



Ronald E. McNair Post-Baccalaureate Achievement Program

Faculty Mentor's Handbook



State University College of New York at Oswego
106 Poucher Hall ♦ Oswego, NY 13126
(315) 312-4079 (Office) ♦ (315) 312-4026 (Fax)
Email: McNair@Oswego.edu

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THE LIFE OF DR. RONALD E. MCNAIR

1950 – 1986



Dr. Ronald Erwin McNair was born on October 21, 1950 in Lake City, South Carolina to Carl and Pearl McNair. The house in which he was born had neither running water nor electricity.

Although he grew up amidst crushing poverty, McNair always exhibited a deep thirst for scientific knowledge. After graduation from high school, he enrolled in North Carolina & State University. He graduated magna cum laude with a B.S. degree in Physics in 1971. McNair then enrolled in the prestigious Massachusetts Institute of Technology. In 1976 at the age of 26, he earned his Ph.D. in physics.

While working as a staff physicist with Hughes Research laboratory, he soon became a recognized expert in laser physics. In 1978 McNair realized his dream of becoming an astronaut; after being selected from a pool of 10,000 applicants for NASA's space shuttle program, he became the second African American to fly in space. He served as a Mission Specialist aboard the Space Shuttle Challenger.

In addition to his academic achievement, McNair received three honorary doctorate degrees and many fellowships and commendations. These included Presidential Scholar, 1967-1971; Ford Foundation Fellow, 1971-74; National Fellowship Fund Fellow, 1974-75; Omega Psi Phi Fraternity, Inc. Scholar of the Year, 1975; Distinguished National Scientist, National Society of Black Professional Engineers, 1979; and Friend of Freedom Award, 1981. McNair also held a fifth degree black belt in karate and was an accomplished jazz saxophonist.

Dr. Ronald E. McNair was killed in the Space Shuttle Challenger explosion on January 28th, 1986, which also claimed the life of the entire crew.

MCNAIR SCHOLARS PROGRAM DESCRIPTION AT SUNY OSWEGO

The Ronald E. McNair Post-Baccalaureate Achievement Program at SUNY College at Oswego is designed to encourage, motivate and prepare students for doctoral study. As a two-year undergraduate research program model with an eight-week summer research component following their junior year, the scholars begin the program as either a sophomore or junior. The program addresses students' needs for research experience, faculty mentoring, information on graduate education and the application process, while improving academic skills – all in preparation for doctoral study completion.

Student eligibility includes a minimum grade point average of 2.75 or better. Two-thirds of the McNair Scholars are low income, the first generation of their family to attend college while one-third is from underrepresented groups (African American, Latino/Hispanic and Native American) in graduate school. They must be enrolled for minimal of 12 hours per semester during the academic year. Students are selected for their intellectual curiosity and vigor, interest in earning a doctoral degree and teaching at the university level. They are also selected based on their ability to pursue rigorous and substantive research.

The overall goal of the McNair Scholars Program is to prepare 26 Scholars each year to successfully pursue and apply to doctoral programs. The overall grant objectives as per the U.S. Department of Education are:

- 1. to recruit and enroll 26 Scholars and to maintain this number of participants through the life of the grant;**
- 2. to maintain or increase Scholars' grade point averages at 3.0 or better;**
- 3. to engage Scholars in high quality research and scholarly activities;**
- 4. to provide Scholars direct and indirect funding which supports their preparation for graduate school; and**
- 5. to support Scholars in their doctoral study plans with academic, financial and psychosocial through professional development seminars.**

WHAT THE MCNAIR PROGRAM EXPECTS OF THE MCNAIR FACULTY MENTOR

The Faculty Mentor participating in the McNair Scholars Program responsibilities consists of **ADVISEMENT, MENTORING AND RESEARCH**. All are equally important for our Scholars to achieve their goal of being accepted into and completing doctoral study.

