Welcome to the UTSA NIH/UTSA RISE Research Training Program
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Undergraduate: http://www.utsa.edu/mbrs/ugRISE/ugRISE.htm
Doctoral: http://www.utsa.edu/mbrs/phdRISE/phdRISE.htm

Research Mentors: Brief descriptions of research foci for approved mentors are listed on program web sites for each mentor. You may also make arrangements with Dr. Taylor to explore addition researchers from participating departments, as long as they are conducting biomedical, chemical or behavioral research.
What is RISE?

RISE (Research Initiative in Science Education) is a federally funded research training program for students from groups underrepresented in the sciences. The UTSA RISE program supports students at undergraduate and doctoral levels in the biomedical and behavioral sciences. The goal of the 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. PhD trainees receive tuition benefits as well. All RISE students have free access to the RISE/MARC computer laboratory and classroom, both for study and for printing wide format scientific posters. The program also sponsors part of the RISE/MARC Friday seminar and professional development series, featuring visits from faculty from high-ranking partner universities or former students, and training in critical professional skills.

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. They 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. PhD trainees are from
the pool of admitted UTSA doctoral trainees and are coached in skills that will allow them to progress effectively in their careers.

*Lower Division Undergraduate:* The RISE program has a two-tiered training strategy at lower division levels:

**Rising Researchers:** In their first semester at UTSA, twenty promising College of Sciences, Psychology or Biomedical Engineering freshmen are inducted into the Rising Researchers program. They attend the RISE-sponsored Friday seminar sessions that provide critical introductions to research as a career and the PhD. Those who maintain a 3.0 GPA, attend, and engage with the sessions receive a small stipend on completion.

**Undergraduate RISE** supports students in their sophomore through senior years and students are progressively trained to be confident and competent pre-PhD trainees. Laboratory research takes place year round, and a variety of stage-specific activities are presented as students develop. During their first summer, UG RISE go through an intensive full-time 10 week Summer Jumpstart Program which results in an abstract and poster that they present both locally and at SACNAS or ABRCMS. In subsequent semesters, trainees take the Research Careers Course, Strengths Quest Training, Seven Habits in Highly Successful College Students, Undergraduate Teaching 101, and other activities that will prepare them for doctoral training.

**Ph.D. RISE:** The RISE program provides financial support and professional development opportunities for underrepresented UTSA Ph.D. students. They obtain a substantial stipend, partial tuition (their departments pay the remainder), and support to attend a scientific conference. They also take the survival skills course, data analysis/statistics workshop, Grant Writing workshops, and the graduate professional seminar series, and receive extensive mentoring and guidance by program staff. It is a goal that our trainees obtain prestigious post-doctoral training positions and launch into successful research careers.
Finding a Research Mentor

Participants in the RISE program perform research under the supervision of one of the pre-approved UTSA research faculty. This article is designed to help you to make your choice of whom to work with. 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 have otherwise enjoyed. Below, we provide information on how to choose a compatible mentor for your research.

You will select 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 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 to 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- You may immediately enter someone’s lab, or you may take a few weeks to rotate through several labs to get a feeling for them. On the RISE (http://www.utsa.edu/mbrs/) web page, you will find a list of participating faculty members and often a brief description of their research interests. Their description will be linked to a more extensive description of their research interests and a description of projects currently being explored in their laboratories. Choose at least five program faculty who are performing research that interests you. Provide a list of people whom you find interesting to Dr. Taylor; she make recommendations, and may also suggest additional faculty members with whom you may be compatible.

You will then email these individuals and set up meetings. You should prepare for these meetings by looking at their websites and also at their up their recent journal articles on Googlescholar or Pubmed (http://www.pubmed.org) or use other internet resources to find publications and laboratory websites prior to visiting. Your effort to do so will generally result in the researcher
looking favorably on you because you will be displaying 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 that they do. Looking up their publications has 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.

