



UNCP

MBRS-RISE Program Guide

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UNIVERSITY of NORTH CAROLINA
P E M B R O K E

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UNCP-RISE Website: www.uncp.edu/rise

Facebook: Uncp Rise

Research Mentors: Brief descriptions of research foci for approved mentors are listed on the UNCP-RISE website. You may also make arrangements with Dr. Poage to explore additional researchers from participating departments, as long as they are conducting biomedical, chemical or behavioral research.

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UNCP-RISE Mission Statement:

“The staff members of UNCP-RISE are dedicated to assisting undergraduate students in their journey towards and preparation for enrollment in a PhD program in biomedical research. Our mission is to adequately prepare highly competitive students for graduate research programs.”

What is MBRS-RISE?

MBRS-RISE (Minority Biomedical Research Support-Research Initiative for Science Education) is a federally funded research training program for students from groups underrepresented in the biomedical and behavioral sciences. The goal of the MBRS-RISE program is to provide a solid foundation that will promote student success in doctoral programs and in subsequent careers as research scientists. We are supported by the TWD (Training, Workforce Development and Diversity) Division of General Medical Sciences at the National Institutes of Health. RISE was created because of federal recognition of the importance of promoting diversity in the sciences, as well as training scientists interested in exploring health problems that disproportionately affect minorities and underserved populations. All RISE trainees receive an hourly wage to financially support themselves while they develop as researchers. All RISE students also receive annual support to work in their laboratory, attend a scientific conference, and engage with a variety of training and mentoring activities. The UNCP Biology Seminar Series, offered during the spring semester, features prominent scientists and role models who speak about their research and who also network with students during an informal lunch.



Activities for undergraduates ensure that students who are interested in pursuing doctoral degrees and developing careers as research scientists gain knowledge and experiences needed to do so. RISE undergraduates move beyond traditional coursework where laboratory experiments have known and reliable outcomes and perform original scientific research in collaboration with a faculty mentor. Laboratory research takes place year round. RISE Fellows are involved in the design of their experiments and experience both the exhilaration of an important result and the frustration of unexpected technical problems and failures. They are expected to become intimately knowledgeable about their experiments and to present them at professional meetings. Students are guided through the program to become confident and competent pre-PhD trainees.\

Finding a Research Mentor

Participants in the UNCP-RISE program perform research under the supervision of one of the UNCP Faculty members. The right research mentor can greatly enhance your experience and further your excitement and preparation for a research career. The wrong one could give you second thoughts about a career that you might otherwise have enjoyed. Below you will find information on how to choose a compatible mentor for your research.

You will choose your mentor from a group of tenure-track faculty who should do the following, or make sure that a trusted associate does so:

- Assist you in developing a reasonably sized research project
- Help you get started with your research project and assure that you make progress
- Coordinate your training in research techniques
- Provide supplies and laboratory space
- Help you troubleshoot research problems
- Give you encouragement and feedback about your progress
- Show you what life as an academic scientist is really like
- Help you develop critical thinking and a scientific mindset
- Help you in researching a good graduate school
- Assist you in building a professional network of contacts

Regarding laboratory entry- on the UNCP-RISE webpage, www.uncp.edu/rise/, you will find a list of participating faculty members and a brief description of their research interests. Choose at least two program faculty who are performing research that interests you. Email these individuals and set up meetings. If you have questions about the process or need assistance in securing a mentor you feel you would be compatible with, please contact a RISE staff member.

You should prepare for meetings with potential mentors by looking up their recent journal articles on Google Scholar or Pubmed (<http://www.pubmed.org>) or use other internet resources to find publications prior to your meetings. Your effort to do so will generally result in the researcher looking favorably on you; you will be indicating a high level of motivation. Although you will likely find their

publications difficult to understand at this point, you should at least be able to get a basic idea of the research they do. Looking up their publications had the added benefit of letting you know if the person's laboratory is actively publishing, which increases your chance of authorship, which is desirable for doctoral program admittance.

If the potential mentor does not immediately respond to your email, they may be buried in work; contact them again after a week or so. When you reach the potential mentor identify that you have been admitted into the RISE program and either set up an appointment to speak to them face to face, or continue to interact with them via email/phone if they wish. A good contact email can go as follows:

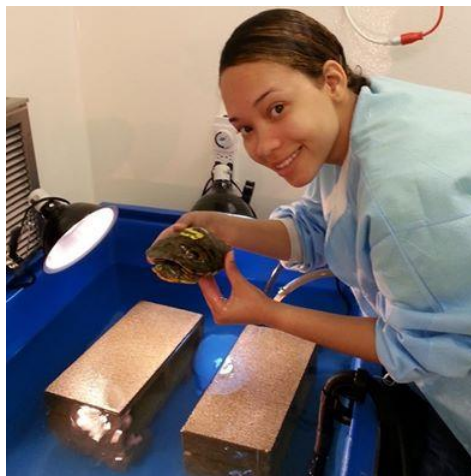
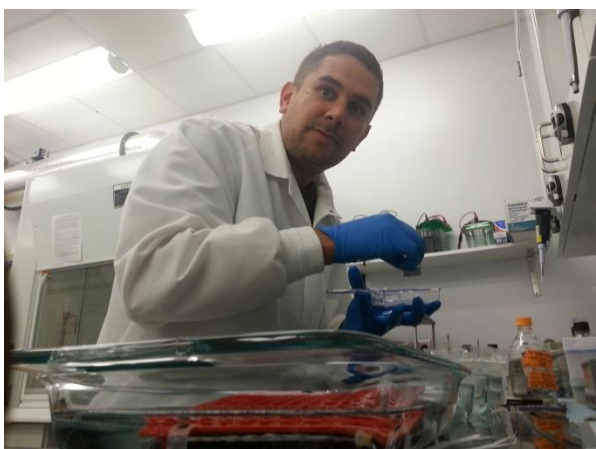
"Dear Dr. XXXXX, I am an undergraduate Sophomore/Junior/Senior (pick one) XXXX major and was recently admitted to the UNCP-RISE program. I am looking for a lab in which to work and I am very interested in your research on _____ . If you are accepting students at this time, I would like to schedule a meeting with you to discuss your research and possible opportunities in your lab. Thank you, _____."

