apply for support to attend conferences, workshops, meetings and research visits, etc. These forms should make it easier for everyone to help the school fulfill its obligations to the funding agencies.

Changes have taken place within the day-to-day administration of ISB. Kaija Söderlund has retired and we miss her very much. Kaija worked very hard for the school since its inception in 1998. Kaija left her position in very good condition. We are very fortunate that Fredrik Karlsson, M.Soc.Sc. has replaced Kaija as the coordinator of ISB. Fred has considerable experience in financial and organizational management and he assisted Kaija in previous years.

Fred is now assisted by the capable Jonna Denessiouk, M.Sc., who is the Scanbalt Campus coordinator for the new Knowledge Network in Informational

Biology. ISB is a member of ScanBalt (www.scanbalt.org) and has been asked to develop the Informational Biology Knowledge Network – initially through the linking of M.Sc. programs in bioinformatics and systems biology. ScanBalt is an open organization consisting of academic and industrial participants from the regions comprising the former Hanseatic League: Scandinavia, Iceland, the Baltic States, Northern Russia, Poland and Northern Germany. This link will help ISB improve the internationalization of our school's activities and our links to industry.

In summary, our school is well respected but to insure our future there is more that we should do to improve our standards and quality, especially with regard to the years required to obtain the degree. Members of ISB are very productive scientifically, 35 students have now graduated from the program, and all of our graduates are currently employed. Improvements will make our school more secure and secure the futures of our graduates as the employment situation in academia and in industry becomes more competitive within Finland and internationally, for only the best will have their futures assured. For all of our sakes, we should focus on excellence, excellence in research training and in the education of our students; we have done well so far and I am sure that we can introduce the improvements sought by the Ministry of Education and the Academy of Finland, and that these improvements will benefit us all.

Thank you all for your participation, hard work, and support of ISB!

Best regards,

Mark Johnson
August 14, 2006

FORWARD to the 1st and 2nd editions

We (the administration, academic and industrial researchers, and doctoral students) are seeking to make the National Graduate School in Informational and Structural Biology the best school possible.

We have produced this little booklet in order to provide guidance on obligations to both students and supervisors within the school.

The thesis committee is of particular importance and we wish to emphasize its role in our school and for our students. In particular, the thesis committee can help provide guidance and detect potential problems before they seriously hinder and delay graduate studies.

The school's administration has obligations to both the Ministry of Education and the Academy of Finland. We file reports and applications for support almost on a yearly basis. Some of the information requested herein is needed to help us fulfill these obligations.

We have also detailed the procedures required for doctoral student and new research groups to apply to our school. Whether a student is funded directly by the school or by other sources of funding, the application procedure is now the same.

If you have any questions, then please contact us. We are here to listen and help if we are able to. All of us – students and supervisors alike – have contributed to the success of this school. We hope that these “rules and regulations” are not seen as a burden to our doctoral students but are instead seen as a positive aspect of the research and educational experience. Our interactions with each other, whether at yearly graduate school meetings or through the thesis committees, show our interest in our students, their education, and their progress as students within the school.

ISB has a firm policy of non-discrimination, however, we encourage participation of younger scientists and female scientists.

Mark Johnson, Director of the school

20th day of September 2001

| CONTENTS | PAGE |
|--|-------------|
| 0. SO YOU WANT TO STUDY FOR THE Ph.D.? | 11 |
| 1. ADMINISTRATION | 15 |
| 2. OBLIGATIONS OF THE DOCTORAL STUDENTS | 16 |
| 3. OBLIGATIONS AND ROLES OF RESEARCH SUPERVISORS | 19 |
| 4. THESIS SUPERVISORY COMMITTEES | 20 |
| 5. RESEARCH PLANS - PROGRESS REPORTS | 22 |
| 6. ABSTRACT SUBMISSION | 23 |
| 7. ISB APPLICATIONS - DOCTORAL STUDENTS | 24 |
| 8. INSTRUCTIONS FOR RESEARCH GROUPS POSTDOCTORAL RESEARCHERS WISHING TO JOIN ISB | 32 |
| 9. PREPARATION OF STUDY PLANS | 33 |
| 10. FUNDS FOR RESEARCHER TRAINING AND EDUCATION | 35 |
| 11. NON-DISCRIMINATION POLICY | 36 |
| 12. ETHICS POLICY | 37 |
| 13. PLAGIARISM – NO TOLERANCE POLICY | 39 |

| | |
|---------------------------------------|-------------|
| 14. DOCTORAL STUDIES, CAREER PLANNING | 42 |
| 15. THE DISSERTATION | 45 |
| 16. WHEN THINGS GO WRONG | 47 |
| 17. ELECTRONIC FORMS | 48 |
| 18. IMPORTANT DEADLINES | 49 |
| CONTENTS | PAGE |

0. SO, YOU WANT TO STUDY FOR THE Ph.D.?

The Ph.D. degree is the ticket needed for career opportunities in academic science and in research and development within industry. Being a doctoral student is not a career; it is a relatively long study course, but the requirements to graduate are challenging and require a dedicated, intense effort to be successful. The rewards can be in the long term equally large.

In Finland, a Master's of Science degree is required to study for the Ph.D. The length of study for a doctoral degree is four years (Akademi of Finland and Ministry of Education policy) but the requirements for graduation are considerable and require long hours and good supervision. Graduate schools in Finland are now being strongly advised by the Ministry of Education to fit the degree studies within 48 months and ISB is implementing the policy.

So, you want to study for the Ph.D. either within ISB or elsewhere. Great! Fantastic! Independent research can be a life-changing experience. You have made a smart decision in this school's view.

But, do you know what you are taking on? And are you prepared for 4 years of intensive study and research?

If you are considering ISB we want you to consider these questions carefully and take into consideration the comments below. We hope that you are not discouraged but if the quantity of work matters to you, if you want a normal 0900 to 1700 job, then you probably will not be successful in this or any other graduate program; you probably should go elsewhere and not waste your time and our time. If not, then please consider ISB.

Being forewarned, your mind should be prepared for the hard work required to complete a degree within this school and the relatively short time to accomplish it within. Requirements and activities within ISB:

- ◆ 240 earned study points are required
- ◆ Original research resulting in international peer-reviewed publications
 - Two to three first-author publications, plus
 - Two to three second or third author publications
 - Usually, a publication cannot be used in its entirety for two Ph.D.s but they can contribute partly to several degrees.

- ◆ Scientific maturity – difficult to describe but obvious to supervisors when it has been achieved, often only attained through hard continuous work and the experience that comes with it. At the time of the defense, you should know how to write scientific articles, get them published and have your own ideas about research problems and how to solve them independently.
- ◆ Training in scientific ethics – knowing what is acceptable behavior and what to do when ethical problems arise.
- ◆ Participating in teaching and in guiding other students in research – the best way to learn a subject very well is by teaching it to someone else.
- ◆ Participation in yearly courses sponsored by ISB – mandatory participation at the ISB Spring School (organized by students and focused on career development issues) and ISB Winter School (students report progress in oral and poster presentations).
- ◆ Participation in courses at the home university and organized by other organizations within Finland.
- ◆ Participation in international activities, primarily courses and workshops, research visits and conferences.
- ◆ Yearly reporting to the thesis committee and hence to ISB.
- ◆ Written dissertation, including compilation of international peer-reviewed publications.
- ◆ Review of dissertation by two independent expert reviewers.
- ◆ Oral public defense of the dissertation before an independent expert opponent.

A career in science is a not an easy one but it has other great advantages. If you are good or very hard working or both you will have an excellent chance to get that degree – the Ph.D., get that postdoctoral fellowship, get that job, otherwise you are competing against many other good graduates and internationally even more. Our goal at ISB is to train students to the highest level in multidisciplinary collaborative research, but most of the responsibility rests with the doctoral student. You must take responsibility for your course of training within the school. That is an exciting prospect as you can design into your study plan national and international courses and participate in research at several institutions as part of collaborative research – it is all up to you and your desire to be successful.

Will you put in the extra hours needed to make forward progress on your research? Will you spend the time screening the literature for every available clue related to your research? Can you persevere

when your current results fail and turn the failure into success?

If you want a typical 7-hour a day job, 5-days a week, then doctoral studies probably are not for you (and you are probably not for it). The work is tough, requires dedication, imagination, development of an inquisitive mind, but most of all it requires a lot of intense effort.

