



IU STARS

Science, Technology, and Research Scholars

Student Handbook

Academic Year 2016-2017



Indiana University

Science, Technology, and Research (STARS) Program



The IU Science, Technology, and Research Scholars (STARS) program was created in 1997 by Dr. Marc Muskavitch, with the primary mission to enrich the academic careers of outstanding undergraduate science majors on the Indiana University Bloomington campus -- young scholars who believe that the pursuit of research is an essential part of their education.

Undergraduate IU STARS work in collaboration with faculty mentors, and members of their research groups, to conduct basic research in a variety of fields in the College of Arts and Sciences. The involvement of Scholars in this work enriches their own training in the sciences and contributes to the progress of the research programs of IU faculty. We are very grateful to the faculty mentors at Indiana University who guide and train these scholars.

***“Success is not final,
failure is not fatal: it is the
courage to continue
that counts.”
—Winston Churchill***

At-A-Glance

IU STARS has had tremendous students come through the program, resulting in the following honors awarded:

17 Goldwater Scholars

12 Beckman Scholars

6 Gill Scholars

2 Rhodes Scholars

1 Truman Scholars

2 Churchill Scholars

2 McNair Scholars

3 Elvis J. Stahr Senior Award

1 Herman B Wells Senior Award

1 Kate Hevner Mueller Senior
Award

3 Provost's Award for Undergraduate
Research & Creativity

While not a requirement, several scholars have published prior to graduation, with over 50 known publications in peer-reviewed journals thus far.

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<https://go.iu.edu/STARS>

You are among a select group of science majors who will have the opportunity to conduct research while earning a bachelor's degree at Indiana University. This opportunity has the potential to become a springboard for your successful career in the sciences.

It is our hope that every scholar in the IU STARS Program will succeed academically, be involved in dynamic and productive research, and have active interaction with a research mentor while he or she is enrolled at IU. You will derive benefit from the program proportional to the amount of time and effort you devote to it. If scholars want pointers on study skills, help with time scheduling, assistance arranging for a new mentor, or simply want to air concerns or ask questions, there is a network of STARS peer mentors and administrators that are available to help at any time.

STARS PROGRAM ADMINISTRATORS

Heather Bradshaw, Program Director and Professor
Department of Psychological and Brain Sciences
(812) 855-1559 / hbradsh@indiana.edu

Teddie Phillipson-Mower, Associate Director, Office of Science Outreach
(812) 856-0801 / trphilli@indiana.edu

Tina Gilliland, Program Coordinator, Office of Science Outreach
(812) 855-5397 / mgillila@indiana.edu

PROGRAM GUIDELINES

Research: Hands-on research is at the core of the STARS experience; therefore, STARS scholars are required to be actively involved in research for approximately **10 hours per week throughout each semester**. Each scholar should consult with her or his faculty mentor to establish precise research expectations and a schedule each semester.

Ethics and Integrity: IU has detailed guidelines about student responsibilities and behavior. Each scholar is expected to follow the IU Code of Student Rights, Responsibilities and Conduct. There are additional expectations for scholars who are working in research labs. **All first-year STARS scholars must complete an on-line ethics course by September 16, 2016** (http://researchcompliance.iu.edu/eo/eo_citi.html; see appendix 2) that will provide research ethics education. Information and training links are available on the STARS website or in the appendices of this handbook. Research mentors will address any additional training needed (i.e. animal experimentation, human subjects, radiation, etc.), although you should inquire yourself.

Grades and Coursework: GPA is considered by semester and is not cumulative. Scholars must have a semester IU GPA of at least 3.500 to remain in the program. Therefore, each semester is considered a "clean slate" in terms of grades. Each scholar can have up to 2 semesters that fall below a GPA of 3.5 and remain in the program. Scholars must also maintain full-time enrollment during each semester of the academic year. If a scholar must withdraw from school

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temporarily, he or she should notify the faculty research mentor and the Associate Director of the OSO (Office of Science Outreach) as soon as possible in order to remain in good standing with the program.

Lab Progress Reports: All scholars are asked to submit an on-line report via Canvas describing his/her current research and laboratory activities each semester. The format for this report will be provided on Canvas. There is also an opportunity to present your work in a poster format twice a year. This will also be announced on Canvas. These posters will be loaded onto the Canvas site as well as being printed for public presentation. All posters will be made available to the STARS community here at IU on the Canvas site.

Program Activities: Your primary obligation as a STARS scholar is to be an active member of the IU scientific research community. This activity includes laboratory research, presentations at IU as well as national and international conferences, attendance at STARS-sponsored seminars, and community outreach. All scholars are asked to participate in the STARS Research Symposiums. Students in their second year and above are asked to present at least once a year (in the fall or spring), though you are welcome to present at both. Freshmen are asked to attend the Symposiums, and are encouraged to present if they have data they want to share.

