National Institutes of Health
Graduate Partnerships Program
Student Handbook

The University of Cambridge
The University of Oxford
Churchill Scholars
Marshall Scholars
Rhodes Scholars

2008-2009


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INTRODUCTION

The NIH-United Kingdom (UK) graduate partnership programs are designed to offer challenging international doctoral training opportunities for highly accomplished students interested in careers in basic or clinical biomedical research. Four distinct but related programs have been developed thus far: the National Institutes of Health-Oxford University Scholars in Biomedical Research Program, the National Institutes of Health-Cambridge University Health Science Scholars Program, the National Institutes of Health-Marshall Scholars Program, and the National Institutes of Health-Rhodes Scholars Program. Students involved in the Churchill, Gates, Howard Hughes Medical Institutes, or other scholarship programs are also able to participate in the UK partnerships which are based on the recognition that biomedical research must be collaborative on a global scale. The breathtaking pace of contemporary biomedical research is driven by such collaboration that is characterized by rapid communication of results, accelerated commercial and noncommercial dissemination of new research technologies, and the interdependence of research groups internationally for research materials. These programs are based on the belief that scientific training must modernize so as to be responsive to the continually evolving nature of scientific inquiry.

In the NIH-Oxford and NIH-Cambridge programs, each student is given the opportunity to work under at least two different research supervisors - one at the NIH and one at either Oxford or Cambridge - on a project that involves a collaborative undertaking by the two laboratories. Applicants must be U.S. citizens or permanent residents and hold a bachelor's degree, and may also already be enrolled in graduate or medical school. Students carry out research with a goal of earning a Doctor of Philosophy degree (Ph.D. or D. Phil.) which requires spending roughly equal amounts of time at the NIH and at the chosen University. During their time at the NIH, students become members of one of the NIH Institutes that collectively constitute a vibrant graduate community that is unique in the nation. While at the selected UK University, the student will be a member of one of the Colleges of which Oxford and Cambridge are comprised and will fully participate in the activities of university and college life. Most doctoral study programs in the UK do not require the completion of formal coursework and the doctoral degree can be completed in three to five years. Upon completion of the program, the students are awarded a doctorate by either Cambridge or Oxford University.

Combined M.D./Ph.D. Program

The Oxford/Cambridge Program is also designed to accommodate students seeking combined M.D./Ph.D. training. The NIH Intramural MSTP partnership is a supplement to the Medical Scientist Training Program that funds M.D./Ph.D. training at 41 U.S. Medical Schools. The purpose of the NIH MSTP partnership is to allow an integrated program of training at one of these medical schools in concert with Ph.D. research in the intramural program of the National Institutes of Health. This program was approved in December 2005 by the NIH leadership and is funded by individual training supplements from the

NIH institutes to the existing MSTP.

The Ph.D. portion of this program is done through the GPP which consists of formal partnerships for Prospective PhD Students and individual partnership for Current PhD Students. An NIH scientist serves as your mentor or co-mentor for the Ph.D. portion of your training. Please keep in mind that as with other M.D./Ph.D. programs, all the requirements for the Ph.D. from the University partner department must be fulfilled. In many cases, medical school courses are accepted in lieu of some of the coursework. In all cases, your Ph.D. degree will come from the university in which you are enrolled for that degree. Students can enter the NIH MSTP in three ways:

Track 1: Simultaneous admission to both programs. Undergraduate or Post-Baccalaureate students can apply for MSTP programs at medical schools and the GPP during the same admission cycle. If admitted to both programs, the student can enter the partnership MSTP with permission of the GPP and MSTP program directors. The sequence of training in this track would in most cases be similar to the usual MSTP training pathway. Students must apply to medical schools for combined-degree training to be considered for the partnership pathway

Track 2: Admission to Ph.D. training from medical school. Medical students can apply to an NIH GPP program and begin graduate training generally after completing the pre-clinical medical school curriculum. Students in 'year-out' programs such as the NIH-HHMI Research Scholars Program or the Clinical Research Training Program can also apply for Ph.D. training in this track. Upon acceptance to the GPP, students can then apply for MSTP status to the MSTP program of their medical school.

Track 3: Admission to medical school and an MSTP during Ph.D. training. Students wishing to pursue this pathway should apply to medical schools for combined degree training (not medical school only) so their applications are considered by the MSTP admissions committee at the medical school. Applying to this pathway during the first or second year of Ph.D. training is preferred so the training can be as integrated as possible.

Students who are not U.S. citizens and are enrolled at one of the participating U.K. Universities are eligible for the Advanced Scholar track which will provide stipend, health insurance and travel expenses, but not tuition or other fees. For the NIH Marshall Scholars program, students must be awarded a Scholarship from the Marshall Commemorative Fund in order to be eligible and may pursue study in any qualifying educational institution in the U.K. Students receiving a Scholarship from the Rhodes Trust to study at Oxford are eligible for the NIH-Oxford program.

ACADEMIC POLICIES

Coursework Required

There is no formal coursework required for the Ph.D. in England (D. Phil. at Oxford). It is assumed that the student has already chosen a field of interest and taken appropriate courses as an undergraduate or during a post-baccalaureate training experience. If, however, the two co-mentors determine that it is in the student's best interest to expand his/her foundational knowledge by engaging in further didactic training in specific areas, opportunities will be made available in the UK or at the NIH through the FAES evening school courses or other avenues to accomplish this purpose. Mentors may recommend courses that enhance the breadth as well as the depth of the student's educational experience. More extensive coursework, for example, a Master's course, may sometimes be required by a particular department or when a student is entering a new field of research for he/she is not adequately prepared. An assessment of this need and the recommendation of an appropriate training experience will be made during the first two-month introductory period at the NIH (see below). In addition, during this time, students also may be required to take brief training in travel security, lab safety and other topics as required by the NIH.

Research Proposals, Examinations, and Progress Reports

During the first two-month introductory period (August and September) and with the guidance of the co-mentors, students will be required to **prepare a 5-page (single-spaced) research proposal with a supporting bibliography**. A copy, signed by both co-mentors, must be **submitted to the student's assigned scientific counselor (Dr. Carol Thiele or Dr. Helene Rosenberg for the Class of 2008) and the OXCAM managing director (Bridget Lampert) by Monday of the third week in September** (prior to departure for the UK--see below). Thereafter, each year the student is enrolled in the program, he/she must submit by October 1st to his/her mentors, the scientific counselors, the managing director and the GPP program assistant a **two to five page research progress report** and **updated curriculum vitae**. Without exception, students must submit to the GPP updated address, e-mail, and telephone (land and cell) contact information at least once per year or as the information changes.

At both U.K. universities, between the first and second years, the student will prepare a formal research proposal or "transfer report" of up to 20 pages which must be submitted to the student's NIH scientific counselor, mentors, and the managing director. The content of the report should generally focus on the topic of the thesis. The university mentor will be able to direct the student in the format and completion of this transfer report. The student "defends" this proposal during an oral examination designed to determine if the student is qualified to submit a thesis for the Ph.D. (D. Phil.) examination at the end of the student's tenure. Upon passing this exam, the student is "transferred" into

full status as a doctoral student at the University. In that year, the student may submit the transfer report in place of the annual progress report. While the program has not customarily required students to present a seminar on their theses, this can be arranged independent of the examination on a case-by-case basis. If, as a result of this assessment, the student is not considered to be on track for a Ph.D. within the normal time limits, the assessors may recommend discontinuation or registration for a lower degree (for example, in Cambridge, the Masters of Science Degree) and the time frame for completion will be abbreviated as appropriate.

NOTE: ALL PROPOSALS, ABSTRACTS, PUBLICATIONS, ONE BOUND COPY OF THE THESIS AND ANNUAL UPDATED CVs SHALL BE SUBMITTED TO THE MANAGING DIRECTOR OF THE PROGRAM (lampertb@niaid.nih.gov).

Guidance and Procedures at University

As a student at the university you will need to be sure to follow certain university guidelines and procedures. For example, each university has a different requirement for students who "work away," which is what you will be doing during the time that you are at the NIH. In order to receive credit for the time that you "work away," the university must grant you permission to do so and typically approve these requests. You will complete an application for "Leave to Work Away." You should also be sure to alert your College of when you plan to leave the UK and go to the NIH. Each university offers very helpful information at the following websites:

University of Cambridge - http://www.admin.cam.ac.uk/offices/gradstud/current/
University of Oxford - http://www.ousu.org/content/index.php?page=4794

Dissertation Requirements

When the student, co-mentors, and the GPP concur that the student has completed a substantial body of work, the student prepares a written dissertation and submits it to the university. The university chooses an internal and an external examiner with expertise in the student's area of research (the external examiner could be the student's NIH adviser, for example, but not the NIH supervisor/mentor) and the student gives an oral defense in a private meeting with the examiners in the U.K. (this is called the Viva). The examiners submit written evaluations to the university, where a committee then decides whether to grant the degree. The committee members evaluate the extent to which the student demonstrates mastery level knowledge of the field and has developed a substantial body of original work. A more detailed description of the process is available from each university. For example, the Cambridge University instructions are appended at the end of this handbook (**see appendices IV and V**).

Time in the United Kingdom

University residency requirements must be met at the University awarding the

degree. The average length of time to degree is to 4 years with approximately 50% of the time spent at the university and 50% at the NIH. Some students may take longer to complete their degrees. The exact sequence of time spent at each institution is set according to the needs of the research. While the program was originally designed to enable students to spend two years in each laboratory, we have built some flexibility into the program. Both Oxford and Cambridge Universities have three nine-week terms each year beginning the first week of October and finishing about mid-June. The Ph.D. (D. Phil.) typically requires that the student spend a minimum of 6 terms in residency at Oxford University or 3 terms at Cambridge University, although there is flexibility such that this may require calendar time rather than adherence to specific term dates. Students seeking these exceptions must obtain written permission from the head of graduate studies at Oxford or Cambridge. NIH-Marshall Scholars and NIH-Rhodes Scholars are required to be in residence in the United Kingdom during the time that they are supported by the Marshall Commemorative Fund and the Rhodes Trust, respectively. Students participating in other scholarship programs such as the Churchill and Gates programs must abide by residency or other requirements of those scholarships. However, winter and summer vacation periods may be spent working at the NIH and the program offers some flexibility for further work if it is essential to the success of the project. Requirements for individual Scholars, especially those intending to complete the doctorate in three years, should be explicitly discussed in advance with the NIH scientific counselors, your mentor, and the University program directors. Exceptions to the 50% time allocation at the university and the NIH have to be acceptable to both co-mentors and the NIH and University Program Directors; however, NIH regulations require that at least 51% of the training period supported by the NIH be spent in the NIH training laboratories. These arrangements are to be clearly outlined in the student research proposal and timeline that the student submits to the GPP on October 1st of the first year and which the mentors and scientific counselors approve in writing. The program can also be modified during the course of the training if the student, the co-mentors, the NIH and University program directors, and the GPP all concur. A GPP representative will serve as a neutral "third party" facilitator during conversations required to resolve any disputes about the appropriate course of action related to the student's education plan. The goal of such dialogue will be for all parties to reach consensus on the course of action agreed to be in the student's best interest while also maintaining the integrity of the program model.

COLLABORATIVE PROJECTS

Introduction

The joint mentorship of a graduate student based on international collaborations provides the possibility of unique experiences and exciting challenges for students as well as mentors. Most importantly, the program allows the student to be a member of two (or more) laboratory research environments in different countries. The student is first faced with the critical task of choosing a suitable project. The Oxford/Cambridge/NIH Graduate Program maintains a list of prospective mentor pairs who are either already engaged in ongoing collaborations or who are planning future collaborations. Listed

mentors have agreed to jointly supervise graduate students and have provided a general outline of the collaboration and the suitability of their collaboration for graduate work **(project descriptions are available through the GPP website (gpp.nih.gov).** Alternatively, the student, through her or his particular interests, may help initiate collaborations between prospective mentors. Mentors are drawn from eligible faculty at Oxford/Cambridge and from among principal investigators at NIH. Principal NIH investigators must hold tenure track or tenured positions, control independent resources, and have obtained approval by their respective Institute's Scientific Director. NIH staff scientists and postdoctoral staff may not serve as mentors but can assist in the training of students. FDA investigators in the NIH community are generally not eligible. Faculty at Oxford/Cambridge must meet the University rules for accepting responsibility for graduate students; postdoctoral fellows are not acceptable mentors. In order to evaluate and finally choose a project, the student will need to discuss in detail the planned projects with the prospective mentors, paying particular attention to the breakdown of specific work to be accomplished overseas and at NIH and to how the different project components can be successfully integrated. Since students are usually located on the NIH campus during this initial phase, discussions with the UK mentors will necessitate extensive e-mail contacts and/or conference calls, including video conference calls arranged by NIH. Under guidance by the chosen mentors, the student then writes up a specific proposal, 5 pages long, that describes the project, provides a brief timeline, and delineates which parts of the work will be carried out where. Students and/or mentors may feel that additional formal course work is required to complement the student's knowledge in the area of the chosen subject. If so, the GPP office will help in making appropriate arrangements. Once the student and the mentors have come to a mutual agreement on the project(s) and its particulars, both mentors and the student will sign off on the project description which will be submitted to the scientific counselor for approval. Students will be required to archive all documents/artifacts related their research in an electronic portfolio system administered by the managing director of the Scholars Program.