Establishing a successful working relationship with a faculty member requires openness and honesty. The faculty member will have questions for you to judge your level of motivation and enthusiasm and to determine your interests in the research field. They will ask you about your academic background and grades, prior research experiences, research interests, time availability, and future goals. Be prepared to explain what you hope to get out of a research experience, why you are interested in this mentor's research and what general type of project you are interested in. It is advised that you bring a one-page "Bio" or CV, containing your contact information and summarizing any research experience that you may already have. A template for a CV is located on the UNCP-RISE website.

In turn, ask the mentor to describe the research projects going on in his/her labs and which projects you might be able to get involved in. You should also inquire about what techniques you would be learning, who would be your primary

trainer, and with whom you would be working. Is your schedule compatible with that of the person whom you will be assigned to work with? What type of time commitment do they expect? Assess for yourself if the mentor's communication style is compatible with yours. Is he/she high or low stress? Does the mentor seem interested in you as a person and make time for you?

You may visit the lab and may also be able to speak to other laboratory members and find out more about the lab. How many hours do students generally work (this varies greatly between laboratories and you may not look good if you work significantly fewer)? Is it a quiet, serious laboratory, or loud and noisy? Is it a messy lab or extremely organized? Do the students like each other and "hang out" with one another after hours? Do you "click" with the person with whom you will be working? All of these things should be taken into consideration when assessing your compatibility.

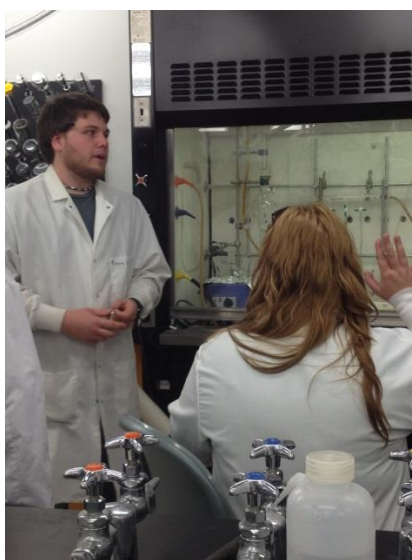


After your meeting, thank the person for their time and information without making a commitment, complete the rest of your interviews, and get back to them as soon as possible. If you fear that this particular mentor or the laboratory and you are not a good match, pay attention to these feelings and interview additional potential mentors. Before you leave, make sure that the faculty member knows how to get in touch with you! In cases where you know that your research interests don't align, ask this person if he or she knows of a faculty member with whom you may have more compatible interests or who is looking for students like you.

After careful consideration after your interviews, if you feel that the mentor/research project is right for you, ask whether the researcher will agree to be your mentor and allow you to work on the project you have discussed. Be aware that the mentor, also, may wish to hold off and do some inquiring of his/her own. Remember to thank those whom you do not choose to work with!

If you are turned down for a research project, don't take it personally as there are many reasons why a faculty member may deny your request: the current research projects may be different than the projects listed, he/she may be insanely busy or already have the maximum number of students that can successfully be mentored, etc.

When you have found a mentor with whom you have a good rapport, and who will give you a research project that interests you, tell this person that you'd like to work in his/her laboratory and notify the RISE Staff of your selection. **If you are having trouble finding a laboratory, do not hesitate to talk to Dr. Poage or Ms. Vallabha- they will help you out!**

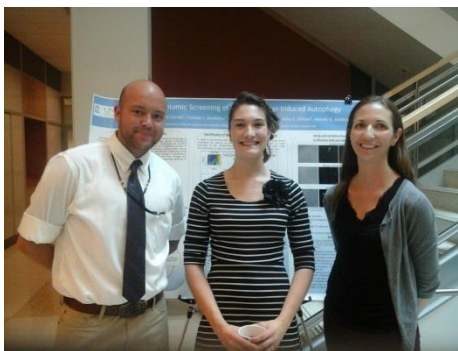


Finally, if you are in a laboratory but find over time that you are having problems or not enjoying your research, please come and talk to RISE Staff. The RISE program is designed to be a positive experience, and if it's not turning out that way, please allow us to help you figure out how to improve things!

Mentor/Protégé Expectations

Role of Mentors with RISE Fellows

- Maintain open communication
- Provide detailed instructions and directions (especially for newer protégés)
- Provide protégés with practical experiences to support development into biomedical researcher
- Guide protégés as they master new techniques and methods
- Assist protégés as they design new experiments, collect and analyze data
- Provide guidance in the development of presentation and/or poster content (including the Spring PURC Symposium and other scientific conferences)
- Help the protégé build self-confidence and a professional demeanor
- Encourage protégés to apply multidisciplinary approaches to scientific inquiry
- Help create and sustain an atmosphere conducive to strengthening and expanding undergraduate research opportunities in the Biology, and Chemistry and Physics departments
- Schedule regular weekly meetings with protégés
- Work together to set attainable goals and a timeline for achieving those goals
- Emphasize technique-specific safety protocols and provide laboratory supervision
- Communicate any concerns about the protégés academic or research progress to the external evaluator through monthly surveys (and/or notify RISE staff directly)
- Provide feedback and constructive criticism to protégé's throughout the research process
- Verify and Sign-off on timesheets
- Guide protégés in identifying needed research supplies and assist them with completing an order form (RISE Fellows are allotted \$1500 per academic year); and remain conscientious of a timeline that provides at least 3 days advance
- Encourage protégés to identify their personal strengths and interests in regard to research and a prospective career path



Role of RISE Fellows with Mentors

- Maintain open communication
- Ask questions and seek insight when conducting research and analyzing data
- Complete weekly time sheets and obtain mentor's signature
- Communicate any concerns about research progress to the external evaluator through monthly surveys (and/or notify RISE staff directly)
- Follow directions and guidelines given by the Mentor
- Work cooperatively under the supervision of a Mentor
- Maintain a lab journal documenting activities, questions, and findings
- Adhere to any confidentiality or intellectual property agreements
- Ensure understanding and compliance with research and lab processes regarding safety and procedures
- Maintain a running record of supplies purchased and balance of their individual allotted budget (RISE Fellows are allotted \$1500 per academic year); and remain conscientious of a timeline that provides at least 3 days advance
- Participate in research opportunities that expand beyond those of regular classroom lab activities
- Prepare a research poster or presentation to submit to PURC and other scientific conferences
- Seek the mentor's guidance and approval of presentation content concerning research they supervised
- Be proactive in regard to paperwork, completing tasks, and providing requested information to the mentor
- Understand and appreciate the constructive criticisms of the mentor and utilize any articles or resources provided by the mentor to enhance the learning experience
- Be punctual, respectful, and contribute to the work undertaken in the lab



Starting Life in the Laboratory

A research laboratory can be one of the most exciting places that a person can work. You get to discover things never before known. You are contributing to science and to human progress. You get to dress casually and, often, have flexible hours (though at times, they can be dictated by your experiments or experimental subjects).