Fall Reception and Symposium: This event gives STARS scholars an opportunity to get to know each other, spend time with STARS mentors, learn more about the year's plans, and ask questions. STARS scholars who took part in any type of summer research (especially those supported by STARS) are asked to present posters about their summer research.

Spring Research Symposium: All second year and above scholars are asked to submit an abstract and present a research poster. First-year scholars are welcome to also present; however, they should feel free to simply attend and learn from their colleagues. Attendance at the symposium is strongly encouraged of all scholars.

Scholars are encouraged to work with their faculty research mentors for guidance in preparing the abstract and poster. There will also be a peer-mentor mechanism through Canvas to help guide those scholars who have questions about the process. A STAR Scholars Advisory Board, which includes junior and senior STARS scholars, will review the abstracts and select three scholars to present platform talks at the symposium. During the symposium, scholars will have the opportunity to discuss their research with mentors and students. A faculty panel will select the top three posters. First place will receive the Dr. Marc and Karen Muskavitch Excellence Award. Two runners-up will receive *College of Arts and Sciences* Excellence Awards.

First Year Scholars Meeting with Program Director: All first year scholars are encouraged make an appointment to meet with the Director of the STARS, Prof. Heather Bradshaw, during their first year in the program.

STARS Summer Research Scholarships: Scholars who plan to continue their research during the summer may apply for scholarships (variable up to \$3000) awarded by the STARS program. There are a limited number of scholarships available on a competitive basis. Applications will be

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available on the STARS Canvas site at the beginning of the spring semester and are due the Friday before Spring break. Applications will require scholars to write a research proposal and obtain your faculty mentor's approval before being fully considered.

STARS Summer Research Scholarships Eligibility Requirements:

- Be a current STARS scholar in good academic standing and in good standing in the lab
- Plan to perform full-time research (40 hours per week) on campus in their mentor's lab for ten weeks (Partial scholarship may be available)
- Enroll full time as an undergraduate for the following fall semester. (Scholars going abroad the following fall semester are eligible, but must submit their poster for the fall reception before leaving.)
- Have no other sources of research support during the summer
- Commit to present the supported summer research in poster form at the STARS Welcome Reception and Symposium in the fall

Travel Awards: Competitive travel scholarships up to \$500 are available yearly for scholars. We encourage student participation in research presentations at professional meetings. Applications will be available on the Canvas site. These are due three times a year. October 1st, January 1st, and May 1st.

Evaluation of Scholars' Work and Progress: As stated above, your primary obligation as a STARS scholar is to be an active member of the IU scientific research community. This is demonstrated in the program by the following: 1) completion of semester reports, 2) presentation of your work at one of two Symposium, and 3) rigorous academic performance with a GPA of 3.5 or higher per semester. Each of these components will be tracked via Canvas and the Registrar's office. Students who are not meeting these criteria will meet with either the STARS Director or the Associate Director and a plan for future involvement will be discussed.

Changing Labs: Our primary goal in the STARS program is to help the STARS scholar be an active member of the IU scientific community. Sometimes that means changing labs. Scholar-mentor associations can change for a variety of reasons and each situation is important. Scholars wishing to change mentors should meet with the STARS Director or the Associate Director of the OSO to discuss the situation and possible transfer to another lab. Given that you will need to stay active in the research community to be a member of the STARS program, you need to consult with the STARS Director and/or the Associate Director as soon as you decide to change mentors. This will allow you to find a new research home within the same semester.

Taking a Semester Off from Research: There are a number of reasons why a student may wish to take time off from research. They might wish to take a semester abroad, prepare for the MCATs, or simply recover from burn-out. As stated above, however, your primary obligation as a STARS scholar is to be an active member of the IU scientific research community. The Program nonetheless recognizes that reasonable arguments in support of a leave might be made.

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One semester of leave may be granted only if the research mentor is in agreement and it is clear that the Scholar will resume his/her work in the Sponsor's laboratory at the conclusion of the semester of leave. Thus, it is the research mentor who will make the determination about the appropriateness of any leave. When a leave has been granted by the mentor, the student **must** notify the Associate Director of the STARS, Teddie Phillipson-Mower.

Probation and Dismissal: If a scholar's IU GPA falls below a 3.500 for more than 2 semesters or if a scholar is not submitting semester reports and presenting at symposia, the scholar will be put on probation.