Choosing a Collaborative Project

This is one of the most important parts of the educational process. It will determine who your mentors are and what research you will undertake during the program. It will have an important impact on your future in science. It is critical that you establish a project which is appropriate for you and with two mentors who appreciate the collaborative nature of the program. It is also crucial that the research environment created by the mentors in their laboratories is compatible with your personality, interests, and goals. A good place to start is on the GPP web page containing hyperlinks to partnership (see http://gpp.nih.gov/Applicants/ProspectiveStudents/PartnershipPrograms.htm). At the bottom of this page, you can click on the links for the Oxford or Cambridge University programs. From there you can click on links to view the participating researchers from Oxford/Cambridge and from the NIH, and also the collaborative projects which are accompanied by a brief overview of the proposed research. Read these very carefully with a mind not only to your current interests, but also as a way to stimulate your thinking in

relationship to the future development of your career. You may contact the researchers at any point and discuss with them any aspect you feel may be relevant to making your choice. Specific points you may want to consider are:

1) Am I interested in the topic? (A bit obvious, but don't forget to consider this!)
2) How much previous lab experience would be needed to get the project going?
3) What type of supervision do I want and how "hands-on" are the mentors?
4) What is the lab environment like (how many post-docs, grad students etc...)?
5) What does the lab offer in terms of journal clubs, presentations, etc...?
6) What is the environment like in terms of collaboration with nearby labs?
7) What are my mentors' expectations in terms of work schedule?
8) Have the mentors worked with students before?
9) Do the mentors have existing collaborations?
10) What do other people in the mentors' labs have to say?

These are just guides to things you should consider when choosing a project. Remember, there are no necessarily correct answers to the questions; you may want a mentor with a very hands-on approach, while someone else may want more independence. In addition, remember that a talented mentor's ability to inspire your research and have an impact on your scientific foundation and future may be more important than identifying a specific topic or discipline for your thesis. In addition to talking directly with PIs, all students are strongly encouraged to visit labs and talk with lab members, especially other students, to gather feedback about their experiences in the lab(s). You should pay special attention to whether or not those with whom you talk seem enthusiastic about the lab in question.

The scientific counselor and NIH advisor assigned to you for your matriculation year will assist you in the selection of a mentor. **Please note that it is not unusual for students to independently identify/select their mentor pairs (about half of the students entering each new class adopt this approach).** The NIH adviser has been selected as an established scientist in your chosen area of research. Often, this individual has developed a sound knowledge of, and perspective regarding NIH faculty and, potentially, UK investigators. These individuals may offer you valuable insights regarding research environments and researcher/mentor styles that you must consider when making decisions about your own research interests/pursuits. It is important to get in touch as soon as possible with the scientific counselor and your NIH adviser to begin your lab selection. **A personal meeting with these individuals should be arranged for the first day of the NIH visit week.** Note that if you establish a good rapport with your NIH adviser, it is possible for him/her to serve as an outside examiner for your doctoral thesis. The current scientific counselors for each class are:

Class of 2001, 2002 & 2003	Dr. Ronald Schwartz	rs34r@nih.gov	301-496-1257
Class of 2004	Dr. Richard Youle	youler@mail.nih.gov	301-496-6628
Class of 2005	Dr. Chris McBain	mcbainc@mail.nih.gov	301-402-4778

Class of 2006	Dr. Jennifer Lippincott-Schwartz	jlippin@helix.nih.gov	301-402-1010
Class of 2007	Dr. John Hanover	johnh@mail.nih.gov	301-496-0943
	Dr. Tracey Rouault	rouault@mail.nih.gov	301-496-7060
Class of 2008	Dr. Carol Thiele	thielec@mail.nih.gov	301-496-1543
	Dr. Helene Rosenberg	hrosenberg@niaid.nih.gov	301-496-1543

When you attend the NIH and University visit weeks held in late June (described below), you will be able to meet with the mentors of the projects you have identified and finalize your decision. You may also gather useful information by talking to the upper year Scholars at the Scholars-Mentors Colloquium during the visit weeks.

Finally, although you are encouraged to choose from the list of pre-approved projects, you may not find a project that you feel really aligns with your interests. If you have identified a mentor or lab that you would like to work in, *it may be possible to establish a collaborative proposal independently. You can only do this with the prior approval and involvement of the scientific counselor and your NIH advisor*. You may ask the mentor you have identified to approach an existing collaborator or colleague at the other institution to be your co-mentor and then establish your project. What is critical to the success of your project, and the program in general, is that your mentors are fully appreciative of the collaborative nature of the Scholars Program research enterprise. Your program mentor will work with you to choose a proper project and co-mentors.

CHOOSING AND WORKING WITH A MENTOR

Evolution to Graduate Education

As you begin the transition from undergraduate to graduate education, you are going to encounter a huge shift in how and from whom you will learn the necessary skills to become a successful scientist. Learning from mentors will require high levels of self-direction on your part because it involves a much less formal process than the traditional classroom-based instructional model found in many higher education environments. This means that choice of mentors will be critically important to, and will have a big impact on your career as a scientist. So, if mentor selection is so vitally important to your success, how does one go about choosing a mentor? What is the most effective process? What should you look for and look out for?

In traditional U.S. Ph.D. programs, students do laboratory rotations of 1-3 months duration with potential mentors. This allows both student and mentor to "try it out" before making the commitment to work with each other for the degree and dissertation research. By contrast, U.K. Ph.D. programs tend to recruit students directly to work with an individual mentor, often times with a pre-specified research project in mind. The Oxford and Cambridge Partnership Programs have elected to use the U.K. model with a twist – you will establish a joint mentorship with one Oxford or Cambridge mentor and one NIH mentor. It is important that this relationship provide double the benefit, not double the confusion. With care, double benefit is exactly what can be achieved, and the mentors, program directors, and advisors will be available to assist you.

Finding the Right Fit

As mentioned above, choosing a mentor involves looking for someone who shares your scientific interests as well as a personal style and laboratory environment with which you feel comfortable. Both are important, but the level of importance can vary a great deal between students. Ideally, one should look for a mentor who fits both of these criteria but often you will need to compromise a bit on one or the other. The most important starting point is for you to be aware of and to look out for what is most important to you. Do not underestimate the importance of giving careful thought to scientific and personal compatibility issues. It is important to consider that most of your time will be spent with other lab personnel and not with the mentor. Therefore, you should meet and talk about your interests and potential projects with those already working in the lab. You can also seek frank information about many important questions that could affect your success and satisfaction. For example:

- How independently do most individuals and, in particular, students function?
- Are people generally cooperative or competitive?
- How hard do people work?
- Are there adequate resources for the work?
- Are students regarded as having a different status than post-docs?
- Is the mentor available and involved when needed?

In answering these questions, your potential future lab mates can give you the "inside story" on how the research group functions.

Where do you start?

Start by reviewing the dimensions of your scientific interests and in so doing, make sure that when visiting potential labs, you carefully evaluate the environment to ensure it will support the fullest development of your research possible. What kinds of scientific questions do you find most interesting? What kind of techniques do you enjoy and/or dislike? The answers will be more visceral than logical, but don't be afraid to analytically look at the future potential in your field of interest. Do you like to work in a highly competitive, hot field, or do you want to work in an area that is important but perhaps not moving quite as fast or quite as high profile as some others at the moment? Seek out individuals doing the kind of work that interests you, starting with a review of established collaborations described on the GPP website. Science is constantly expanding and changing and during your research career you will investigate many different topics. During graduate school, your scientific interests are likely to change, plus whole new fields will develop throughout your career. Therefore, your Ph.D. training and mentor should also prepare you to take up new questions wherever and whenever they appear. Some of these considerations may also benefit from discussions with your previous scientific mentors and associates in college or medical school.

Before you contact potential mentors, it is important to examine their most current publications. Is the individual's rate of publishing consistent with established standards? Are the person's findings being published in highly regarded journals? (Note--not every publication has to come out in *Science, Nature* or *Cell*). From there, begin contacting those who look like they are highly productive and actively engaged in their science. **The first question to ask is always, "I am exploring options for my thesis research and the work you are doing is very interesting to me. Do you have room for a student in your lab at this time?"** No sense getting too far into the conversation if a researcher is overwhelmed with people or short on research dollars. To go beyond this stage, you need to have a good sense of your core values and goals. For instance:

- Do you want someone who will give you a lot of autonomy (are you ready for it?) or someone with who you can interact frequently?
- Do you like to work in a large group focused on many different projects occurring simultaneously or would you prefer to work with a smaller, more cohesive group?
- Do you have a strong desire to come up with you own distinct project or springboard from one that is ongoing?
- Do you like to work fairly regular hours when most of the lab is working or do you have a desire/need to work a different schedule, perhaps when fewer people are around?

You need to think about which of these or other issues are really important to you before you talk with potential mentors. Once you have some of these issues sorted out in your own mind, you should:

1. Find out from the mentor exactly what kind of work will take place in his/her lab both in the present and near future. Is there a project that would be appropriate for your doctoral thesis?
2. Discuss the mentor's perspectives on any specific work-related issues that are important to you. How have other doctoral students fared in the lab?
3. Find out more about the experiences of and outcomes for previous graduate students and postdocs in the lab in which you are interested (e.g. – how long have various individuals worked in the lab, where did some go afterwards, is ongoing collaboration/communication with the lab encouraged after people move on, etc.). Avoid situations where students or postdocs stay in the lab for excessive periods of time or labs where people leave not on good terms with the mentor.
4. Talk with others in the lab, especially any graduate students and postdocs, to find out how they like it i.e. what are the things they like and don't like. Always talk to several people to get the broadest perspective possible. Try to get a sense of the work environment and how students function in the lab setting.
5. Attend a lab meeting, if at all possible, to see the dynamics among the lab group.
6. As you explore laboratories, **be aware that there is a key cultural difference between labs in the U.S. and the U.K.** In the U.S., it is not uncommon for students

to select labs and "interview" prospective mentors. For example, at an American university, students may select among many potential mentors that advertise their work at research days or during the course of rotations. By contrast, British studentships are typically given to the departments or laboratories, which then advertise for students. British mentors have generally been accustomed to students applying and interviewing for available positions. By and large, mentors control the selection process. It is beneficial to be mindful of this difference and proceed with care when you carry out lab selection in the U.K. Otherwise, you may get a reputation for being an overly aggressive student and may risk being rejected by the mentor you select.

7. For mentors in both the U.S. and the U.K., be prepared to explain a little about the NIH Oxford/Cambridge Scholars Program, especially the fact that your thesis project is required to be collaborative and interactive and that your time will be shared roughly equally between the two labs. **Because the program is still relatively new and many faculty are unfamiliar with its structure, they may be tempted to think about your work in their lab according to conventional graduate programs to which they may be accustomed.**

For the NIH Oxford/Cambridge Partnership Program, you need to repeat this process with your other mentor as well. If it is a pair which has already established a working relationship, then talk with both PIs and lab personnel to determine if a fit exists between your goals and theirs. If you are trying to forge a new collaboration, or if you will be the first student to participate in an existing collaboration, your job may be a bit tougher. You are going to have to try to figure out if it will work. Both mentors should be enthusiastic to see it work and cognizant of what it will take to make it work. **It is important that both mentors understand that the project is meant to be a collaboration between and for the benefit of their research programs.**

The student plays the crucial role of ensuring the collaborative plan is effectively implemented. It might be valuable to map out in advance the "**rules of engagement**" and to ensure that these rules are accurately communicated to all key stakeholders. How frequently do the mentors think the three of you should communicate via audio or video conferencing? Although you may not need a weekly meeting of this type, it will be critical that all three of you are attentive to the progression of the project and are highly engaged from the start. It may be valuable for you to consult upper year Scholars in the program for suggestions on how to manage bi-laboratory transatlantic collaborations. **DO NOT enter into a project thinking you will be working solo with one mentor for two years after which you will then show up in the other lab to start working for another two years; your efforts must be structured so that they represent an ongoing collaboration.**

Getting Advice

Do not be hesitant to seek out advice and input from many sources, both in terms of choosing who to contact as potential mentors and in deciding among those who look like they could be a good fit. The U.S. and U.K. program leaders are great resources. The GPP

leaders also have much experience helping students sort out their options. Other students in the program, especially those who are ahead of you, can offer you their impressions of individuals you are considering as potential mentors. Keep in mind, however, that each of them will have different interests (scientific and otherwise). Be especially cautious if someone offers you strong "advice"; what you need most is information, not someone directing or telling you what you ought to do. Ultimately, when you consider your final choice, it should "feel" right. If, after extensive discussion and investigation of the potential mentors you are excited and anxious to get started, it is likely that you have made a good selection.

