

**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 Annual Progress Survey**

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Response Statistics & Role

48 out of 62 participants completed the survey for a 77% response rate.

Role

Value	Percent	Count
Principal Investigator/Co-Principal Investigator	8%	4
Co-Investigators	19%	9
Faculty/Researcher (not a Co-Investigator)	13%	6
Postdoctoral Fellow	25%	12
Graduate Student	31%	15
Other, please specify:	4%	2
Totals		48

Other, please specify:	Count
Worked as Postdoc until September 2019, subsequently left academia	1
undergraduate student	1
Totals	2

Please rate your level of agreement with the following statements about participating in the GROWTH project.

	Not true		A little true		Somewhat true		Moderately true		Definitely true		Responses
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %	
I have achieved greater academic output (e.g. publications, telescope proposal submissions).	2	4%	4	8%	10	21%	9	19%	23	48%	48
I have improved my academic competitiveness (i.e. likelihood of educational or career advancement, proposal success).	1	2%	4	8%	13	27%	10	21%	20	42%	48
I have made scientific discoveries in the field of astronomy/astrophysics.	6	13%	3	6%	13	27%	6	13%	20	42%	48
I have shared my findings with individuals, institutions, and/or industry by writing a paper or presenting at a conference.	4	8%	3	6%	9	19%	10	21%	22	46%	48
My findings are actively being used by individuals, institutions, and/or industry to make positive impacts in my field (i.e. citations).	4	8%	3	6%	14	29%	10	21%	17	35%	48

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

Please tell us how participating in the GROWTH project has helped you to develop as an astronomy/astrophysics researcher?

Response

My involvement in GROWTH projects has helped me to work under the guidance of very experienced people in my research field which would not be possible otherwise. It has surely benefited my approach towards changing in research methods.

My participation in the GROWTH project has helped in providing good exposure to my students to interact with the best groups in transient science.

The collaboration helps me to stay on top of recent developments in the field.

Through GROWTH I have had opportunities to learn techniques for VLA data reduction that can be applied to numerous other radio interferometers around the globe. This has helped me to become more flexible in term of what instruments I can use for my research and in terms of my ability to contribute to the collaboration.

GROWTH has provided me the opportunity to collaborate more easily with institutions outside my home country.

Useful new collaborations. Supervision of summer students

It has expanded the pool of potential collaborators, added new topics of research, and provided access to top-notch facilities.

I am not a researcher; I am an educator. The previous questions are largely not relevant to me.

Working with experts and on astrophysics projects.

I work more with more people.

Being able to connect with people in different fields/countries.

Mostly follow-up observations using the telescope(s) within GROWTH network.

I am already a well-established researcher. My participation in the GROWTH project has benefited other scientists working with me.
collaboration

Exposure to new science.

The coordinated use of telescopes around the globe has been a game-changer in the study of rare transient phenomena. Likewise, a coherent effort by scientist from multiple institutions with complementary skills has been key to maximize the science returns.

Rapid sharing of information with e-mail, slack, and zoom. Sharing of scientific output in GROWTH conference.

Please tell us how participating in the GROWTH project has helped you to develop as an astronomy/astrophysics researcher? Cont.

Response

I participated in the development of tiling strategy for the [name of telescope redacted] telescope. This has resulted in greater understanding of performance of Large Field of view telescopes. Coming from a field outside of astronomy, it has also allowed me to learn the state of art technology used in astronomy.

increased my knowledge of astronomy and enhanced my coding skills, communication skills

Strong collaboration allowed us to achieve world-leading results. It is an opportunity to learn as well as to establish oneself in the field.

By participating in GROWTH, I have increased the number of publications I have been a co-author on from 1 to 4 and have had a chance to contribute significantly to at least two of the GROWTH publications. I have also had a chance to participate in several of our EMGW campaigns and lead GCN circulars. In addition, I have had the opportunity to participate in both the GROWTH internal conferences and currently am attending an international conference representing [name of telescope]-GROWTH efforts. As a GROWTH member I have contributed to several proposals in the group, and led one such proposal myself. I have also been able to develop my skillset in database development for the ToO marshal (described below). These are just a few examples.

Since my background was not in astronomy, it helped me understand how survey data in astronomy is obtained and analyzed.

It helped to build up a strong network, collaborate and get observing time for interesting targets.

All aspects.