I. **ADVISEMENT COMPONENT**

- ◆ Advise McNair Scholars on how to get into graduate school within their discipline. The Mentors inform Scholars about professional conferences they may attend and/ or present their research;
- ◆ Supports the Scholar as they set up professional networks. As a Mentor, you are attuned to the importance of establishing and maintaining networks in and across disciplines, higher education, etc.
- ◆ Advises Scholars of professional journals, publications and organizations within their discipline;
- ◆ Sees opportunities for Scholars as well as the barriers they may face towards achieving their goals. We look forward to mentors guiding and assisting McNair Scholars to find realistic solutions.
- ◆ Help Scholars set realistic and attainable goals;
- ◆ Write supportive letters of recommendations for graduate school applications, fellowships, scholarships – as examples;
- ◆ Submits a final Mentor report with the McNair Office before the beginning of fall semester for suggestions of the upcoming semester as well as their overall evaluation and assessment of their Scholars' needs;
- ◆ Meets with the McNair Scholar regularly to monitor progress on research, the graduate school process and other possible concerns. These meetings may be an office visit, lunch/dinner, or an outing of mutual choice; and
- ◆ Including your McNair Scholar in academic symposiums, conferences and conventions are highly encouraged. Limited financial support is available. For further information, please review the Travel Policy on page .

As a suggestion, the following activities may assist you and the McNair Scholar in getting to know each other.

- 1) Exchange basic information

- a. Name, address, telephone number
 - b. Class/work/office hours schedules
- 2) Discuss expectations
- a. What each hopes to accomplish with this relationship
 - b. Pet peeves/things that annoy me
- 3. Discuss where to meet/times available
 - 4. Discuss any restrictions
 - a. How to address one another
 - b. Where I may be contacted (work/home) and appropriate times

II. MENTORSHIP

Some of the research focusing on mentorship states that some of the skills necessary for successful mentoring include: openness, genuineness, sincerity, knowledge of college resources, good interpersonal skills, communication skills, positive attitude, sense of humor, perceptiveness, caring attitude, dependability, accessibility, commitment, self-esteem, persistence, flexibility, sensitivity, discipline and empathy.

The primary purpose of the Faculty Mentor/ Scholar relationship is learning. One of the principle reasons that mentoring relationships fail is that the learning process is not tended to and the focus on learning goals is not maintained. Similarly to the campus, the McNair/ CSTEP Office fosters the learner-centered paradigm. In essence, the Scholar plays a more active role in their education, shares in the responsibilities, setting priorities and becomes self-directed. The Faculty Mentor's role is to nurture and develop the Scholar's capacity for self-direction from dependence, to independence and eventually to interdependence as a future college/ university professor and/ or researcher.

III. RESERCH COMPONENT

Research is an important component of a McNair Scholar's preparation for graduate study. The grant requires each Scholar to complete 140-hour (minimum) summer research project beginning in the spring semester of the junior year. The project is to be completed by the last Friday in the month of September immediately following the summer research program. The McNair Faculty Mentor can assign components of their larger projects to McNair Scholars, understanding that they will teach the PROCESS of research. The Scholar will present a report at the end of the project which may be on the process or on the product, the completed component.

One of the goals of the McNair Scholar at SUNY Oswego is to demonstrate to a graduate admissions committee their ability to do research within their discipline. The Faculty Mentor should assist the Scholar in choosing a project that is significant and of publishable quality. In addition, the Faculty Mentor guides the Scholar's research as if they were completing a thesis. The benefits of the research projects are the following:

- Scholars learn research methodology in their discipline and come to understand expectations common to graduate study and professional life beyond it
- Research projects often distinguish applicants for admission to graduate programs
- Generally speaking, students who have direct/independent study courses as part of their work in their major are generally looked on more favorably in the application process
- Through close contact with their Faculty Mentor, Scholars should be able to receive a more detailed letter of recommendation
- The research project may be presented as a part of the end of the Summer Research Banquet, QUEST and at local, regional, and/ or national conferences.

While outcomes vary, the research steps are generally the same and your McNair Scholar should participate in most, if not all of them. These steps are: Development/ Idea Formulation, Literature Review, Research Design (Methodology), IRB (if appropriate), Data Collection and Data Analysis.