So, we at ISB have tried to discourage you, if you are in anyway hesitant about fulfilling the requirements for study in this graduate school. NOTE!! In the case we did not succeed as yet, we encourage all supervisors to place new students on probation during the first year, where continuation in the school will be decided at the Fall thesis committee meeting based on a review of the progress made by the student – this includes ISB funded positions, which may be withdrawn. The objective is not to remove anyone from the school, but to ensure that new doctoral students perform with vigor during the first year, that supervision is adequate from the start of the student's studies, thus setting our doctoral students up for a successful 4 years within ISB, and ensuring that their future career goals can be attained.

You will find that supervisors, thesis committees, doctoral students, and other members of the school will do whatever they can to assist you if you need it. You can always consult the ISB office for confidential advice. We want our students to succeed and we want the quality of our school and our students to continually improve. ISB will then continue as an excellent graduate school and graduates will go on to successful and satisfying careers.

Who can apply to the school? If you have an M.Sc. you can apply to join ISB. This school and others in Finland are encouraged by the Ministry of Education and the Academy of Finland to reduce the age of our graduates and to attract foreign students to the school. Within ISB, foreign doctoral students account for 14 % of our students, we currently have a 50:50 split between the genders, and our students are roughly evenly split among experimental wet lab work (biochemistry, cell biology, molecular biology), structural biology, and computational approaches (bioinformatics, computational chemistry). We encourage multidisciplinary research and collaboration between research groups and doctoral students within the school. Most of our researchers have active collaborations with foreign researchers, too.

Finally, the 4 years of graduate study within ISB is a marvelous opportunity that comes to a person once in a lifetime. You receive a

salary for full-time study and research. You work rather independently under supervision, beginning from a novice with little experience and proceeding towards scientific maturity where you have the experience and confidence to guide others within research projects. You will learn to effectively describe your research in good (hopefully) scientific English, develop skills in presenting your research in oral and poster presentations, and your imagination will be stimulated and your mind will be trained to solve problems. **You will receive guidance on scientific ethics and you will understand from the beginning that we have a no-tolerance policy for plagiarism of any kind** – do it and you may be removed from the school and university for 6 months; any repeat and you will be asked to leave ISB and (you should be removed from the university position), and we are required to report to the Academy of Finland and the Ministry of Education on students that leave the school and the associated reasons. If you have a question concerning what is an acceptable practice, ask someone who would know.

Upon completion of the degree you should be able to compete effectively for a postdoctoral position or grant, whether in Finland or abroad. You should be able to obtain that job in industry that others cannot. These are the hopes and goals for you that all of us forming the ISB graduate school want. We want you to be the very best that you can be; it takes much hard work on your part, but the rewards for you should be corresponding large. You will find that you can handle the added responsibilities of postdoctoral research and guide junior researchers. It will prepare you for your first independent research post where you must take responsibility for raising funding, guiding personnel, formulating the research, etc.

Interested in hard but stimulating work?

Then please apply to ISB!

1. ADMINISTRATION

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The management board 2003-2006

Mark Johnson, Director

Kajja Söderlund, Coordinator (retired 2004)

Fredrick Karlsson, Coodinator (from 2004)

Adrian Goldman, University of Helsinki

Vesa Hytönen[†] University of Jyväskylä (2003-2004)

Markku Kulomaa, University of Tampere

Elina Kuokkanen[†], University of Turku (2004-)

Anne Marjamäki*, BioTie Therapies Corp.

Peter Slotte, Åbo Akademi University (2005-)

Michael Peräkylä, University of Kuopio

Ritva Serimaa, University of Helsinki

Roman Tuma, University of Helsinki

* Industrial representatives. [†] Representatives of the ISB doctoral students

2. OBLIGATIONS OF DOCTORAL STUDENTS

2.1 New doctoral students

New doctoral students, approved by the Board of ISB, are accepted into the school under the following provisions.

2.1.1 Accepted applicants must provide to the school evidence of an M.Sc. degree (official copy stamped by the university) or equivalent before officially joining the school. No funding direct from ISB may be received by any doctoral student that does not have an M.Sc. degree.¹

2.1.2 No doctoral student in ISB may simultaneously belong to more than one graduate school – this is not permitted under any circumstances (OPM regulations).¹

2.1.3 ISB requires a contract signed by the doctoral student agreeing to the following 7 sections:

2.1.3.1. The doctoral student agrees to provide materials as requested by the school in a timely matter (**see §2.2.1**).

2.1.3.2 The doctoral student will, in consultation with the supervisor, select a thesis committee of no less than two additional research supervisors (**see §4**).

2.1.3.3 No later than one month after starting in the school the doctoral student will provide the following to the coordinator of ISB:

- ◆ The title of the proposed 4-year research project.
- ◆ A paragraph (**see §6**) describing the research and goals – this will appear on our web pages, so confidential and sensitive information should not be included. Get your supervisor's approval!
- ◆ Names of at least three thesis committee members.
- ◆ A copy of the study plan (**see §11**) filed with the home university and prepared in consultation with the thesis committee.

¹ Requirement of the Ministry of Education and Academy of Finland (note that footnotes are numbered sequentially and may be cited throughout the text).

- 2.1.3.4 New students will arrange a thesis committee meeting within two months after joining ISB. The doctoral student will present a revised version of the thesis project and demonstrate that an in-depth literature search on the subject has been made, and present the study plan. The thesis committee has a duty to see that the new student is performing as would be expected, helping to solve any problems that may be retarding progress.
- 2.1.3.5 Towards the end of each year the doctoral student will submit a written research report and arrange a thesis committee meeting (see §2.22).
- 2.1.3.6 The doctoral student will have read and acknowledged that ISB's zero-tolerance policy on plagiarism is understood.
- 2.1.3.7 New students. All first year students are on one-year probation. Towards the end of the first year the thesis committee should write a short evaluation of the doctoral student using the form on our website and send it to the coordinator of ISB. The thesis committee will determine whether the doctoral student has made sufficient effort and progress during the year to continue within the school.

2.2 All continuing doctoral students

All continuing doctoral students in the school are responsible for the following:

- 2.2.1 Each doctoral student agrees to provide materials as requested by the school in a timely matter. Data are supplied to the Ministry of Education and the Academy of Finland when new funding is applied for. ISB will be asking for these details. In particular, the doctoral student will need to maintain yearly records of the following merits for the Ministry of Education:
- ◆ All poster presentations
 - ◆ All oral presentations
 - ◆ Record of attendance at ISB Spring and Winter schools
 - ◆ Numbers of national and international activities: workshops and courses (including university courses), research visits and conferences
 - ◆ All publications, patents, copyrights, computer programs

- ◆ Forms for reporting are on our website.
- ◆ Deadline for reporting: Students will be contacted by E-mail when information is requested and a deadline will be given at that time.²
- ◆ Students should feel free to forward details of publications to ISB at any time to be included on our web pages.

2.2.2 Towards the end of each year the doctoral student will submit a short written research report and arrange a thesis committee meeting (see §4, 5).

- ◆ The doctoral student will arrange for a meeting of the thesis committee in the Fall of each year.
- ◆ The doctoral student will present the research results and future plans.
- ◆ It is very important that the thesis committee reviews the doctoral students progress concerning course credits.
- ◆ A discussion will follow.
- ◆ A short summary of the meeting, signed by all participants will be delivered to the school's coordinator before **November 15** (new students only³) or **December 20** (continuing students) of each year.

2.2.3 Exceptions to §2.2.2 are given to doctoral students that are in the process of writing their Ph.D. thesis – the supervisor should simply inform the coordinator of ISB prior to **December 20**.

2.2.4 All doctoral students are obligated to participate in the yearly ISB Spring School and ISB Winter School.

2.2.5 Full-time doctoral students must focus their time on their research and academic studies that will lead to a Ph.D. The Ministry of Education has given a 4-year time limit for ALL students. Supervisory thesis committees will be responsible for determining if satisfactory progress is being made.

² Deadlines for doctoral schools to file reports and funding applications to the Academy of Finland and the Ministry of Education are continually changing and fixed dates for reporting would be impractical. Consequently, the coordinator will make contact as required.

³ This ensures that contracts can be prepared and submitted to the university in time.