It hasn't

Exposure to a broad scope of telescopes, techniques and people

I have learned to be more collaborative.

Collaboration opportunities Given me opportunity to practice teaching and mentoring

It has helped me learn more about transients.

Learn more about observations

I have been part of the gravitational waves follow-up effort and I have contributed to nearly 6 new papers. I have met with collaborators and visited partner institutions

Please tell us how participating in the GROWTH project has helped you to develop as an astronomy/astrophysics researcher? Cont.

Response

Making great links of telescopes

Interactions with GROWTH team members has helped me broaden my horizons into several areas of time domain astrophysics outside my main field of study

I had the opportunity to interact with a GROWTH surf student, which helped with gaining more experience in mentoring students.

Networking with other scientists with various expertise at other institutions has helped.

Through the GROWTH project, I have been involved in the automation of the GROWTH-India telescope observations and data reduction procedure including template subtraction. This has taught me the nuances in handling a telescope and how those translate on to the image.

It gave me many opportunities to broaden my research and learn additional skills.

This project included setting up the GROWTH-India telescope, where the presence of the whole group was definitely important in getting project approval. We have been very effective in coordinated followup of GW sources with [name of telescope redacted] and [name of telescope redacted], and all discussions in our calls and meetings have been very informative, bringing in new ideas and research directions.

By participating in the GROWTH Project I have learned collaboration on a wide scale between different people, which can help me grow in my field of research.

Enabled collaboration with researchers in different, but related, fields

It has helped me create a new software and develop collaborations

It has helped with collaboration and excellent data access.

GROWTH has provided a better opportunity to interact and collaborate with various researchers working in the area of transients. The data obtained with the GROWTH facilities are used to better understand some of the peculiar events in detail. Work on some events is in advanced stage.

Increased collaboration with international partners.

It has helped in many ways: I have both gained broader exposure to the way that international rapid-response research is conducted in a team setting on a broad science case, and I have gained important collaborators to help me with my own projects.

not sure

Improve international collaboration.

How has the scope of your research expanded as a result of your participation in GROWTH?

Response

Due to my connection with other GROWTH institutions I have more opportunities to work on other side projects.

I learned more about what people in other fields are doing.

Started working on multi-messenger astrophysics

I am now more broadly focused on transients in general as opposed to just EMGW follow up.

Yes, my research fields extended to transients, NEA and GWEM.

I've started some new projects working on solar system science that I had not worked on previously.

The scope of my research has expanded into the area of GW science.

I now have students working on supernovae and near earth asteroids, which has happened only as a result of GROWTH.

internationalization

See previous

GROWTH supports asteroid research, which otherwise would not have been funded

The international competitiveness has been improved.

My main field of research is cosmology. With the GROWTH effort, we are now starting to be able to make use of a novel astronomical tool for distance measurements, a very welcome addition to the cosmologists' toolbox.

Collaboration with other facilities to maximise science output.

GROWTH is a huge collaboration involving people from different institutions. By participation in GROWTH I get a chance to work on new and emerging projects, which has benefited me in skills improvement and expanding my research areas. I have taken into account the different facilities available in GROWTH Collaboration to improve the quality of my research.

I have branched my research to include topics in time domain astronomy that are outside my specialty.

Greater involvement in EM/GW followup than otherwise

I collaborate with people around the world that I didn't before.

How has the scope of your research expanded as a result of your participation in GROWTH? Cont.

Response

I have been able to participate in the study of peculiar transients like AT2018cow, which I had never really known existed.

I have participated in the ToO marshal activities of the [name of telescope redacted] telescope. I did various exploratory studies for the [name of telescope redacted] telescope targeting optimization of observation.

Much wider collaboration is possible now with people across several countries

GROWTH has given me resources I wouldn't have gotten otherwise, like data and access to different facilities

My experience was primarily in gravitational wave physics. With my GROWTH experience I have the experience in optical follow-up of gravitational wave transients

connecting with established astronomers around the world introduced me to a number of concepts relevant to my research

Direct involvement in the search for transients

Yes.

Develop my models to allow for better comparison with data

As a result of GROWTH participation I have been involved in software development for the GROWTH ToO marshal. It has strengthened my ability to think about telescope scheduling, but also has made me more proficient in python and familiar with sql, html, and flask.