We have adapted the format used by the Department of Psychology (Dr. Becky Burch) as a template. Not all of the steps outlined will be pertinent to all disciplines. More specifically, listed below are some of the areas that will be covered with the Scholar in general McNair research sessions. We expect the Scholars to use the general information while tailoring it to their research projects under the guidance of the Faculty Mentors.

1. In Development - Idea Formation

- a. What is it that you want to investigate?
- b. What observations have you made regarding your topic that you want to study?
- c. What articles have you read that have left you with questions?
- d. Given an idea about a research topic/specific question about all the possible factors- are there biological bases? Social factors? Personality differences? Gender differences? Childhood or familial factors? List every variable you can that could possibly affect your topic. These are the variables you will have to investigate, either to show their effect on the subject matter, or to rule them out.

2. Literature Review

- a. A research project is only as good as the literature review conducted before it begins. If you do not do a thorough enough lit review, you risk conducting and completing a study that has already been done, or repeating flaws and confounding variables that have already been listed.

If this occurs, there is a good chance your research, and all your work, will not be publishable.

- b. Examine all the relevant literature- including research on the factors you want to rule out.
- c. Pay close attention to any review articles that exist.
- d. Go through the reference section of the articles you have, particularly the review articles, to find other research of interest.
- e. Identify researchers whose names appear over and over in lit search and in reference sections. Conduct a literature search on those names to find more material
- f. If there is an article that is integral to your research topic, and was not written too recently, go to the library and find the article(s) in the Social Sciences Citation Index (these are usually paper editions in the reference area of the library, but may be available as computer programs), for example. Starting with the year the original paper was published, search for that author and article every year after, up to the present. This will give you a list of all the articles that cited that study. This will be vital. If any studies have replicated, failed to replicate, or extended the findings, they would have had to cite the original study, and they will be listed.
- g. If it helps, make a chart or list of all the articles, what they studied, what they found, and what flaws you found.
- h. By conducting this thorough lit review, you can determine what are the important factors to include and what variables can be ruled out in your study. There may be some contradiction in the literature concerning a particular variable. You can now study this variable in more detail, being careful not to repeat any mistakes from previous research.
- i. Once the review is done, you can write a review article yourself, but at the very least you can lay out all the relevant literature in your introduction, and clearly show why your study is improves on previous studies and is important.

3. Research Design

- a. Discuss with your Faculty Mentor the best way to study your particular research topic. There are usually several different ways to study a topic; surveys, experimental manipulation, observation. You can also study different facets of the topic in different ways. For example, if a child's resemblance to their father affects how they are treated, you can study this by using surveys- asking children or parents questions regarding

resemblance and treatment, or you can manipulate this experimentally, altering pictures of children and seeing how people react to them. You can also develop within subjects or between subject designs.

- b. There should be several different possible designs. Determine with your Faculty Mentor what is the optimal design, what is the most feasible, etc., then decide which to use.
- c. It is possible that you will not have the time, money, or space to do exactly what you want. It is important to realize that you can't necessarily conduct the best study in scientific history- especially your first time out. Do the best you can, and while paying attention to the details, do not get bogged down debating the merits of every facet of the experiment, if applicable. Pay attention to detail but step back periodically to look at the big picture.
- d. Discuss the design with people you trust to get feedback regarding confounding variables, other variables you may have overlooked, and to make sure that all questions and procedures are clear.

4. IRB Review - Proposal Submitted

- a. Pay close attention to the forms used by the institution. Be sure to understand their policies regarding research with humans subjects, and specific populations.
- b. Be sure to be as clear as possible regarding procedures in your IRB proposal. Write in layman terms whenever possible.
- c. Include any previous studies, proposals, or materials necessary to make your case clear to the IRB. This does not mean "include your entire lit review". Briefly state your case using the relevant literature and make sure the IRB has copies of your testing materials, information regarding previous similar IRB proposals, or a copy of the study you wish to replicate.
- d. The most important thing is that the IRB should not be confused regarding any part of your study or need more information to make its decision.

5. IRB Review - Revisions Submitted

- a. If the IRB asks for changes to a protocol, reply as quickly as possible.
- b. If you disagree with a particular revision, discuss this with the IRB to determine a compromise or alternative.