Making it Work

Once you have chosen your mentors, the fun begins! Just like any other relationship, it will take some time and energy to make it work. Projects go up and down and so do people. ***The single most important principle is to maintain open and frequent communication.***

Keep talking, both science and any other issues that arise. Be sensitive to the many time demands on your mentors, but don't be afraid to make it known when you need help. The other important issue most students don't think about in advance is that your mentor relationship will be changing as you go along. In apprenticeship models, such as Ph.D. mentoring, one is relatively unskilled and inexperienced in the beginning, but by the time you finish, one should feel that a transition has occurred and that the mentor has become a peer and vice versa. Those changes can cause some strain if one or both of the individuals do not allow the relationship to grow in this way. Nevertheless, this vital growth process is essential to the development of a successful career.

No matter how committed the mentor, be prepared for her/him not being up on or overly excited about the significant details of your progression toward your degree. It will be very important for you to take responsibility for completing all necessary paperwork and other tasks required by your university and the GPP. In the end, you will make the most efficient use of your time and energy if you keep on top of things rather than trying to figure out how to repair the damage when a deadline was missed or a form was not filled out correctly. And, get used to it. Life as a scientist, no matter where you work, always requires care and attention to details in proposing, documenting, and reporting your work to those who are paying for it and charged with its oversight. The managing director, scientific counselors, GPP staff and program directors are always available to help if uncertainties arise.

By contrast, your mentors will be very concerned about important new discoveries and who receives credit for them. Allocation of credit for scientific work is vital to the scientific process since it is one of the most important rewards that laboratory workers receive for their efforts. Explicit guidelines have been formulated and promulgated by the NIH through the office of the Deputy Director for Intramural Research and you should refer to them. Most investigators who are well-established in their careers have

considerable experience with these issues and may have strong feelings about a particular project or discovery. Your best means of navigation is to make sure your mentors on both sides of the Atlantic are well-informed of your research progress. Moreover, it is best to seek the opinion of both mentors before you deliver any public presentations, whether they are talks, posters, or papers. Most investigators make fair and reasonable decisions about authorship and other forms of credit allocation if they are consulted in advance. On the other hand, being confronted without forewarning with a public presentation of research results by a student that is part of a mentor's research group in a co-mentored arrangement increases the risk of stirring up hard feelings. Remember that your mentors have invested their entire careers in their laboratory groups and therefore have earned certain prerogatives regarding the research that is carried out. The best strategy is to seek advice in advance from both mentors on any issues of public presentation or apportioning of credit. Try not to assume you can predict how your mentors or peers involved in the project will feel and remain sensitive to the feelings that are expressed. In cases of dispute, you may also consult with the Program Directors or the GPP leadership, either privately or openly. Usually, reasonable accommodations can ensure fair credit is given to all who deserve it. Related to scientific credit is the issue of intellectual property which is taken very seriously by the universities and the NIH. In general, ownership revolves around where the discovery or invention was made. However, it is best to consult your mentors and the technology transfer offices connected to their labs for guidance about what disclosures can be made and what forms should be completed to protect you and your mentors' collaborative work. At the time you begin your participation in the partnership program, you will be required to sign a form that indicates you are familiar with and agree to the **intellectual property stipulations of the program**.

Most successful research environments will offer you access to many individuals who may share with you their expertise regarding techniques and knowledge in your chosen field of study. Strive to find at least one smart individual in the lab with whom you enjoy interacting on a day-to-day basis to exchange new ideas and experimental plans. These individuals will play a vital role in your development as an independent experimentalist and scientific thinker.

TIMELINE AND BENCHMARKS OF GRADUATE STUDY

First Year

February

At the time of the student interviews in February, all applicants are given a list of potential collaborative research projects to consider that have been pre-formed and approved for funding. Students should begin serious consideration of mentors at this time since they will be required to choose their preference for Oxford or Cambridge at the time of the interview. Students will also be asked at this time to state general areas of scientific

interest suitable for doctoral work.

March

After acceptance into the program (around the middle of March), each student is asked to determine if any of the topics or laboratories on the projects list are of interest. In almost all cases, the student will be offered a Scholarship award at only one university: Oxford, Cambridge, or, in the case of Marshall Scholars, other U.K. institutions. Further discussions with program faculty are encouraged and suggestions will be made by the Program Directors for specific research opportunities in the student's areas of interest. Students should also begin serious consideration of their college choice at Oxford or Cambridge. Applications to Cambridge should be submitted as soon as possible in order to obtain a top choice college (see below). For Oxford, the pro forma application can be made in July, but college selections should be pre-arranged with the Oxford Program Director (see below). For Marshall Scholars, the Commission office in London will begin negotiating with the chosen University regarding the terms of matriculation into the NIH-Marshall scheme. For Rhodes Scholars, the Rhodes Trust will play an active role in the process. The NIH and University Program Directors will provide assistance as required.

April

Individuals selected to serve as your scientific counselors will begin contacting you in late April for the purpose of assigning to you an individual NIH advisor who will assist you as you move through the process of refining your research goals and identifying mentors and labs. Ideally, you should know who your advisor is by the first week in May. Thinking about possible projects ahead of time will facilitate the lab selection process once you accept the offer of admittance to the program (*ideally* on or before **April 15th).**

It is important to submit these applications to Oxford or Cambridge universities as soon as possible so as to have the best chance of being admitted to your first choice of college. **You should take note of the following general guidelines when applying to the university of your choice.**

OXFORD APPLICATION GUIDELINES

- Complete and submit the Oxford application online at: http://www.admin.ox.ac.uk/postgraduate/apply/
- Initiate contact with a lab at Oxford to identify a mentor and choose a department (NOTE: Students who choose a department and not a mentor may experience delays in the matriculation process)
- The deadline for submission of the application is July 27th with May 18th being the first date students may use the web site to apply
- Obtain a letter from the college and the University regarding the Visa application
- MSTP students should not apply until they are ready to matriculate into the university

CAMBRIDGE APPLICATION GUIDELINES

Candidates offered admission to the NIH/Cambridge Program SHOULD NOT directly apply to Cambridge (online or via mail) unless the individual wishes to try for a different sort of program. The outline below describes the process through which NIH/Cambridge partnership students' applications will be handled.

The NIH Managing Director will send to the Cambridge Graduate Student Office copies of the GPP applications of students wishing to be admitted to Cambridge. This transfer of materials will be completed by the latter part of **April.** Please note that a Cambridge-based partnership Steering Committee will meet **May 1st**. **Unless notified otherwise, this group will assume that the candidates put forth to the Steering Committee by the NIH are firm in their selection of Cambridge as the University of choice.**

Candidates will be asked to identify their Cambridge College preference by presenting to the Managing Director a ranked list of their four top choices. When identifying preferred Colleges, candidates will also be required to furnish to the Managing Director a paragraph or two that broadly describes their research interests (note: students will be expected to have begun this exploration well in advance of providing the synopsis noted herein). To optimize the outcomes of this exploration, candidates will explore the following Cambridge web sites:

For biology and medicine **department topics**, see:
http://www.biomed.cam.ac.uk/gradschool/prospective/

For **departments outside the Life Sciences**, see:
http://www.admin.cam.ac.uk/univ/gsprospectus/subjects/

For **general information** regarding Colleges (info geared for undergrads), see:
http://www.cam.ac.uk/colleges/

For additional information specifically aimed at **graduate students**, see:
http://www.admin.cam.ac.uk/univ/gsprospectus/colleges/

Following a May 1st Cambridge Steering Committee meeting, the Committee will begin advocating for student admission to the colleges identified as top choices. Once scholars have chosen their supervisors /mentors (by the end of the Colloquium if not before) and the Cambridge Graduate School has obtained a commitment from the Department/Degree Committee, the Cambridge Graduate School Director will send the applications to the Cambridge Board of Graduate Studies (BGS) with request for an offer to be made. At this point, the BGS will log the application in CamSIS, issue the offer to the student, and confirm College placement. **All steps in the process are to be completed by July 31st (the College room allocation deadline).**

Your NIH scientific counselor will stay in contact with The Graduate Studies office at Cambridge to ensure actions on the applications occur in a timely manner. For Marshall Scholars, negotiations are carried out through the Marshall Commission. Please consult with **Ms. Mary Denyer** in the London office and be sure that you refer to the fact that you are in the "NIH-Marshall" Program in any correspondence with the Universities. Churchill Scholars submit applications for Master's degree studies to relevant departments and generally gain acceptance to the University through those departments as well as securing a spot in Churchill College. These arrangements are coordinated through Mr. Harold Epstein, Executive Director of the Churchill Foundation through the program's office in New York. For Rhodes Scholars, the procedure will be provided by the American office of the Rhodes Trust.

May

After the student acceptance, usually by May 1st, the GPP sends the required paperwork for a U.S. government appointment under a pre-doctoral Intramural Research Training Award (IRTA). Your NIH Advisor will help you to choose and arrange visits to the NIH and U.K. laboratories of your choice.

June

IRTA paperwork must be completed and submitted to the GPP Office by June 1st. At the end of June, you will visit the NIH for one week and the U.K. laboratories during the first week in July to meet with potential advisors and investigate potential dissertation laboratories and collaborative projects. Under the direction of the GPP, travel to and from the U.K. will be organized by the student, who will be reimbursed for expenses.

<u>IMPORTANT:</u> DO NOT PURCHASE AIRLINE TICKETS WITHOUT FIRST RECEIVING INSTRUCTION FROM THE GPP.

During the NIH and UK visit weeks, you will meet and interact with other students already in the program and participate in the Scholars' Colloquium, the location of which rotates each year between Oxford, Cambridge, and the NIH. In 2008, it will be held at the NIH main campus the week of June 16th. **Attendance at the Colloquium is mandatory each year for all mentors and Scholars.**

After the NIH and U.K. visit weeks, you will then be asked to choose a project and a pair of co-mentors. This decision should be made as soon as possible after your visit to the U.K. is finished so that you can complete your application to a College at the U.K. University, if you have not already done so. At Oxford, this generally requires submission of a preliminary one to two page research plan that is written in collaboration with your U.K. mentor. At Cambridge, if you have applied to study through the Department of Medicine, you will have already been accepted to a College through the nominal mentorship of Dr. Ken Smith. If you have not been accepted by a College at this point, do not worry as the University will ensure that a College membership is made available to

you. You will then have to spend some time during the next year to ensure that your official U.K. co-mentor and his or her Department are entered into the Cambridge database.

July

The choice of laboratories and project as well as application to the college of your choice should be finished by the end of the first week in July.

August/September

Your pre-IRTA appointment begins at the NIH on August 1st. During the first week on campus, you must participate in mandatory orientation activities to be delivered by the GPP staff, the OXCAM managing director, the program directors scientific counselors and individual advisors. Please note that your first paycheck will not be deposited in the bank until the end of August. It will include a special supplement to cover your temporary housing near the NIH campus. Upon arrival, your primary objective is to write up an in-depth, 5 page (single spaced) research proposal with the help of your mentors and advisors (see Appendix I). It should contain the specific aims of your research and a brief timeline of when and where the work will be performed. The research proposal must be approved and signed by the following individuals:

- Both Mentors
- Scientific Counselors
- Program Directors
- Personal Advisor

The development of the research proposal enables you to establish the background knowledge that will be foundational to the successful initiation of your project. As you are developing the proposal, you will engage in literature reviews, attend lectures, and explore NIH and U.K. resources (e.g., video conferencing with your U.K. mentor). You will submit the signed research proposal by the third week in September. The **submission of the proposal is mandatory before you embark on your travel to the U.K. to begin your work there.** The same deadline applies to students beginning their first research year at the NIH as opposed to Oxford or Cambridge. Note that the specific division of your time between the NIH and the U.K., within the 50:50 guideline, as well as where you will start your research, is determined by the science and a joint decision between you and your mentors. It will be useful for you to determine with your mentors the process by which you will obtain a laptop for your work in the program so that it can be configured to access the resources of the NIH and your Institute/Center.

