

SUGGESTED GUIDELINES FOR THE MENTORS PORTION OF AN F31 NRSA

A few general principles should be considered when submitting a predoctoral NRSA application:

- 1) Both the training plan/environment and the scientific project will be carefully evaluated. If either one is weak, you will not succeed.
- 2) The training experience of the mentor is heavily weighted. If you are a junior faculty member, consider a co-mentor who is more senior. Be sure to discuss in detail in the training plan the role of the co-mentor and include a letter from the co-mentor that demonstrates their familiarity with the trainee and the proposed project.
- 3) Keep the science simple and clean. Graduate students should not be seen as engaging in high risk projects (i.e. generating a transgenic mouse, developing a new drug therapeutic) or overly ambitious projects (limit to 2-3 years max). Emphasize hypothesis testing and avoid the dreaded “descriptive study” characterization. Use a flow diagram or a “if this... then that...” approach if you can.
- 4) Be prepared to resubmit, and when you do, be sure to respond to every comment made by the reviewers.
- 5) GOOD LUCK!

The following is a template for preparation of the Mentors portion of an predoctoral National Service Award grant application to the NIH. The Mentors portion is given considerable attention by the study sections and must reflect a clear training plan, strong environment and high degree of involvement of the mentor with the mentee. What follows is suggested wording and will hopefully serve to spark your own ideas and remind you of things that you might not otherwise have considered.

Research and Training Support Available to the Sponsor and the Applicant During the Period of Proposed Award.

Grant Title	Funding Source	Identifying Number	Principal Investigator	Dates	Amount
53 character title	National Institutes of Health	R01 XXXXX	Mentors name	07/01/00 - 06/31/11	\$200,000 direct/year
53 character title	National Institutes of Health	R01 XXXXX	Mentors name	pending	pending
Predocutorial Training	National Institutes of	T32 XXXX (list only if	PI's Name	09/01/00 - 08/31/05	Predocutorial stipends

Program in (name)	Health	mentor is listed on grant)		renewal pending	
Postdoctoral Training Program in (name)	National Institutes of Health	T32 XXXXX (list only if mentor is listed on grant)	PI's Name	9/15/94 - 6/30/09	Postdoctoral stipends
Training Program in (name)	National Institutes of Health.	T32 XXXX	PI's Name	07/01/79 - 04/30/06	Pre- and Postdoctoral Stipends
Training Program in (name)	National Institutes of Health	T32 XXXXXX	PI's Name	07/01/87 - 06/30/2007	Predoctoral stipends

The pilot data for this proposal was generated using funds from R01 XXXXX. Trainee Name is currently supported by a stipend from (mentors R01, GRA, T32 – give name). Trainee was chosen for this support based on his/her outstanding undergraduate and graduate grades, his/her excellent research record and his/her promise as a successful scientist.

PREVIOUS TRAINEES.

Of my previous trainees, one student received an F30 Award (for MD/PhD), one postdoc receive an individual NRSA, two postdocs received K01 awards from XXXX and two postdocs received NSERC awards from the Canadian government. I have also had two postdocs and two students receive trainee grant awards from (insert name of organization). Two of my former students are currently in tenure track positions and two are in continued training related to medical school. One student who graduated this summer is now a postdoctoral fellow at (name University) and has received an individual NRSA from the (name NIH) Institute.

GRADUATE STUDENT TRAINEES

Student Name, PhD, 1994 -1998 - “Thesis title” – current position, tenure track Assistant Professor, Department of (name), University name and location.

Student Name, PhD, 1995 - 2000 - “Thesis title” – current position, Resident, Department of (name), University name and location.

Student Name, PhD, 2000 -2004 - “Thesis title” – current position, postdoctoral fellow, received individual NRSA from NIH Institute, Department of (name), University name and location.

Student Name, PhD, 2000 -2005 - “Thesis title” – current position, postdoctoral fellow, Department of (name), University name and location.