Who is in the lab:

The UNCP Faculty Member who is usually your mentor, runs the lab, and generally spends a lot of time intellectually guiding the activities of the lab.

Postdocs have their Ph.D. and are receiving additional training for anywhere from 2 to 5 years, prior to looking for a position as a PI or industry researcher. They tend to be somewhat independent. A new postdoc often has to learn a whole new field of literature and new equipment.

Technicians have varying levels of education, and are involved in the care of the lab. They order supplies, perform experiments (independently or as an assistant). Treat them with respect, as a trained technician can be the most skilled and experienced person in the lab and you do not want them annoyed with you. Do not expect them to do things for you personally, unless they have been assigned by the Mentor to do so.

Graduate students are either in the laboratory permanently or may be doing a rotation, which allows them to “try out” several labs prior to picking one in which to complete their research.

Undergraduate students may be in the lab as volunteers, for independent study classes, for honors theses, or as members of research training programs.



Rules to Live By:

Laboratories have many unspoken rules that you will need to pick up to be considered a well-behaved laboratory citizen. A number of these are compiled below:

Things to do:

- ✓ Sit down with your mentor and get the specifics of what is expected on your project. Be happy if you are assigned to work with someone; you will get much more help than otherwise and you can worry about independent projects later.
- ✓ Familiarize yourself with who does what when. Learn by observation when possible, or ask when people are free (not in the middle of a complicated experiment). Or set up an appointment for them to go over material with you.
- ✓ Create and maintain a lab notebook. This will allow you to keep your questions and observations in one location. It will also provide a place for you to jot down thoughts or ideas that you might want to return to later in your research career.
- ✓ Maintain a lab supply budget and timesheet. Your mentor should help you develop your supply budget by explaining what things you will most likely need to order for the completion of your project. The supply money allotted by RISE is your responsibility: you are required to maintain an accurate record of order requests and amounts. The timesheet must be completed daily with your time and activities and signed by your mentor at the end of the pay period. The original timesheets must be submitted to Mrs. Sonda Rogers in the RISE Office.
- ✓ Always adhere to lab safety regulations. Regardless of the behavior of other individuals in the lab RISE Fellows are expected to set the standard for lab safety which includes the safe and proper use of equipment and abiding by the rules of protective wear. Safe laboratory procedures are expected to be followed no matter who is (or is not) in the lab with you.
- ✓ Take notes on everything that is told to you. Do not make people explain things twice. Record people's names, incubation times and temperatures, locations of reagents, instructions, etc.
- ✓ Try to do a simple experiment as soon as possible, even before you know exactly what you are doing. It will help you to understand what you are doing.
- ✓ You are likely to almost immediately have a meeting with laboratory safety, radiation safety, and animal care. Go and be respectful and cooperative.
- ✓ Introduce yourself to everyone and ask them about their projects. Try to go out to lunch (network/bond) with people at least once a week. Participate in tea and coffee breaks.
- ✓ Although many people may pick their hours, there is a standard time commitment that is expected- do not violate this.

- ✓ If there is a general time trend when most people work, try to work at these same hours, at least at the beginning; this way, you will get to know people, obtain assistance, and assure folks that you are in the lab working hard. If you have to work alternate hours, then make sure that it's known what yours are and what you are doing.
- ✓ Read the literature that is pertinent to your project. If it does not make sense, it will begin to once you are doing experiments.
- ✓ You will be assigned a desk or lab bench space. Arrange it however you like but keep it neat because other people may need to be using it too.
- ✓ You are likely to be assigned freezer and refrigerator space (might take a little while). Be respectful of other people's space and put your stuff where it belongs. If you put your stuff in someone's space thinking that you will remove it "in a sec," you will either forget to or get caught.
- ✓ If you mess it up, clean it up after (or during) each experiment. Cleanup is part of the experiment. It is NOBODY'S job to pick up after you in the lab. Even if the PI or other students are sloppy, this does not mean that you are allowed to be sloppy too.



- ✓ Try not to have an experiment fail or break equipment because you didn't ask a question. Do not repeat a failed experiment without asking someone more experienced what might have gone wrong, after brainstorming first on your own. Absolutely, be able to give suggestions on what might have gone wrong, so that you don't look helpless.
 - ✓ If you break something, admit it and apologize. They will figure it out anyway, and if you lie about this, they will question your ability to do honest research. Offer to remedy the mistake, if possible.
- ✓ Use consumables (chemicals/reagents/buffers, etc) if and only if you have permission to do so. If you use it up (or nearly up), remake it or make sure that it's ordered.
- ✓ Put things back where you found them. Particularly pipettors or small movable pieces of equipment. Not just on the same shelf, but in the same position, particularly when solutions/reagents are involved.
- ✓ If there's an alarm, investigate it. You're part of the lab and lab problems are your responsibility. If you don't know about the alarm, ask someone (don't just shut it off and ignore it, either!).
- ✓ If lab equipment (such as ultra-centrifuges) has a sign-up sheet, sign-up to use it well in advance. Do not use it if someone has already signed up for that time slot!

Things Not To Do:

- ✓ If you have trouble with anybody in the lab, do NOT stop going or drop out of the program. Communication is the key. Talk to your mentor. Talk to RISE Staff. Worst case scenario, we'll allow you to change labs.
- ✓ Don't demand someone's time, "Right now!" Set up appointments for someone to assist you, on their own time.
- ✓ Never demand that anybody in the lab teach you something, clean anything for you, or complete your experiments if you have to leave for the day. Ask and then generously pay people back with favors. Don't ask for favors too often, or without repayment.
- ✓ Don't use someone's buffers, reagents, or pipettors without their permission. They may be sterile and require special handling...or even bad. And, if you use someone's solutions without their permission, eventually they may make SURE that they are bad...



- ✓ Don't complain about how much office/bench space you are given. It can be resolved over time.
- ✓ Never complain (or even note) that "they didn't do it this way at..." if you've had other research experience. Wait and assess the why/how underlying this laboratory's practices. If you have a method that can actually improve circumstances, then let someone know...but not early on.
- ✓ Don't read a newspaper, novel or play computer games in the lab. Although there is dead time, read the scientific literature instead. Do otherwise and you will look bad.
- ✓ Don't ask or complain about money or salaries.
- ✓ Don't discuss someone else's results with anyone outside the lab.
- ✓ If you have an exciting result, don't broadcast it to the world outside of your own lab without asking your mentor if you can. Getting scooped is a very real possibility and you don't want this to happen.
- ✓ Do NOT start an experiment or process that will run long enough that will cause you to miss a class or a RISE program meeting/activity.