If you and your co-mentors determine that it is important for you to undertake any **formal course work** at the NIH or in the U.K., arrangements should be made at this time as to how best to pursue this option. It will be useful during your orientation time at the NIH, to acquaint yourself with your NIH mentor's Administrative Officer (AO) and, if possible,

his/her Laboratory or Branch Chief and the Scientific Director of the Institute/Center. Finally, during this time, all students will fill in the paperwork required for foreign travel to the U.K. and apply to the British Consulate in New York for an Entry Clearance Visa for a 4-year visa to attend a U.K. University. Supporting documents from your U.K. University and the Graduate Partnerships Program will need to be attached to your Visa application (see below in the Visa section of the Handbook). **Visa applications should be made no later than the end of August** to assure that you will have the documentation necessary to enter the U.K. as a student in residence for more than six months. Consult with GPP office personnel about your Visa application as soon as you arrive at NIH in August.

The two-month orientation period culminates with a celebration during which new Scholars are formally inducted into the program during an *Evening of Honors*, hosted by the International Biomedical Research Alliance, a non-profit organization dedicated to promoting the advancement of and excellence in biomedical research. In pursuit of its mission, the Alliance provides philanthropic, scientific and industry resources dedicated to developing **The NIH/Oxford/Cambridge Scholars Program** into a world class training program emerging leaders in the biomedical sciences. During the *Evening of Honors* to which Scholars' parents are invited, each student is awarded the medal of the Scholarship.

October

Matriculation at Oxford or Cambridge occurs in the **first week of October**. All fees and tuition will have been prepaid by the NIH. Research begins immediately unless you have made special arrangements to take classes. At this time, your mentors are required to participate in a *mandatory orientation program* designed to ensure they understand the crucial components of the program and their responsibilities and obligations to the Scholars working under their direction. At Cambridge University, you will be assigned an adjunct advisor to turn to in case you encounter any scientific problems in the laboratory. In addition, the Cambridge and Oxford Program Directors, Drs. Ken Smith and Stephen Kennedy respectively will be available to deal with any logistical problems you may face while adjusting to the U.K.

Second Year

April

After 6 months at Cambridge, your thesis advisors (your mentor and a second assigned outside supervisor) will conduct a formal review of your progress toward starting your dissertation research and integrating into the University community. They will inform the GPP Program Directors of any problems you may be having.

October

At the end of one year at Cambridge, your co-mentors and advisors will evaluate a

research progress report or transfer report that you write that should summarize what you have accomplished during the year. A copy of this is also submitted to the GPP and the Program Directors. This is an important document that will determine whether you can be formally enrolled into the Ph.D. or D.Phil. program.

At Oxford University, the process is less formal, with no 6-month review and the transfer to D.Phil. status can occur anywhere between the end of the first year and the end of the second year. Nevertheless, **the GPP requires that a formal progress report of about 2 to 5 pages in length be submitted by all students to the scientific counselors and Program Directors by October 1st.** This report should take on the format of an NIH research progress report (see below). It must include preliminary or published findings that demonstrate what you have accomplished. The progress report should also include detailed plans concerning future experiments you wish to conduct. In addition, updated curriculum vitae and contact information is to be submitted with your yearly progress reports. **NOTE: If you have completed the transfer report by this time, it may be submitted instead of the progress report.**

During the first two years of your research, you must keep in contact with your NIH co-mentor by e-mail, telephone conference calls, and video conferencing. A formal meeting between you and your two mentors will take place at the end of June or beginning of July during the GPP Colloquium each year. **You are required to attend the Colloquium.** In addition, you may, when appropriate, travel to the NIH to carry out experiments on a short-term basis (up to 4 weeks). Accommodations will be provided in the U.K./GPP Group House when available. Get-togethers with NIH-UK students and co-mentors are encouraged at research conferences and for writing of research papers. When students are at the NIH, it is expected that the student will keep in active contact with the U.K. mentor by e-mail, phone conferences, and meetings attended. If you are a medical student, it is advisable to keep in contact with the Dean of Students and Registrar's office of your medical school so you may keep them apprised of your progress, perhaps by sharing your research report with them.

Third Year

October

By the **end of the second year** and generally sooner, the student must turn in the 20-page transfer report on the research project in the U.K. In addition, a 2-5 page progress report and updated contact information must be submitted to the GPP, scientific counselors and project directors. Arrangements should be in place for your transfer to the NIH. Upon arrival, you and the NIH co-mentor must arrange for a formal presentation, i.e. an open seminar, to the NIH research community on the work carried out in the U.K. This exercise is critical for developing public speaking skills when addressing a scientific audience. The student is also encouraged to make such presentations at local, national, and

international scientific meetings, laboratory meetings, and departmental/discipline retreats whenever possible. When on the NIH campus, the Scholars *Journal Club* also provides you an opportunity to develop your public speaking skills.

Fourth Year

October

At the **end of the third year,** another 2-5 page progress report with a revised time line and updated contact information is due on October 1st. Delivered in an RO1 format, this report should again detail research milestones and should include papers if applicable. The report should outline plans for finishing up the thesis work. While Oxford and Cambridge have no formal requirement for publication in order to be awarded a Ph.D. or D. Phil. degree, the GPP expects that the student will publish 3 papers (including at least one first author paper to be published in a respected peer-reviewed journal) in order for the student to be competitive for obtaining a high-quality postdoctoral position in the United States.

Graduation

When the co-mentors, the University and the GPP concur that the student is ready to graduate, a thesis is written and the student defends it orally (the Viva) in the UK before both an external and an internal examiner who are experts in your field of scientific inquiry. A copy of the thesis is submitted to the GPP, the University, and the Program Directors. Although time to complete the thesis varies, it is expected that most students will complete it within four years. Approximately one year or more before you expect to complete your doctorate, you should begin planning and applying for postdoctoral positions. The most sought after labs often make commitments a year or more in advance so that the earlier you apply, the better your chance of finding an open spot in the lab of your choice. You may also need to apply for postdoctoral fellowship support, which is best done well in advance. Having publications, especially those on which you are the first author, enhances your chance of securing the postdoctoral opportunities of greatest interest to you. For medical students, you should plan your transition back to medical school a year or so ahead of time. It will be important to have sufficient lead time if you have to arrange a schedule of medical school rotations or other training activities to minimize loss of time in finishing your medical degree and applying for a residency.

VISAS AND FOREIGN TRAVEL

To travel to the U.K. and establish residency while doing research at the University, you must obtain a "Study Visa" or "Entry Clearance Visa" because your stay is more than 6 months. U.S. citizens with an "Entry Clearance Visa" do not need to apply for a UK Residence Permit. This ruling was established on November 13, 2003.

The Entry Clearance Visa will be in the form of a vignette (sticker) placed in a

passport at a visa issuing post. In the U.S., the visa-issuing posts are located at the British Consulates General in Chicago, Los Angeles and New York. Visit www.ukvisas.gov.uk/ for contact details. You may apply online at www.ukvisas.gov.uk/. The online e-application process requires that you provide personal details, including passport details, financial details and information about your course of study in the U.K.

You should plan to submit your online application no more than one month prior to submission of the supporting documents. Students usually apply online in early August. **You will not be able to submit your supporting documents until after you have received written confirmation of your acceptance to the University and/or the College**. Once you have submitted your online application, you should bring your passport and supporting documents to the GPP office so that the GPP can submit the paperwork. The Program Assistant in the GPP office will notify you at the end of July about when in late August you should drop off your passport and supporting documents. In recent years, the turn around time for obtaining the Entry Clearance Visa has been approximately 8-10 days but this is not guaranteed; you must submit your application at least one month prior to the date that you are leaving for the UK (6 weeks is preferable). Once the Entry Clearance Visa is granted, you will be able to enter and leave the U.K. for the duration of the Visa. Note that there is a security training requirement in place for HHS workers, including students who will spend greater than 6 months abroad. Free security training for students is provided at the NIH *once per year* in August.

The Entry Clearance Visa is only valid in the U.K. U.S. students wishing to travel to other European countries will still be subject to those countries' immigration rules. Re-entering the U.K. following a visit abroad will not be affected. All costs (except mailing the application to the consulate) associated with obtaining the Visa are the responsibility of the student.

TRAVEL AND ATTENDANCE AT SCIENTIFIC MEETINGS

Once a student has formally started in the U.K. program (August 1), all travel at all times must be arranged via the **NIH travel orders mechanism.** Travel arrangements and issuance of travel orders are carried out by the Administrative Officer (AO) of the student's NIH laboratory advisor/mentor. Ask your NIH mentor to introduce you to this person. Generally, travel orders should be submitted as far in advance as possible. See the following specific guidelines:

- For **national or international research meetings**, you should begin travel planning 3-6 months in advance as lower registration fees are often available then and meeting accommodations can fill up quickly.

- For **domestic travel**, the laboratory AO must be notified **at least one month in advance** of the days and destinations of necessary scientific travel in order for the AO to be able to issue the airline tickets, lodging, etc. and to make related arrangements so the student can leave and return on the desired date.

Students paying for their own travel arrangements ***will not be reimbursed for expenses***. **Making arrangements via the Internet is permissible but must be booked through the government travel vendor, OMEGA, and requires a personal credit card number from the traveler. A travel order must be prepared and approved by AO the same day of booking.**

- For **foreign travel**, the laboratory AO must be notified at least 6-7 weeks in advance of the desired travel date to assure tickets will be ready when needed. *Travel arrangements paid for by students* ***will not be reimbursed.***
- Students in the U.K. programs can be supported for travel and lodging for scientific meetings and travel to and from the U.K. University and NIH (Bethesda) if the travel is related to their dissertation research. *Travel funds cannot be used for visits home or personal trips.

FUNDING

Students in the U.K. programs (except Marshall, Churchill, and Rhodes) are supported during the first and second year by the Graduate Partnerships Program for tuition and college fee payments. During the first two years, the student's NIH mentor funds the student's stipend, medical benefits, and travel allowance. The mechanism of funding of students is through the Intramural Research Training Award (IRTA). In years three and four of study, students are supported entirely by their NIH mentor. Generally, no tuition and college fees are paid in these out years since the student is at NIH. For Rhodes, Marshall, Churchill and other Scholarships, fees and stipends are paid according to the terms of those Scholarships.

The paperwork for receiving the IRTA award is sent to the student by May 1st and is to be returned to the Graduate Partnership Program by June 1st to assure proper processing in time for an August 1st start date at the NIH. To complete the paperwork, you must be able to provide the following:

- Proof of citizenship
- A U.S. bank checking account to which your stipend can be transferred
- Completed form for a medical examination within the last year with the immunization record included
- A Curriculum Vitae – a standard format will be sent with the packet
- Statement of research goals at the NIH (1/2 page)
- A final transcript from your undergraduate university indicating you have received your Bachelor degree with date of degree award

When you submit your completed IRTA packet, you must either choose enrollment in the NIH medical insurance plan (Blue Cross Blue Shield) or indicate that you are retaining your own insurance or are covered under your parents' policy. **A student cannot**

participate in the GPP program without proof of medical insurance. For the purposes of the IRTA award packet, the GPP will use the letters of recommendation you furnished when you initially applied to the program.

VACATIONS

Per NIH guidelines, trainees are generally granted two weeks of vacation per year, if agreed to by their mentors. Trainees are to notify their mentor of the planned time of vacation and its duration.

IMPORTANT PROGRAM CONTACTS

NIH PROGRAM DIRECTORS	OXFORD UNIVERSITY	CAMBRIDGE UNIVERISTY
DR. MICHAEL LENARDO, M.D. OXCAM PROGRAM DIRECTOR LENARDO@NIH.GOV **DR. RICHARD SIEGEL, MD, PH.D.** MD/PHD PROGRAM DIRECTOR SIEGELR@NIAMS.NIH.GOV **BRIDGET LAMPERT, M.S.** OXCAM/MD/PHD MANAGING DIRECTOR LAMPERTB@NIAID.NIH.GOV 301.496.6083 (OFFICE) 301.272-5174 (CELL)	**DR. STEPHEN KENNEDY** DIRECTOR, OXFORD PROGRAM stephen.kennedy@obstetrics-gynaecology.oxford.ac.uk 44-1865-221013	**DR. KENNETH SMITH** DIRECTOR, CAMBRIDGE PROGRAM KGCS2@CAM.AC.UK 44-1223-762645

GRADUATE PARTNERSHIP PROGRAM OFFICE CONTACTS			
NIH GPP BUILDING 2, ROOM 2E06B 2 CENTER DRIVE BETHESDA, MD 20892 PHONE: 301.594.9605 FAX: 301.594.9606	**DR. SHARON MILGRAM,** PH.D. GPP DIRECTOR MILGRAMS@OD.NIH.GOV	**CAROLINE DUFFY** PROGRAM ASSISTANT, GPP DUFFYC@OD.NIH.GOV 301.451.8268	**SHAWN MULLEN** PROGRAM ASSISTANT, GPP 301.451.7420

APPENDIX I: THE RESEARCH PROPOSAL

WRITING A RESEARCH PROPOSAL AND PROGRESS REPORTS

Why is it required?