Trainee Name, 2004 - current applicant, project ongoing

Other Student, 2004 -present, project ongoing

Other Student, 2005 - present, project ongoing

POST-DOCTORAL TRAINEES

Dr. Name, Department of (your department), 1998 – 2001 postdoctoral fellow, received an NRSA F31 in 1999 from NIXXX, received a KO1 Award from NIXX in 2001. Title of Project: give name. Current position: tenure track Assistant Professor, Department of (name), University of (name), (place)

Dr. Name, Department of (your department), 2000 – 2003 postdoctoral fellow. Title of Project: give name. Current position: tenure track Assistant Professor, Department of (name), University of (name), (place)

Dr. Name, Department of (your department), 2001 – 2004 postdoctoral fellow, received a Society for NAME Fellowship Award in 2001 and a K01 award from NIXX in 2004. Title of Project: name project. Current position - tenure track Assistant Professor, Department of NAME and Program in NAME, University name and place.

Dr. Name, Department of (your department) 2003 – present. Title of project “give name”.

Dr. Name, Department of (your department) 2004 – present.

Training Plan.

Trainee is a graduate student in the Program in (name). He/she is just beginning her 2-4th year in the program after two years of intense course work and completion of three independent laboratory rotations. He/she has been working in the lab full time for the past year and has now generated sufficient pilot data to apply for an individual NRSA.

Trainee came to the Program in (name) with a strong background in (discipline). As an undergraduate at (name) College he/she had worked extensively in the laboratory of Dr. (name) on the control of (discipline) in the laboratory mouse/rat. He/she was already proficient in basic techniques such as (list). What Trainee lacked was any formal training in (discipline). The emphasis of the Program in (name) at UMB is (discipline), meaning we feel students should be well versed in the basics of cellular mechanisms in order to ask questions at the functional level. Trainee represents what we refer to as a top down student (bottom up), one that comes in with an appreciation of whole animal physiology and behavior (cell and molecular approaches) but seeks to ask mechanistic (systems level) questions to determine how these functional outcomes are reached. The field of (name) is particularly predisposed to this multi-level of analysis.

In order to broaden the base of his/her knowledge, Trainee has taken a range of courses. To gain expertise in molecular and cell biology he/she completed Advanced Molecular Biology, considered a very difficult course taught out of the Biochemistry Department, Molecular Neuropharmacology and Membrane Structure and Function. Courses relevant to his/her interests include (name specialty courses). He/she has also participated in a Readings in (name) that involved weekly reading and discussion of primary research articles and next year he/she will take an advanced course in (name).

Trainee has also received extensive didactic training in (discipline) via our required courses, (name), and an elective methods course called (name). The (name) course is a very intense one semester course that lasts well into June and reviews in excruciating detail (detail). As with many of our students, Trainee had never been exposed to this level of detail about cellular physiology and it was elegantly presented by some of our most outstanding faculty. He/she was fascinated and intrigued by the (discipline) approach and chose two laboratory rotations that involved (approach).

Trainee enjoyed the variety of different experiences from his/her laboratory rotations but fortunately for me ultimately decided to conduct his/her thesis research in my laboratory under my supervision. The long standing focus of my research program is (describe) and currently Dr. Postdoc is a member of our research group. Dr. Postdoc is an expert in (discipline) and will be a valuable source of support to Trainee. The project proposed here by Trainee dovetails nicely with other projects in the lab being conducted by Dr. Postdoc, who will also assist in providing support and advice for implementation of the project.

One component of the proposed project involves the use of (name technique), a methodology I do not have extensive experience in. Therefore we have included Dr. Professor as a Co-mentor on this application (see attached letter and Biosketch). Dr. Professor has over XX publications on the use of (discipline) and is an internationally recognized expert on the topic of (name). Dr. Professor will serve as a member of Trainees thesis committee in addition to his/her role as co-mentor on this proposal.

The remaining methods proposed, (list) are routinely used in this laboratory and familiar to Trainee.

Training involves more than learning methodology of course. Trainee has already participated in a pro-seminar course that reviews basics such as how to prepare your CV, what is a hypothesis, how to give a good seminar etc. He/she has also presented to the Program in Name Journal Club as a required component of his/her training. An additional training component comes from a weekly journal club held by our Name Group in which recent papers in the field of (name) are presented (see further below).