3. OBLIGATIONS AND ROLES OF RESEARCH SUPERVISORS

- 3.1 Research supervisors are responsible for their doctoral students and are the main influence on the direction of their research and day-to-day research education and training.
- 3.2 Research supervisors should plan for their doctoral students to complete the Ph.D. thesis within a period of four years. Problems in maintaining this schedule should be identified early and remedied.
- 3.3 Research groups should seek to retain doctoral students so that they complete their Ph.D. (We are required to report on all doctoral students that leave the school without completing their degrees).
- 3.4 Supervisors have the responsibility to do their best to ensure continuity in funding for doctoral students accepted into the laboratory and into our school for the duration of their Ph.D. Ministry of Education funding is limited to a maximum of four years.
- 3.5 Supervisors cannot place students within ISB if they do not reasonably expect to fund the student for 4 years.
- 3.6 Active participation in the school, especially at our yearly meetings and by placing funded doctoral students within ISB, is essential. We need to match all ISB funded doctoral students with doctoral students receiving support from other sources of funding. Participation is one factor recognized when funding decisions are being made.
- 3.7 Research supervisors have the responsibility to ensure that their doctoral students follow the enclosed guidelines. Continued funding of doctoral students and participation in the school by research groups is contingent on the fulfillment of these obligations.⁴
- 3.8 Supervisors will provide a short report on past and present doctoral students when required.
- 3.9 If a supervisor finds herself/himself in a position where difficulties arise with a doctoral student, as occasionally happens, we strongly recommend that the thesis committee be used to help find a fair and satisfactory solution for all parties.

⁴ Requirement of the Academy of Finland and Ministry of Education.

4. THESIS SUPERVISORY COMMITTEES

- 4.1 Each doctoral student will have a supervisory thesis committee⁴ with at least three members each with a doctoral degree (supervisor plus a minimum of two other members).
- 4.2 New students will select a thesis committee in consultation with their research supervisor. The names of committee members will be reported to the school within one month of a doctoral student joining the school.
- 4.3 The committee should be selected with care; the committee should provide the doctoral student with valuable guidance, constructive criticism, and advice.
- 4.4 At least one member of the supervisory committee will be from another research department and preferably from a different University.
- 4.5 We encourage participation of members from industry and international research collaborators on the committee, but it is wise to elect an additional member in the case where long-distance travel cannot be made to Finland every year.
- 4.6 The doctoral student will arrange a meeting with the thesis committee at least once per year, preferably towards the end of the year. New students will arrange an initial thesis committee meeting within two months after joining ISB, see §2.1.3.4.
- 4.7 New students will meet with the thesis committee within two months of joining ISB.
- 4.7.1 The role of the committee is to:
- ◆ Monitor the progress of the doctoral student
 - ◆ Assist in creation of the official study plan
 - ◆ Ensure that the requirements of the study plan are fulfilled
 - ◆ Determine if first year probationary students have made satisfactory progress and may remain in the school
 - ◆ Advise and assist the doctoral student in research and study goals, and future career plans
 - ◆ Provide the board of the school with an evaluation of the

doctoral student's progress

- ◆ Intervene when a doctoral student is clearly not fulfilling the research training and education goals that will lead to a Ph.D.
- ◆ Intervene early on when it is clear that a student will not achieve a degree within 4 years.
- ◆ Act as intermediaries if problems situations develop, e.g. between a doctoral student and the supervisor or with some other organization.
- ◆ Determine when the doctoral student can begin writing the doctoral thesis and plan for the oral defense and provide suggestions for referees and opponent.

4.7.2 The doctoral student is obligated to:

- ◆ Organize the yearly meeting with the committee.
- ◆ Provide the thesis committee with a written copy of the short research report (**see §5**) in advance of the meeting.
- ◆ Give an oral summary of the research report to the committee.
- ◆ Together with the thesis committee prepare a brief written summary of the meeting, signed by all participants.
- ◆ Deliver to ISB a copy of the research report and a signed, written summary of the meeting. Deadlines: **November 15** (new students only³) or **December 20** (continuing students)



5. RESEARCH REPORTS

- 5.1 A copy must be submitted to ISB before **November 15** (new students only³) or **December 20** (continuing students).
- 5.2 The length of the research report has been increased to a maximum of 5 pages of text, excluding references.
- 5.3 The report should be E-mailed to the ISB coordinator as a *pdf* file. Please be specific and informative, and avoid redundancies. The writing of the report is not a mere formality; a well-done report is a substantial and necessary part of doctoral studies preceding the dissertation. The research report should include sufficient information needed for evaluation of the project, independent of any other document and include the following:
- ◆ **Title**
 - ◆ **Summary (1 paragraph)** Clear and concise.
 - ◆ **Specific aims and timetable (1/2 page)** A list of the broad, long-term objectives of the research is sufficient, proposed publications, and the approximate date to achieve the objectives.
 - ◆ **Background and significance (1/2 page)** Very briefly sketch the background leading to the present research. This section is intended to introduce the reader to the field of research, including the main problems as they are presented in the literature.
 - ◆ **Current state of the project (1-2 pages)** Summarize the results obtained since the last report, including preliminary results and problems that have been encountered and how they might be solved.
 - ◆ **Future plans for the project (1 page)** Describe ongoing studies, and discuss forthcoming studies, as well as problem.
 - ◆ **National and international activities (1/2 page)** What courses have been taken during the year and what courses, workshops, conferences, and research visits are planned. How have the requirements of the official study plan been fulfilled?
 - ◆ **Timetable for the thesis** When do you expect to complete your Ph.D. studies? Are you encountering any problems that might delay completion? (Studies need to be completed in 4 years).
 - ◆ **References (key references only)**
- 5.4 Please deliver a copy of the report to the thesis committee at least a week before the scheduled meeting.

6. ABSTRACT SUBMISSION

6.1 New doctoral students

6.1.1 New doctoral students are required to submit a title and short abstract on their proposed research for the Ph.D.

6.1.2 This is due during the first month after joining the school.

6.1.3 This information is for the public and will be posted on our web page, so please do not include sensitive and confidential information within it. Please obtain your supervisor's permission before submitting the abstract to the school.

6.1.4 Please complete the form "ISB Website, abstract submission" **Form O500** and E-mail to: isb@abo.fi.

6.2 ISB Winter School, Spring School

6.2.1 Titles and abstracts are required for presentations (oral and poster) made at our yearly Winter School.

6.2.2 Registration and abstracts will take place several months before the scheduled meetings.

6.2.3 Please follow the instructions of the organizing committee for online registration and submission for both the Winter and Spring Schools, as requested.

7. ISB APPLICATIONS - DOCTORAL STUDENTS

Students that wish to apply to our school may do so through one route. Funding may come from several possible sources. Applications to join ISB will now be processed three times per year, with closing dates of **September 15**, **February 15**, and **May 15**. Note that applications may be submitted at any time but they will be processed only after the next closing date.

7.1 Funding of doctoral student positions

7.1.1 ISB funded positions

Some positions, every few years, are funded by ISB directly from funds from the Ministry of Education and Academy of Finland. These comments apply only to these specially funded positions.

- ◆ Applications are accepted during a fixed period only.
- ◆ **Only one** application should be forwarded to the school by any one supervisor. Competition is fierce and only the best applications should be submitted.
- ◆ Supervisors should direct students to contact other supervisors when space is not available in their laboratory.
- ◆ Doctoral students presently within the school can apply for funding, but the length of time they have already studied will be taken into account.
- ◆ While we encourage industrial supervisors to have doctoral students within the school, the school cannot directly fund these students although joint supervision with an academic group is certainly possible.
- ◆ Employees of companies have been able in the past to apply to the Academy of Finland for support to cover part of their salary if they are allowed to simultaneously pursue Ph.D. studies. Please consult the Academy of Finland web site www.aka.fi for details.
- ◆ Active participation in the school by the supervisor is important and encouraged; having doctoral students within the school, funded from other sources is considered a very important contribution to the school.
- ◆ In order to have funded positions from the Ministry of Education, ISB must match them with doctoral students funded from other sources.

- ◆ The maximum funding of ISB positions in any case will be for 48 months (maternity, military or alternative service leave is not considered part of the 48 month period and funding is automatically reserved for the student to resume their studies when they return).
- ◆ **We ask that supervisors voluntarily refrain from submitting an application if one of their students is already funded via ISB and the overlap in funding with the present program is more than 1 year** (excluding overlap due to military service and maternity leave).