Contrary to popular belief, the research proposal is not just another hurdle put in the path of graduate students. It actually serves many purposes, all of which help to ensure the timely completion of your degree and to aid in your professional development as a scientist. Just a few of the functions of the dissertation proposal include:

- Focusing your attention on the full course of the research project, not just the next experiment
- Ensuring you complete a comprehensive review of the literature to make sure the research question has not already been answered and that you are familiar with all relevant work already done in the field
- Establishing agreement with mentors on the scope of the dissertation
- Beginning development of technical writing skills
- Beginning development of grant writing skills

Without question, the most ambiguous element of the Ph.D. is defining when the dissertation research has reached the required "critical mass" i.e. one can provide evidence of sufficient quality and quantity of research to meet the standards of the degree. One of the critical aspects of the dissertation proposal is to propose and achieve agreement on the scope of the research to be accomplished. Not uncommonly, the ultimate dissertation may move away from what is proposed due to insurmountable problems, unexpected results, new findings published in the literature, etc. However, it is essential that all principal parties involved in a student's research achieve initial agreement on the scope of the dissertation.

The research proposal also pushes one to really think about what is known in the field, how one will contribute new information, and what logical steps must be taken to accomplish one's research goals. This kind of planning helps one avoid paths that lead to dead ends. In other words, students are strongly advised to incorporate alternative strategies towards which specific outcomes will guide them as the research progresses. This is a skill that must be developed if one hopes to become a successful scientist. After awhile, this way of thinking will become second nature as you design your research, but initially many new researchers may not be aware of their need to grow in this way.

Finally, by developing the research proposal you will hone your technical writing and grant writing skills. The proposal format is consistent with that of most postdoctoral fellowship proposals and individual research grants. Thus, the student should recognize that development of the research proposal is not a sterile exercise but rather one which will help you develop skills you may apply throughout the entire span of your research career.

When and how is it submitted?

The initial research proposal must be submitted to the NIH Oxford/Cambridge Managing Director by October 1st of your first year in the program. This individual will ensure the proposal is disseminated to others who have a need to review it. During the Orientation Week at NIH, program personnel will provide guidance on how to go about constructing the dissertation proposal. You will then work with your NIH and U.K. mentors during August and September to create an initial research plan. It is appropriate to work with your mentors to come to general agreement on what you are going to propose, but the proposal should clearly represent your work. Unlike a manuscript being submitted for external peer review where everyone involved has major input to its writing, you must serve as the author of the research proposal. You may ask your mentors to review drafts of the proposal for general comments, but do not expect them to provide detailed editing such as occurs with manuscripts. The final proposal must be signed by both mentors (signatures on faxed or e-mail copies are acceptable) to ensure that they are in agreement with you and each other in terms of what you have proposed to be the focus of your research. The scientific counselors and project directors will also read and approve the proposals. Keep in mind that research does not always (ever?) proceed as planned, so

you should view the proposal as an initial plan that may require revisions as your work progresses. You should not view yourself as locked in to every detail of what you initially propose if your results require that you modify the plan.

Since you will have only two months to prepare your proposal, it will not reflect the magnitude of your research or include the detail of a proposal written by someone who had done preliminary studies or who has developed a research project over the first year or two of graduate work. The proposal length should be not fewer than five pages and not more than ten, excluding tables, figures and references. The idea is to keep it clear and concise as a voluminous document would serve no good purpose in the early stage of your research.

What is the format of the research proposal?

Different graduate programs may have slightly different requirements but the basic format is fairly standardized in that it is consistent with that of NIH extramural research proposals. This format, referred to as the **PHS 398**, is by far the most commonly used in all of biomedical research, so it should be the one you learn and utilize in your practice. The dissertation research proposal will almost always be shorter and more preliminary than a typical competitive research application, but the format and structure are identical. **The electronic forms and detailed guidelines can be found via the web link provided below**.

Focus your attention on the Research Plan beginning on page 15.
http://grants1.nih.gov/grants/funding/phs398/phs398.html

The goal of this short introduction is not to provide a thorough course on proposal writing. Whole books and lengthy workshops cover that topic, as will the annual GPP workshop on dissertation proposal writing. Rather, the following section synopsizes key sections of the proposal and their purposes. For simplicity, essential points are displayed in bullet fashion. The **numbers in parentheses** refer to the approximate number of pages devoted to each section in a 25 page NIH proposal. The **bold numbers** refer to the approximate number of pages for your 5-10 page version.

Title (56 Characters including spaces – absolute maximum)

- Actually quite important - searched and indexed
- Creates an initial impression

Abstract (0.5 pages, **0.5 pages**)

- Can be thought of as a mini-proposal – easiest to build with the same components as the proposal
- Written for a more general audience
- First impressions are important - creates or deflates interest
- Written last but NOT at the last minute
- In real life, one of the few pieces that everyone reads, including the public

- MUST explicitly follow required length guidelines

Hypothesis and Specific Aims (1 page, **1 page**)

- State the explicit hypotheses you plan to test and how you plan to test them
- A bullet point approach is very effective to articulate exactly what you plan to do – it may include a small elaboration
- This section creates a critical real first impression
- Often includes a preamble which serves as a mini-introduction - context
- Second section that everyone will read - often the "make or break" section for proposals that go through a grant review process
- Establishes what a reader perceives as your thought patterns
- Success of your work will be measured against whether you accomplish the aims
- In reality, aims move and evolve once the research is under way
- Also plays the role of "tell them what you are going to tell them"
- NIH grants usually require the identification of 3-5 total Aims – 2-4 typical for a dissertation
- Includes but is distinct from hypotheses being tested

Background and Significance (2-3 pages, **2-3 pages**)

- Sets up the "story" you want the reader to read - lead them toward your research vision
- Establishes you as an authority/ i.e. one who is well-read on the topic
- Shows that you are cognizant of the most important work already published on the topic
- Distills from the universe of knowledge on the topic your specific aims (analogous to a funnel)
- Establishes for the reader the importance of the work - "ho hum" vs. "I can't wait to find out the results"
- Helps the reader understand the logical next steps i.e. your Specific Aims
- Focuses more on what others have done but also allows you to weave in or build on your contributions or unique perspectives

Preliminary Studies (variable depending on when it is written – 1-8 pages, ≤**1 page**)

- Demonstrates that you are capable of deploying the proposed research methods
- Shows the quality and quantity of data already acquired
- Continues to build the case for the feasibility and logic of your proposal
- Incorporates as needed relevant small tables and figures (these count toward the page limit)
- Larger data sections can be added as appendices

Research Design and Methods (the largest section – generally 50% or more of the total, **2-4 pages**)

- Explains the methodologies to be used to accomplish the aims
- Two separate areas must be covered; these may be interwoven or presented as distinct sections
    - conceptual and experimental design
    - details of the methods
- Should be tied absolutely and unmistakably to Specific Aims
- Design should include branch points, different routes depending on what is seen, and must avoid fatal dead ends where Aims depend on success of previous Aims
- Should acknowledge potential barriers and pitfalls and how you plan to get around them
- If you are testing alternative hypotheses, make it very clear how the experiments will differentiate between them

References

- Choose carefully - more is not necessarily better
- Important to have a balance between a few of historical importance but most current (i.e. "right up to the minute" - literally if possible) show you are on top of the latest developments in the field

Annual Progress Reports

Annual progress reports are required as an aid for monitoring your progress toward degree completion and to keep your mentors, advisors, and program directors informed of any unexpected changes in direction and/or scope of the proposed research. As with the Research Proposal, the Progress Report must follow the standard format expected of NIH grants. The instructions for completing the Progress Report can be found at: http://grants2.nih.gov/grants/funding/2590/2590.htm

Don't worry about the mechanical pages like the Face Page although it is never too early to start learning the details of how extramural grants are structured. **Focus your attention to section 6 - Progress Report Summary**. Follow the guidelines carefully. By following these guidelines, you will begin to **learn the critical skill of compact writing**. Just as it is often harder to give a 10 minute talk than a 30 minute talk, learning to write briefly while capturing all of the most important points is a skill/art you must master. **NOTE: For real NIH grants, the limit is 2 pages and must be respected. Try to keep to this length for your progress reports, but in all cases, the report should be five pages or less. If your research has taken a significantly different direction than originally proposed, then the rationale for this change should be a major focus of the Progress Report.** Listed below are the instructions provided for this section in the PHS 2590 forms.

Section 6—Progress Report Summary from PHS 2590

(**FORM PAGE 5, RTF or PDF FORMAT**)
Well-planned Progress Reports can be of great value by providing records of accomplishments, which serve as a basis for continued support of the project. Furthermore, Progress Reports provide information to awarding component staff that is essential in the assessment of changes in scope or research objectives (as defined in the NIH Grants Policy Statement) from those actually funded. They are also an important information source for the awarding component staff in preparing annual reports, in planning programs, and in communicating scientific accomplishments to the public and to Congress.

The Progress Report should be a brief presentation of the accomplishments on the research project during the reporting period, in language understandable to a biomedical scientist who may not be a specialist in the project's research field. The style used in *Scientific American* articles would be appropriate. Abbreviations and language that may not be known to the broader scientific community should be avoided unless clearly defined.

When submitting Progress Reports for program project grants, center grants, education grants, or other large multicomponent grants, contact the program official in the awarding component for specific instructions. The entire Progress Report for regular projects, exclusive of the list of publications and the "Inclusion Enrollment Report," **should not exceed** two pages. The report should follow the outline and numbering system shown below. Continuation pages may be used as necessary.

a. Specific Aims
The aims, **as actually funded**, may differ in scope from those stated in the original,

competing application, because of Scientific Review Group (SRG) and Council recommendations and/or budgetary modifications made by the awarding component. If the aims have not been modified, state this. If they have been modified, give the revised aims and the reason for the modification.

b. Studies and Results
Describe the studies directed toward specific aims during the current budget year and the results obtained. Include negative results. If technical problems were encountered in carrying out this project, describe how your approach was modified.

c. Significance
Emphasize the significance of the findings to the scientific field and their potential impact on health.

d. Plans
Summarize plans to address the Specific Aims during the next year of support. Include any important modifications to the original plans. Address any changes involving research using human subjects and/or vertebrate animals.
Complete Items A and B on Form Page 5 if the research involves Human Subjects or Vertebrate Animals. If "Change" is checked, provide the information below. Although no specific page limitation applies to the information on Human Subjects or Vertebrate Animals, be succinct.

NOTE – it is important to include comments on any changes in human or animal protocols as this is a good checkpoint to make sure you don't need to seek approval of revised research plans from an IRB or IACUC.

The Progress Report helps you achieve the following **two primary goals**:

GOAL I: Step back and take stock of the rate at which you are progressing toward meeting your original Aims and testing your initial Hypotheses. After you have synthesized your progress into the two page summary, ask yourself the following questions:

- Am I making adequate progress to be on course for completing my degree in the time available? If not, why not?
- Have I kept a narrow focus on the original plan, taken on additional projects that presented themselves without jeopardizing the initial plan, or gotten too distracted into different projects? One of the challenges all scientists face is establishing balance between focus on a plan and taking on new projects.
- Based on where I am today, how long will it take me to realistically accomplish my initial aims? Is the time available or has the project become too difficult to complete in the time remaining?
- Will my data, either now or if further developed in a reasonable time frame, yield a significant contribution to the literature on which I will be first author? If you determine that the answer to this question is no, then you and your mentors

must seriously reevaluate the aims and rate of progress of the project.

GOAL 2: If the Aims and/or Hypotheses have changed, how will it affect your dissertation? Your mentors will provide the most important guidance in this area and both must agree on any significant changes in scope or Aims. Ask yourself the following questions:

- Will the complete "story" that my dissertation will describe satisfy the requirements for a dissertation?
- Have I communicated changes in Aims and hypotheses to both of my mentors and are they in agreement with these changes?
- Am I confident that I can defend the new dissertation to an external examiner and the full audience at my defense?

You should be asking these questions throughout the year, but the Progress Report will provide a reason to systematically focus on them at least annually. All researchers must periodically and critically assess how far their research has come and where it is going, so these Progress Reports introduce you to the necessary rigor and assessment associated with high quality scientific practice.

APPENDIX II: PUBLICATIONS AND INTELLECTUAL PROPERTY

Publications

All manuscripts published by NIH intramural researchers must go through a simple clearance procedure that varies in detail depending on the Institute. Consult your NIH mentor for information about this.