I learned of other scientific goals being pursued by other people in the collaboration. I also learned more about the gravitational wave follow-up effort.

It hasn't

Broadly because of collaborators in different parts of the world

I have created a new software for the Liverpool telescope and thus broadened my research horizons into a new area of research

New facets of time-domain have opened up.

Participation in GROWTH has also expanded my research scope to observe long-GRB supernovae to investigate whether they are sites of r-process nucleosynthesis.

I'm doing more work in realtime, which enables me to work on transients.

How has the scope of your research expanded as a result of your participation in GROWTH? Cont.

Response

Being in a team of experienced time domain astronomers has given me access to a large range of expert opinions for help in my research

Worked on projects/topics as a result of collaboration I would not otherwise have done.

It has been allowed to include much larger data set than otherwise

Have established new collaborations in the field

Since I work in time domain astronomy, I require time critical immediate observations. Sometimes observations are not possible through the telescope I use, due to strict schedule. But through GROWTH project, I can trigger any new and exciting transient event and may be follow it up .

.

It has facilitated my competitiveness in gravitational-wave and fast optical transient astronomy and allowed me to write papers and competitive proposals in these areas.

I have branched out into studying objects other than SNe Ia, e.g. kilonovae.

Extended research into GW astronomy.

Currently stayed the same.

Expanded from radio transients to multi-wavelength transients

it didn't

As a member of GROWTH team, I am able to access the data and therefore, plan our observing strategy in advance. Specially, at the early phase, now we are getting a very good sample of the light curves that is useful to estimate various physical parameters of transients.

How many grant applications have you submitted that are related to GROWTH science themes?

Count	Response
32	0
4	1
7	2
2	3
1	4
1	5
1	10

How many have been funded to date?

Response
3
2
2
8
2
1
1
2
1
1
All
1
1
1

Please rate your agreement about how the GROWTH project has impacted your teaching practices in the area of astronomy/astrophysics thus far. If you are not involved in the educational & curriculum development aspects of the project, please select N/A.

	Strongly disagree		Disagree		Neither disagree/agree		Agree		Strongly agree		N/A	Responses	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count
I have shared teaching resources, practices, pedagogies, or expertise with other members of the project.	0	%	1	20%	0	%	4	80%	0	%	0	%	5
Other members of the project have provided me with new teaching resources, practices, pedagogies, or expertise.	0	%	0	%	0	%	4	80%	0	%	1	20%	5
My knowledge about teaching resources, practices, or pedagogies has increased.	0	%	0	%	2	40%	3	60%	0	%	0	%	5
I have engaged more frequently in educational collaborations (e.g. joint-course, joint-curriculum, sharing research data for teaching).	0	%	2	40%	1	20%	1	20%	0	%	1	20%	5
I have implemented new research-centered, project-based and/or data-driven teaching resources, practices or pedagogies into my astronomy-astrophysics classrooms.	0	%	0	%	2	40%	2	40%	1	20%	0	%	5

*Darker shades of teal indicate higher counts of respondents who selected that rating. This question was only shown to GROWTH course faculty members.

We encourage you to elaborate on your ratings above. Tell us more about how this GROWTH project has impacted your teaching/learning practices.

Response

I have learned new teaching techniques from my GROWTH collaborators

The GROWTH summer school and winter school have been rewarding experiences.

I implemented a new course, but it was only slightly related to GROWTH. I haven't included any material from others in my courses.

Participation in the GROWTH summer school has required me to think about different ways of presenting information, which is helpful to my teaching practice overall.

We have used the data collected from [name of telescope redacted] in class's exercises.

*This question was only shown to GROWTH course faculty members.

How has the integration of data-driven resources into the classroom affected students' learning and academic success?

Response

My students are very interested in learning how to use large databases because they realize it is an area of future growth in astronomy.

Students are excited to work with real data and I believe it strengthens their academic success.

It improved it.

It was a good/new learning experience for the MS students, some indicates the willingness to continue to PhD programs.

More interactive classrooms are more effective.

*This question was only shown to GROWTH course faculty members.

When preparing your GROWTH courses, did you collaborate with other GROWTH team members? If so, in what way?

Value	Percent	Count
Sharing teaching approaches and strategies	40%	2
Other, please specify:	20%	1
I did not collaborate on education-related efforts	40%	2

Other, please specify:	Count
sharing info on data access	1
Totals	1

*This question was only shown to GROWTH course faculty members.