Scholars on probation should meet with their research mentor and/or the Associate Director and/or the STARS Director and a set of guidelines for improvement will be agreed upon by the mentor, student, and STARS Director. Once these specific guidelines for improvement have been met, the scholar will return to full good standing in the program. If the guidelines are not met, the scholar may be dismissed from the program.

Dropping STARS: If you are contemplating leaving the program, you should contact the STARS Director, Prof. Heather Bradshaw or Associate Director, Teddie Phillipson-Mower to discuss your decision.

Fifth-Year Scholars: There are often sound reasons for taking a fifth year as an undergraduate. With mentor approval, fifth-year scholars are invited to remain in the STARS program

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APPENDIX - 1

2016-17 DATES TO REMEMBER

Fall Semester

- ❖ **August 28, 2016; 4:00 – 5:30 PM; Jordan Hall Atrium and JH A100**
 - Fall Welcome Reception, Orientation, and Symposium for all new and returning STARS scholars. Summer scholarship recipients and others present research posters.

- ❖ **September 16, 2016**
 - Deadline for ethics on-line training for first-year STARS scholars. (See Appendix-2)

- ❖ **Mid-Fall**
 - Research/Career Talk and/or Professional Development Events (TBA)

- ❖ **October 15, 2016**
 - Travel Scholarships Applications due

- ❖ **December 5, 2016**
 - Semester Report due

Note: All first-year scholars are encouraged make an appointment to meet with the Director of the STARS program during the fall semester.

Spring Semester

- ❖ **January 1, 2017**
 - Travel Scholarship Applications due

- ❖ **February 27, 2017**
 - Symposium Abstracts are due

- ❖ **March 1 – 7, 2017**
 - The STAR Scholar Advisory Committee, made up of junior and senior STARS, reviews and selects symposium IU STARS speakers

- ❖ **March 10, 2017**
 - Applications due for summer research scholarships

- ❖ **April 8, 2017 in Jordan Hall Atrium**
 - IU STARS Spring Research Symposium

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- ❖ **Mid/Late Spring**
 - Research/Career Talk and/or Professional Development Events
- ❖ **April 24, 2017**
 - Spring semester online report due if you did not submit an abstract and present a poster at the symposium.
- ❖ **May 1, 2017**
 - Travel Scholarship Application due

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APPENDIX - 2

STARS ETHICS TRAINING INSTRUCTIONS

- Using a network computer on the IU Bloomington campus, please go to the Indiana University, Office of Research Administration site: http://researchcompliance.iu.edu/eo/eo_citi.html
- Read as you scroll down to the bottom of the web page and click “Yes”
- Login with your username and password (same one used for email, Canvas, etc.)
 - A verification page may come up after you log in if you have worked on other IU campuses. Fill in updated information as required. Click “verify” when you are ready to move on.
- Select “Add a course or update learner groups” under *Indiana University – IU Health Courses*
- Add curriculum by answering a series of questions:
 - Question 1: select “No” to Human Research course needed” (unless required by your lab mentor)
 - Question 2: select “No” to IRB Chairs Course
 - Question 3: select “No” to CITI Good Clinical Practice (GCP) unless you are interested. (This is optional, but encouraged).
 - Question 4: select the best option based on your area of research
 - Biomedical = biology, biochemistry, chemistry, neuroscience, medical sciences
 - Social and Behavioral = social psychology, anthropology, speech & hearing
 - Physical Science = physics, mathematics, geology, geography
 - Question 5: select “Not at this time”
 - Question 6: select “Not at this time” (This is a good course to take, but is optional)
 - Question 7: select “Not at this time” (Another good course to take, but is optional)
 - Question 8: select “Working with the IACUC Course” is required if you plan to use lab animals in your work. Choose the appropriate species specific electives according to your research lab.
 - Question 9: select the best option depending on whether or not you work with animals.
 - Questions 10 and 11: select “Not at this time”
 - Question 12: If you conduct studies that use Lab animals, click on SoS- Working with the IACUS – Investigators, Staff and Students. Choose the appropriate species specific electives depending on your work or interests.
 - Questions 13, 14, 15, and 16: select “no”
- Press “Submit” button
- Return to the main menu, click on the first course that you want to take in the box below “Course.”
- First, select “Complete the Integrity Assurance Statement before beginning the course”, and follow instructions.
- Second, click on the link with the name of your course and complete the required modules

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- You are not required to complete the optional modules, but are encouraged to do so
- Once all required modules are complete, send me (trphilli@indiana.edu) notification/proof (e.g., printing out the page that lists the required modules as complete and current score % at the top). You will find this under “My Reports” on the ribbon below the CITI Program banner.

If you have any questions about the system, feel free to contact someone at **Research Ethics, Education & Policy (REEP)** at reep@iu.edu or (812) 855-0656