Intellectual Property

The NIH and the universities have come to an agreement in which ownership of intellectual property generated by Scholars will be jointly owned. All Scholars are required to notify both institutions—the NIH and the University—of any intellectual property of potential importance (e.g. patents, licenses, commercial collaborations, etc.) and public disclosure of discoveries that may have commercial implications. NIH has a very well-developed technology transfer apparatus designed to fulfill a strong commitment to promoting new inventions for the public health and welfare.

APPENDIX III: THE NATIONAL INSTITUTES OF HEALTH

Established in 1887 as a one-room Laboratory of Hygiene, the National Institutes of Health (NIH) is an agency of the Department of Health and Human Services and has grown into one of the world's foremost medical research centers. Over the years, the mission of the NIH evolved and is now clearly focused on developing new knowledge that will lead to better health for all. This mission is carried out by scientists and others who:

- Conduct research in the NIH's many laboratories
- Provide support for research conducted by scientists in universities, medical schools, hospitals, and other research institutions throughout the country and abroad
- Train research investigators
- Foster the communication of medical information

NIH is primarily located in Bethesda, Maryland with satellite campuses in Maryland, North Carolina, Montana, and Arizona. The Bethesda campus houses 75 buildings on 322 acres. Presently, the NIH includes 27 extramural and intramural Institutes' and Centers' laboratories whose research areas focus on diseases, organ systems or techniques with each comprised of an extramural and intramural component, unless otherwise noted.

Institutes and Centers with Extramural and Intramural Research Support

- National Cancer Institute (NCI) - Established in 1937
- National Eye Institute (NEI) - Est. 1968
- National Heart, Lung, and Blood Institute (NHLBI) - Est. 1948
- National Human Genome Research Institute (NHGRI) - Est. 1989
- National Institute on Aging (NIA) - Est. 1974
- National Institute on Alcohol Abuse and Alcoholism (NIAAA) - Est. 1970
- National Institute of Allergy and Infectious Diseases (NIAID) - Est. 1948
- National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) - Est. 1986
- National Institute of Child Health and Human Development (NICHD) - Est. 1962
- National Institute on Deafness and Other Communication Disorders (NIDCD) - Est. 1988
- National Institute of Dental and Craniofacial Research (NIDCR) - Est. 1948
- National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) - Est. 1948
- National Institute on Drug Abuse (NIDA) - Est. 1973
- National Institute of Environmental Health Sciences (NIEHS) - Est. 1969
- National Institute of Mental Health (NIMH) - Est. 1949
- National Institute of Neurological Disorders and Stroke (NINDS) - Est. 1950
- National Institute of Nursing Research (NINR) - Est. 1986
- Center for Information Technology (CIT) - Established in 1964
- John E. Fogarty International Center (FIC) - Est. 1968
- National Center for Complementary and Alternative Medicine (NCCAM) - Est. 1992
- Warren Grant Magnuson Clinical Center (CC) - Est. 1953

Institutes and Center with Extramural Research Support

- National Institute of Biomedical Imaging and Bioengineering (NIBIB) - Est. 2000
- National Institute of General Medical Sciences (NIGMS) - Est. 1962
- National Library of Medicine (NLM) - Est. 1956
- Center for Scientific Review (CSR) - Est. 1946
- National Center on Minority Health and Health Disparities (NCMHD) - Est. 1993
- National Center for Research Resources (NCRR) - Est. 1990

The NIH receives a budget annually from the Department of Health and Human Services, via Congress. Over the past several fiscal years, the NIH budget has averaged $27 billion dollars. The annual budget is disseminated in support of research grants (71%), intramural research (10%), research & development (7%), research management & support (3%), research training (3%), and all others (6%); representing a 80:20 split between extramural and intramural research support.

The NIH Intramural laboratories support researchers at various education levels: post-baccalaureate (230 trainees), medical students (90 trainees), graduate students (300 trainees), post-doctorate & clinical fellows (3300 trainees), tenure-track investigators (290

trainees), and ~920 senior investigators. There are several training programs available, based on education level:

Summer Students – open to high school, college, graduate and medical students

- Summer Internship Program
- Summer Research Fellowship Program
- Undergraduate Scholarship Program

Post-Baccalaureate Education

- Post-Baccalaureate IRTA
- Technical IRTA
- NIH Academy

Graduate Education

- Graduate Partnerships Program (http://gpp.nih.gov)
- Year-Off IRTA

Post-Doctoral Education

- IRTA
- Visiting Fellow

The trainee and investigator populations support ~2500 intramural research projects and 90 scientific interest groups representing scientific interests in the following areas:

- Biochemistry
- Bioengineering
- Bioinformatics
- Biostatistics
- Biophysics
- Cell biology
- Chemistry
- Computing
- Developmental biology
- Environmental biology
- Epidemiology
- Genetics
- Histology/pathology
- Imaging
- Immunology
- Microbiology/virology
- Molecular biology
- Pharmacology
- Physiology
- Proteomics
- Structural biology
- Toxicology

APPENDIX IV: CAMBRIDGE UNIVERSITY GUIDELINES FOR SUBMITTING YOUR THESIS FOR THE PH.D., M.Sc. AND M. Litt. DEGREES

UNIVERSITY OF CAMBRIDGE

Board of Graduate Studies

Guide to Graduate Students including changes to take effect with respect to theses submitted *after 1 January 2003*

A. Requirements for dissertations

1. What the Degrees represent

Ph.D., M.Litt. and M.Sc. degrees are not awarded in any particular subject, and the certificate makes no mention of your subject area. The M.Litt. and M.Sc. are, however, generally reserved for the Arts, Humanities and Social Sciences on one hand and the Sciences and Technology on the other. Research Degrees are awarded subject to the successful examination of a dissertation in two stages. These are usually: **scrutiny** by two examiners and an **oral examination**.

Ph.D.: **before recommending the award of the Ph.D. Degree, the Examiners must satisfy themselves that the dissertation is:**

- clearly written;
- takes due account of previously published work on the subject;
- represents a significant contribution to learning, for example through the discovery of new knowledge, the connection of previously unrelated facts, the development of new theory, or the revision of older views.

Examiners are asked to bear in mind that the research topic is approved in the light of what it is reasonable to expect a student to complete within **three years full-time (5 years part-time)** research. The limitations implied by this advice are intended to apply to the *scale and scope* of the work presented in the dissertation but *not to its quality*.

M.Sc. and M.Litt.: **before recommending the award of the M.Sc. or M.Litt. Degree the Examiners must satisfy themselves that the dissertation is:**

- clearly written;
- takes due account of previously published work on the subject;
- represents a useful contribution to learning.

Examiners are asked to bear in mind that the research topic is approved in the light of what it is reasonable to expect a student to complete within **two years full-time (3.5 years part-time)** research.

2. What is a thesis?

Your thesis must be a connected account of your research written by yourself.

Published papers
Your thesis must *not* simply consist of a collection of unconnected or unrelated papers published or otherwise. However, it *may* **include** published or publishable work *provided* it is part of a connected argument and is uniform in presentation and format with the remainder of

the dissertation. It may also include Appendices which are relevant to the material contained in the dissertation but do not form part of the connected argument.

Other written material
You may also submit with your dissertation other *unconnected* or *unrelated* work which you have **published**; such work may, at the discretion of the Examiners, be taken into consideration.

Other materials
If you wish to include in an Appendix an audio or videotape, a film, computer programs or a CD, **please write to the Secretary of the Board of Graduate Studies *before* submitting your thesis**. The Board of Graduate Studies may, on the recommendation of your Degree Committee, allow you to do this *provided* the material is presented either in slip envelopes within the binding of the dissertation or, for more bulky items, gathered into a supplementary volume of similar format to the bound dissertation. Nothing should be attached to the *outside* of the cover of the dissertation.

Please note that the inclusion of a CD does not provide a means of escaping the constraints of the word limits set out in section C2.

Language
Your dissertation, apart from quotations and recognised technical formulae, must be written in **English**.

3. Originality of your thesis

When submitting your thesis, you will be required to state the sources from which your information is derived, the extent to which you have availed yourself of the *work of others*, and the portions of the dissertation which you claim as your own original work. If the dissertation is almost **entirely your own work,** the following statement should be included in the preface:

'This dissertation is my own work and contains nothing which is the outcome of work done in collaboration with others, except as specified in the text and Acknowledgements'.

Collaborative work
The Board of Graduate Studies recognises that research degrees are frequently now carried out in groups and, in almost all subjects, you are likely to have availed yourself of the help of others to some extent. If you have done collaborative work during the course of your research, you should consult your supervisor to decide whether you need to write to the Board to obtain permission to include such work in your thesis.

If you are granted permission to include collaborative work, you must **indicate clearly** which portions of the thesis describe **work done by others or in collaboration with others**, and give the names of those persons with whom you have collaborated and the extent to which you have availed yourself of their assistance. You must also send to the Board with your thesis a

statement from your Supervisor attesting to the contributions you made to the investigation. If you did not get permission in advance, please ask your supervisor to write **now** to support your case for including collaborative work.

Work submitted for other qualifications
You are also required to declare that the dissertation submitted is not substantially the same as any that you may have submitted for a degree or diploma or other qualification at any other University and to state what part, if any, has already been, or is concurrently being, submitted for any degree, diploma, or other qualification. Such a declaration, signed by you, must accompany or be incorporated in your thesis; forms for this declaration may be obtained from the office of the Board of Graduate Studies.

Circumstances in which you might include some work submitted for another Degree
The Board of Graduate Studies does not permit the inclusion of the whole or the major part of the text of the previous thesis in the Ph.D., M.Sc., or M.Litt. Degree thesis. It does, however, recognise that further work often develops from work undertaken previously and that certain candidates may wish to include some parts (including tables, diagrams etc.) of their previous work. If you have previously been approved for the M.Phil. Degree, M.St. Degree, a research Diploma, or Certificate of Postgraduate Study ***and been allowed to count up to three terms towards the requirements*** for the Ph.D., M.Sc., or M.Litt. Degree, and if you wish to include suitable elements of this work, it must be clearly identified as such and must form a connected part of the argument of your Ph.D., M.Sc., or M.Litt. Degree thesis.

4. Good research practice

The University has a published policy on good research practice. You should familiarise yourself with this at www.admin.cam.ac.uk/offices/personnel/policy/research. Please note that the University will deal very severely with detected cases of plagiarism or fraud:

Plagiarism can be defined, in general terms, as presenting the ideas or the work of others *without acknowledgement and passing them off as your own*. This applies to all types of work, whether published or not, regardless of medium.

Fraud can be defined as the use of *deception to obtain an unjust advantage or to injure the rights or interests of another*; for example, the forgery of documents, or the fabrication of data.

5. Intellectual Property Rights

Unlike most universities, the University of Cambridge recognises the right of graduate students to own Intellectual Property (IP) that they have generated during the course of their studies in the first instance. However, in some instances (see the examples listed below) a student will be required to assign his or her IP to the University or another organisation. Normally when this is the case, the student will be recognised and rewarded for his or her contribution in the

development of the IP in accordance with University policy.

- If you are funded by a sponsor the University may enter into a contract with the sponsor which governs your research. These contracts are negotiated by the Research Services Division (http://www.rsd.cam.ac.uk/) of the University and may require you to assign your IP to the University;
- Your supervisor may have research funding from external sponsors with terms and conditions which require you to assign your IP to the University;
- If the IP generated in the course of your study involves significant University resources such as input from your supervisor or other members of staff, etc. and shared inventions arise, the University may require you to assign your IP to the University;
- *If you are based in an "embedded" or independent laboratory ('Non-University Institution'),* special IPR conditions apply *(for example the MRC Laboratory for Molecular Biology, Sanger Centre or the Babraham Institute);*
- If you are an employee of an organisation either full- or part-time, your *employer* may have certain rights to IP generated during the course of your studies. You should check your contract of employment to verify this. (If you are an employee of the University of Cambridge, the arrangements will be set out in your contract).
- *Note from the NIH – As trainees of NIH, students are required to adhere to the NIH/pre-IRTA provisions of the Intellectual Property statement of the NIH.*

If you require further information on your Intellectual Property rights please contact your supervisor, who may draw on the expertise of the Research Services Division.

Copyright of your thesis

Under the Copyright, Designs and Patents Act, 1988, ownership of the copyright of unpublished dissertations and theses and their summaries rests with the author for the duration of his or her lifetime and a given number of years thereafter, unless he or she specifically transfers it to another person.

When you submit your dissertation for examination, the Board's staff will ask you to sign a statement acknowledging your ownership of copyright in the dissertation and asserting your right to be identified as the author of the dissertation.