In my laboratory the training is based on individual meetings between myself and the trainee on an ad hoc basis. We usually meet at least once a week and often more frequently. My office is located (in relation to) the laboratory. My door is always open. In addition I hold weekly lab meetings attended by all members of the lab at which we discuss research plans for the upcoming week, trouble shooting of any particular technical problems, distribution of animals and other resources and sharing of recent findings of interest. Prior to national meetings we hold additional practice sessions for presentations of posters or talks. These sessions are attended by the entire Name Group, thereby providing an outside-the-lab perspective on the individuals research findings. Related to this, we have also recently formalized a reciprocal relationship with (name group) located at (another University, another lab etc). . On a semi-annual basis we visit each others institutions and spend an entire day in which students and post-docs from the main labs present their findings. This informal and relaxed setting is not only an important ego booster for the trainees, it has on a frequent basis provided some unique new insight into the projects. The combination of laboratory activities, formal presentations and informal get togethers provides for a wide range of professional experiences from which Trainee is already clearly benefiting.

Future training will include continued attendance at both the Name Group Journal Club and the Program Name Journal Club. Trainee will also continue to attend the annual meetings of the Society for Name and the Society for Name, just as he/she has done for the past XX years. Methodologically, Trainee will receive training in (technique) from Drs. Post-Doc and Dr. Professor, and in aspects of the use of (method) from Dr. Professor. For career development, I will continue to work with Trainee on the skills needed for a successful career in science, including presentation skills, time management, effective lab management, data management, manuscript and grant writing and most importantly, how to decide which scientific questions are worth pursuing and which should be let lie.

Environment

This is a particularly exciting time for graduate education at the University of Maryland, Baltimore. In response to a faculty led initiative, the Graduate Program in Life Sciences (<http://lifesciences.umaryland.edu>) was established in July 2006 and serves as an organizational umbrella over five independent degree granting graduate programs. The programs are organized along scientific discipline and include faculty from any of the basic science or clinical departments in the schools of medicine and dentistry. This organization offers an unprecedented level of choice for graduate students and promotes interactions between faculty that were previously separated by departmental barriers. The Program in (Name) maintains its own guidelines for training but is provided administrative and educational support from the Graduate Program in Life Sciences. This includes a state-of-the art website that includes an intranet for posting of course materials, calendars, applicant materials and minutes of confidential meetings. The Graduate Program in Life Sciences also hosts student oriented events such as seminars, career workshops and social gatherings.

In the field of (name), the environment at the University of Maryland, Baltimore is particularly exceptional. The substantial number of training grants awarded to our faculty is an independent confirmation of the quality of the training environment but more important is the unusual concentration of scientists with interest in (discipline). Beginning with a tradition started by (famous name in field) some 30 years ago, (discipline) has always been a strength, and the Training Program in (discipline) is the longest standing continuously funded training grant on this campus. Famous Professor retired in 19XX and his protégé, Other Famous Professor soon left to take a position at (name). One might think that would be the death knell for (discipline) here at Maryland. On the contrary, I was hired at the same time, a few years later New Famous Professor, a world renowned expert in (discipline), was recruited to the Dept. of (name), followed not too long after by Dr. Junior Professor a new Assistant Professor in the Dept. of Name and sure to be a rising star. Very recently we had the great fortune of recruiting Another Famous Professor from (name) and he/she has joined the Dept. of Name. Together this makes for a critical mass of expertise in both the methodology and theory needed for advanced training in the field of (name). Our group meets on a weekly basis to discuss papers in the literature. This informal and friendly journal club is attended by students and post-docs, and the average size in attendance is around 15 individuals. We also teach a yearly course in (field) which is very popular with a wide range of students, including from the Program in (name) and (name).

In addition to this rich resource of (experts), the Program in (name) at Univ. of Maryland includes numerous outstanding colleagues including expertise in (name area) (professor, professor, professor), area (professor), area (professor), area (professor, professor) and area (professor, professor). All of these individuals are located within the same contiguous four building complex as our laboratory. The Program in (name) runs a weekly journal club attended by 50-60 people in which faculty and senior postdocs present recent high profile papers in the field. Graduate students are required to present in the journal club during the second semester of their second year. We also sponsor a monthly seminar series of leading researchers across the range of disciplines in area and with attention to diversity based on gender and ethnic background. A graduate student luncheon with the speaker allows students to interact with leaders in the field without the constraints of faculty in the room. Lastly, There is a yearly retreat at which students and postdocs present their work in an environment outside of the university.