6. Data Collection

- a. Before collecting any data, testing those running subjects to be sure that they can run the procedures correctly.
- b. Conduct a pilot study if procedures are complicated or if there is some question regarding procedures. Use this data to determine if procedures should be changed, if more training is needed, and to “work out the bugs” and ensure that future data collection will run smoothly.
- c. Discuss with your Faculty Mentor how this data will be organized and where it will be stored.
- d. If when dataset is being set up in SPSS (if applicable), label everything. Make sure all variable titles and labels are clear. If variables are a result of calculation (sums, averages, etc.) label them as such. This is possible on SPSS using the “Transform/compute” function.
- e. If variables have to be recoded, recode them into new variables in case you make a mistake.
- f. Make periodic checks to make sure the data is being organized properly and saved to a hard drive. ***Number all cases and label the raw data accordingly.*** Choose a case at random (for example a survey) and check this case in the dataset. It is best to have more than one person making checks. Be sure to make copies of the data to prevent loss.

7. Data Analysis

- a. Make a list of all the variables and relationships you want to investigate. You already have a list in your head, but when you start analyzing data, you may lose track and examine some relationships repeatedly while overlooking others. Be sure to list all the variables that may measure a particular behavior.
- b. Make sure all variable titles and labels are clear. If variables are a result of calculation (sums, averages, etc.) label them as such. This is possible on SPSS using the “Transform/compute” function.
- c. If variables have to be recoded, recode them into new variables in case you make a mistake.
- d. Choose a case at random (for example a survey) and check this case in the dataset. It is best to have more than one person making checks. Be sure to make copies of the data to prevent loss.
- e. Discuss with your Faculty Mentor the best statistical tests to analyze the data, if applicable. Do not be hesitant to discuss statistics with other faculty as well- they may be familiar with other models or tests.

- f. In some cases, different statistics will require reorganization of the dataset. Create a copy of the dataset and label it for the tests being used or how it is organized.
- g. If a particular pattern in the data is confusing, create a graph- this may make it easier to understand. When making graphs, be sure to have the axes either set to zero or of an appropriate range. SPSS can sometimes only show very short ranges that imply there is a greater effect than there actually is.
- h. Make a list of your important findings, the numbers and the significance levels. If you do this in a word document, you can reorganize it into a result section easily.

Scholars submit their projects as a hard copy to the McNair Office with the *Faculty Mentor Signature of Approval Form*. Scholars also submit an electronic form to the office for the Summer Research Journal. We will publish their projects in our Summer Research Journal that appears in spring semester of the Scholar's senior year. Scholars include their projects as a writing sample for the applications for graduate school. As a courtesy, the Mentor should also receive a copy.

Given the focused nature of the research, the length of the final paper should be in the range of 20-25 pages for research in the humanities and social sciences, and possibly shorter for disciplines that are more numerically-oriented.

Those McNair Scholars whose research project is a performance or exhibition should submit evidence of completion, such as a program, portfolio or videotape, and should document the theoretical component of their research in a paper.

TIME COMMITMENT

At the beginning of the academic year and summer semester, you are expected to attend a one-hour mentoring meeting. We will discuss the program's expectations and update you on current changes as well as to answer any questions.

Although we do not require you to participate beyond working with the McNair Scholar, we periodically will invite you to travel with a student to a conference, serve on an ad hoc editorial board or perhaps the Advisory Board, and speak at one our Professional Development Seminars.

Academic Year – During the academic year, you are expected to meet at least bi-monthly with your McNair Scholar to monitor their research progress and answer graduate school questions. Also, we would like for you to participate during a

professional development seminar along with your Scholar (when your schedule permits) providing insight of pursuing the doctorate.

Summer Semester – As a continuation of the spring semester for mentors and juniors, the McNair Scholar will complete their 140-hour research project. Their research will be presented at the SUNY Buffalo McNair Student Conference in Niagara Falls, NY in mid-July. We are encouraging faculty mentors to attend to support your institution's McNair Scholar.

CONFERENCE PRESENTATIONS

In their senior year, McNair Scholars are also expected to present their final project at the end of the Summer Research Banquet and at QUEST. There are opportunities to present their projects at local, regional and national conferences.