7.1.2 Doctoral students to be supported by the supervisor from other sources than ISB

- ◆ The Board should accept “excellent” applicants into the school proposed by a supervisor.
- ◆ Supervisors must ensure that continuous funding for 48 months doctoral study is provided to the student.¹

7.1.3 Doctoral students may bring their own funding

- ◆ The Board should accept the applicant into the school if the supervisor supports the application and it is considered to be of “excellent” quality.

7.1.4 Applications to ISB must undergo approval by the ISB Board

- ◆ The ISB Board is obliged to render a decision on applications within a reasonable period, typically within 1-2 months after the closing date for applications.
- ◆ The ISB Board is not obligated to accept all students that apply through a supervisor, but reasons for refusal will be transmitted to the applicant.
- ◆ The Board will consider the previous achievements of the applicant, as well as the supervisor’s ability to cover the costs of the applicant and likelihood that a student will complete studies successfully, within 4 years time, under the supervisor’s guidance.

7.2 Application instructions

In all cases, the application is sent to the school by a supervisor belonging

to ISB (see our web pages for a listing of participating laboratories and universities).

7.2.1 Applicants are encouraged to apply even though they have not yet completed their M.Sc. degree (ISB funded positions must be activated within 12 months time of the earliest start date), are expected to take maternity leave or will be on military leave.

7.2.2 Students need to apply through a chosen supervisor (this assures that the student is acceptable to a laboratory and that the applicant has been thoroughly pre-screened by the supervisor).

7.2.3 ISB now uses an application procedure that reduces paper use as much as possible. Detailed instructions are attached to the electronic form “Application form – Ph.D. Studies” **Form A100-2006** used for applications and summarized here:

7.2.3.1 Applications are in **English**. Please read the **ISB Handbook, 3rd Edition** as described in **section A3** of the application form. Applications are prepared together with the proposed supervisor. Please contact a supervisor within ISB before proceeding further with the application. Incomplete applications will not be processed.

7.2.3.2 Closing dates for applications. Applications are accepted at anytime but will be processed only three times per year, with **closing dates of September 15, February 15 and May 15**. Applications (E-mail and posted versions) received after 1600 local time on the closing date will be processed after the next closing date. Applicants will be informed of decisions usually within 1-2 months. ISB funded positions are available only at specified times, advertised in advance at www.abo.fi/isb.

7.2.3.3 Eligibility. ISB funded positions will be allocated on a competitive basis. Applicants do not need to have an M.Sc. degree to apply to ISB, but documented proof of the degree must be received by ISB before doctoral studies may begin. Offers of funding will be withdrawn if funding has not been activated within a period of time specified in the award letter. This time is now extended to within 12 months of the earliest start date.

7.2.3.4 Restrictions. Because of the limited number of **funded**

positions, supervisors with funded positions for the period 2006-2009 should voluntarily refrain from submitting new applications for funded positions for the period 2007-2011.

7.2.3.5 The Ministry of Education requires that ISB-funded positions are matched with positions funded from other sources, thus the level of participation of a research group in ISB may be considered.

7.2.3.6 Non-discrimination policy. ISB has a policy of non-discrimination with respect to gender, age, nationality, etc. We do, however, follow the policy of the Ministry of Education and Academy of Finland and encourage younger students to apply. ISB maintains gender equality.

7.2.3.7 CV. Must include date of birth, nationality, description of education and positions held, description of M.Sc. (title, research topic, supervisor, university and department, completion date), work experience and any other relevant details that the applicant wishes to include.

7.2.3.8 When completed, (1) please E-mail *pdf* files to isb@abo.fi:

- ◆ Completed application form obtained from www.abo.fi/isb
- ◆ Scanned copy of M.Sc. degree, official document (university stamp), if applicable
- ◆ Scanned official copy (university stamp) of university grades

and (2) mail the original signed form and one copy of the official documents (no copies please) to:

ISB
c/o Department of Biochemistry and Pharmacy
Åbo Akademi University
Tykistökatu 6A
FI-20520 Turku, FINLAND

7.2.3.9 Evaluation statements. Two knowledgeable individuals should be requested to send an evaluation of the applicant by post and E-mail directly to ISB. **Applicants:** Please pass on these instructions and our address, above, to the evaluators. **Instructions for the evaluators:** Dear evaluator, please give us your candid and honest opinion about the capabilities of the

applicant who is applying to begin a 4-year doctoral program within our graduate school. Thank you!

- ◆ In particular, students will be under severe pressure to complete within 4 years – in your opinion, is the applicant self-motivated and capable of working the long hours required for a successful outcome?
- ◆ How long have you known the applicant and in what capacity (advisor? teacher? pro gradu supervisor? etc.).
- ◆ How would you rate the applicant overall with respect to a successful outcome in a doctoral program using the following scale? Fractional scores may be used, e.g., 3.5.
 - **1** (will have extremely difficulty in completing doctoral studies)
 - **2** (will have some difficulty in completing a doctorate)
 - **3** (good prospects and should complete doctorate on schedule)
 - **4** (excellent prospects and is capable of completing doctoral studies in 4 years)
- ◆ Finnish law requires that we provide applicants with statements written about them if requested, but in such a case we will blank-out any identifying information. Because of the tight schedule arranged for reviews and decisions, statements must be received by the closing date. **Please (1) E-mail a pdf file of your comments to isb@abo.fi and (2) post the signed original to ISB.**

7.2.3.9 Selection process. All applications undergo competitive evaluation by ~10 reviewers.

- ◆ Our past experience has shown that there is a remarkable consistency among the reviewers' opinions and the large number of reviewers allows us to identify extreme views and weight them appropriately.
- ◆ The submitted applications and discussions that take place during the selection process are confidential.
- ◆ Reviewers never participate in evaluations when a conflict of interest exists with an applicant.

- ◆ Because all applicants have been pre-screened by the sponsoring supervisor, all applicants should be acceptable to ISB if funding were available.
- ◆ For ISB-funded positions, because of the small number of positions that are available, not every qualified applicant can be funded, and some applicants will be disappointed.
- ◆ Decisions are based on the materials that have been submitted to ISB. Decisions approved by the board of ISB are final. Final results will be posted on the ISB web site and applicants will be informed of the board's decisions by letter.
- ◆ Funding awards from ISB are made to the applicant, not the supervisor.

7.2.3.10 Instructions to supervisors. The supervisor should take part in formulating the research project submitted as part of the application. The supervisor is to complete and sign **section B**. Supervisors should not assist the applicant in any way with regard to completing **section D**. Please take note of the comments in **section F3** (Eligibility) and **section F4** (Restrictions) above. If you have any questions, please contact Mark Johnson (+358-2-215-4014).

- ◆ It is very important that supervisors wishing to sponsor an application select the best student for submission – supervisors should spend some effort on recruiting excellent students. The supervisor should organize an in-depth interview and explore the capabilities of the students wishing to join the research group. If a supervisor comes into contact with a student of superior ability but is unable to sponsor the student, the supervisor should assist the student in making contact with another supervisor within ISB.
- ◆ We are under pressure to reduce the time needed for the Ph.D. to within 4 years. Although we were rated “excellent” by the Academy of Finland, the extra time generally taken by doctoral students to complete the doctorate within ISB has been cited by the Academy of Finland as one area where we need to improve; consequently, they state that this reflects upon the supervisors. In future years, one criteria for funding support will be the capability of a supervisor's students to meet the 4-year schedule set forth by the Ministry of Education – in other words, performance over the next

several years will be considered when positions become available in the future. Of course, special situations occur that cause delays and we must take them into account, too.

- ◆ Foreign students holding a valid M.Sc. can be members of ISB and some of our best performing students have been from abroad – it is important that supervisors thoroughly vet both local and foreign applicants.

7.3 Other considerations

- ◆ An M.Sc. degree is a requirement for a position – students may not study for the Ph.D. nor receive funding unless they have completed their M.Sc.
- ◆ ISB requires an official certificate proving that the M.Sc. degree has been completed and awarded.
- ◆ Individuals close (within 6 -10 months) to completion of the M.Sc. are encouraged to apply – applicants need to supply details on the estimated completion date, state of the thesis (is it written?), and numbers of courses that still must be completed.
- ◆ Foreign applicants: an M.Sc. degree is generally a requirement. The Finnish university administration will have the final say on the requirements for entry into the school for applicants without an M.Sc. degree.

