

Seeking 8th-12th grade students interested in field science research



2017-18 Research Apprenticeship Program



UA Science: Sky School (<https://skyschool.arizona.edu>) is seeking students who are excited to learn more about science and enjoy being in the outdoors. We are recruiting students in grades 8-12 to develop and execute field-based research projects for the regional science fair, run by the Southern Arizona Research, Science, and Engineering Foundation (SARSEF). Each student will be paired with a University of Arizona (UA) undergraduate student mentor and a UA graduate student science advisor to conduct an original field study, culminating in a final presentation at SARSEF. This is a valuable opportunity to gain experience in the scientific inquiry process, utilizing the unique environment of Sabino Canyon.

Students will benefit by:

- Learning how to develop and implement their own field-based scientific research project
- Having access to equipment, transportation, and guidance to do authentic scientific research
- Utilizing skills from a variety of STEM disciplines
- Relating learning to the larger framework of science research and how it applies to their own lives
- Gaining confidence and skills in science and engineering to pursue higher education and STEM careers
- Developing and maintaining working relationships with UA scientists
- Developing a better ‘sense of place’, the natural and cultural history, of the Tucson region

Your commitment:

By submitting an application, you are agreeing to be present for each of the days below. See more details in the full application.

Fall, 2017	<ul style="list-style-type: none"> • Saturday, October 7th, 8am-4pm- First field day in Sabino Canyon • Sunday, Oct. 8th, 9am-1pm- Work day at UA Main Library • Saturday, Oct. 14th, 8:30am-3pm- Field day to test methods • Saturday, Oct. 21st- Depending on need, field day 8:30 am-3pm or work day 9am-1pm • Field days for data collection, 8:30am-3pm: 10/28, 11/4, 11/18, 12/2
Spring, 2018	<ul style="list-style-type: none"> • Work days, UA Main Library, 9am-1pm: 1/20, 1/27, 2/3, 2/10, 2/17, 2/24 (optional), 3/17 • Poster display & presentation practice- Saturday, March 31st, time & location TBD
SARSEF	<ul style="list-style-type: none"> • Wednesday, April 11—project set up at TCC between noon and 8pm • Thursday, April 12—judging: Middle School 10am-11:30am & High School 12-3pm • Friday, April 13—public viewing, 9am-8pm • Saturday, April 14—awards ceremony, times TBA

To apply, complete the accompanying application, including:

- Student application (plus attached sheet for written answers)
- Parent form (plus attached sheet for written answers)
- Teacher advisor form & Teacher recommendation (attached separately)

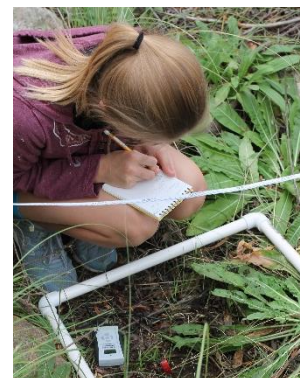
Applications must be received by midnight on Sunday, September 24th

Students will be notified of acceptance by Sunday, October 1st

Mail to or drop off at: UA Science: Sky School, c/o Rebecca Lipson, 933 N. Cherry Ave., Tucson, AZ 85721. Or scan it and send to the e-mail address below.

Questions? Contact Rebecca Lipson at rlipson@email.arizona.edu

Application materials are online at <https://skyschool.arizona.edu>





Research Apprenticeship Program

Student Application

Name _____

E-mail address _____

Phone number _____

School _____

School address _____

Grade _____

Research Apprenticeship students may conduct an individual research project or work in a group with up to 2 other students to do one project together. All students will be part of a research team consisting of a UA graduate student science advisor, a UA undergraduate mentor for each student (or team of students), and other students in grades 8-12 from a wide variety of schools in and around Tucson.

If you plan to work in a group (up to 3 students total) to complete a project together, please list your partner(s):

On a separate paper, please answer the following questions:

1. Describe your interest in science, include classes you've taken and the subjects that most interest you.
2. Tell us about a science fact or story you recently learned about and found interesting. Why did it catch your attention or imagination?
3. Have you done a science fair project in the past? If so, what was your topic and what did you learn?
4. Why would you like to participate in this opportunity to do a field-based research project with Sky School and SARSEF?
5. What qualities do you have that make you a good candidate for this opportunity?
6. What are your hobbies or interests and why do you like those things? Help us get to know you as a person, not just as a student.
7. Doing fieldwork can involve strenuous activity, possibly at high elevation, in a variety of weather conditions. What type of physical activities (sports, physical training, etc.) or outdoor experiences (hiking, camping, gardening, etc.) have you had that might prepare you to work outdoors?

Note: You may be called for a phone interview if we have further questions that would help us decide if you are a good fit for this program.

Participants for the UA Science: Sky School's Research Apprenticeship Program will be selected based on demonstrated interest in science research, willingness to learn, and ability to work cooperatively. We will consider the student application, teacher recommendation, and parent form in making our selections.

UA Sky School 2017-18 Research Apprenticeship Schedule

By submitting an application, you are agreeing to be present for each of the days below. This project requires commitment and consistency since others are volunteering their time to mentor you. Additional time will be expected to do some research and writing independently. Repeated or unexplained absences will result in dismissal from the program.

Transportation is provided from UA for all field days. You must have transportation to and from UA. Times listed for field days are the times we will depart from and return to UA.

