

Summer Research Training Program (S RTP) Application Instructions

The application is arranged as follows: 1) **Personal Information**; 2) **Abstract**; and 3) the **Research Plan** consisting of: a) **Specific Aims**; b) **Background and Significance**; c) **Progress Report/Preliminary Observations** (optional); d) **Methods**; e) **Literature Cited**; and f) **Human subjects/Vertebrate animals**. Follow directions for each section, **strictly** observing space limitations as indicated. Keep in mind that you are attempting to communicate with faculty who may not be familiar with the area of your proposed research. It is of primary importance that you demonstrate a firm understanding of your project and the procedures you plan to follow. Be clear, avoid jargon, and spell out abbreviations before using them the first time.

All application must be submitted via email to
studentresearch@som.umaryland.edu by **5 p.m., February 24, 2012**.

SUPPORT PERIOD - Period of full-time devotion to the project (usually 10-12 weeks starting in late May/early June and including the first Friday in August).

MENTOR DECLARATION - Provide this document to your mentor for them to read, sign and submit via email to studentresearch@som.umaryland.edu.

ABSTRACT - Briefly describe in the space provided, (1) the nature of the project on which you will be working, and (2) the nature of your participation in that project.

RESEARCH PLAN - Organize this section of application to answer the questions: (A) What do you intend to do? (B) Why is the work important? (C) What has already been done? (D) How are you going to do the work? **Do not exceed six (6) pages for sections A to E.** APPLICATIONS EXCEEDING THIS LIMIT WILL NOT BE CONSIDERED

A. Specific aims. State concisely and realistically what the research project is intended to accomplish. What hypotheses are to be tested or what questions will be asked? Be sure to emphasize *your role* in the project. **One-half page maximum is recommended.**

B. Background and Significance. Briefly summarize the scientific background to the proposal. Critically evaluate existing knowledge, and specifically identify gaps that the project is intended to fill. Literature cited should be current and relevant, rather than exhaustive. Be sure to indicate how the specific aims were derived from the background. State concisely the importance of the research described, and the broad, practical implications of the work. **One to 1.5 pages is recommended.**

- C. Progress Report/Preliminary Studies.** Include preliminary work (optional) where relevant in this section (such as library research, methodological development, procurement of supplies, etc.). Students who are applying for a second fellowship must provide a summary of their previous work and publication information. The information in this section will serve only to aid the reviewers in determining the feasibility of the proposed project. Previous research experience is **NOT** a prerequisite for a traineeship. **Do not exceed one page.**
- D. Methods.** Discuss the experimental design and procedures to be used to accomplish the specific aims. Describe the protocols to be used, and the tentative sequence and timetable of the investigation. Be as specific as you can regarding the nature and number of subjects or samples you plan to study. Include the means by which the data will be analyzed and interpreted. Emphasize *your role* in this phase of the project and provide a timetable for accomplishing your work. **No specific recommendation, but do not exceed the total of six pages for sections A-D, leaving sufficient room for section E.**
- E. Literature Cited.** References should appear as consecutively numbered citations in the text rather than alphabetical. Each citation must include the names of all authors, title of article, the name of the journal or book, year of publication, volume number, and beginning and ending page numbers for articles, chapters, or sections of books. **This list must be included within the six page limit.**

Provide as Attachments

- F. Human subjects/Vertebrate animals.** If you have indicated that **human subjects** are to be involved in your work provide **a copy** of the approval letter to your faculty sponsor from the *Human Volunteers Research Committee* (HVRC) which shows the protocol review number for the approved procedure to be used in your research. If you have indicated that **vertebrate animals** are to be used, you must provide **a copy** of the approval letter to your faculty sponsor from the Institutional Animal Care and Use Committee (IACUC) which shows the protocol review number for the approved procedure to be used in your research. If this application is approved, you must then request your mentor to formally add your name to the appropriate protocol for work either with human subjects or vertebrate animals, as required by the Human Volunteers Research Committee or Institutional Animal Care and Use Committee. **A copy of the approved and appended protocol must be sent to the Office of Student Research before any funds can be released.**

APPLICATION REVIEW POLICIES

- A. Evaluation Criteria.** Applications must describe a realistic, well thought out biomedical research project of short duration formulated by a medical student in close collaboration with

a faculty mentor. The application should be clear and concise and should provide demonstrable evidence of understanding of the problem by the student. In addition, there must be clear and convincing evidence of adequate support and supervision of the student by the faculty mentor. This generally means that the mentor has substantial grant/contract support, publishes 'regularly' and acknowledges receipt of the Mentor-Trainee Guide.