7.3 Evaluations and evaluation criteria – please refer to comments attached to the application form and summarized in §7.2.

7.3.1 A Panel that includes the Board of ISB makes evaluations of submitted applications.

7.3.2 The Panel is encouraged to employ additional expertise in the evaluation process.

7.3.3 All conflicts of interest will be orally declared and no panel member may participate in discussions concerning applicants proposed by them or where collaboration has or will take place.

7.3.4 Applicants whose proposals are ranked “excellent” are invited to join ISB.

7.3.5 In making decisions concerning funding direct from ISB, the panel will primarily consider the research proposal and the relevance of the proposed research to the aims of the school, which are to

promote excellence in education and research training in the fields of structural biology, biophysics, and bioinformatics in Finland.

- 7.3.6 The panel should aim to balance the representation within the research areas of prime interest to ISB.
- 7.3.7 The academic record of the student will be considered in the knowledge that good academic performance alone is not a guarantee of success in research. The academic record is used to judge whether a student will complete an M.Sc. degree by 31 December of the year when funding would begin, since all offers of funding from ISB, when available, must be activated by that date.
- 7.3.8 Published results from the Master Thesis work are not required.
- 7.3.9 The Panel will select a minimum of three applicants for a waiting list. They have priority on funding from ISB that might become available.
- 7.3.10 All applications are strictly confidential. All discussions by the panel are strictly confidential. It is unethical to disclose such confidential information.
- 7.3.11 Offers of funding are awarded to the applicant (not the supervisor). Thus, doctoral students may transfer their studies to another laboratory if that becomes necessary, after discussions with the thesis committee and approval of the Board of ISB.
- 7.3.12 Written acceptance of conditions set by ISB is a requirement of all doctoral students.
- 7.3.13 Proof of the M.Sc. must be delivered to ISB before any funding can be arranged and, in any event, before **December 31** of the year when funding is to begin.
- 7.3.14 The school has a strict policy of non-discrimination.
- 7.3.15 In accord with guidelines of the Ministry of Education and the Academy of Finland, we particularly encourage younger doctoral students and female doctoral students to participate in the school.

8. INSTRUCTIONS FOR RESEARCH GROUPS AND POSTDOCTORAL RESEARCHERS WISHING TO JOIN ISB

- 8.1 Our school encourages both experienced and recently established research groups and postdoctoral researchers to join ISB.
- 8.2 We primarily focus on the fields of structural biology, biophysics, and bioinformatics, but it is also important to include experimental molecular biology and biochemistry where closely related to ISB's main interests. The major theme of ISB is to understand complex biological systems at the atomic, molecular, and cellular levels by synergistically combining expertise from different disciplines.
- 8.3 Our school has been rated "excellent" by the Academy of Finland each time that ISB has been evaluated and we aim to maintain this excellent rating.
- 8.4 Interested in joining ISB? Applications are accepted at anytime but will be processed only three times per year, with **closing dates of September 15, February 15 and May 15**. Applications received after 1600 local time on the closing date will be processed after the next closing date. Applicants will be informed of decisions usually within 1 month.
- 8.5 Please send the following materials as one or more *pdf* files to isb@abo.fi and mail one signed copy to ISB.
- ◆ A short statement of research aims, including the relevance of the research to the aims of ISB in research training and education
 - ◆ A short (3 page maximum) CV
 - ◆ List of publications
- 8.6 Research group leaders and other members of ISB need only to inform the coordinator if they desire to discontinue being a member of ISB.

9. PREPARATION OF STUDY PLANS

Below are some general guidelines for preparation of the Study Plan. These details are from the requirements of the Mathematics and Sciences Faculty of Åbo Akademi University. The corresponding requirements of your own particular university may vary somewhat.

(Since 1 August 1997, every student who wants to submit a Study Plan for the Ph.D. degree should have a mark of "good (god/hyvä)" in the major of their M.Sc. and at least *cum laude approbatur* for their master thesis. If not, then special procedures are required.)

- ◆ Fit the Study Plan to a single page.
- ◆ The Study Plan for the Ph.D. degree consists of a plan of 240 study points (sp) worth of study and activity.
- ◆ A title for the thesis is required (it may be changed later).
- ◆ All courses should be at the intermediate or advanced level.⁵

| | Total Credits |
|--|-----------------|
| 1. Thesis | 180 sp |
| 2. Major subject | 30-35 sp |
| ○ Book exam (of own choosing, but must be approved by your professor) and other workshops or courses | 10-15 sp |
| ○ Conferences and congresses with posters or oral presentations | up to 8 sp |
| ○ Seminars | 4 sp |
| ○ Essay | 8 sp |
| 3. Minor subject(s) | 25-30 sp |
| ○ You can have one or several minor subjects | |

- ◆ The name of your supervisor(s) must be indicated.
- ◆ Your Study Plan must be approved and signed by the examiners of your major and minor topic(s).
- ◆ Type your name and address.
- ◆ Sign the form.

⁵ Introductory courses are usually not allowed; they have been accepted in the minor subject by some faculties when, e.g. mathematics and computer science was *not* part of the M.Sc. studies and where the minor courses are critical for a doctoral student's research area, i.e., bioinformatics.

EXAMPLE STUDY PLAN FROM ÅBO AKADEMI UNIVERSITY

Till matematisk-naturvetenskapliga fakultetens fakultetsråd

Undertecknad anhåller om studierätt vid institutionen för biokemi och farmaci för avläggande av filosofie doktorsexamen samt att följande studieplan för nämnda godkänns

Studieplan för filosofie doktorsexamen 240 sp

Doktorsavhandling: Struktural studies on.....180sp

Huvudämne: Biokemi

| | |
|---|--------|
| Boktentamen: Structure and Molecular Properties, Creighton, T.E | 8 sp |
| Molekyylin suunnittelu (HY) | 3 sp |
| SYBYL training course at CSC | 1.5 sp |
| Molecular Modelling I (KY) | 4.5 sp |
| Neurobiology (ÅA) | 4 sp |
| Farmakologia (TY) | 9 sp |
| From target to market (ÅA) | 4 sp |

Totalt **35 sp**

Biämne: Informationsbehandling

| | |
|----------------------------------|------|
| Programmering, grundkurs | 5 sp |
| Programmering, fortsättningskurs | 5 sp |
| Logik | 5 sp |
| Datastrukturer I | 5 sp |
| Probabilistic Algorithms | 5 sp |

Totalt **25 sp**

Handledare _____

Examinator för huvudämnet: _____

Examinator för biämnet: _____

Åbo den _____

Your name/signature

Institutionen för biokemi och farmaci, Åbo Akademi, BioCity 3rd floor
Artillerigatan 6 A, FI-20520 Åbo, Finland

10. FUNDS FOR RESEARCHER TRAINING AND EDUCATION

10.1 Each year ISB applies for and obtains funding from the Academy of Finland to support the activities of our school.

10.2 Funding is used for yearly research meetings, arranged courses, but funds are also available to doctoral students for

- ◆ Research meetings
- ◆ Scientific symposia (if oral or poster presentation is made)
- ◆ Workshops
- ◆ Other courses
- ◆ National and international research visits

10.3 Funding is available to all doctoral students in ISB, but priority is given to international events, research visits, workshops and courses.

10.4 ISB, with rare exception, will not fund attendance at a conference or symposium unless a poster, oral or written presentation is made.

10.5 Funds are limited and available on a first come, first served basis.

10.6 Funds are generally limited to 200-300 € (Europe) and 300-500 € (USA, Australia, Japan, etc.). Thus, it is likely that we cannot fund the entire amount that you might need. Often by combining a modest sum from several sources, sufficient funding can be accumulated. Thus, in addition to us, you should also contact:

- ◆ University foundations
- ◆ Private foundations and charities
- ◆ Your research advisor
- ◆ Your department or institute
- ◆ Industry

10.7 To obtain funding from ISB, please complete the appropriate form “Graduate student activity support form” **Form G203** found on the ISB web pages. Please describe (very briefly) the event, purpose, the costs involved, and how much funding is requested from the school. You must supply a budget where you estimate the costs and your plan to obtain the remaining requested funding. We generally make

a decision within a few days.

11. NON-DISCRIMINATION POLICY

- 11.1 Since the founding of ISB in 1997, the school has had a strict policy of non-discrimination, including but not limited to age, gender, race and nationality.
- 11.2 In accord with guidelines of the Ministry of Education and the Academy of Finland, we particularly encourage younger doctoral students / researchers and female doctoral student / researchers to participate in the school.