FACULTY MENTOR REPORTS

Upon the student's graduation or termination with the McNair Program, we ask Faculty Mentors to complete a report with the McNair Office highlighting experiences with their Scholar. This information will not be shared with the student unless you have given us permission to do so.

WHAT THE MCNAIR PROGRAM EXPECTS OF YOUR SCHOLAR

Your McNair Scholar should:

- Participate in bi-monthly workshops held on-campus through the McNair Program
- Meet with their Faculty Mentor regularly, at least twice a month
- Finish all workshop assignments, if appropriate
- If a Rising Senior, complete their summer research project by the last week of September
- Present research findings at the Summer Research Banquet and at QUEST; or at a local, regional and national conference
- Produce a final project paper you approve in form and content
- Keep you informed of their current status, follows through on projects and asks for clarification when needed
- Take advantage of the opportunities you provide such as attending and presenting at conferences, publications, networking, etc.

THINGS THAT YOUR MCNAIR SCHOLARS APPRECIATE OF THEIR MCNAIR MENTORS

- You hold office hours and keep appointments
- Your expectations are clear and when there is a possible misunderstanding, you prepare a memorandum of understanding and work closely with the McNair Office, if appropriate
- You demonstrate that you are interested in their academic, professional and possibly personal life (establishing a bond with them)
- You treat them with respect and as a valuable addition to your research team and not as an extra pair of hands to do copying or run errands

QUESTIONS FREQUENTLY ASKED BY MCNAIR SCHOLARS & MENTORS

What if my mentor does not return my phone calls or misses an appointment?

Persistence is very important in the mentoring partnership. Because Both you and your Mentor have hectic schedules, it is possible that you will miss each other's call. Keep trying. If your mentor fails to return three phone calls, or misses three or more appointments, call the McNair/ CSTEP Office. We will follow up with the Mentor. By working with the McNair Staff, together we can solve the problem.

What if the match does not work?

First, try to address the issues with your Mentor. If for some reason you do not want to continue with your Mentor/ Scholar, the partnership needs to be discussed with Dr. Adrienne Morton, and if necessary, ended. The termination should be used as an opportunity for growth for both you as well as your Mentor/ Scholar.

Can I have more than one Mentor and does this person have to be a Faculty member at SUNY Oswego?

We highly encourage having more than one Mentor, as it pertains to the Scholar's research project. Gaining different perspectives throughout the process is important towards receiving information pertinent to your career and educational decisions. However, for the purposes of the grant and your research paper, you are required to work with at least one Faculty Member from your major department. A second Mentor can be from any area within the Oswego State University community.

How do I register to receive credit for the research course?

In the spring semester of the junior year, Scholars are to register for an Independent Study Course within their respective departments. Generally speaking, Scholars and Faculty Mentors have utilized the IND 490 course within the Mentor's department for the spring semester prior to the summer research. If there are two Faculty Mentors, the primary Mentor will have priority in signing the ADD/ DROP Form from the Registrars Office as well as assigning the final grade in September.

This will change once an official course has been approved for McNair Scholars Research.

How much input should my Faculty Mentor have on my research?

Faculty Mentors are to assist the Scholar in formulating a research question and/or a hypothesis that can be conducted over the course of the spring semester (literature review and proposal) throughout the eight week summer research program (conducts the actual research) and into the month of September (final edits and submission). This topic should be of interest to the Scholar since they will be using the finished project as a writing sample for their graduate school applications.

During the course of the Fall semester, Scholars entering the program are to begin discussing a research topic of interest to research in the immediate Spring semester. In the spring semester, the Scholar and Faculty Mentor will discuss a topic of interest, a plan of action in conducting the research with due dates, an appropriate literature review and assistance with editing the final product.

Who has the responsibility of giving me a final grade for the research project? And what if I have two Faculty Mentors?

The Faculty Mentor who the Scholar registered the independent Study Course with is responsible for assigning the final grade. There is one stipulation to this rule and it only relates to those who have more than one Faculty Mentor.