Because many of the faculty members are locked behind security doors, we recommend that your first contact come email. If the potential mentor does not immediately respond, they may be buried in work; contact them again after a week or so, or go find them during their office hours (their department maintains a list of when/where these hours are). When you reach the potential mentor, identify that you have been admitted to 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) XXX major and was recently admitted to the RISE Research Training program. I am looking for a lab in which to work and am very interested in your research on ________________. If you accepting students at this time, I would like to schedule a meeting with you to discuss your research and possible opportunities in your lab.” As a RISE trainee, I have the option to participate in at least two two-week rotations, but after this I will be in a lab for ___ length of time until graduation. 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 their 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 at http://www.utsa.edu/mbrs/resources.htm.

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 would you 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?
While rotating in the lab, you also be able to speak with 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 rotations, 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. Or, ask whether they will be willing for you to do a short rotation through the laboratory, to get a better “feel” about the laboratory environment. 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! This is the polite thing to do and represents you and the program well!

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.

Continue to meet with faculty members or perform rotations until you have found a mentor with whom you have a good rapport, who will give you a research project that interests you. Tell this person that you’d like to work in his/her laboratory and have them write an email to the RISE and MARC Program office (gail.taylor@utsa.edu) to that effect. If you are having trouble finding a laboratory, do not hesitate to talk to Dr. Taylor or Dr. Barea- 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 Dr. Taylor. The RISE program is designed to be an positive experience, and if it’s not turning out that way, please allow us to help you figure out how to improve things!

Good luck! 🟢
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 Principal Investigator (P.I.) who is usually your mentor, owns the lab, and generally spends a lot of time writing grants and 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 P.I. 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 the PI and get the specifics of what is expected of you. 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.
- Finish your online safety training; you can’t work without it!
- Familiarize yourself with who does what, when, in the lab. 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.

- **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.

- **Read the literature that is pertinent to your project.** If it does not make sense, it will begin to once you are doing experiments. **If your PI gave you something to read, read it as soon as possible.** It can serve as a test of your commitment! If they ask you about it in a few days and you have not read it, it looks bad for you.

- **Begin to complete any Animal care training necessary.** See if you can be given a small non-animal project while working through this (It takes a long time).

- **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.

- **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.

- **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 have trouble with anybody in the lab, not NOT stop going or drop out of the program. Communication is the key. Talk to your mentor. Talk to Dr. Taylor. 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.

Other Things to Find out About:

Dress Codes: These are generally more relaxed at universities than in industry or hospitals. If you are at the Health Science Center, 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 weekly meetings, to discuss experimental progress. These are generally informal and involve sharing research results and discussion. Find out where and when they are. Also, your mentor may require you to enroll in a special course or two.

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, or cell phone notifications.

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 advisor and make sure that you’ve arranged to have someone take care of any ongoing duties (like feeding cell lines). Your advisor, rather than RISE staff, determines when it’s okay for you to be gone on vacation, and will generally sign time cards even when you are gone. Try not to be gone too much, though.

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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.

How much do I get paid...and what are my hours?

Answer: RISE PhD students need to work enough to progress very efficiently towards their degree. RISE undergrads need to work at least 15 during the semester, but must not go far over this, as it could damage their grades. However, keep in mind that this is a research training program and not a job, so hours can vary a bit!

In the RISE program you are given an hourly wage for their laboratory work, so that 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 multitask your responsibilities- now is a good time to begin. If you are finding this to be a problem, please contact Dr. Taylor 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: Undergraduate: 15 hrs/week during the semester and 40 during the summer ($12.00/hr). Ph.D. students report 20 hours per week at a rate to earn $26,000/year, year round but must put in a full time effort when academics and laboratory work are combined. PhD students also have 60% of their tuition paid year-round, with their departments of mentor paying the balance. We expect our PhD students to make obtaining their degree the focus of their full time efforts.

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. Please be careful about starting experiments- there will be NO: “My hours are done, you stop my gel...”. If an undergraduate finds that their mentor is requiring hours well beyond the 15 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 with crummy grades.