Please rate your agreement with the following statements.

	Strongly disagree		Disagree		Neither disagree/agree		Agree		Strongly agree		Responses
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %	
I plan to continue my pursuit of a graduate degree in an area related to astronomy/astrophysics.	0	%	0	%	0	%	2	13%	13	87%	15
I plan to pursue an academic career in astronomy/astrophysics.	1	7%	0	%	2	13%	5	33%	7	47%	15
I plan to pursue a career in an industry related to work in the GROWTH project (big data, high tech, etc.)	1	7%	2	13%	8	53%	1	7%	3	20%	15
I think international collaborations are integral to my future research and career.	0	%	0	%	0	%	4	27%	11	73%	15
I know where to look for career opportunities in astronomy/astrophysics.	0	%	0	%	2	13%	9	60%	4	27%	15
I know who to contact to pursue a job in a field related to astronomy/astrophysics.	0	%	0	%	4	27%	7	47%	4	27%	15

*Darker shades of teal indicate higher counts of respondents who selected that rating. This question was only shown to respondents who selected their role as Graduate Student.

Please select yes or no about your attendance to the following events.

	Yes		No		Responses
	Count	Row %	Count	Row %	Count
I attended the conference/workshop organized by the GROWTH project.	13	87%	2	13%	15
I attended one or more conference(s) focused on research themes related to GROWTH	12	80%	3	20%	15
I attended lectures/workshops/summer school, etc. focused on time-domain astrophysics	13	87%	2	13%	15

*Darker shades of teal indicate higher counts of respondents who selected that rating. This question was only shown to respondents who selected their role as Graduate Student.

Please rate your agreement with the following statements.

	Strongly disagree		Disagree		Neither disagree/agree		Agree		Strongly agree		Responses
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %	
I plan to pursue a career related to astronomy/astrophysics.	0	%	2	17%	1	8%	4	33%	5	42%	12
I plan to pursue a career in an industry related to work in the GROWTH project (big data, high tech, etc).	2	17%	3	25%	3	25%	3	25%	1	8%	12
I think international collaborations are integral to my future research and career.	0	%	1	8%	1	8%	4	33%	6	50%	12
My participation in GROWTH has helped me to identify relevant career opportunities.	0	%	0	%	4	33%	6	50%	2	17%	12
My participation in GROWTH has helped me to build a network that can facilitate my pursuit of an academic career in astronomy/astrophysics.	0	%	0	%	3	25%	5	42%	4	33%	12

*Darker shades of teal indicate higher counts of respondents who selected that rating. This question was only shown to respondents who selected their role as Postdoctoral Fellow.

Please select yes or no about your attendance to the following events.

	Yes		No		Responses
	Count	Row %	Count	Row %	Count
I attended the conference/workshop organized by the GROWTH project.	6	50%	6	50%	12
I attended one or more conference(s) focused on research themes related to GROWTH.	8	67%	4	33%	12

*Darker shades of teal indicate higher counts of respondents who selected that rating. This question was only shown to respondents who selected their role as Postdoctoral Fellow.

Please indicate the frequency of which you are performing the following collaborative activities as part of the GROWTH project. You will be asked to identify the frequency of the collaborative activities performed within your institution.

My institution- I obtain new insights into my own research through discussion with others.

Value	Percent	Count
Never	4%	2
Rarely	6%	3
Sometimes	23%	11
Often	38%	18
Very often	29%	14
Totals		48

Please indicate the frequency of which you are performing the following collaborative activities as part of the GROWTH project. You will be asked to identify the frequency of the collaborative activities performed within your institution.

My institution- I improve my scientific knowledge through collaborations with other researchers.

Value	Percent	Count
Never	2%	1
Rarely	6%	3
Sometimes	19%	9
Often	40%	19
Very often	33%	16
Totals		48

Please indicate the frequency of which you are performing the following collaborative activities as part of the GROWTH project. You will be asked to identify the frequency of the collaborative activities performed within your institution.

My institution- I improve my ability to further scientific discoveries through collaborations with other researchers.

Value	Percent	Count
Never	6%	3
Rarely	6%	3
Sometimes	23%	11
Often	40%	19
Very often	25%	12
Totals		48

Please indicate the frequency of which you are performing the following collaborative activities as part of the GROWTH project. You will be asked to identify the frequency of the collaborative activities performed with other institutions within your country.