Other Things to Find out About:

Dress Codes: These are generally more relaxed at universities than in industry or hospitals. If you are concerned that you are not appropriately dressed, check out what people are wearing in the lab and dress similarly.

Remember that:

- The more expensive your clothing, the more likely it is that you will spill cloth-eating chemicals on them.
- Ties can be dangerous, if you are using fire.
- Open-toed shoes mean that when (not IF) you drip something, gravity works and you are likely to minimally get your feet splattered.

Assigned Jobs- Oftentimes, there are common jobs in the lab that people are assigned to do. Take them seriously and don't complain.

Meetings- Your laboratory will likely have routine meetings to discuss experimental progress. These are generally informal and involve sharing research results and discussion. Find out where and when they are.

Chemicals- how are they arranged, who makes solutions, bottle marking conventions, how to get a good pH, conventions on weighing (extra back into bottle, another bottle, or trash?).

Computer- is there one for you to share use on in the lab? Can you do literature searches on it? Are there computer use policies?

Glassware- Where is it? Where does the dirty glassware go? Will you have to wash your own? Is there a special washing procedure for certain glassware?

Lab coats- Do you need one? Is one provided? Who washes it?

Lab notebook- Is the lab book provided? Are books, duplicate books, or loose leaf sheets preferred? Is there a format that is required in this lab? Are there other conventions that are followed? Do you need to make a copy of all data?

Supplies- Who does the ordering? What do you do when you are running low? Is there a strict budget? Who picks up the supplies? Where do you put items that come in, that may need refrigeration or freezing?

Photocopying- Is there a machine in the lab? Is there a copy card that you can use? Are you limited on the number that you can make? Are there policies about what you can copy?

Telephone calls- Try to minimize the number of phone calls, texts, or facebook check-ins. Folks in your lab will begin to resent hearing you gab endlessly with your friends

Trash disposal- What is biohazard and what is not? Who takes away the trash? Where do sharps (needles, etc) go? Where does glass go? Recyclables? Who autoclaves that which must be autoclaved?

Vacations- Find out when people take vacations. If you are in a lab, you are expected to work during days that are generally holidays for students, i.e., between semesters and during the summer. If you are going to take days off, clear it with your mentor and make sure that you've

arranged to have someone take care of any ongoing duties (like feeding cell lines). Your mentor, rather than RISE staff (unless it interferes with RISE activities), determines when it's okay for you to be gone on vacation. Try not to be gone too much, though.

In conclusion, the research laboratory can be an exciting and rewarding place to work. If you follow these rules, you are likely to start out on the right foot in the laboratory, be able to work cooperatively with others in the lab, and proceed nicely on your research.

*Summarized and modified from: **At the Bench: A Laboratory Navigator** -- by Kathy Barker. Cold Spring Harbor Laboratory Press. 1998.*



How Much Do I Get Paid....and What Are My Hours?

Answer: *UNCP-RISE Fellows are permitted to work no more than 16 hours per week. Going over this could damage your grades. Keepin mind that this is a research training program and not a job, so hours can vary.*

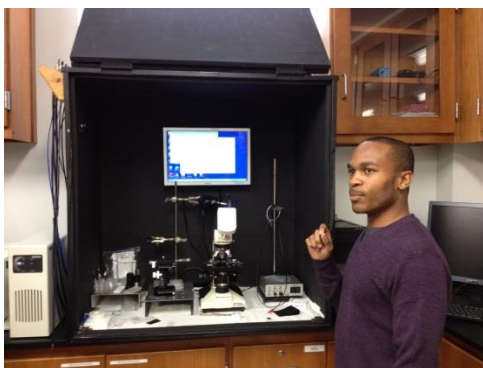
In the MBRS-RISE program you are given an hourly wage for their laboratory work so you do not have to pursue off-campus, dead-end positions. We want you to be able to devote the number of hours to the laboratory, necessary to actually get something done and learn what research is like. However, again we must emphasize, **that you must NOT kill your grades because you have become completely absorbed with the lab.** As a graduate student and beyond, you will need to multi-task your responsibilities- now is a good time to begin. If you are finding this to be a problem, please contact RISE Staff and we will explore solutions with you.

All RISE students are expected to spend enough time in the laboratory to make significant progress in their research-related activities. You will be paid in an hourly fashion: no more than 16 hrs/week (\$12.50/hr). You will also receive a lab supply budget of \$1500.00. The time that you need to spend in the laboratory may, at times, slightly exceed the maximal number of hours that you put down on your time sheet. If an undergraduate finds that your mentor is requiring hours well beyond the 16 or piling on many responsibilities that should be carried out by other lab personnel, please let us know ASAP! *Remember...although we are helping you pursue research as a career, we are not paying for you to work as a technician and you aren't going to get into grad school at all, with crummy grades.*

MBRS-RISE students must turn in time sheets as indicated on the payroll guidelines bi-weekly pay period sheet. Original, signed time sheets, must be submitted to Mrs. Sonda Rogers at the close of the bi-weekly pay period (Friday, 5 PM). Your time **must be entered** into BraveWeb **before 5 PM** on that Friday. Anything submitted after 5 PM on that day is considered a late time sheet and you will receive a non-compliance deduction.

For How Long am I Funded?

Your appointment to UNCP-RISE is made annually, following an evaluation of both your progress and participation in program activities during the prior year. Students can be selected as RISE Fellows from their initial placement in the program and through to graduation. However, at the end of each year everyone must reapply to the program and sit for an interview. To remain in good standing, RISE students must fulfill the requirements of their respective degree, and fulfill mandated RISE activities and performance expectations to continue RISE funding. Students in the program are expected to progress towards their degree efficiently.