Fall semester

- **Saturday, October 7th, 8 am-4pm**—First field day with all mentors & students to provide an introduction to Sabino Canyon and explore potential project ideas
- **Sunday, October 8th, 9 am-1pm**—UA work day for students to do research on potential topics, narrow down ideas, start writing their proposals, etc.
- **Saturday, October 14th, 8:30 am-3 pm**—Field day to finalize questions, test preliminary methods, collect pilot data, etc.
- **Saturday, October 21st**—Field or work day, depending on student's need (TBD by mentor and team leader)
 - 8:30 am-3 pm—Field day to collect data
 - 9am-1pm- UA work day for students to write proposals

Field days for data collection (Saturdays, 8:30 am-3pm):

1. **October 28**
2. **November 4**
3. **November 18**
4. **December 2**

Spring semester

Work days at UA Main Library (Saturdays, 9am-1pm):

1. **January 20**
2. **January 27**
3. **February 3**
4. **February 10**
5. **February 17**
6. **February 24** -optional due to Rodeo break
7. **March 17**

SARSEF schedule:

- Wednesday, April 11—project set up at TCC between noon and 8pm
- Thursday, April 12—judging: Middle School 10am-11:30am & High School 12-3pm
- Friday, April 13—public viewing, 9am-8pm
- Saturday, April 14—awards ceremony, times TBA

Saturday, April 21st at 10am- Sunday, April 22nd at noon—Final hurrah on Mt. Lemmon for an overnight trip of hiking, meadow campfire, silly awards, telescope viewing, etc. for all involved in the project (students, mentors, staff). Students must bring a bag lunch for Saturday; dinner and breakfast will be provided. Students will be housed in the Sky School dormitories. Transportation will be provided from UA.



Research Apprenticeship Program

Parent Form

Student name _____

Student's school _____ Grade _____

Student's ethnicity—This information is used to secure grants to support this program. It is optional for you to respond, but your response is helpful for fundraising purposes.

How do you describe your child (you may select more than one)?

- | | |
|---|--|
| <input type="checkbox"/> American Indian or Alaska Native | <input type="checkbox"/> Native Hawaiian or Other Pacific Islander |
| <input type="checkbox"/> Asian | <input type="checkbox"/> White or Caucasian |
| <input type="checkbox"/> Black or African American | <input type="checkbox"/> Other |
| <input type="checkbox"/> Hispanic of any race | |

Parent/Guardian name(s) _____

E-mail address _____

Phone numbers: Home _____ Work _____ Cell _____

Your child will be expected to

- work within a cooperative group setting, possibly collaborating in a team
- follow directions from adults in regards to his/her work and safety
- show respect for staff, peers, the environment, and others' property

On a separate paper, please complete the following:

1. Describe your child's eagerness to learn about science and engage in scientific research.
2. Tell us about your child's personality, particularly as it relates to a school or work type of setting.
3. What are your child's strengths and challenges?
4. Doing fieldwork can involve strenuous activity, possibly at high elevation, in a variety of weather conditions. Is your child prepared for potentially strenuous physical activity?
 Yes Maybe No

Comments:

Deadline: Sunday, September 24th

Mail to or drop off at: UA Science: Sky School, c/o Rebecca Lipson
933 N. Cherry Ave., Tucson, AZ 85721

Or scan it and send to Rebecca Lipson at rlipson@email.arizona.edu



Research Apprenticeship Program

Teacher advisor form

Students (individually or working in teams of up to 3 per school) must have a teacher at the school who is willing to be their advisor on this project. This teacher will be responsible for periodically checking in with students, and serving as the school contact person for the mentor and Sky School staff.

Students, please identify a teacher to serve as your advisor at the school for your project. Have that teacher complete the information below. This does not need to be the same person who writes your recommendation, nor does it need to be a science teacher.

Teacher name _____

E-mail _____

Phone number _____

Signature _____ Date _____

Deadline: Sunday, September 24th

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933 N. Cherry Ave., Tucson, AZ 85721

Or scan it and send to the address below.

Questions? Contact Rebecca Lipson at rlipson@email.arizona.edu

Note to teacher advisors:

As a teacher advisor, you do not need to attend any of the field days. The main responsibility of the teacher advisor is to be a contact person at the school. I appreciate you checking in with the student(s) to be sure they are on track and not having any difficulties communicating with their mentor. I will be following up weekly with each of the mentors. I know some of you have laboratory or classroom space at school that may be beneficial for your student(s) to use. If you are able to assist in this, I greatly appreciate it. I will do my best to provide resources from the University, but our Sky School office does not have a laboratory or extensive storage space for each of the students involved. I will work with each mentor and you to work out the details for each project.

Thank you for supporting your student(s) in this endeavor. Please contact me if you have any questions.

Rebecca Lipson, UA Sky School Assistant Director



Research Apprenticeship Program

Teacher Recommendation

Student Name _____

Teacher Name _____

Teacher e-mail _____

Teacher phone _____

School _____

Subject taught or relationship to student _____

How long have you known the student? _____

How would you describe this student's overall academic performance?

- Straight A student
- A/B student
- B student
- This student occasionally receives a C grade
- C student
- Below C student

Please rate the student on the following:

	Above Average	Average	Satisfactory	Needs Improvement	Unknown
Aptitude for science					
Eagerness to learn					
Ability to cope with new situations					
Cooperating in a group					
Ability to follow directions					
Being a self-motivated learner					
Time management					

On an attached page, please describe the student's strengths and weaknesses (at least one of each) that you feel are most relevant to his or her participation in the Sky School's Research Apprenticeship.

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