Other institutions in my country - I obtain new insights into my own research through discussion with others.

Value	Percent	Count
Never	10%	5
Rarely	13%	6
Sometimes	17%	8
Often	29%	14
Very often	23%	11
NA	8%	4
Totals		48

Please indicate the frequency of which you are performing the following collaborative activities as part of the GROWTH project. You will be asked to identify the frequency of the collaborative activities performed with other institutions within your country.

Other institutions in my country - I improve my scientific knowledge through collaborations with other researchers.

Value	Percent	Count
Never	8%	4
Rarely	13%	6
Sometimes	25%	12
Often	27%	13
Very often	17%	8
NA	10%	5
Totals		48

Please indicate the frequency of which you are performing the following collaborative activities as part of the GROWTH project. You will be asked to identify the frequency of the collaborative activities performed with other institutions within your country.

Other institutions in my country - I improve my ability to further scientific discoveries through collaborations with other researchers.

Value	Percent	Count
Never	10%	5
Rarely	13%	6
Sometimes	17%	8
Often	35%	17
Very often	15%	7
NA	10%	5
Totals		48

Please indicate the frequency of which you are performing the following collaborative activities as part of the GROWTH project. You will be asked to identify the frequency of the collaborative activities performed internationally.

Institutions outside my country - I obtain new insights into my own research through discussion with others.

Value	Percent	Count
Never	4%	2
Rarely	4%	2
Sometimes	33%	16
Often	38%	18
Very often	21%	10
Totals		48

Please indicate the frequency of which you are performing the following collaborative activities as part of the GROWTH project. You will be asked to identify the frequency of the collaborative activities performed internationally.

Institutions outside my country - I improve my scientific knowledge through collaborations with other researchers.





Value	Percent	Count
Never	2%	1
Rarely	2%	1
Sometimes	33%	16
Often	38%	18
Very often	25%	12
Totals		48

Please indicate the frequency of which you are performing the following collaborative activities as part of the GROWTH project. You will be asked to identify the frequency of the collaborative activities performed internationally.

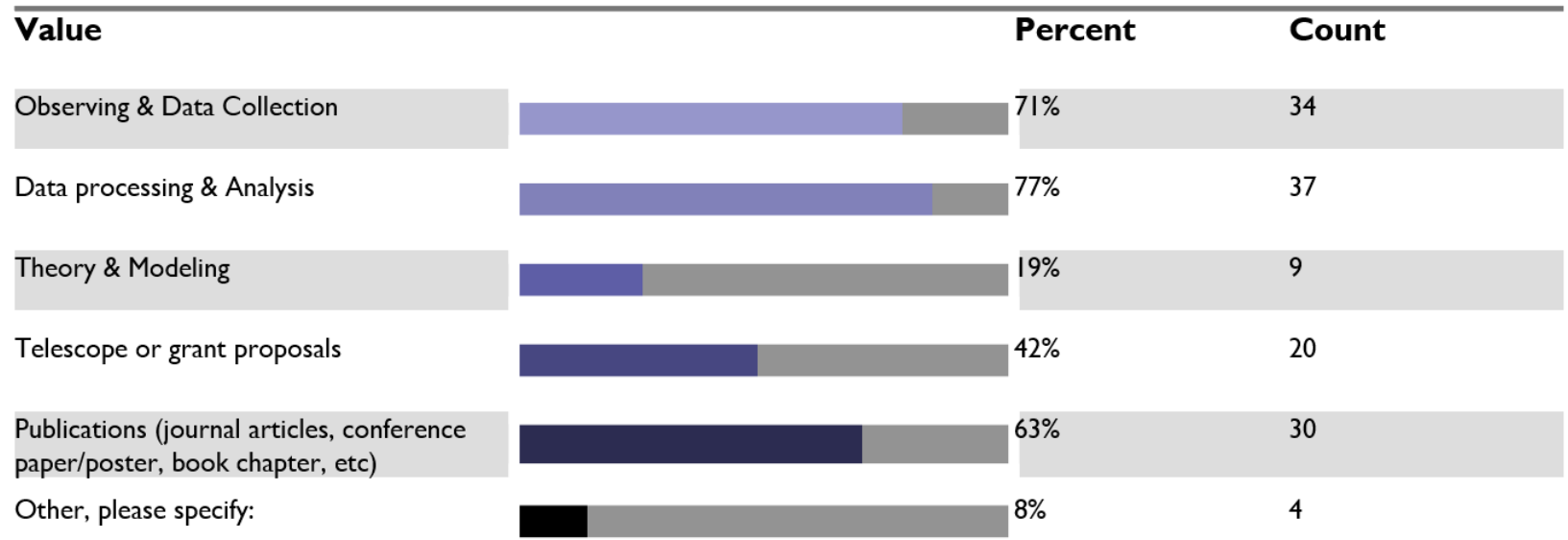
Institutions outside my country - I improve my ability to further scientific discoveries through collaborations with other researchers.