Important Career Resource Web Sites

- SACNAS Web Site: <http://www.sacnas.org>
- ABRCMS Web Site: <http://www.abrcms.org>
- JustGarciaHill Web Site: <http://www.justgarciahill.org> (Virtual Community for Minority Scientists: jobs, career advice, grants, summer programs)
- The Scientist Web Site: <http://www.the-scientist.com> (Jobs for scientists)
- Peterson's Guide: <http://iiswinprd01.petersons.com/GradChannel/>
- Grad Schools: <http://www.gradschools.com>
- Council on Graduate Schools: <http://www.cgsnet.org>
- Graduate School Guides: <http://www.schoolguides.com/>
- Gradview: <http://www.gradview.com>
- PhD's: <http://www.phds.org/rankings/>
- National Institutes of Health: <http://www.nih.gov/>

UNCP-RISE Buddy Checklist

Are YOU a Buddy?



- Routine check-in to see if there are questions or concerns
- Guidance on the initial (or even subsequent) time sheet items
- Guidance on entering time into BraveWeb
- Explanation of entries and maintenance of iBioSketch.....
- Assistance with creating and formatting a presentation poster.....
- Advice and suggestions for travel and conference attire, etc.....
- Provide gentle reminders of upcoming deadlines or activities.....
- Volunteer to proof read personal statements or abstracts.....
- Invitation to an event or seat at the table during conference dinners.....
- Provide insight on experiences in the program and during internships.....

These are suggestions for activities to complete with your Buddy. Keep in mind this is not an all-inclusive list. The role of the RISE Buddy is to guide a new Fellow into the RISE environment and to provide insight into roles, guidelines, how-to's, and to answer lingering questions.

Cohort Yearly Checklist

UNCP-RISE Yearly Check List

Check When Completed	Task
<input type="checkbox"/>	CONTRACT: Review and sign
<input type="checkbox"/>	PAYROLL FORMS: Complete all required paperwork on or before your start date
<input type="checkbox"/>	<u>IBIOSKETCH</u> : Create account and update it WEEKLY, by 5 pm on Fridays
<input type="checkbox"/>	MENTOR: Meet with Faculty Research Mentor, discuss project, <u>review</u> requirements
<input type="checkbox"/>	GOALS & MILESTONES/IDP: Submit to the RISE Office by September 4
<input type="checkbox"/>	CLASS SCHEDULE: Submit to RISE Office each semester
<input type="checkbox"/>	LAB NOTEBOOK: Create and manage
<input type="checkbox"/>	MIDTERM GRADES & GPA: Submit within 3 days after receipt
<input type="checkbox"/>	FINAL GRADES & GPA: Submit within 3 days after receipt
<input type="checkbox"/>	RISE MEETINGS/WORKSHOPS: Attend all activities, as required
<input type="checkbox"/>	RISE POSTER SESSION: Prepare a poster and present in August
<input type="checkbox"/>	ABRCMS: Attend and participate in sessions; present a poster/oral if desired
<input type="checkbox"/>	PURC: Prepare a poster and present in April
<input type="checkbox"/>	SUMMER INTERNSHIPS: Apply to 3 or more, provide copy to RISE Office
<input type="checkbox"/>	SENIORS: GRE EXAM: Take exam prior to graduation; provide scores to RISE Office
<input type="checkbox"/>	SENIORS: GRADUATE SCHOOLS: Apply to 3 or more, provide copy to RISE Office
<input type="checkbox"/>	SENIORS: EXIT INTERVIEW: Complete survey prior to graduation

Updated 8/13/14

Absolutes: The “9 Commandments”

1. Fellows shall complete all required forms and registration steps (create an iBiosketch account, etc.) on or before the day that your Fellowship officially begins.

Neglecting to complete these steps may delay reimbursement/payment. If not compliant within a week after the official fellowship date will result in withdrawal of the Fellowship offer.

2. If Fellows have obligations outside of the RISE Program, they must be made clear before accepting this Fellowship. Fellows shall comply with their obligations to attend and fully participate in RISE activities as outlined. If Fellows take on additional obligations, they must be of a nature that will not cause conflict with RISE, and must be approved in writing by the Program Director. Travel arrangements are non-transferrable. Fellows also agree to repay any non-refunded costs for cancelled travel.

Fellows who take on other responsibilities that interfere with their participation in Program activities (including but not limited to sports, clubs, or other jobs on/off campus) may be asked to discontinue those activities, or surrender their Fellowship.

3. To receive payment through RISE funding, Fellows shall submit a weekly timesheet—signed by their Mentor—to the RISE Administrative Support Associate and must complete electronic records of the week’s activities (iBiosketch and Braveweb).

Failure to complete this documentation will result in delay of payment, reduction of paid hours, or loss of payment. Continued neglect of these submissions will result in Fellowship termination.

4. Within 10 days of selecting a Faculty Mentor, Fellows shall generate (with help from RISE Staff and their Research Mentor) a list of specific academic and research goals for the academic year and shall submit them to the Program Coordinator. Fellows will review and revise these goals periodically during their support period.

Failure to submit goals will result in reduction of paid hours or Fellowship termination.

5. Fellows are required to maintain a strong academic standing (GPA \geq 3.0). To advise Fellows on their academic progress, the RISE staff needs Fellows to submit their midterm* and final grades each semester within three days of receiving grades. [*Fellows on probation with the program may be required to submit progress reports more often.]

Failure to submit grades will result in reduction of paid hours or Fellowship termination.

6. Fellows shall maintain a laboratory notebook, and shall follow all departmental and university regulations regarding conduct in the laboratory. For example, laboratory work shall always be supervised by the Mentor or an appropriate staff member.

Work with unapproved methods, materials, or continued neglect of regulations will result in a delay or reduction of pay or Fellowship termination.

7. Fellows shall attend all RISE meetings and programmatic activities, including workshops on some Saturdays and one or two off-campus conferences and meetings.

Failure to notify RISE Staff of scheduling conflicts is not a valid reason for missing such events. Missing a single event without very strong reasoning and valid explanation will place your Fellowship in a "probationary" status. Multiple failures in this area will lead to Fellowship termination.

8. Fellows shall prepare a poster to be presented at the PURC Symposium, RISE End-of-Summer Research Presentation and/or other venues throughout the academic year and/or summer. Any publications or presentations arising from your work must acknowledge the RISE grant (NIGMS Grant Number: R25 GM 077634).

For a new research project, extensive data is not needed for such a poster. All Fellows will receive help in this area, especially those who have never prepared such a presentation. Failure to generate a presentation is a missed opportunity and will result in a reduction of paid hours and possible probation or termination, as well as render Fellows ineligible to apply to the Program next year or in the coming summer.

9. Fellows shall cooperate with the grant's external evaluator, who will collect data on the Program's success via short, monthly web-based surveys, feedback on Program activities, an exit survey, and other mechanisms.