The applicant is expected to provide a research design which includes: specific aims; significance of the research; and delineation of the experimental design/protocol with types of expected data and proposed data analysis procedures.

Proposals which are merely equivalent to the taking of a course, the performance of library research, or which are solely of a technical nature, e.g., setting up an assay/procedure without applying it to a specific problem, as well as proposals that indicate inadequate supervision by the faculty mentor, will be automatically disapproved.

Projects must provide the student participant with a significant and realistic experience. Emphasis will be placed on the quality of the research experience, rather than on a measure of the caliber of the research project itself. The program committee will assign high priority to research projects that are likely to provide an excellent experience. Projects that just consist of chart reviews or of 'data mining' are not considered viable projects.

- B. Review Process.** Applications will be reviewed and recommended for approval or disapproval. Priority scores may be used to provide a basis for determining the allocation of available funds when necessary.
- C. Mentorship.** Student applications may be sponsored by one or more faculty. However, the principal mentor must be a **full-time faculty member** of the School of Medicine who is a **current recipient of a research support in the form of a grant or contract** (e.g., NIH, NSF, P- or U-type, AHA, etc.) **or the equivalent**. The mentor may not sponsor more than one student at a time under this program. Co-mentors may be from this or other schools or institutions. Exceptions to this requirement are made in rare cases where alternative arrangements can be justified and approved in advance of the submission of an application. Cost-sharing and applications for external grants from professional and scientific societies is encouraged so that we can provide a research experience to as many students as possible.

D. SUMMER RESEARCH TRAINING PROGRAM FOR MEDICAL STUDENTS

RESPONSIBILITIES OF A TRAINEE

1. **Award payments.** Stipends will be disbursed in equal installments on or about the second week of June, July, and August. Additionally, a portion of your stipend (generally 10%) will be withheld and issued ONLY upon receipt of the final required documents (see #9 below) by the designated deadline. This fourth, if applicable, installment will be issued in September.
2. **Change of Address Notification.** Be sure to advise us of any address change. This will facilitate our communication with you regarding Program developments and your career decisions. You may reach the office from 8:30 AM to 4:30 PM, Monday through Friday at (410) 706-3026 or via e-mail ASHarris@som.umaryland.edu
3. **Schedule.** You are expected to devote full-time for 10 weeks to your research (85%) that may include library work, seminars and other meetings (15%). You may be expected to work some evenings or weekends as well with compensatory time off. There is no arrangement for overtime.
4. **Research Assignments.** If you have any problems with the clinic, laboratory or mentor, immediately contact the Program Director. We want to make sure that you and your project are a good match, that your summer is productive and that you are enjoying yourself.
5. **Summer Science Colloquium.** Trainees and other interested parties will meet jointly at Orientation on the first day of the program as well as at other program activities. All participants will then attend a series of lectures dealing with the *Ethical and Responsible Conduct of Research* and a subsequent *Seminar & Academia Series*. The seminar speakers are chosen for the topical nature of their research, their involvement in Academic Medicine and for their ability to communicate with students, provide the philosophical as well as scientific nature of his/her work, and his/her stature as a role model. Seminars are specifically tailored for the program. During a third hour you may be able to meet informally with physicians and scientists who will provide you with a realistic understanding of their activities and professional opportunities. Attendance is required.
7. **Student Research Forum.** Toward the end of the summer program, each trainee is expected to write a scientific abstract and present the results of his/her research project at the *Student Research Forum*. At mid-summer, trainees and their mentors will be asked to select either an oral communication or poster presentation for the forum. Lunch and a reception are included in this all-day event that all trainees are expected to attend.

8. **Journaling.** Trainees are provided with a journal and instructions for daily/weekly journal entries. This is not the same as a laboratory notebook. It is meant instead to provide a means to develop an experimental approach to learning and conducting research, so that your subsequent actions will be intelligent, rather than accidental and routine. Instructions in "journaling" will be provided.

9. **Final Requirements.**

At the end, you will be expected to:

- a) Submit a report (double-spaced, typed, five-page minimum exclusive of graphs and references) on your work in the form of a journal or review article.
- b) Submit a critique of the program (double-spaced, typed, two-page minimum) based on your journal entries and other experiences. This evaluation is written in a narrative format and is unrelated to the actual research itself.
- c) Complete a post-training questionnaire (particularly valuable to us since every effort is made to improve the program based on the students' responses).