Value	Percent	Count
Never	6%	3
Rarely	2%	1
Sometimes	33%	16
Often	38%	18
Very often	21%	10
Totals		48

Which statement most closely describes the degree of interdisciplinary research you are involved in as part of this project.

Value		Percent	Count
I mostly work with researchers from my field of research		40%	19
I sometimes work with researchers from other disciplines		48%	23
I often work with researchers from other disciplines		8%	4
I regularly work with researchers from other disciplines		4%	2
Totals			48

When performing research activities, what are the ways in which you most frequently collaborate with other GROWTH team members?



Other, please specify:	Count
Student training	1
Supervision	1
none	1
teaching resources	1
Totals	4

Please identify strategies that help to facilitate collaboration (e.g. research or educational) for you within this project.

Response

Frequent collaboration on projects.

The use of Slack for planning and coordinating observations

Using slack to communicate in real time,

Prompt sharing of information with e-mail, slack, and zoom.

Slightly more frequent telecon?

Easy communication methods. Talking with fellow GROWTH members in person at meetings in order to discover common goals.

Regular telecons and posted minutes; meetings

Use of online collaborative tools such as Slack.

Science working groups

Use of communication tools (e.g. slack), regular telecons

I was able to meet with leaders of different groups within the GROWTH collaboration via a GROWTH exchange fellowship. They helped me to become an active member of the GROWTH radio follow up groups using radio telescopes across [continent redacted] and with the VLA in [state redacted]

1) participation in GROWTH school. 2) Participation in GROWTH annual meeting. 3) GROWTH Internship program. 4) Online meetings, communication via slack.

The collaboration is very active and in touch through various activities that has made the overall interaction vibrant and productive. The younger members of the group benefit immensely by this constant interaction.

Regular face to face meetings and telecons

regular meetings and discussions

Taking advantage of the opportunities to coordinate observations with foreign collaborators

Please identify strategies that help to facilitate collaboration (e.g. research or educational) for you within this project. Cont.

Response

Using forums such as Zoom are extremely useful for facilitating collaboration on a day-to-day basis. Frequent communication is key for good collaborations. Github is essential for us to collaborate on our code, and overleaf is required for writing joint papers. Also, being flexible about timing for meetings helps facilitate meetings between different groups.

N/A

The slack channel and the GROWTH conferences are helping to facilitate collaboration.

Teleconferences, meetings and workshops

The association through GROWTH made me more willing to reach out to researchers whom I don't have prior contact otherwise.

Not sure

The growth meetings to establish collaboration contacts keeping in contact through regular meetings/telecons

N/A

More face-to-face meetings will be helpful.

clearer and more ways to access the data

Exchange projects are very successful.

Team planning and Team work

None

-

Slack, telecons, marshal

Common goals.

Workshops

Please identify strategies that help to facilitate collaboration (e.g. research or educational) for you within this project. Cont.

Response

Slack channels

identification of core groups with assigned tasks

zoom

-

Regular meetings helps a lot, and timely notification of important observing opportunities for interesting objects on the mailing list.

My involvement with GROWTH is comparatively new. Presently, I am looking the data handling/analysis aspect obtained with GROWTH but plan to lead the science part soon.

research

Regular meetings and email updates

Not entirely sure what is meant by 'strategies' but the SURF student was good to interact with and hence further collaboration on that project.

The team meetings are definitely helpful to catch up with the rest of the collaboration and understand the scope of the work being done. The graduate internship was also a great learning experience

I strongly believe that we can make this collaboration improve by meeting once a year with other GROWTH team members(faculties, engineers, Postdocs, Grad students, etc.) which can be beneficial in exchanging views, maybe some data observed by someone and someone else can use it (if the data has not been published in some form) , coding and data analysis schools for everyone in the team (especially freshers').