The Center for the (name) also holds a weekly journal club and an annual retreat and this is an additional important source of interaction for trainees as it brings a perspective outside of the (discipline). As one can see there is no shortage of journal clubs, seminars and retreats to attend and at times we have to limit our involvement so that we can get some work done in the lab!

Facilities.

My laboratory consists of XXXX sq feet of newly renovated state-of-the art research space. In addition to numerous research benches and all of the usual laboratory equipment, there is a separate room for (name), another room for (name) that includes a set up for (name). There is also a shared cell culture facility two doors down the hall, in which our laboratory is responsible for the everyday maintenance and which we share with only 2 other investigators.

The University of Maryland, School of Medicine has core facilities that include Confocal Microscopy, Proteomics, Biacore, DNA synthesis and sequencing, Transgenic mice and routine histology. The ALAAC accredited animal facility is located (in relation to the PI's laboratory).

Number of Fellows/Trainees to be Supervised

Currently there are XX postdoctoral fellows and XX graduate students in this laboratory. XX of the postdocs are senior (greater than 3 years experience) and the other XX have been with me for over 2 years, so on average they require only minimal supervision and instead provide a great deal of support to the graduate students in the lab. There is a full time technician with XX years experience and a part-time undergraduate who helps with everyday jobs around the lab.

Applicant's Qualifications and Potential.

Trainee began his/her research career as an undergraduate working in the laboratory of Dr. Famous Professor at Small Liberal Arts College where he/she conducted studies on (describe). He/she was accepted into the Program in (name) here at UMB in the Fall of 200X and is considered one of our top students, which is reflected in his/her having been supported by one of our training grants since he/she arrived (he/she is eligible for an additional X-X years of NRSA support). Trainee has published XX manuscript with Dr.

famous Professor and XX with my group. He/she is also author on an additional manuscript in preparation. For the XX papers in my lab, Trainee has been an essential component of the successful completion of the manuscripts, having contributed major portions of the data and participated actively in the writing process. He/she has now generated a substantial amount of pilot data that forms the basis of this application, studies which he/she has conducted entirely on his/her own. He/she and I have had many conversations about the design of the experiments and interpretation of the results. On more than one occasion I have had said, "no no, it works this way" or "you should do....", and trainee would say "well I was thinking....", and sure enough, he/she would be dead on. Sometimes he/she would have to stand his/her ground quite firmly, but he/she always did and in the end the experiments were far better designed than if he/she had let me just lead him/her along. The same has been true in the preparation of this proposal. He/she has designed, and often redesigned the experiments in a very thoughtful and deliberate manner. His/her enthusiasm for the project is palpable and is equal to my own as we both feel this is a significant series of experiments with the potential to provide novel insights into the mechanistic basis for the establishment of (describe).

Qualifications of students are often based on quantifiable measures such as grades and standardized test scores. Trainee's GRE scores are well above our threshold cutoff of 1800 (old system) and his/her undergraduate GPA is in the B to B+ range. The same is true of his/her graduate school course grades. Trainee took a very demanding course load and managed to pass them all, not all with A's, but he/she passed. Many of the courses he/she chose are the hardest ones we offer, and his/her grade has never been below a B. This reflects something fundamental about trainee, he/she does not take courses to achieve high grades, but instead takes them to learn. Moreover, he/she does not get discouraged by less than perfect scores, instead he/she continues to challenge his/herself, a critical personality trait for success in science. Trainee took these courses while completing laboratory rotations, in all of which he/she received an A. I am very familiar with the other laboratories that trainee chose to work in, and as with his/her courses, they are some of the most demanding in our program. I considered trainee a genuine gem who is going to go far in science and in particular will bring cutting edge mechanistic based research to the field of (name). I would rank trainee in the top 2% of graduate students I have worked with, and I have had the honor of working with some excellent students. In summary, trainee FULL NAME is an outstanding choice for a Ruth L. Kirchstein NRSA award as he/she has a bright and productive future ahead of him/her. I'm looking forward to being a part of his/her developing career as he/she begins to reap the rewards of his/her intellect, keen instincts and creativity.