

Evaluation of the California Institute of Technology (Caltech)  
Global Relay of Observatories Watching Transients Happen (GROWTH)  
Partnership for International Research and Education (PIRE)  
2019 GROWTH Graduate Student and Postdoc Internship Survey

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## Response Statistics

Seven out of seven graduate and post doctoral students who completed an internship exchange in 2019 completed the survey (100% response rate).

Please rate how useful the following services were in preparing for your internship on a scale from not at all useful to extremely useful.

	Not at all useful		Slightly useful		Somewhat useful		Very useful		Extremely useful		N/A		Responses
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count
Information provided by my home institution mentor about the internship.	0	%	0	%	1	14%	3	43%	3	43%	0	%	7
Support and assistance provided by the GROWTH staff during my time away.	0	%	0	%	0	%	4	57%	3	43%	0	%	7
Response to my questions, requests, and needs from my host institution.	0	%	0	%	0	%	4	57%	3	43%	0	%	7
Academic support provided by my host institution mentor during my internship.	0	%	0	%	0	%	2	29%	5	71%	0	%	7
Social activities and events provided/organized by my host institution.	0	%	0	%	3	43%	2	29%	2	29%	0	%	7

\*Darker shades of teal indicate higher counts of respondents who selected that rating.

Is there any other information and/or assistance from your home institution that proved to be useful or that would have been useful? Please explain.

\*This question was not required. No respondents chose to respond to this question.

Is there any other information and/or assistance from your host institution that proved to be useful of that would have been useful? Please explain.

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Response

No

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# Overall experience

Please rate your level of agreement with the following statements about your internship on a scale from strongly disagree to strongly agree.

	Strongly disagree		Disagree		Neither disagree/agree		Agree		Strongly agree		Responses
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %	
I felt part of the research group/community at my host institution.	0	%	0	%	2	29%	1	14%	4	57%	7
I was motivated and engaged with my assigned project throughout the internship.	0	%	0	%	0	%	2	29%	5	71%	7
I was intellectually challenged by the work/project I was assigned.	0	%	0	%	0	%	2	29%	5	71%	7
I was engaged with the research work and project during my internship.	0	%	0	%	0	%	0	%	7	100%	7
I was able to connect with new potential collaborators.	0	%	0	%	0	%	3	43%	4	57%	7
I was able to form stronger research networks like conducting more research activities (e.g., publishing or sharing data) with existing connections.	0	%	0	%	0	%	4	57%	3	43%	7
I feel like my contributions were valuable.	0	%	0	%	1	14%	3	43%	3	43%	7
The internship met my expectations.	0	%	0	%	0	%	3	43%	4	57%	7

\*Darker shades of teal indicate higher counts of respondents who selected that rating.

Do you believe that participating in the internship has improved your skills as a researcher?

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Value	Percent	Count
Yes	100%	7
<b>Totals</b>		7

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\*Response options included Yes, No.

## Please explain how:

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### Response

During this internship I get a chance to work with a few of the lead persons in my research area. I leant. Alot from them. The pace and the techniques they used to help me and during meetings has improved my skills as I tried to adopt the same.

Working with my host at [university name redacted] ([mentor name redacted]), I gained a lot of technical skills in image reduction and transient detection

This experience gave me the opportunity to dig into some problems related to my research in a more rigorous manner than I usually do.

As a student building the skills of a researcher, I have learned the importance of being flexible and receptive to new techniques and information. Science is an ever-growing field and collaborative effort of understanding the world, and our ability to adapt and welcome new ways of learning is very essential.

My experience in [country name redacted] was the first time I got to give 0.5-1 hour talks at different institutions and take comments from researchers outside of my usual collaboration. I also got to connect to supernova astronomers in [country name redacted] directly.

This program has helped me to understand the data reduction methods used to reduce JVLA data. I was also able to learn how to write scripts to automate some of the data reduction pipeline which will be very useful for every future radio observation I am a part of.

Tried something new.

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\*Those who responded Yes to “Do you believe that participating in the internship has improved your skills as a researcher?” were shown this question.



Please explain why not:

\*Those who responded No to “Do you believe that participating in the internship has improved your skills as a researcher?” were shown this question. No respondents chose this response.

# How has participating in the exchange program helped you to better understand how to work as part of a large scientific collaboration?

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## Response

I was able to meet with Both the PI of the [name of collaboration redacted] and the [university group name redacted] for EM/GW follow up. This allowed me to work and find places where I could contribute to both groups.

I learnt that everybody has to play a part in order to make the collaboration a success. With the telescope we can do a good job in follow up of important targets from ZTF. I discussed the same with people at Caltech. They agree on the same.

I have gained experience with working in teams for large technical code development projects

I got to experience that the work I'm doing is not isolated, but part of a much bigger and more global effort to study transients. I got to appreciate contacting with an outside expert in the field (in this case, [expert name redacted]) and discuss my work.

Being from a country with a very big language barrier, I gained a greater sense of camaraderie towards people in the field, and acceptance as all of us are in a continuous journey of learning.