Failure to complete requests from the external evaluator will lead to reduction of paid hours. Multiple failures in this area will lead to Fellowship termination.

What Must I Attend?

UNCP-RISE Fellows must complete the following program-related activities:

- Laboratory research activities
- Program Workshops (See Calendar of Activities)
- Program evaluation activities- forms and meetings
- Monthly online survey & regular iBioSketch updates
- Scientific conferences (ABRCMS, NCAS)
- Annual PURC Symposium research presentation (poster or oral)
- Mentor/Fellow Social & End of Year Celebration
- Progress Meetings with RISE Staff
- Weekly RISE Meetings and/or Trainings
- Summer Research Internship (Sophomores-Juniors)
- Graduate School Applications (Seniors)
- Take the GRE prior to Graduation

Approximate Abstract Deadlines:



ABRCMS: Annual Biomedical Research Conference for Minority Students

Deadline: Early September for Abstract & Travel Awards



SACNAS: Society for Advancement of Chicanos and Native Americans in Science

Deadline: Early July for Abstract & Travel Awards



Pembroke Undergraduate Research and Creativity Center

Deadline: Early March



NCAS: North Carolina Academy of Science

Deadline: Early March

Abstract Submission Guidelines

When you submit an abstract to a scientific conference, you will need to follow the guidelines and requirements of the conference. In all cases, you must also (1) tell your mentor that you wish to submit it and ask if it's okay and (2) give him/her a final review of what you want to submit before submitting it. In addition, you will need to provide a copy to Mrs. Joanna K. Cole in the RISE Office. It is important to have your mentor on board with any abstracts you submit regarding the work you have done with them because there are few things that annoy a researcher more than finding out work for their lab has been submitted when they were not notified. This is particularly true of summer mentors so you need to start working with them well before the submission deadline! Please work with your research mentor, keeping the rules for the particular conference in mind, while creating the abstract. NOTE: Abstract writing is amazingly slow, considering how small an abstract it...but it gets easier with time!

Attending Scientific Conferences

At scientific conferences, scientists meet, network and share their data. Depending on the conference, there may be vendors and publishers promoting their products, or universities advertising their summer research or doctoral programs. At a conference, you will learn an incredible amount about science as a career, late-breaking findings in your field, and schools that you wish to attend. You will attend presentations made by the top scientists in the U.S. and world. You can make professional contacts that will last throughout your career and attend professional development seminars. All we ask is that you make it worth our while to send you by taking full advantage of these and other opportunities; it's not a vacation, it's a conference. *Do NOT bring or meet friends or family during a conference, as your focus on the conference will suffer.*

UNCP-RISE Fellows are funded to present their work at one scientific conference per year. For undergraduates, the first conference is ABRCMS. Please note: All students are encouraged to apply for free travel awards; this looks good on a CV and allows our program to send you to an additional meeting.

For ABRCMS and NCAS, Mrs. Joanna K. Cole will make group reservations for hotels and airfare. She will also coordinate your registration with you. If you are going to another conference, then you'll have to adhere to the procedures described below. Please do all of the following as far in advance as you can, so

that all paperwork and travel advances can be completed and airfares are as low as possible. *Remember: you must turn in any receipts within a week of your return. No travel expenses (registration, airfare, hotel, etc.) will be reimbursed or paid for by RISE if you have not obtained prior approval from a RISE Staff member.*

Registration: All conferences have a registration fee that the program will pay (if predetermined by the RISE Staff). Mrs. Joanna K. Cole can pre-register you for the conference, if you give her at least a week prior to the conference application deadline. You may also register on-site and be reimbursed afterwards, if you keep the receipt for the conference. On-site or late registration will cost more; please be organized and make your plans early.

Airfare: Write down dates and times that you wish to leave and return. Mrs. Joanna K. Cole will make your plane reservations. Please do not change your mind about the date after you've given it to her, unless you are willing to pay for the fees associated with ticket changes. If you want to fly with friends, try to turn in all of your time/information to Mrs. Cole at the same time.

Hotel: The RISE program pays for hotel rooms for RISE Fellows attending conferences. If two RISE Fellows of the same gender are going to the conference, they **MUST** room with one another. If you have a problem rooming with someone, please contact the program staff, privately. Regarding your choice of hotels, please work with Mrs. Cole to determine the maximal rate that can be spent on hotel rooms, per individual, in that particular city (usually this isn't a problem if two people room together). It may be necessary to reserve your room using your own credit card. Please note: phone calls, in-room snacks, and similar local expenses are not covered by the program.

Meals: Meals will be included in the travel cost on a per diem basis, unless the meals are included in the cost of the conference registration. You will be reimbursed after the conference. Unless you are at an International meeting (or in Puerto Rico or Hawaii), you will get a flat rate (per diem) for a day's worth of meals. As a result of the per diem, you do not have to save receipts for meals.

Other Travel: The program will pay for taxi or shuttle fares to and from the hotel/conference center. If the conference is not held at your hotel, then your fees for travel between it and your hotel are covered. Save your receipts and turn them in to Mrs. Cole within a week of return. The program does NOT pay for personal travel unrelated to the conference- Taxis to theme parks or far off dinners are not reimbursed.

Student Responsibilities: **1) To your Mentor:** Make sure that your research mentor knows that you will be gone. **2) To your Instructors:** You need to let your instructors know about the conference as early as possible in the semester. Mrs. Joanna K. Cole can provide an absence letter for your professors if necessary. If you are in lab courses, you need to make arrangements BEFORE THE CONFERENCE to attend a different section at the beginning of the week. **3) To the Program:** We expect students to get more from a conference than a free vacation to a new city. Students should expect to attend lectures and workshops, view posters, check out potential graduate schools and summer programs, and network with other researchers. At each conference attended by Dr. Poage, Ms. Vallabha, or other program staff, we will be dining as a group, unless other arrangements are made. Those under age 21 should NOT consume alcoholic beverages and those who provide them will be sent home. Also...please do not put yourself at risk. Make wise decisions about where and how you spend your free time.

In Summary: Conferences provide an environment where you can greatly increase your knowledge about science as a career; make personal contacts; and set up summer programs, graduate schools, and post-doctoral experiences. We expect that you will take advantage of these opportunities and further your development as a scientist.