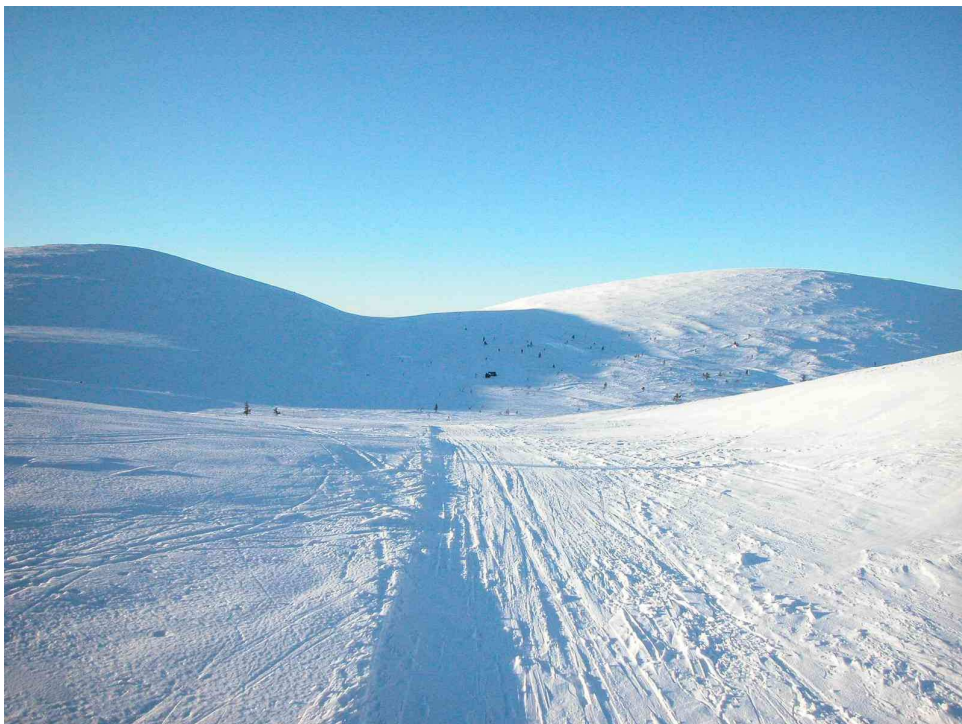
12. ETHICS POLICY

- 12.1 Professional and scientific ethics are an extremely important part of every doctoral student's and every scientist's education and training. The Academy of Finland and the Ministry of Education repeatedly stress that ethics "training" must be a formal part of doctoral education. ISB promotes good ethical practices in science and education.
- 12.2 In cases of scientific fabrication, misrepresentation, plagiarism, and misappropriation in science, we adhere to the policies and recommendations of the National Advisory Board on Research Ethics. Details are contained in the following publications available from: www.pro.tsv.fi/tenk
- ◆ Good Scientific Practice and Procedures for Handling Misconduct and Fraud in Science
 - ◆ Guidelines for the Prevention, Handling and Investigation of Misconduct and Fraud in Scientific Research (1998)
- 12.3 Similar procedures are followed in cases of academic fraud, which includes cheating on exams, plagiarism, and misappropriation of another's work.
- 12.4 In accord with these practices and procedures, all suspected cases of academic and scientific malpractice would be reported to and handled by the rector of the relevant university or universities or by the director of independent institutions. Misappropriation of funds is a criminal offense and should be handled by the police.
- 12.5 It is unethical and irresponsible to make malicious accusations against individuals or institutions that are false or based on speculation. Bullying, threats, harassment, and intimidation will not be tolerated from anyone.
- 12.6 The individual research groups belonging to ISB will adhere to ethical practices in biotechnology, medicine, and gene technology. We refer all doctoral students and supervisors to the National Advisory Board on Research Ethics for further information. See also, the Ministry of Education web site located at www.minedu.fi.
- 12.7 Ethical practices will be applied in handling of sensitive information

(e.g., applications submitted to the graduate school and discussions of such applications by review panels are strictly confidential; no personal data of any individual will be placed on the ISB web site; personal information (contact details) will be distributed only to members of the school; others details to the Academy of Finland and the Ministry of Education only as required by them).

12.8 Biological ethics (e.g., use of embryos for stem cell studies; use of primates or other animals for testing purposes) may be a tricky issue that is affected by the changing views of society. Some issues are clear such as the concept that testing on humans is forbidden unless strict procedures are followed and that the test subjects are in favor of the testing. Some issues are less clear and depend on one's own personal views and conscience. Clearly a subject that requires discussion and careful consideration.

12.9 In practice, our advice is to be very careful if a problem arises. Consult in confidence someone that you can trust. Get legal advice if necessary. One should not be intimidated from bringing forward legitimate claims of misconduct but keep in mind that everyone is innocent until proven to have committed misconduct. The Board of ISB, however, reserves the right to expel any member of ISB who has been shown to engage in serious ethical misconduct.



13. PLAGIARISM – NO TOLERANCE POLICY

- 13.1 Nationally and internationally, plagiarism, especially using materials from the Internet, has been a particular problem in courses, presentation files, course essays and even thesis materials.
- 13.2 Plagiarism will not be tolerated from anyone who is a member of ISB.
- 13.3 In cases of academic malpractice, ISB follows the policies and recommendations of the National Advisory Board on Research Ethics. Details are contained in publications available from: www.pro.tsv.fi/tenk
- 13.4 Since all members of ISB have been informed of this policy, what constitutes plagiarism (see below) and what constitutes proper acknowledgement of another's work (see below), ANY incidence of plagiarism will likely result in being expelled from ISB, loss of future funding from sources managed by ISB, but other regulations at individual universities or institutes may apply. Details will be reported to the Ministry of Education and to the Academy of Finland as is required.
- 13.5 In order to make it absolutely clear, we have reprinted here an early piece from our ISB Newsletter (Issue 2, 2002) that has been updated to include some more recent observations. Guidelines are also given on how you may properly use the intellectual property of others.

Talking point: Plagiarism in scientific writing

plagiarism 1. The appropriation or the imitation of the language, ideas and thoughts of another author, and representation of them as one's original work.
2. Something appropriated and presented in this manner

(Excerpted from Webster's Encyclopedic Unabridged Dictionary of the English Language, Gamercy Books, New York, 1996, p.1100)

We see it all the time: Headlines in *Nature* or in *Science* alleging that senior (and junior) scientists have faked or reused data over and over again for different purposes. These scientific "crimes" occur and those that commit these offenses are embarrassed internationally when detected and often lose their chance to continue in their scientific career.

Less often but occasionally reported are cases of plagiarism, where one person's material is passed off by another person as being her/his own. When

this “crime” is detected, and there are those that have made a career of scanning published material for offenders, a similar embarrassing fate usually awaits the perpetrator.

Why do I bring this up? Over the past six months I have had nearly 10 separate encounters here in Finland where “authors” have appropriated material from others and represented it as their own. This has ranged from appropriating figures from other sources and not referencing the source – to written essays that are entirely, word-for-word the text of others, extracted from textbooks and material from the Internet. In the most extreme case, a scanner was used but the “picture-to-text” translation software did not work, making it difficult for the “author” to include the various chapters into her/his “own” work. In another case, after being confronted about the use of large amounts of direct text from a textbook, on given a second chance the revised text of this “author” was traced to lecture notes from several sources published on the Internet. And it is not just individuals that engage in plagiarism. Surprisingly, we have noted the use of figures and material from my own research group on publications by other organizations, without permission and, in some instances, breaking copyright laws because the figure has appeared originally on the cover of a scientific journal.

In each of these cases the person involved was surprised or otherwise unperturbed when the offense was brought to their attention. “I did not know that this was wrong”. This was even the case for the person that was twice confronted.

Well, it is wrong, absolutely and very wrong. In the USA and the UK, for example, plagiarism in the university by a student is the same as cheating on an exam and typically results in expulsion from the school if proven. For scientists, it usually ends their careers permanently, depending on how much publicity is raised about the incident and how many other incidences of plagiarism are dug-up as their career’s work is investigated.