This will depend on the reasoning for having two Mentors. If both Mentors are utilized in conducting the research, then the Scholar must determine (in agreement with the Mentors) who will have the primary duty of assigning the final grade. It is assumed that both Faculty Mentors will have input on the final grade of the Scholar.

However, there have been occasions in which the Scholar has identified two Faculty Mentors for separate “duties”. For example, one Faculty Mentor who will be assisting the Scholar with their research while the other Mentor is strictly utilized for the Educational Planning for graduate school. In such instances, the Faculty Mentor working with the Scholar on the research project will provide the final grade. The secondary Faculty Mentor can sign the Scholars Bi-Monthly Contact Form when the discussions are about their Educational Planning pertaining to graduate school admissions.

What if my Faculty mentor is not available this summer but during the academic year?

We have had situations where the Faculty Mentor was not on campus during the summer months to meet with Scholars. So long as there is contact – emails, phone calls –

between the Scholar and Faculty Mentors, it is possible to complete a summer research project. There are some disadvantages of not having the Faculty Mentor accessible to the Scholar during the summer months. These include minimum face-to-face contacts, editing and support in preparation of Scholars' presentations at upcoming conferences just to name a few. This has been resolved by the Scholar identifying and collaborating with two Faculty Mentors.

Can I send the Bi-Monthly Contact Sheets electronically?

It is highly recommended that Scholars and/ or Faculty Mentors submit them electronically given the deadline dates for the release of the Scholar stipends. It cuts down on paper and assists us with the tracking of Scholar/ Faculty Mentor contacts.

My Scholar has submitted their final research project and it is now their final year at SUNY Oswego. What are we to discuss now during our bi-monthly meetings?

Senior Scholars are required to attend a Capstone Course designed as a means of transiting them from undergraduate to graduate studies. Much of the information discussed within these sessions including funding opportunities, budgeting and financial aid, as well as navigating the first year of graduate school.

During the bi-monthly sessions, we ask the Scholars to begin talking more about the expectations of them as graduate students with their particular field of study. Furthermore, Scholars should also be discussing graduate school options, tapping their Faculty Mentor's networks and providing support to them through the graduate application process.

WHAT THE MCNAIR MENTOR CAN EXPECT OF THE MCNAIR PROGRAM

PROGRAM SUPPORT TO MCNAIR FACULTY MENTORS:

- Limited supplies to help you and your McNair Scholar with research
- Limited financial support for conference travel
- Sharing your experiences with a potential Faculty and Research colleague
- Connecting your Scholar with those within the field
- Preparing them for the Ph.D. journey

PROGRAM SUPPORT TO MCNAIR SCHOLAR:

- Bi-monthly workshops that provide practical instruction on how to achieve their goal towards completion of doctoral study
- A stipend of \$400 per semester upon completion of assignments. Rising Seniors who participate in the summer research receive an additional \$2000
- Graduate school visit travel monies, limited funding for supplies, GRE partial waivers and graduate application fee waivers, if accepted by the institution
- Use of the office facilities and materials as appropriate to assist in their research and application process
- Individualized assistance such as review/edit of personal statement and resume, GRE preparation course, and graduate application assistance
- Limited financial support to attend professional conferences
- Seniors receive free membership to one professional organization – based on the recommendation of the Faculty Mentor
- Technological Loaner Equipment Programs
 - Digital cameras and camcorders
 - Mini-tape recorders and cassettes
 - Laptops
 - Graphic Calculators

TROUBLESHOOTING

Maintaining open lines of communication with the McNair/ CSTEP Office is essential. Mentor/ Scholar relationships vary, just as people do. Please contact Dr. Adrienne Morton (x4079) at the first sign of any difficulties.

If you experience any one of the following, please call the McNair/ CSTEP Office at x4079:

- After repeated efforts to contact the McNair Scholar you are unsuccessful and the McNair Scholar remains unresponsive
- Conflicts between you and your McNair Scholar cannot be successfully resolved
- Unexpected circumstances impede your ability to continue as a mentor

CONFIDENTIALITY

Personal and academic confidentiality is the heart of the mentoring relationship. Because your relationship is based on trust, honesty and candor, it is understood that all information shared within this relationship remain confidential.