Program Evaluation

The National Institutes of Health, which runs the MBRS-RISE program is required to justify program effectiveness to the US Congress. To do so, the NIH uses data that we in the local programs provide for them. We continuously examine the effectiveness of program activities and make sure that they are actually benefiting students. We track the progress of our students following graduation and demonstrate that our program is providing a foundation needed for our students to apply for and succeed in doctoral programs. Finally, we must ascertain that our students are actively participating in the program and its ancillary activities, rather than merely “going through the motions.”

To evaluate such things, the programs rely on external evaluation that is conducted by Mr. Dawayne Whittington and Mrs. April Parks of Strategic Evaluations. You will meet them several times during your time as a RISE Fellow. Surveys or focus groups (sometimes held by our external or “outside” evaluator, who assures data anonymity) will be used throughout the program to obtain feedback about other components, including but not limited to our seminars, scientific meetings, summer research experiences; your comments will be used to make our program better. Your mentor will receive monthly surveys as well as a questionnaire each semester to document your development as a researcher. Finally, over the years, someone from the UNCP-RISE office will be getting in touch with you to see what you did following receipt of your degree.

What we ask is that you please cooperate with our evaluation efforts. Even if you have something bad to say, say it so that we can improve the program for future students. Please help us by submitting the surveys quickly so that we may have a full set to compile and analyze.

Finally...We need your feedback!

RISE is YOUR program! Although we do not have much control over salaries on a particular grant, we CAN make other improvements. Please let us know what we can do to improve the program. The Program Staff enjoys fixing things and will try to take your suggestions and do constructive things with them. In addition, we are always looking for new components to add to our programs during the next granting cycle.

How Am I Doing in the Lab?

As RISE Fellows, you are not taught to be laboratory technicians but rather to take the first steps necessary to be world-class researchers. The goals of the “intramural” research component are that you:

- ✓ develop critical reasoning skills required for the development and analysis of scientific ideas.
- ✓ learn how to apply laboratory techniques to explore these ideas.
- ✓ achieve the confidence, foundation of knowledge, and technical skills necessary to enter and to succeed in graduate school and beyond.
- ✓ **earn a Very Strong Letter of Recommendation from your mentor.**



To receive positive feedback in the research component of the program, which is vital for you to maintain your status as RISE Fellow from year to year, you are expected to make progress towards the goals outlined above. You should work diligently on your research project, successfully balance your academic and research responsibilities, make progress towards graduation, take the steps necessary to enter graduate school, and participate in required RISE-sponsored activities.

Your faculty mentor will receive surveys to provide feedback of your progress. Questions asked fall into several categories: Intellectual growth and development, research skills and habits, professional career development, and academic progress. In addition, you will receive monthly surveys which will allow you to critique your own progress and provide feedback regarding your satisfaction in your laboratory. Please bring up any problems that you may be having to the RISE Staff.

Finally, a RISE Staff member will conduct routine progress meetings to see how your school, research, and planning for the next semester are going. Please set up an appointment with them promptly after they request you to do so. All decisions regarding your status in the program will be made through consultation with your mentor and the RISE Staff members.

Publications: Scientific Papers and Abstracts

During your time as a RISE student, you are likely to publish research Abstracts (paragraph summary of your research), give poster presentations (visual summary of your research), or even scientific Journal Articles. On any of these publications, it's common practice to acknowledge programs or grants that have funded you. Any of these that you complete while a member of RISE, please include the following statement: *"Acknowledgements: This work was supported by grant #5R25GM077634-04 from the NIGMS (National Institute of General Medical Sciences) supporting the UNCP RISE Program."* When you complete any of these publications, please provide a copy to Mrs. Joanna K. Cole so we can put it in your file and include it in our annual report.

Summer Research Programs

Summer Undergraduate Research Fellowships are a fantastic opportunity for students to experience the research environment of a larger university or training facility, to meet other faculty and students for networking opportunities, and to learn about graduate school options. Students generally report very positive experiences during these programs. If you know that you wish to go to a particular graduate school, attending their summer research program could be invaluable for you, if you are willing to show them how great an asset you would be! All doctoral programs will positively recognize summer program attendance, and some dual degree programs (M.D./Ph.D.) even mandate that a student attend two summer programs prior to applying to their school.

MBRS-RISE Undergraduates are required to attend off-campus summer research programs unless special circumstances dictate remaining on campus. UNCP-RISE Staff will present a workshop on locating and applying to internships. Applications for various internships are due from early January to March 1. Look up dates and plan accordingly. Each one will need at least two letters of recommendation, preferable from a research mentor and the RISE program director. Ask for these letters well in advance (a month is good...2 weeks is about minimum), and then "touch base" every so often to make sure that they are written and sent.

UNCP-RISE Meetings

To keep abreast of student progress as well as to help guide and mentor trainees in their pursuit of graduate degrees, the program staff has implemented weekly meetings. Other workshops have been scheduled throughout the year. All students are expected to attend these meetings/workshops. Lack of attendance will be viewed as lack of participation or enthusiasm about the programs. We try to make the meetings interesting, informative and relative. If you have any suggestions for meeting topic, please let the RISE Staff know, and we will try to schedule it.

Socials/Celebrations

At end of the Fall semester we will host a Mentor/Fellow Social to give our RISE family an opportunity to socialize informally and to celebrate the end of the semester. At the end of the Spring semester we will host an End-of-Year Celebration in which all Fellows, Mentors, RISE Alumni, and family members are invited. The graduating Seniors will be honored at this celebration and all RISE Fellows will be recognized for their work. Lunch will also be served. Our graduates will be honored and receive awards. These gatherings are generally supported by the Dean's office and are mandatory for RISE Fellows. Make sure to network and get to know one another during these events!

Additional Training Opportunities- Watch Emails!

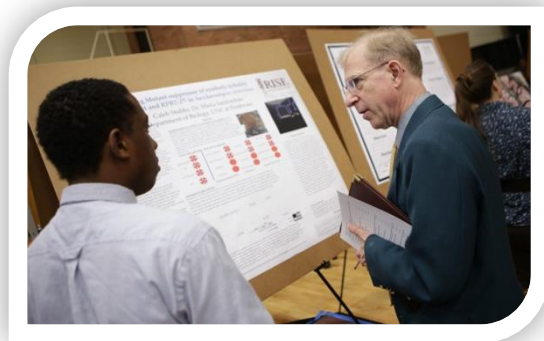
Additional CV-building activities are always available. Look for emails from Mrs. Joanna K. Cole or other program staff to find out more about them. Sometimes they are information about an off-campus training opportunity such as summer programs or funded short courses. Others involve conferences for which you can apply for travel awards, or conferences that are happening nearby. There may also be additional leadership training opportunities. Overall...each semester there are many opportunities that come to the attention of our program. Those who take advantage of them are wise. Please keep your eyes open for these opportunities to build your credentials and forward your career.