RISE students must turn in timecards on the 15th and on the last day of the month. Please turn them in to the program admin. An online link to the timecard and the actual dates that the money will be deposited (or checks will be sent) can be found on the program websites.
For How Long am I Funded?

Your appointment to RISE is made annually, following an evaluation of both your progress and participation in program activities, during the prior year.

- RISE Undergraduates may work up to five years, contingent upon strength of annual mentor evaluations.
- RISE is limited, maximally, to paying for 5 years of graduate education. Ph.D. students are reserved four years of funding, contingent on annual evaluation (details online), with a possible extension to 5. HOWEVER, RISE can support a student for only ONE YEAR beyond the funding limit of their prospective programs. To remain in good standing, RISE students must fulfill the requirements of their respective doctoral studies committees, and fulfill mandated RISE activities and performance expectations to continue RISE funding. All RISE Ph.D. students must attempt to obtain personal external funding.

Students who begin the program after the first year of any funding level are required to progress towards their degree efficiently. They are held to the same standards as students who began at the beginning of a degree program.

Important Career Resource Web Sites

- SACNAS Web Site: http://www.sacnas.org – Many resources
- 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, etc, for scientists
- 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/rankings/
Communications Technology Classroom and Laboratory

The RISE program has developed the Communications Technology Laboratory, in BSB 2.03.10, to benefit our student participants and their mentors. It features state-of-the-art presentation creation hardware and software, as well as a variety of printers (B&W, Color, Poster). Student researchers are welcome to use this laboratory for school work, meetings, practicing presentations, etc. All RISE students have printing privileges, as long as they are not abused.

Please be polite when in the lab…don’t talk unnecessarily or chat on your phone. Normal working hours in the “Techlab” are 8:00 – 5:00, M – F. If you are in there after hours, you MUST call the police upon entry and exit, at x4242. As a RISE student, you have priority in the lab space- if you need to practice presentations or have a loud activity, you are allowed to do so. The only exception is when we loan out the room for PhD students to complete qualifying exams, or we allow a computationally-based course to meet there.

When you start up in the program, you will be given access to this room; if you ever have trouble getting in please let the program coordinator know. Program approval is needed for all poster printing.

Approximate Abstract Deadlines:
SACNAS – Early July for September/October meeting
ABRCMS – Early September for early November conference
Neuroscience – Late April/early May for mid-November meeting
Cell Biology – Early August for mid-December meeting
ARVO - Early December for mid-May Meeting

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What Must I Attend?

RISE students must complete the following program-related activities:

All:
- Laboratory research activities
- Program Workshops: (StrengthsQuest (all); 7 Habits (UG); Interviewing Skills (UG); Leadership (All); Critical Thinking (UG); Other misc.
- Program evaluation activities- forms and meetings
- Scientific conferences
- RISE/MARC Seminar and any associated lunches
- RISE/MARC Networking Events
- Spring UTSA OUR - Undergraduate Research Showcase
- College of Science Research Conference (Fall Semester)
- End of Semester Presentations & Celebration of Grads (Fall/Spring)
- Annual Scientific Conference (Soph and up)
- Undergraduate Teaching Strategies 101

Undergraduates:
- Friday Meetings with Dr. Cassill (New Students)
- Group tutoring/study
- Research Careers and Professional Skills development course.
- Advanced coursework in field related to your research (For Bio - Neuro, or Cell, or Immunology, or Virology, etc).
- Final Presentation of their research (prior to graduation)
- Bio for Non-Majors (for Chem, Physics, etc)
- Biochemistry (Recommended, Chemistry Students)
- Biostatistics (Recommended- Biology Students)
- Summer Research (Required for Jr/Sr trainees)
- Take the GRE prior to graduation
- Apply to at least 5 graduate programs
- College Honors with Departmental Research Courses.