N.B. If you are sponsored by a firm or agency, a formal agreement may have been entered into concerning access to your work and results; your supervisor should be able to advise you and should draw on the expertise of the University's Research Services Division in doing so.

Access to your thesis

The University requires that each thesis approved for the Ph.D., M.Sc., M.Litt., together with its summary, shall be available for consultation in the University Library and that photocopies of them shall be made available by the Library to those who wish to consult them elsewhere. To protect your interests, the staff of the University Library, before allowing a thesis and summary

to be consulted, either in the original or in a photocopy, require each person wishing to consult them to sign a **declaration** that he or she *recognises that the copyright of the dissertation, or thesis, and summary belongs to their author, and that, in accordance with the* **Law of Copyright**, *the thesis or a substantial part of it may not be copied without the author's written consent.* In addition, the thesis and summary themselves, and any photocopy supplied by the Library, will contain a prominent notice drawing attention to the same points.

The Board may make summaries available for copying and publication, including publication by ASLIB in their *Index to Theses*. The University Library is also authorised to make available copies of theses for those wishing to consult them elsewhere, including microfilming for the British Library Supply Centres *inter-library loan service.* Your thesis will be considered to be in the public domain, unless you have been granted restricted access (see below), as soon as it has been catalogued by the University Library.

Restricted access

If you have special reasons for not wishing your thesis and summary to be generally available for consultation you must apply in writing to the Secretary of the Board for access to be **restricted**. ***You should do this when you submit your thesis for examination.***

The Board is not obliged to approve an application for restriction unless you have a contract with a sponsor that specifies restriction. Other reasons that are generally considered as valid might be that publication would cause you or third parties mentioned in the text to be open to legal challenge or racial, ethnic, political or other persecution. Limiting the scope for competition from other scholars to publish on your topic is not generally recognised to be a valid reason.

If you have signed a confidentiality agreement with a sponsor regarding the results of your research, you should ask your supervisor to check whether it will be necessary to ask your Examiners to sign a confidentiality agreement regarding the contents of your thesis for the period of the examination and for any period thereafter for which restricted access may be granted. If so, the Degree Committee office will arrange for this to be done.

If an application for restricted access is approved, it usually covers a **limited period only** (typically up to two years from the deposition of the thesis in the Library); the thesis and summary would then become generally available unless you or your supervisor apply to the Board for the period of restriction to be extended and the Board has approved the application ***prior to the expiry date***.

N.B. If your Degree Committee requires a second copy of the thesis to be retained in the ***Department Library***, you should ask your Department librarian about restriction of access.

B. About three months before submission

The Board will write to you at the appropriate time to tell you what to do.

1. Submission date

- You *must not* submit your dissertation before the first day of your 9th full-time (15th part-time) term for the Ph.D., or 6th full-time (10th part-time) term for the M.Sc. or M.Litt., *unless* you have been granted exemption from up to 3 full-time (5 part-time) terms of research.
- You *are expected* to submit by the first day of the 11th full-time (17th part-time) term (e.g. 4th January for a full-time October starter) unless you have been granted permission to defer submission. This deadline is the same for all three Degrees, but most M.Sc./M.Litt. candidates should aim to submit around the 7th full-time (12th part-time) term.

2. Deferring submission

If you are not ready to submit within 21 days of your deadline, you should apply for an extension. The Board will send you the relevant form. This requires a written endorsement from your supervisor. When seeking an extension, **be realistic about the date of your submission.** *There is heavy pressure on Departments for all PhDs to be submitted* ***within 4 full-time (7 part-time) years*** *of starting*. **Your Degree Committee may not agree to grant an extension beyond 4 (7) years**, except in cases of illness (supported by a medical letter) or other grave cause.

3. Applying for appointment of Examiners

You should apply for the appointment of Examiners ***at least*** **two months in advance of submitting your dissertation.** The appointment of Examiners may take some time, particularly if your application for appointment is submitted during a Vacation. The application should be made on a form available from the office of the Board of Graduate Studies as soon as a firm and **realistic** submission date can be given.

In your application you should:

- propose the exact **title** of your dissertation (see 3 below) and;
- **the date** upon which you propose to submit it, and;
- enclose with your application three copies of a short summary of the contents of the dissertation (see 5 below).

You will be expected to adhere to the date you propose for the submission of the thesis.

If you **expect to leave the country** soon after submission you must bear in mind that you will be expected to **attend a *viva voce* (oral) examination in this country**. You should state on the application form for the appointment of Examiners the proposed date of your departure, allowing ***at least*** **eight weeks** between the date of the submission and the proposed date of

departure.

The Degree Committee will do its best to arrange your oral examination as quickly as possible, but please bear in mind that it is sometimes difficult to find a suitable examiner, or the most suitable person may not be free to act within a tight timetable.

4. Approval of the Title

The subject of your research is provisionally approved at the time of your admission and confirmed in more specific terms when you are registered as a candidate for a research degree.

Before your thesis is finally typed and bound, when applying for Examiners to be appointed, you should propose the **precise** title of your thesis. Your supervisor should indicate his or her support for the title; this is then submitted to your Degree Committee and to the Board for approval.

5. The Summary

The summary must be written in English and should consist of a piece of connected prose forming an abstract of the dissertation and be about 300 words in length. If at all possible, it should be accommodated on **one side** of A4 sized paper. It should bear your **name** and the **exact title of your dissertation** at the head of the page.

If you submit a soft-bound thesis in the first instance, you will need, when submitting the final, hard-bound copy of your thesis, to provide a further, loose-leaf *copy of this summary, identical to that bound into the final version, for the University Library file.*

The summary will be considered by the Examiners and, if the dissertation is approved, the summary will normally be deposited in the University Library for consultation and inter-library loan.

C. Format of the Thesis

1. Word limits and stylistic conventions: Requirements of the Degree Committees

You should write as concisely as is consistent with clear and adequate exposition. The following Degree Committees have prescribed the limits of length or stylistic requirements given below. If you have been working under any one of these Degree Committees, you must submit a certificate stating that it does not exceed the prescribed limit when you submit your thesis.

These limits and requirements are strictly observed by the Board and the Degree Committees and, unless approval to exceed the prescribed limit has been obtained beforehand, a dissertation that exceeds the limit may not be examined until its length complies with the prescribed limit.

Biology: not to exceed 300, single-sided, pages of double spaced text, not including the bibliography and appendices.

Clinical Medicine and Clinical Veterinary Medicine: for the Ph.D. Degree not to exceed, without the permission of the Degree Committee, 60,000 words (80,000 words for dissertations within the field of History of Medicine) **excluding** figures, photographs, tables, appendices and bibliography.

Computer Laboratory: not to exceed, without the prior permission of the Degree Committee, 60,000 words **including** tables and footnotes,but **excluding** appendices, bibliography**,** photographs and diagrams. Any dissertation which without prior permission of the Degree Committee exceeds the permitted limit will be referred back to the candidate before being forwarded to the Examiners.

Engineering: not to exceed, without prior permission of the Degree Committee, 65,000 words, **including** appendices, bibliography, footnotes, tables and equations not to contain more than 150 figures. You must submit with your dissertation a statement signed by yourself giving the length of the dissertation and the number of figures. Any dissertation which, without the prior permission of the Degree Committee, exceeds the permitted limits, will be referred back to the candidate before being forwarded to the Examiners.

History and Philosophy of Science: not to exceed 80,000 words for the Ph.D. Degree and 60,000 words for the M.Litt. Degree, in all cases **including** appendices but **excluding** bibliography and notes of reference. Permission to submit a dissertation falling outside these limits must be obtained in advance from the Degree Committee.

Physics & Chemistry: not to exceed, without prior permission of the Degree Committee, 60,000 words, **including** tables, footnotes, bibliography and appendices, but **excluding** photographs and diagrams. The Degree committee points out that some of the best dissertations extend to only half this length. Any dissertation which, without prior permission of the Degree Committee, exceeds the permitted limit in length will be refused.

Social and Political Sciences: not to exceed 80,000 words **including** footnotes and appendices but **excluding** bibliography; each page of statistical tables, charts, or diagrams shall be regarded as equivalent to half a page of text. Only in the most exceptional circumstances are the Degree Committee willing to consider requests to exceed the normal length and such permission will not be granted simply because you have already exceeded the limit in writing up your work.

2. Style and format

- **Typescript** on **A4** paper (although the Degree Committees for Engineering, Management Studies and Physics & Chemistry are willing to accept **A5** size).
- **Portrait** format is expected, but **landscape** format may exceptionally be allowed by some Degree Committees; please consult the Board of Graduate Studies.
- **Double-sided printing** is permissible for the soft bound version; however, **single-sided** is required for the ***text*** of the final, hard bound Library copy (diagrams on facing pages are acceptable).
- **One-and-a-half spaced** type.
- *Minimum* **font size** for text is 11pt (12pt is preferred) and for footnotes is 10 pt.

Your dissertation must include a **title page** giving your full name, your College, the full title of the dissertation, and the degree for which it is submitted. It should also include a **summary** (see B5 above).

You should take care to ensure that the text is **legible**: the quality of printing should be such as to allow for copying; manuscript or similar entries should be of an ineradicable nature.

Photographs and other illustrations: should be scanned or printed into the text; where this is not the case, they must be originals, not photocopies, and securely fixed. Sellotape is not acceptable as an adhesive.

Presentation: please note that the form in which your dissertation is presented, and the care with which it has been prepared and illustrated, are in themselves evidence of your capabilities and will receive consideration as such. **You are strongly advised** to **check carefully for typing errors, spelling mistakes and poor English**. The correction of such errors may be a condition of approval for the Degree. Take particular care to ensure that the **correct version of text** appears in the copies of the dissertation submitted for examination.

NB If you intend to submit a **soft bound thesis** in the first instance, please note that this ***must not be viewed as a means of submitting a provisional, unpolished version of the thesis***.

The Examiners are *not* expected to copy edit your work, although, of course, they will deal with errors of fact and typographical errors that affect the meaning, as well as larger issues. **The extent to which the text has or has not been properly prepared may influence their recommendation concerning the award of the Degree.**

3. Binding

Two bound copies **of the dissertation are to be submitted for examination; these copies may be hard bound *or* soft bound.**

- **Hard bound** means **permanently stitched and bound in stiff covers** with the title of the

dissertation and your name clearly inscribed on the cover

- **Soft bound** must be bound in such a way for the contents to be **securely fixed** within the covers, which must bear the **title** and your **name**.

N.B. Whether you submit your thesis in hard or soft binding in the first instance, it is a* condition for proceeding to the Degree *that you submit a hard bound copy for the University Library.

- *If you submit a **soft bound copy** in the first instance, you should produce the final hard bound copy* only *after receiving a letter of approval for the Degree from the Secretary of the Board of Graduate Studies. **Please be aware that this step will almost certainly delay the date you can graduate. Board meetings take place a week or so before graduation days and this time interval is generally too short for the production of a hard bound copy in time for approval being given for admission to the Degree.***
- *If a soft bound copy is submitted, it will almost certainly be necessary to provide a NEW copy for hard binding as most methods of soft binding create holes that would weaken conventional binding and may lead to an unacceptable loss of the margin.*

D. Submitting your thesis

1. Where to submit & what to take with you

- Bring **two copies** of the thesis to the Board of Graduate Studies. You are strongly recommended to retain one or more copies of the dissertation for your own use.
- You must also submit two *additional loose* copies of the **summary** for approval by the Examiners; these must be *identical* to the summary in the thesis itself.
- You must also sign a **declaration** regarding your right to be identified as the author (see Section A3 above).
- Bring with you any submission documents you received from the Board. Our staff will offer any guidance you may need. A **checklist** of items needed for submission of the thesis is as follows:

(a) two complete copies of the dissertation together with two copies of any published papers also being submitted;
(b) three copies of a summary of the dissertation (see B5 above) ;
(c) the declaration of originality of the work (see A3 above);
(d) if applicable, a certificate as to the length of the dissertation (see C1 above);
(e) if applicable, the statement by your Supervisor about work done in collaboration (see A3 above);
(f) a declaration regarding access to and the copying of the University Library's copy of the dissertation and summary (see A5 above);
(g) an Addresses for Examinations Purposes Form

Some Degree Committees may require you to submit a disc containing the text of your dissertation; your Degree Committee Office will advise you if this is necessary.

Please consult the Board of Graduate Studies *in advance* of submission if you are in doubt about any of these matters.