It was useful having an experience with a different working group. The insights I gained talking with others at my host institution was really useful.

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# How has participating in this exchange program impacted your professional development?

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## Response

It has helped me to see where I can focus my research to complement the work of my collaborators.

During my stay I attended a lot of meetings which were source of knowledge and skills that I can adopt. I talked to different people during my visit and their response made me think about various aspects which I didn't take care in past.

With the exchange program, I gained a better insight of what I need to improve on with regards to my existing skills.

I was able to connect with people in [location redacted], whom I will keep contact. This will be useful when I move back to [location redacted] at some point after my postdoc, given the geographical proximity. I also learned a lot a about the OISTER network, whose IR photometry capability may be useful for me in the future.

I think the most useful thing in terms of professional development was the interactions with the people at my host institution.

Got the chance to work on a new project and to work with new people.

It was great to be a part of the bigger transients group at [university redacted], as I got to interact with experts in both technical and scientific fields

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# What did you learn about how to form new collaborations to advance research in your scientific area?

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## Response

In order to collaborate I need to talk to the people with my research as a base. Explaining how my research can give benefits to them and the community can form such a good base

I learned that Collaboration is mutually beneficial for everyone in the group. Usually reaching out and speaking to a colleague with expertise you can benefit from should be seen as an opportunity to help each other.

I think the experience working with a different group of collaborators was really useful. Even though I knew a few individuals at my host institution, it was good to interact with them on a day to day basis.

Look for opportunities in the collaboration.

It is good to identify strengths of individuals and use them to improve the collaboration

As for someone starting out, being surrounded by people specializing different fields and being able to ask them questions are great ways to get into interests, or even deepen one's understanding on a specific interest. I was able to gain inputs in my personal project and it gave me a different approach to tackle issues.

A simple email message can go a long way. It is often time difficult for me to contact a person I don't know, but I learned from this trip that most people are interested in answering questions you have regarding their work, and are generally open to collaborate. At Caltech, it could be easy to not reach out since we tend to have a large group already.

# How likely are you to keep in touch or collaborate with individuals from your host institution?

Value	Percent	Count
Likely	29%	2
Extremely likely	71%	5
<b>Totals</b>		<b>7</b>

\*Response options included Extremely unlikely, Unlikely, Neither unlikely nor likely, Likely, Extremely likely.

# What was the most important skill you gained from participating in the exchange program?

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## Response

The most important skill I gained would be patience. Our questions of the universe aren't answered overnight, nor our analysis would be right on the first try. It's the continuous effort, patience, and understanding for ourselves and others that keep the community thriving.

I learned to image and reduce VLA data to assist with future EM/GW observations.

Not making useless assumptions while looking for information in data.

I'm not sure if there was a 'new' skill that I gained, but I feel like I refined several skills over my time in the internship. In particular I became familiar with new ways to code things things that I wouldn't have necessarily thought of on my own.

Using simulations to understand statistics of noise

Meeting with astronomers outside of my collaboration, and have a meaningful discussions. Less important skill I learned was how to navigate [redacted city name] rail system.

Image differencing.

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# What suggestions do you have for improving the experience for future participants?

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Response

Information on the website is quite brief. I also think for the future, a small per diem should be provided, especially for internships in high living cost areas.

The environment I felt was great. Improvement can be done in terms of funding for god's expenses etc for people from other countries

More events from Growth during the summer to engage both in internships and schools.

Provide with an instruction of the local transportation.

Introduce the guests at to everyone at the beginning of the week not at the end. I was working in a little office only interacting with the my mentors. There was little interaction with the rest of the faculty and students till after we all attended a talk together and were introduced 2 days before the internship ended.

None

None

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# With which gender do you most closely identify?

Value	Percent	Count
Male	86%	6
Female	14%	1
<b>Totals</b>		<b>7</b>

  

Other, please specify:	Count
Totals	0



With which racial/ethnic backgrounds do you most identify? (select all that apply)

Value	Percent	Count
Asian	71%	5
White	29%	2
Other, please specify:		Count
Totals		0

\*Response options included Asian, Black/African American, American Indian/Alaska Native, White, Hispanic/Latino, Native Hawaiian/Pacific Islander, Other: please specify, and Prefer not to answer.

# How are you affiliated with the GROWTH project?

Value	Percent	Count
MA student	14%	1
PhD student	43%	3
PhD candidate	29%	2
Postdoc	14%	1
<b>Totals</b>		<b>7</b>

How many internships or summer research programs have you participated in, including this one you just completed? Count all internships/programs inside and outside of GROWTH

Value	Percent	Count
1	14%	1
2	43%	3
3	29%	2
4	14%	1
<b>Totals</b>		<b>7</b>

\*Response options included 1, 2, 3, 4, and 5+.

# Are you a first-generation college student?

Value	Percent	Count
No	100%	7
<b>Totals</b>		7

\*Response options included Yes, No, I am not sure, and Prefer not to answer.