Here are some very simple rules to follow:

1. You can never ever use material of others - figures, text or other materials - without proper referencing and acknowledgement. (This includes any material whether copyrighted or not or whether from the printed page or from the Internet).
2. Directly quoted text should be placed in quotes and an explicit statement and reference should make the situation absolutely clear to the reader.
3. Figures, when reproduced entirely - this fact should be clearly stated in the figure legend along with the reference/source/web page/etc. [give a very specific indication in the legend if you are also reproducing the text of the figure legend, too, with permission of the copyright holder, of course].
4. Figures of others that are adapted (changed somewhat) for your own use should be accompanied with a statement such as this: “This figure was

adapted from Figure 6 of ... giving the full reference to the original authors and figure.

5. You must obtain written permission from the copyright holder for the reproduction of copyrighted material in any publication, including theses.
6. Every co-author on a paper to be published has the responsibility to ensure that the text and results are original and that they belong to the authors.

[As I was writing this I was refereeing a manuscript on a topic close to our own interests. In the introduction of that paper the authors had used statements from our own published paper word-for-word and without acknowledgement needless to say (and due to other factors too) - the paper was rejected.]

Since these comments were printed in 2002, more incidents have occurred including several close to home. In particular, materials from Internet sites and from books (not on the Internet) were used, and the persons involved have found themselves in very hot water.

7. You may never use material from any web site unless you treat it in a similar way as with copyrighted material. If it looks as though you are trying to pass the material off to others as your own – no quotes, no citation, and no acknowledgements – then you are engaging in plagiarism! Rules on plagiarism extend to all activities including course work, course laboratory reports, theses, etc.

– Mark Johnson

13.6 Proper citation using a secondary source. Note that in writing you should have read the publications that you are citing. If you have not, for example, because it is for historical background and the primary reference from 1747 is not generally available but was reported in a secondary reference, then you should write the text so that the reader will know that the information reported is from a secondary source reporting about the primary text.

14. DOCTORAL STUDIES, CAREER PLANNING

14.1 Doctoral studies

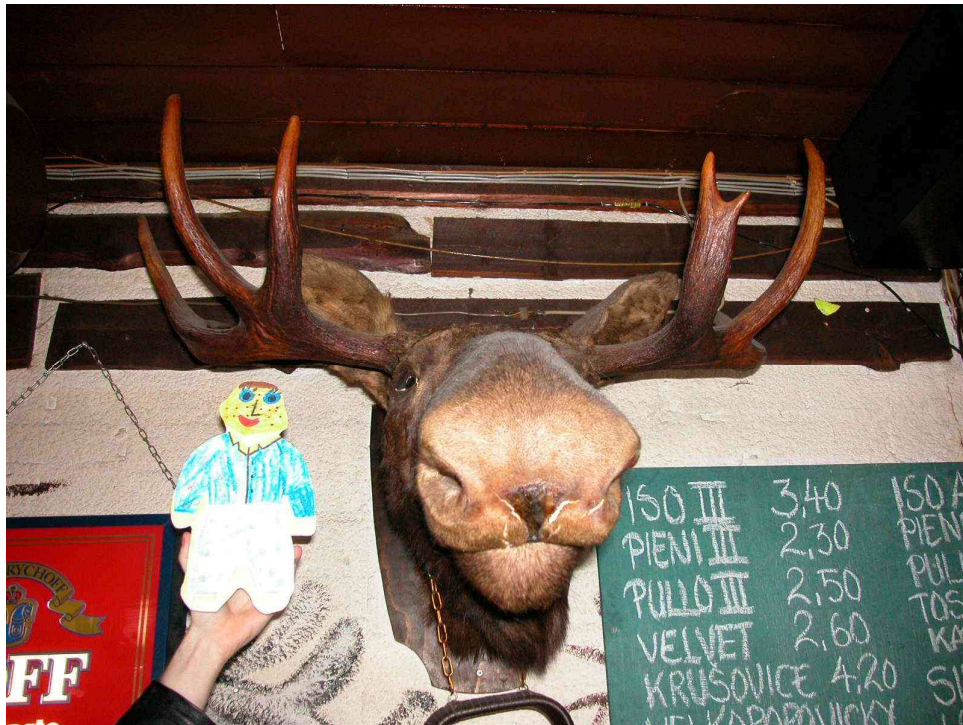
- ◆ Doctoral studies are a 4-year, intensive researcher training and education program. It is not a career choice, but a preparation for a future where having a Ph.D. is a license for participation.
- ◆ You are responsible for making a success of this opportunity no matter what the circumstances are. The supervisor can lead you (horse) to the lab/computer (water) but can't make you a scientist (drink).
- ◆ ISB and all other graduate schools in Finland are now under extreme pressure from the funding agencies to see that doctoral students complete within 4 years. From the start it is important for **you** to focus on your studies with the aim of being the best.
- ◆ The main idea is this: by the end of your time in a doctoral program, you will know how to solve problems by yourself. You will know how to write a publication for international scientific journals or present your research effectively in public. You will have some experience in guiding others in research and in teaching others. You will have ideas of your own that you want to pursue in research and you will be driven to implement them. You will know your field of interest well. When all of these are true, you are ready to defend the thesis and go off to the next phase of your life, and you should be a success.
- ◆ ISB is there for you to use and exploit, but is up to you under the guidance of your supervisor and other thesis committee members to plan courses, national and international, that will customize your education for your future plans. Remember, in the end, this is your Ph.D. and *you* – not your supervisor – are responsible for making it a success.
- ◆ “International” is important! The Ministry of Education and the Academy of Finland have placed a huge importance on internationalization, in other words, that our students travel abroad for courses, workshops and in giving presentations and conferences. Consider a longer-term research visit with a collaborating group! If there is a desire it can be arranged.
- ◆ ISB has only a limited amount of funding to arrange courses for the whole school and the focus will remain on the ISB Spring and ISB Winter schools, support of doctoral students on research courses, workshops and research visits.

14.2 Career planning

- ◆ Remember: employers want **quality**, whether academic or in industry, they want excellent, productive employees (mediocre researchers will have difficulties). In academia, this means good research, publications, ability to communicate, teach others, ability to raise funds, more publications, more fund raising, etc. The Academy of Finland has support plans that cover the entire career of a scientist; consult www.aka.fi for details regularly as deadlines and types of funding change.
- ◆ Whatever your future goals, the important thing is to have a plan for your future and use the 4 years in the school wisely and in a way that prepares your way ahead towards a successful future. Think and plan 5 years ahead: “to get where I want to be in 5 years, what must I do now and over the next few years?” Then do it.
- ◆ In Finland the progression in the academic world is: Ph.D. → Postdoc → Docent → Junior and Senior researchers → Professor. Industry may or may not need postdoctoral training after the Ph.D. Recent discussions at the Academy of Finland have identified the bottleneck in academic careers and recommendations are now suggesting corrections whereby more positions will be made for researchers after their postdoctoral training is completed.
- ◆ In planning your career, you need to take into account the course credits and publication requirements to be completed over the four years. It is a rather large requirement and if you are not serious and focused from the beginning you may find it difficult to complete your requirements within 4 years. When planning for postdoctoral research after the Ph.D., you need to begin more than a year in advance: What lab? Finland?/abroad? How will it be funded? What project plan will be submitted along with funding applications? Etc.
- ◆ Postdoctoral research funding - timing is important! The Academy of Finland has deadlines (see www.aka.fi) each year for postdoctoral applications. To qualify for the application, you must have your Ph.D. defense scheduled by your university faculty, thus your timing of the defense is critical because if you miss the date, then you need to wait another year before applying. The decisions are usually announced more than 6 months after the application was submitted. EMBO (www.longterm-fellowships.embo.org) is another important source for support with application dates several times per year.
- ◆ Postdoctoral training abroad 1: Doing research in another country for a year or more can bring you many benefits. Firstly, it will change you forever. You will be exposed to new ideas and ways of making science. You may even realize what a good system we have here and how lucky you have been; you may like it there and decided to stay

forever. A majority of the most successful scientists in Finland today have been abroad for postdoctoral training.