2. Submitting the hard bound Library copy

*If you submitted a **soft bound** thesis in the first instance, you must, when submitting the **final, hard bound, copy** of your thesis:*

- *provide a further loose copy of the **summary**,* identical to that included in the final version*; this is for the University Library file;*
- *sign a **declaration** that the work submitted is **identical** to that which was examined, except as required by the Examiners by way of correction.*

***Permission to proceed to your Degree is conditional on the submission of the hard bound copy**.*

E. The examination

1. The Procedure

Your dissertation will be sent by the Secretary of the Board of Graduate Studies to your Degree Committee and referred by them to two Examiners, appointed by the Degree Committee, who **report independently and conduct an oral examination.** In *very* exceptional circumstances, at the Examiners' discretion, a written examination may be held instead of an oral examination; please consult the Secretary of the Board if you think you might require such an examination. **Video conferencing is <u>not accepted</u> as a medium for oral examinations for the PhD or M.Sc./M.Litt..**

If you do not have a date for your oral within eight weeks of submitting your thesis, you may contact the ***Degree Committee Office*** for your Faculty to enquire about progress.

The examination procedure can take several weeks and frequently much longer. If you expect to leave the country after completing your course of research, you must submit your dissertation early enough for the Examiners to have a reasonable time in which to read it and to hold an oral examination before you leave. *If you leave the country before having the oral examination **you must not assume** that the Examiners will hold a written examination instead of an oral examination.*

2. The oral (viva) examination

The oral examination need not be in Cambridge (although it is normally expected to be in the UK) and should take place in the most mutually convenient location. There are no rules for its duration, but as an approximate guide, it will normally occupy at least 90 minutes and is likely to conclude within about three hours.

The oral examination should allow:

- you to defend your thesis and clarify any matters raised by the Examiners;
- the Examiners to probe your knowledge in the field;
- the Examiners to assure themselves that the work presented is your own and to clarify matters of any collaboration;
- the Examiners to come to a definite conclusion about the outcome of the examination.

Your examiners are asked not to give you any direct indication of the likely outcome of the examination; this is because the official result can be confirmed *only by the Board of Graduate Studies*. However, the general progress of the oral should give you a fair indication of the outcome.

3. After the oral

The reports of your Examiners are considered at a meeting of the Degree Committee and are forwarded to the Board of Graduate Studies for consideration, with a recommendation about the outcome of the examination. You will not know the official outcome until the Secretary of the Board of Graduate Studies writes to you**.** For all examinations set in train after 1 January 2003, your Examiners' reports will be sent to you by the Board with the result of your examination.

4. Results and leave to proceed to the Degree

The results of examinations can only be considered **at meetings** of the Degree Committees and of the Board of Graduate Studies; the timetable for these may be found in the University Diary. Submission of a soft bound thesis for examination will also delay the granting of leave to proceed to the Degree. You must take this into account in any plans you may have to attend a particular Degree Congregation.

Your College is responsible for presenting you for your Degree. Please note that Colleges reserve the right not to present for a Degree a candidate with outstanding debts to the College until such debts have been cleared.

A certificate will be issued when the Degree is conferred on you, either in person at a Congregation, or *in absentia*. You may not use the title (PhD, M.Sc. or M.Litt.) until the Degree has been conferred.

5. Submission of a revised dissertation

If you are not approved for the degree sought at the first attempt, the Board of Graduate Studies may, on the advice of the Degree Committee, permit you to submit a revised dissertation on *one further occasion only* by a prescribed date.

If you are offered, and accept, the opportunity to revise and resubmit, the Board will forward the revision advice provided by the Examiners to you and to your supervisor. The examination of a revised dissertation begins *afresh*, possibly with new Examiners, and you may be required

to undergo an oral or written examination on the revised dissertation.

6. Review of results

If you are not approved for the Degree, it is open to you to make representations about the outcome, either personally or through your Tutor, under the Regulations for the Review of the Results of Examinations of Postgraduate Qualifications, which may be found in the *Statutes and Ordinances* of the University and about which further information is given as the need may arise.

APPENDIX V: OXFORD UNIVERSITY GUIDELINES FOR THESIS SUBMISSION

Students attending Oxford University may find guidance regarding the preparation of the thesis by visiting the hyperlink listed below.

http://www.medsci.ox.ac.uk/portal/postgrad/Microsoft_Word_-_Notes_for_Guidance_2006-7_Booklet.pdf

APPENDIX VI: RESPONSIBLITIES AND OBLIGATIONS OF MENTORS

FACULTY AGREEMENT FOR NIH-OXFORD/CAMBRIDGE GRADUATE PARTNERSHIPS PROGRAM

Responsibilities and Obligations of Mentors

Congratulations on being selected to participate as a mentor in the UK/NIH Graduate Partnership Program (GPP)! This is an unusual graduate program in biomedical research in which two distinguished laboratories join together to mentor a single graduate student on a thesis project that is of mutual interest to both laboratories. This task requires diligent communication between all three parties involved and requires an integrated effort during the entire term of the research project (average 4 years). This program is NOT to be viewed as a mechanism by which a student spends 2 years in a lab in the UK on an NIH fellowship. Similarly, it is not to be viewed as a program designed TO "employ" a technically trained student to work in an NIH laboratory on one's own project. In addition, there are certain teaching and/or financial obligations that each mentor must fulfill in order to ensure the success of the program. The purpose of this document is to make clear to both parties involved specific duties and commitments associated with service as a student mentor.

STEPS FOR SETTING UP A RESEARCH PROJECT

(1) The two mentors in the partnership should agree in advance on an area of research of mutual interest, potential projects that the student may carry out, and which parts of the project will be conducted where.

(2) If the student chooses your collaboration and both mentors agree to take on the student, it is the responsibility of both mentors to help the student write up a research proposal (maximum of 10 pages) describing the project and prepare a brief timeline for where and when the research will be carried out. The proposal should reflect a thorough familiarity with the relevant literature and be written by the student during orientation scheduled for the student's first summer. This proposal

will be the first task that he or she performs in the lab. All the students will be housed at the NIH from August 1 – September 30 (the orientation period), in order to ensure that the writing of this proposal is done properly.

(3) In addition to helping with the research proposal, each mentor should look closely at the student's college transcript and assess whether the student would benefit from undertaking any formal coursework or tutorials to add breadth/depth to the student's didactic training. If it is decided the student would benefit from additional coursework, mentors are asked to submit a recommendation via email to the GPP Office and the Office of the Managing Director of the program (lampertb@niaid.nih.gov). Mentors should be able to advise students with respect to the many specialty courses available through the NIH and its affiliates. **The request for training should also be appended to the end of the research proposal.**

FIRST YEAR FINANCE GUIDELINES

(1) The **NIH mentor is responsible for paying the student stipend**, **health insurance**, and **travel** beginning October 1st of the student's first year. **NOTE:** *It has been our experience that participating colleges and universities have a practice of sending bills to the students and mentors. These should not be paid but forwarded to* ***Deloris Mills*** *in the GPP office.*

(2) The **GPP is responsible for college tuition and fees** according to the partnership agreement. Please contact the GPP for details since individual arrangements must be made for each student.

(3) For **Marshall and Rhodes Scholarships**, the **student costs are covered for the first two years by the supporting organizations.** Except for costs associated with travel and the purchase of a laptop, mentors should anticipate no other costs for these students.

(4) **One year of support** may be provided for those students who have been awarded **Churchill, Gates, or Fulbright Scholarships**.

FIRST YEAR'S TRAVEL GUIDELINES

(1) During the year, the student may wish to attend a meeting or come to the partner lab to do an experiment or use a piece of equipment. NIH labs supporting a Scholar are expected to set aside a **$3,000 per annum travel budget.** These funds must be used for research related activities only. This stipend should NOT be used for holidays or trips home to visit family. The U.S. Federal Government maintains very strict rules regarding foreign travel and all student travel must be arranged through the **Administrative Officer in the student's NIH lab.**

(2) Students must **make arrangements at least 6 weeks in advance of traveling** in order to get proper government clearance for the trip. This is true whether the student travels from the UK to the U.S. or vice versa. **The US government travel agent must purchase all tickets**.

FIRST YEAR'S RESEARCH PROGRESS REPORT

(1) At the end of the first year, students are required to submit a **progress report which summarizes their research accomplishments** during the year. For the majority of students who matriculate at the standard time, this document will be **due on October 1st** and is to be submitted to the GPP and the Managing Director of the program (lampertb@niaid.nih.gov). For the few students who have received exceptions and matriculate at another time, the document will be due one year after the date of matriculation.

(2) The progress report should be approximately 5 pages long (including references). If changes in the direction of the research have occurred over the course of a year, students should include a **revised project timeline** in the report. NOTE: At Cambridge a research proposal is already required for formal application for transfer to Ph.D. (DPhil) status. Oxford is less strict on when this first year transfer application is due. Nonetheless, students who matriculated in either of the programs are required to submit a progress report as noted above (Note: For Cambridge Scholars, the *Transfer Report* may be used).

COMMUNICATION BETWEEN THE LABS

(1) Since students work primarily in one lab during any given year, it is absolutely critical that good communication be maintained between the student and both mentors. This can be accomplished by **e-mail and/or video conferencing** (NIH has a facility for this located in Building 10 which is available free of charge to investigators). The student should seek periodic feedback from both mentors. Phone conferences should are encouraged as a way for all collaborators to discuss points in detail. *iSight* or computer cameras used for video conferencing have proven to be convenient tools to ensure students and mentors maintain appropriate levels of communication.

(2) A **colloquium** will be held once a year to bring both mentors and the student together for quality discussion time. This will take place in the fourth week of June or the first week of July each year. **As a mentor, you are REQUIRED TO ATTEND**.

(3) Each year, students must submit to the Managing Director updated CVs, biographies, and information about their research accomplishments.

SECOND YEAR'S RESEARCH PROGRESS REPORT AND EVALUATION

(1) At the end of the second year, the student is expected to submit to the GPP and the Managing Director (lampertb@niaid.nih.gov) an **extensive research summary** of the progress he/she has made during the first two years. This document should be 20 pages. Please refer to the OXCAM Handbook regarding the format of the summary. It must include preliminary or published findings of what has been done and detailed plans for future experiments.

(2) The student will also submit a written report and undergo an informal review in the UK by a thesis committee composed of the two mentors and possibly a third UK university adjunct advisor. The exact timing of this review will be set by the UK mentor.

THIRD YEAR SEMINAR
In the standard operation of the program, the student will spend two years in the UK and two years at NIH; however, the student's precise location at any given time should be dictated by an agreement between the mentors and student according to the requirements of the science. At the end of the first two years, the UK university will require a written report and an informal presentation to the student's advisory committee (as described above). When the student returns to the NIH, a third task must be performed. The student is required to give an open seminar on his/her work to the Laboratory or Branch affiliated with the project. It is best if the seminar is planned first with the mentor in the UK before leaving and then polished by the mentor at NIH before that person schedules the presentation.

THIRD YEAR REPORT
At the end of the third year, another report with a final time line is due on October 1st. This one should again review the progress made including the publication of papers in professional journals. In addition, the report should outline the plans for finishing up the thesis work. While Oxford and Cambridge have no formal requirement for publication in order to be awarded a Ph.D. (D Phil) degree, the GPP expects that the student will have at least one first author paper in a respected, peer-reviewed journal in order for the student to be competitive for obtaining a postdoctoral position in the United States.

FOURTH YEAR THESIS DEFENSE
If the mentors, the University and the GPP concur that the student is ready to graduate, a thesis is written and the student defends it in the UK before an outside assessor (examiner). A copy is submitted to the GPP, the University, and the Managing Director (lampertb@niaid.nih.gov).

PROGRAM FLEXIBILTY
Both Cambridge and Oxford have a minimum residency requirement of 6 University terms. This translates into about 54 weeks of time that must be spent in the UK within a 20 mile radius of the University. While the program was originally designed to have the student spend 2 years in each laboratory, students are offered flexibility in how the time is spent so as to accommodate the scientific exploration process. According to NIH IRTA policy, the total time must be a 50/50 split between the UK and NIH. The plan for time distribution will be acknowledged from the very beginning when the student signs the research proposal and a timeline to be submitted to the GPP and the Managing Director (lampertb@niaid.nih.gov) on September 30th of the first year. Alterations in this program are certainly permissible but both mentors must agree on any changes to the student's plan.

RESOLUTION OF DISPUTES
If differences of opinion occur between the two mentors or between either mentor and the

student about the appropriate course of action for the student's education, the first points of contact for each class are the class deans who will provide scientific counseling to Scholars and may be contacted per the information shown below:

If necessary, a GPP representative or committee will serve as a third party mediator to attempt to reconcile differences. If no reconciliation is deemed possible, the GPP will attempt to work out an alternative mentorship arrangement.

Signatures

By signing below, each party confirms that he/she has read the **Responsibilities and Obligations** mentor guidelines set forth in this document and will make every effort to adhere to them.

NIH Mentor	Date
UK Mentor	Date
Student	Date
Scientific Counselor	Date