The GROWTH internships have been very fruitful. It would be very useful to have remote teaching and mentoring for students.

no

.

Identifying common interests and synergies, and having the network to utilize those.

Please identify barriers that hinder you from collaborating (e.g. research or education) within this project.

Response

Other duties within the institutions.

Time zone differences make telecon scheduling challenging.

institutes in different states/ countries, not many opportunities to meet in person.

Other time commitments; family conflict that prevent in-person meeting attendance

Geographical distance from other team members working on a specific project

Most people are not from my field and the interaction is limited.

It is hard to travel to internationally so international collaboration can be difficult since it is all done remotely.

private data

As a side of collaboration with some institute or people, it is required to spend some time at the institute itself to have more deep interaction with people.

But, sometimes my Institute's attendance policies act as a barrier. Getting full funding for the small internship is another issue which bothers me sometimes as not every country has good enough pay scales to let you spent time in some institute outside your country without full funding.

Lack of robotic telescopes for data taking.

Motivating postdocs to reach out to other groups for coordinated observing

Different time zones, leading to off hours telecons is a problem. In person meetings with long very long overseas travel time and only lasting for a few days are neither efficient nor good for the environment.

Nothing springs to mind.

I don't always know what other educators are doing in their courses.

Insufficiency of the observational information.

No major barriers

large numbers of other people at other institutions developing things on their own.

Please identify barriers that hinder you from collaborating (e.g. research or education) within this project.

Cont.

Response

structure of the available resources

NA

Few chances of meeting in person, which still can make the difference.

Timezones.

Certain aspects are centered at specific institutes and communication/inclusion of researchers from other institutes is difficult

None

Time

-

Hierarchy, little money as a PhD student

time zone difference

Ability to get feedback from members in the collaboration outside the institution.

High pressure to do things unrelated to my research (administration, etc)

Time constraints make it difficult for me to attend the GROWTH conferences.

none

Availability of manual with detailed description of some of the more technical behind the scenes software

At times, my (personal) lack of ability to communicate in a timely manner hinders me from collaborating. Furthermore, my involvement in the [name of collaboration redacted] collaboration prevents me from sharing certain proprietary information, though I try always to use the information in a responsible way to help guide decisions for whether or not to trigger on a GW event.

N/A

Please identify barriers that hinder you from collaborating (e.g. research or education) within this project.
Cont.

Response
Timezones
Travel expenses are always the biggest hurdle!
.
The spread in timezones make phone conferences challenging.
Sometimes, lack of information on few activities.
no
As it is very international and diverse sometimes it is hard to identify who the drivers are or whether something is likely to come out of a particular line of investigation.
None
-
None.
Time difference and collaboration between the different institutions could be improved
Timezones
Not as such. But maybe travel grants for GROWTH winter school programs which are being held for the last couple of years can be useful.
very large size of the team

Do you view your collaborations with other GROWTH partners as a key component in achieving the research and education goals of this project?

Value	Percent	Count
Yes, and I plan to further enhance my collaborations in the future.	46%	22
Yes, I am satisfied with the current level of collaboration and plan to maintain it in the future.	44%	21
Collaborations are important but not essential.	8%	4
No, my collaborations are not key to achieving the project goals.	2%	1
Totals		48

The following sections assess the sustainability capacity of the project, with the assumption that the project's capacity for sustainability should grow as the project matures. Please answer the following questions based on the following 7-point scale where 1 = little or no extent and 7 = very great extent.

	Little or no extent 1		2		3		Some extent 4		5		6		Very great extent 7		Not able to answer		Responses
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count
The vision of the project is clearly articulated to team members and external parties.	0	%	0	%	0	%	1	6%	3	18%	6	35%	7	41%	0	%	17
The project is visible and well supported (scientifically and administratively) at partner institutions.	0	%	0	%	0	%	1	6%	5	29%	8	47%	3	18%	0	%	17
Human and other resources are effectively managed by the GROWTH management team.	0	%	0	%	1	6%	1	6%	3	18%	7	41%	4	24%	1	6%	17
The project regularly re-evaluates and adapts its strategies to changes in the environment (scientific, political, social).	0	%	0	%	1	6%	2	12%	6	35%	4	24%	4	24%	0	%	17
The project's funds are managed effectively to meet the project needs.	0	%	0	%	0	%	2	12%	1	6%	7	41%	3	18%	4	24%	17

*Darker shades of teal indicate higher counts of respondents who selected that rating. This question was only shown to Management Team members.