- ◆ Postdoctoral training abroad 2: Secondly, training in another country is looked upon very favorably when decisions are made on postdoctoral and other grant applications, as well as applications for positions at universities. The Academy of Finland has been disappointed at the decreasing number of Ph.D.s training abroad. Did you know that they provide excellent support to those that go out of the country for postdoctoral training? as well as helping with funding for your return to Finland? Visit their website for details.
- ◆ Other sources of postdoctoral funding. The Academy of Finland is not the only source for funding. Postdoctoral researchers, both in Finland and abroad, are funded from a research group's funding, too. In any event, you will have needed to make contact with possible research groups from 1.5-2 years before your anticipated date of graduation. Remember, funding is hard to raise and it takes time, and for a foreign research group or one here in Finland it will often take more than one year to arrange funding and hear a decision. Consider going abroad and apply for support from: the Human Frontiers Organization, Marie Curie Postdoctoral Fellowships, EMBO, etc.



15. THE DISSERTATION

ISB 15.1 At some point the doctoral student, the supervisor(s) and thesis committee will have agreed on the timing for the writing of the final thesis work.

15.2 Remember that the arrangements take a considerable amount of time. Reviewers must be approved by faculty committees, whose meetings occur once per month. Reviewers may be given a month or more to return comments back to the faculty. When the faculty has obtained positive reviews, the opponents name must be submitted for approval by the faculty committee, and the date of the oral defense can be proposed. The whole process can take 3 or more months.

15.3 No thesis should be sent out for review if the parties involved are not convinced that the thesis is of the quality and content that is required for a doctoral degree according to current standards.

15.4 Monographs are generally not accepted as the final work within ISB, whereas a collection of published articles are required as is customary for the sciences. International peer-reviewed publications represent the first independent review of the thesis material.

15.5 Reviewers of the thesis form the second set of independent reviewers of the dissertation that should focus on the material that has not been submitted for peer review, the introduction and literature review and any manuscripts appended to the thesis. Reviewers should be chosen with care since their opinions matter most and no thesis should reach an opponent if there are serious problems.

15.5.1 ISB encourages the selection of foreign reviewers if timing permits.

15.5.2 Because research within ISB is often multidisciplinary, reviewers should be chosen to provide expert opinions on different major aspects of the thesis.

15.5.3 Independent (no co-authors) thesis committee members have been reported to make excellent reviewers because he/she is well informed about the project and has had an interest in the doctoral

student's career from the beginning. At ISB, one reviewer may come from the thesis committee.

15.6 Opponent(s) of the thesis represent the final level of review of the thesis and of the candidate for the doctoral degree.

15.6.1 Foreign opponents of the dissertation are encouraged and like all reviewers in the process must be an independent reviewer without any conflicts of interest with the candidate for the degree.

15.6.2 The opponent has several goals but the most important ones are to establish that the candidate has prepared the thesis materials, that the candidate is familiar with the literature in his field of study, and that the candidate can address a range of broad questions surrounding the thesis topic.

15.7 Please let ISB know when the thesis defense is scheduled so that we may advertise the fact to others in the school. Please send a copy of the published thesis to ISB for its archive, we thank you in advance!

15.8 The Ministry of Education and Academy of Finland asks the fate of all of our doctoral students. Are they employed? In industry? Academia? ISB asks supervisors for information on past doctoral students and reports to the government agencies for use in policy making.

16. WHEN THINGS GO WRONG

Occasionally, things can go wrong. Difficulties arise between a doctoral student and supervisor for one reason or another. A doctoral student commits a breach of our ethics policy and finds him or herself in very serious trouble. Funding ends.

If you find yourself in such a situation, whether as a supervisor or as a doctoral student, it is our recommendation that a neutral party is consulted to help sort out the problems. No one should ever make any rash decision; think and consult with others before doing anything.

During the past several years, thesis committees (the members other than the supervisor) have been used repeatedly to help resolve issues between a doctoral student and the supervisor, but other neutral persons have given valuable assistance, too.

In no event should anyone resign a post or position in haste and under pressure. Instead, it is important to consult the thesis committee or some other party.

Before sending that nasty letter, wait until you cool off and then reconsider what you are doing – nothing destroys any future relations and cooperation like a nasty letter, especially when it comes as an unexpected surprise. Remember several things: Humans are not mind readers and what is obvious to you another person may be blind to. Colliding objects interact with equal but opposite forces – the same happens in human relations – the “eye-for-an-eye” syndrome. So, if possible, try to bring-up issues without getting emotional and try to resolve issues early before they become real problems and get out of control.

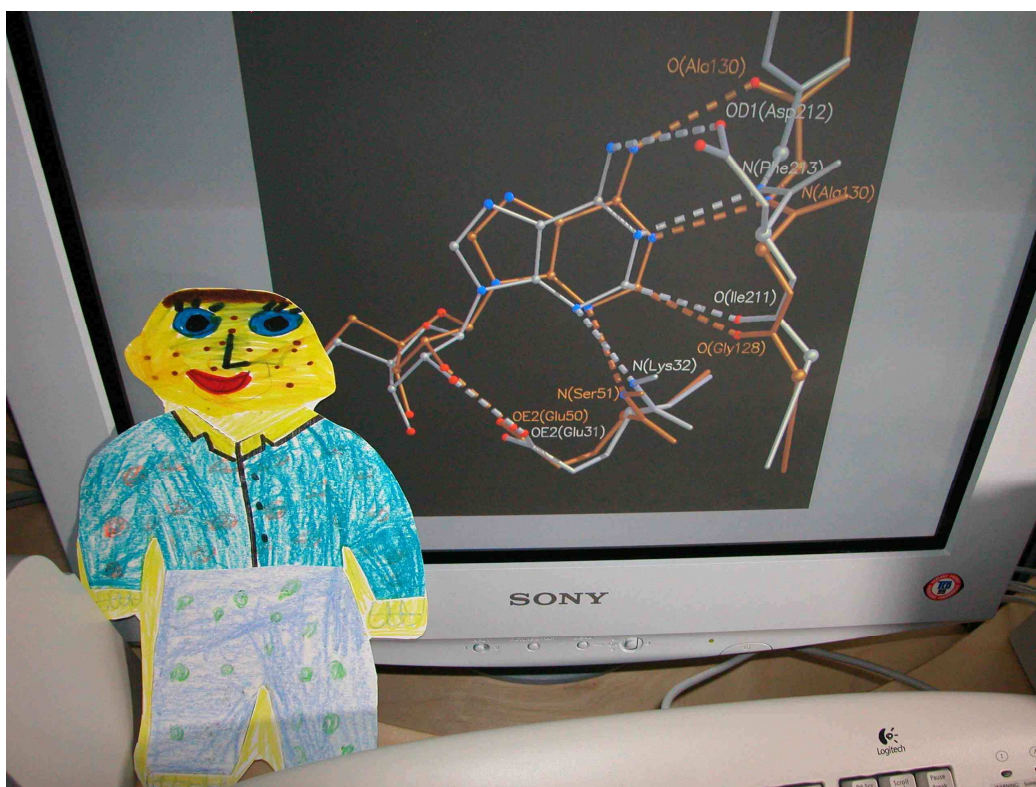
In the case of Ministry of Education sponsored positions, funding is made to the doctoral student and not to the supervisor, and on very rare occasion we have allowed the transfer of the student to another lab, see **§7.3.11**.

If you need to consult someone in private and in confidence about a “difficult situation”, you can always contact the ISB office and those of us in the office can give you advice and/or make contacts to arrange a meeting with another party to help sort the problem out.

17. ELECTRONIC FORMS

As we try to reduce the amount of paper used, the photocopying and shredding, we are creating forms that may be filled out and returned back to ISB by E-mail. For legal reasons, we sometimes will request 1 signed copy of a document.

Forms are available from www.abo.fi/isb for, e.g. applying to the school, applying for funding of student activities, submitting the project abstract to be placed on the website, and more forms will be added as need.



IMPORTANT DEADLINES

New students:

⊗ Before you can officially join the school you must supply ISB with an official copy of the M.Sc. degree

Within the first month, you must

⊗ Give ISB a copy of your Study Plan

⊗ Notify ISB of the thesis committee members

⊗ Give ISB the title and abstract of your research project (for the Internet pages)

Within the two months, you must

⊗ Revise research plan, complete literature survey and meet with thesis committee, and report back to ISB

All students, yearly requirements:

⊗ Fall: Preparation of research report

⊗ Fall: Thesis committee meetings

⊗ November 15: New students: Deadline for delivery of research reports, thesis committee summary, and report form to ISB

⊗ December 20: Continuing students: Deadline for delivery of research reports, thesis committee summary, and report form to ISB

Applications from students/supervisors/postdoctoral researchers wishing to join ISB:

⊗ September 15, February 15 and May 15