Ph.D.:
- RISE Grant Writing Seminar
- Survival Skills Professional Development Course
- Submission of Federal Grant Proposal
- Recitation Instruction/Teaching Techniques
Preferential Pre-enrollment:
The RISE program has the ability to pre-enroll students in courses that are not controlled directly by the departments. With pre-enrollment, you can control when your courses will be held, assure that you can attend the Seminar, and optimize your time in the laboratory. We will send out a pre-enrollment form approximately a week prior to its due date; please return it ASAP to assure that you are pre-enrolled. …

Enrollment in Restricted Courses:
The RISE/MARC Research Careers (BIO 4953) is a restricted course. We will give the department of biology permission to enroll you in my course. For the Departmental Honors research courses, you will have to fill out paperwork at the various departmental offices: http://www.utsa.edu/sciences/ugresearch/honors.html

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 addition, for ABRCMS or SACNAS, you will need to show it to Dr. Taylor, Barea-Rodriguez or Cassill. HOWEVER, in all cases, you must also 1) Tell the PI on the research that you wish to submit it and ask if it’s okay and 2) give him or her a final review of what you want to submit before submitting it. There are few things that annoy a researcher more than finding out that 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 is…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. If you want a holiday, stay
longer at the conference and meet people after; you will have to pay the difference in airfare and fund your own additional nights in the hotel.

RISE students are funded to present their work at one scientific conference per year. For undergraduates, the first conference will be SACNAS or ABRCMS, depending on where the program as a group is going. Please note: All students are encouraged to apply to SACNAS for free travel fellowships; this looks good on a CV and allows our program to send you to an additional meeting.

If you are going to SACNAS or ABRCMS, Dr. Taylor will generally make group reservations for hotels and airfare. Coordinate with her to register as well.

If you are going to a different conference, then you'll have follow 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. Also, please turn in any receipts within a week of your return.

Registration: All conferences have a registration fee that the program will pay. The program admin 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. The program admin 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 the program admin at the same time.

Hotel: The RISE program pays for hotel rooms for students attending conferences. If two RISE students 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. Our students might also be paired with students from other programs on the UTSA campus who are also attending. Please remember that the program is limited to a total of $1200.00 per person for the entire conference and plan your housing accordingly.

Regarding your choice of hotels, please work with the program admin 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). Please reserve your room using your own credit card. Then, have the hotel fax us a complete accounting of how much your room will be for that many nights, with taxes included. Give this to the program admin. She will turn in a Travel Advance Voucher for you and obtain a Cliba card that will have money on it for you to spend on the trip for food and hotels. This way, you will not have to wait for reimbursement. Note: If you don’t give the program admin at least 3 weeks notice, your travel advance will likely not be ready by the time you leave. Also note: phone calls, in-room snacks, and similar local expenses are not covered by the program.

Meals: As mentioned above, the cost of meals will be included in the travel voucher, unless the meals are included in the cost of the conference registration. If
you don't get a voucher, 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. No matter what you eat, you get this much for the day. Each U.S. city has an allowable daily meal cost (per diem), so this amount will vary, usually between 38 and 48 dollars; check with The program admin if you want to confirm the amount. As a result of the per diem, you do not have to save receipts for meals and you can actually make money if you don’t eat at expensive restaurants.

**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 The program admin 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. Dr. T can get involved where needed and provide a letter. 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. Taylor, Dr. Barea, 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, with those who provide them, will be sent home. Also…please do not put yourself at risk. If you accept rides with hotel staff or other locals, you’re not only endangering yourself, but also the careers and emotional health of the staff who are there to supervise you.

**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 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 internal evaluation that is generally carried out by Ms. Danielle Gordon. You likely met her when you filled out your initial entry questionnaire for the program. You will see a similar questionnaire when you complete the program. Questionnaires 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 seminars, scientific meetings, summer research experiences; your comments will be used to make our program better. Your mentor will receive a questionnaire each semester to document your development as a researcher (see next page for a summary of the student evaluation). Finally, over the years, someone from the 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 returning the questionnaires 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 (They promise: no origami). 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 students, 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 a positive annual evaluation in the research component of the program, which is vital for you to maintain your status as an RISE participant 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.