What can be done to improve the sustainability of GROWTH and its research efforts?

Response

I come from an institution without direct financial support for GROWTH. We are depending on other grants to benefit and contribute to project, e.g., to send students and postdocs to GROWTH meetings and research visits. Being able to receive direct support would have been a major plus.

not sure

Not sure

The leadership of the education portion has not been consistent.

Honestly not sure what funding opportunities are out there.

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Continuation of the research funding for the project.

Continuation of the PIRE program

No idea.

Make discoveries!

Some way to continue the project efforts (education in particular) after the conclusion of the grant would be important. I'm not sure how to do this at the scale at which it is working now!

Possibility to continue the project beyond the expiration of the PIRE grant.

-

GROWTH-related funding opportunities should be explored and more joint multi-national proposals should be submitted.

Increase exchanges independent of Caltech.

Another NSF PIRE call for proposals.

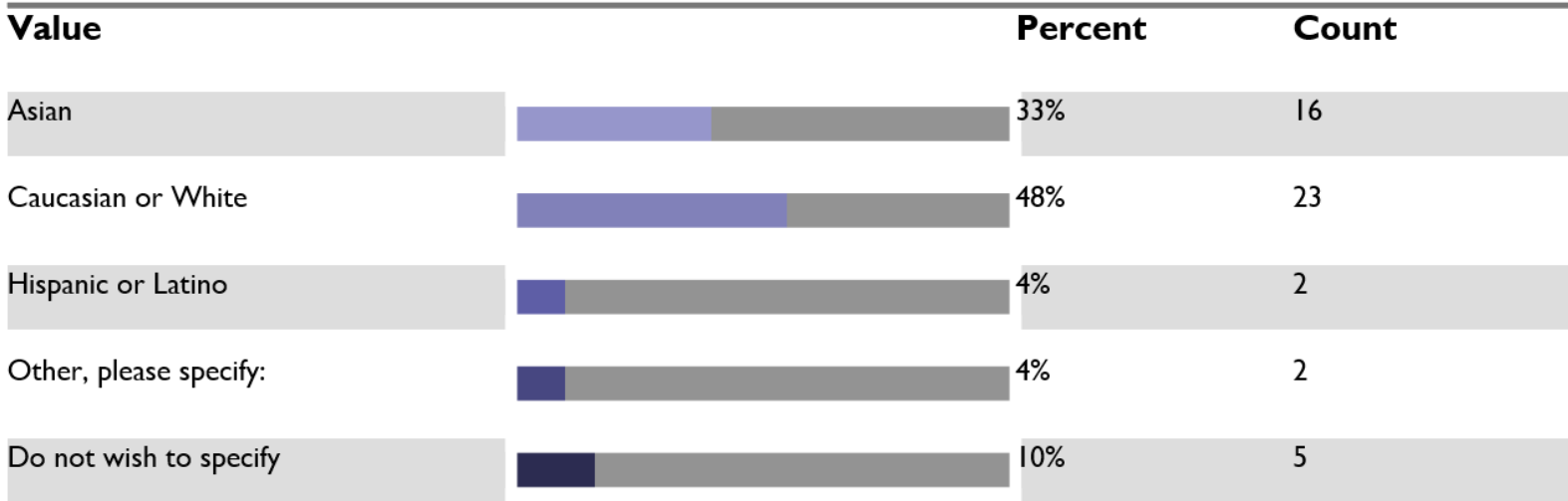
Unknown.

*This question was only shown to Management Team members.

Please select the gender with which you most closely identify.

Value	Percent	Count
Male	71%	34
Female	25%	12
Do not wish to specify	4%	2
Totals		48
Other, please specify:		Count
Totals		0

Please select the ethnic background(s) with which you most closely identify.



Other, please specify:	Count
Indian	1
South Asian	1
Totals	2

*Response options included: Asian, American Indian or Alaskan Native, Black or African American, Caucasian or White, Native Hawaiian or Pacific Islander, Hispanic or Latino, Other: please specify, Do not wish to specify.