Speaking of Watching Emails....

It is critical that you check and respond to emails from RISE Staff members. You will receive updates, announcements, and reminders. Many times a RISE Staff member will need to receive information or feedback from you as soon as possible to complete a registration or report. You may find it helpful to create a “RISE Folder” in your email mailbox where you can place these emails for future reference. When you do not respond to emails that request information from you it delays the ability of RISE Staff members to get necessary work completed. In the same manner, RISE Staff members will attend to your emails as promptly as possible.

PURC Symposium

During the spring semester, MBRS-RISE students share their research results with other disciplines at the annual Pembroke Undergraduate Research and Creativity Center Symposium. This mandatory activity was implemented at student suggestion, to allow interpersonal interaction between students and faculty as well as to provide a forum for students to practice critical presentation skills before the Fall conference season. Even if you are not presenting, you are expected to be there to support the other RISE Fellows and expand your knowledge of various research subjects.



Everyone who wishes to make a presentation creates an abstract and submits it to the Symposium coordinators. Students are selected to give either an oral presentation (if they request) or a poster presentation, and are given assistance in creating the required materials. The PURC Symposium takes place during the first week of April. Therefore it is expected that Fellows create presentations that summarize or expand upon the research they have conducted with their mentor during the academic year.

Preparation for Doctoral Program Timeline

Although graduation seems far off during your early college years, it's important to begin preparing early to continue on to doctoral education. Finding out late in your final year that you didn't take the Chem or Stats courses that you need for the top graduate schools throw major roadblocks in your path. The following guidelines were created to help you to chart your course towards successful admission to a doctoral program of your choice.

Freshman/Sophomore Years

- Take broad science intro courses and labs
- Take courses to help with public speaking and writing
- Get involved in research
- Get to know grad school advisors
- Get to know faculty members for letters

Junior year (or year prior to final year)

- Take advanced Sciences (Cell, Molec., Micro., Physio., O Chems, Biochem.)
- Take liberal arts (econ, history, literature, etc)
- Expand research
 - Try to attend at least one summer program
 - Choose summer research program at a school of interest
- Begin GRE Prep or MCAT (MD/Ph.D.)
- MCAT should be taken in April of 3rd year.
- Take GRE CAT in early Fall Begin gathering information on doctoral programs!
- Assess your focus and desires for a grad program

Senior Year (final year)

- Take advanced courses (research and techniques oriented)
- Apply to at least four programs (Ph.D., Post-bacc)
- Request letters of recommendation early
- Submit Applications early
 - MD/Ph.D.: Try for Sept 1
 - Ph.D. : Try for Dec 15
- If possible, visit schools that interest you

Summarized from:

The Leadership Alliance: <http://www.theleadershipalliance.org>
(Graduate School Guide & Tips on Preparing for and Applying to Graduate School)

Finding a Great Graduate School

Although your research mentor, summer experiences, networking with recruiters at conferences will likely play a strong roll in your choice of graduate school, other online resources are available, as follows:

- Petersons Guide: <http://iiswinprd01.petersons.com/GradChannel/>
- Grad Schools.com: <http://www.gradschools.com>
- Council on Graduate Schools: <http://www.cgsnet.org/>
- Graduate School Guides: <http://www.schoolguides.com/>
- Gradview.com: <http://www.gradview.com/>
- Ph.D.s.org: <http://www.phds.org/>

Grants and Sources for Doctoral Funding



- Online Grant Application Mock review: <http://www.drg.nih.gov/Video/Video.asp>
- Definition of NIH Grant Terms: <http://grants.nih.gov/grants/glossary.htm>
- Community of Science (*Huge database of grants*) <http://www.cos.com/>
- UCLA GRAPES database: <http://www.gdnet.ucla.edu/grpinst.htm>
- Council on Graduate Schools: <http://www.cgsnet.org/Default.aspx?tabid=163>
- GrantsNet: <http://www.grantsnet.org/> Search “pre-doctoral”
- NSF list of Grants: <http://www.nsf.gov/funding/>
- National Academies of Science: <http://www.nationalacademies.org/grantprograms.html>
http://sites.nationalacademies.org/PGA/FordFellowships/PGA_047958
- National Institutes of Health:
Kirschstein: <http://grants.nih.gov/grants/guide/pa-files/PA-11-112.html>
Kirschstein: <http://grants.nih.gov/grants/guide/pa-files/PA-11-111.html>
- American Psychological Association: <http://www.apa.org/pi/mfp/index.aspx>
- American Physiological Society : <http://www.the-aps.org/education/grad/stuawards.html>

Hints for Finishing Up and Moving On

Something that we'd like to stress to students: You need to take responsibility for your own progress through your degree program and subsequent entry to the "real world". Have a goal in mind, strengthen your skills required to be successful in that goal, and aggressively pursue it.

Undergraduates need to maximize their chance of graduate school admittance. While not neglecting your research, take care to maintain as high a GPA as possible. Particularly, do not take more courses than you can handle each semester and seek assistance if a subject is proving exceptionally difficult. Choose coursework that will get you into graduate school (do not be afraid to ask your advisor to assist you with this). Prepare for the Graduate Record Exam. Try to be an author on at least one scientific paper, complete abstracts and attend scientific meetings. When at meetings, network! Seek out scientists from universities that interest you and try to find out about their graduate programs and research.



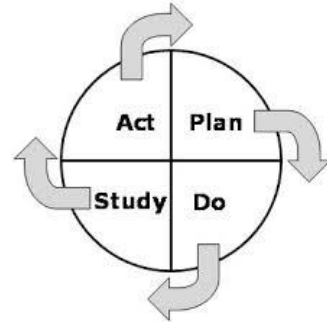
Planning your Progress

Graduation Date: _____

Graduation Application Date: _____

Need to take GRE by: _____

Will Take GRE Prep by: _____



Conference you will attend: _____

Conference Date: _____

Abstract Deadline Date: _____

Summer Programs of Interest: _____

Graduate School of Interest: _____

Application Deadline: _____

Graduate School of Interest: _____

Application Deadline: _____

Graduate School of Interest: _____

Application Deadline: _____



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Booklet adapted from Gail P. Taylor, Ph.D. original, USTA

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