Once each semester, your faculty mentor will receive a form to guide them in evaluation of your progress. Questions asked fall into several categories: Intellectual growth and development, research skills and habits, professional career development, and academic progress. We suggest that the faculty also discuss your progress with you at this time.

In addition, each semester, you will receive a self-evaluation form, 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...Dr. Taylor will be happy to help you out.

Finally...Drs. Taylor, Barea-Rodriguez and or Cassill will call you into their office about twice per semester to see how your school, research, and planning for the next semester are going. Please set up an appointment with Ayeza promptly after she requests you to do so and fill out and send back any forms that Danielle or Ayeza ask for.

If you’d like to see an evaluation form, to determine what your mentor and the program consider important, Ms. Danielle Gordon can help you out. All decisions regarding your status will be made through consultation with your mentor and the RISE Student Retention and Selection Committee (and Doctoral Studies Committee, for Ph.D. candidates). ☛
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 (Publications! Yay! Great for your career!). On any of these publications, it’s common practice to acknowledge programs or grants that have funded you. The RISE number is: GM0060655. When you complete any of these publications, please provide a copy to the program evaluator in the RISE office, so that 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.

RISE Undergraduates are required to attend off-campus summer research programs. A non-comprehensive listing of summer programs is available on the RISE website under Internships at:

http://www.utsa.edu/mbrs/internships.htm

In addition to programs listed, Drs. Taylor and Barea will forward any emails that they happen to obtain from individual programs, to you!

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.


RISE Meetings

To keep assessed of student progress, as well as to help guide and mentor trainees in their pursuit of graduate degrees, the program staff has implemented periodic meetings.

New Undergraduate RISE students will meet with Dr. Cassill in their first year, and with Dr. Barea in their second. Ph.D. students will meet monthly with Dr. Barea.

All students are expected to attend the Seminar and the Lunch with the speaker meeting. Lack of attendance will be viewed as lack of participation or enthusiasm about the programs. We will try to make the meetings interesting and informative. If you have any suggestions for meeting topic, please let Drs. Taylor or Barea, know, and we’ll try to schedule it.

Award Ceremonies/Final Presentations

At end of the Spring and Fall semesters, the MARC and RISE programs host an awards ceremony to honor our graduates and celebrate the end of the semester. Generally these occur on the Friday prior to study week, over lunchtime. All exiting RISE trainees will give an Oral Presentation! If you are exiting but have not graduated, but have completed substantial research, you are expected to present. Lunch will also be served. Our graduates will be honored and receive awards. This is a mandatory activity. These get-togethers are generally supported by the Dean’s office. Students from all levels participate, as well as their mentors. 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 Dr. Taylor 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 are about funded “Preview Weekends” where a university flies in underrepresented students to recruit them to their graduate school. Sometimes they involve local mentoring of other students. 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 into our will be several of these. Those who take advantage of them are wise. Please keep your eyes open for these opportunities to build your credentials and forward your career.
In Campus Conferences

During the fall and spring semesters, RISE students at all levels share their research results with one another at the COS Conference and the Undergraduate Research Symposium. These are mandatory activities. Even if you are not presenting because you have no data at all (improbable) or are a PhD student, you are expected to be there to support the other RISE/MARC students and expand your knowledge of various research subjects.

In collaboration with their research mentor, all trainees will create or revise an abstract of their work and submit it online to the meeting organizers. Most students will be selected to give a poster presentation, but we recommend that you volunteer to give an oral in your field for the COS Conference. Be watching for emails advertising these and other presentation activities!

For more information on the COS Conference:
http://www.utsa.edu/sciences/research_conference/

For more on the Undergraduate Research Symposium:
http://research.utsa.edu/UGresearch/showcase.php

Program Networking Events

Networking events were implemented at student suggestion, to allow interpersonal interaction between students in different programs. These are an opportunity to meet and get to know other students at all levels! Make sure that you attend!

RISE/MARC Library

The RISE/MARC programs have developed a professional development library in the Techlab, with books that provide addition depth to various topics discussed in program sponsored courses and meetings. These books may be “checked out” by RISE/MARC students to assist them with developing various skills. Books owned by the library fall into a number of categories, including: Presentation Skills, Grant/Thesis/Essay Writing, Personal Development/Leadership, Scientific Research as a Career, Problem Solving/Critical Thinking, Job/Career Options, Mentoring, Graduate Schools, and Laboratory Skills. We have collected several hundred books! Come see them now, in the Techlab! You may check them out…

Favorites include:
Grants Application Writer’s Handbook
Schaum’s Outlines on many subjects
Many John Maxwell books.
At the Bench – A Laboratory Navigator
Preparation for Doctoral Program Timeline

Although graduation seems far off during your early college years, it’s important to begin preparing early if you plan (or are even considering) 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 (RISE, MARC; volunteer)
- 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 (Summer Res., Indep Res.)
  - 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 (M.S., Ph.D., Post-bacc)! 
- Request letters of recommendation early!
- Submit Applications early
  - MD/Ph.D. – Try for Sept 1
  - Ph.D. – Dec 15
- If possible, visit schools that interest you

Summarized from:
The Leadership Alliance –
Graduate School Guide:  
Tips on Preparing for and Applying to Graduate School  

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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/](http://iiswinprd01.petersons.com/GradChannel/)
- Grad Schools.com: [http://www.gradschools.com](http://www.gradschools.com)

Money Money Money...Money! Obtaining Funding

Undergraduates who have been accepted for graduate school can also begin putting together a grant. We strongly recommend that when you begin doctoral training or during your first two years of training, you will apply for your own funding. These grants look great on your CV, and give you greater independence in your studies.

**LARGE LISTINGS OF GRANTS AND SOURCES FOR DOCTORAL FUNDING**


Definition of NIH Grant Terms: [http://grants.nih.gov/grants/glossary.htm](http://grants.nih.gov/grants/glossary.htm)

Community of Science (Huge database of grants) [http://www.cos.com/](http://www.cos.com/)

UCLA GRAPES database: [http://www.gdnet.ucla.edu/grpinst.htm](http://www.gdnet.ucla.edu/grpinst.htm)


National Academies of Science

[http://www.nationalacademies.org/grantprograms.html](http://www.nationalacademies.org/grantprograms.html)

[http://sites.nationalacademies.org/PGA/FordFellowships/PGA_047958](http://sites.nationalacademies.org/PGA/FordFellowships/PGA_047958)

National Institutes of Health:


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; the UTSA Bio degree requirements might not be adequate for the top schools. 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.

Doctoral students should write grants to obtain individual support. Form the committees required and get your qualifying exam and research proposals out of the way by the end of your second year. Although coursework and research are important, there are many other professional skills that you’ll need to maximize your effectiveness as a researcher, including but certainly not limited to presentation skills and effective laboratory management. Maximize your networking (80% of science jobs obtained through friends...20% through ads) and beef up your CV. Make absolutely SURE that you can write effectively, even if it means taking additional coursework. Be looking for great postdoc positions well before graduation! Look at finishing your doctorate in 5 or fewer years, and moving on to the next stage of your career. 😊
Planning Your Progress:

Graduation Date: __________________________

Graduation Application Date: __________________________

Need to take GRE by: __________________________

Will Take GRE Prep: __________________________

Conference you will attend: __________________________

Conference Date: __________________________

Abstract Deadline Date: __________________________

Summer Programs of Interest: __________________________

Graduate School Fields of Interest: __________________________

Graduate School of Interest: __________________________

    Application Deadline: __________________________

Graduate School of Interest: __________________________

    Application Deadline: __________________________

Graduate School of Interest: __________________________

    Application Deadline: __________________________

Possible Fellowships: __________________________

    __________________________

    __________________________
RISE Research Training Program
The University of Texas at San Antonio – Biology
BSB 2.03.02
One UTSA Circle
San Antonio, TX 78249
(210) 458-5761
http://www.utsa.edu/mbrs/

Booklet by: Gail P. Taylor, Ph.D.
Some clipart courtesy of the ArtToday web site.