2024 OPTYCs Annual Evaluation Report

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About this report and the evaluation

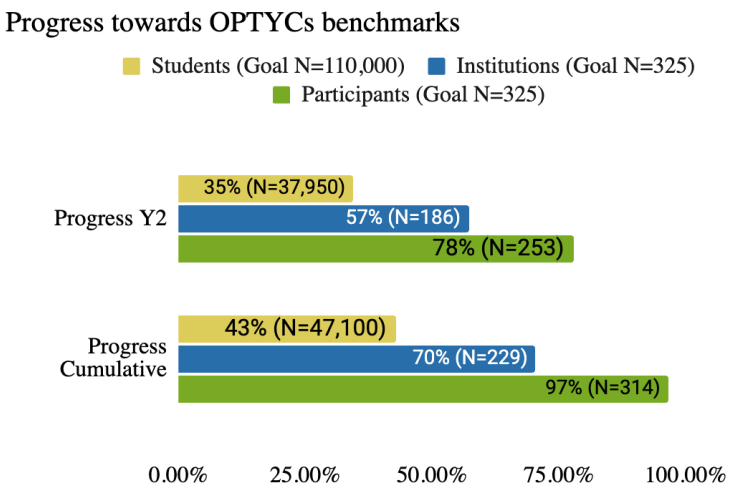
The evaluation team has collaborated with OPTYCs for the past two years to refine their vision and goals, develop the evaluation approaches, and provide critical feedback. This report reviews the following data:

- Documentation of events
- Registration data (pulled April 30th, 2024 and shared by Kris)
- Google Analytics and other web stats
- Annual participant survey
- Feedback surveys and/or observations for
    - CPDW
    - PER
    - Mentoring Group
    - Leadership Institute (LI)
    - Diversity, Equity, and Inclusion (DEI) Change Teams
- Advisory Board Meeting Discussion Notes related to Sustainability

Executive summary

OPTYCs has had a very busy and successful year, with the launching of all OPTYCs planned programs, strong participant engagement, and community support:

- At least 314 unique participants from 229 unique institutions have participated in OPTYCs cumulatively, impacting the learning of about 47,100 students.
- There is an increasing number of individuals attending more than one type of OPTYCs event, with 54 individuals attending multiple events, usually CPDW and PER.
- Among CPDW and PER participants, 34% of participants



attend more than one of those events, **indicating an increase in repeat attendance since Y1**.

- A total of 62 events have been offered cumulatively: 36 CPDW events (exceeding the target of 15 for the 4-year grant), 14 PER (out of a target of 24 for the 4-year grant), 1 NFDS, 1 DEI, 1 LI, 1 Tandem (meeting the target), and 8 active mentoring matches.

The project is reaching a variety of instructors – with continued **room for growth in terms of adjuncts, women, and historically underrepresented groups.**

- Most are full-time instructors (79%)
- Most (88%) teach predominantly physics
- Most participants are at public community colleges (72%)
- More participants are men (62%) than women, and most (68%) are white

OPTYCs community members praise and value OPTYCs efforts. In open-ended comments on the annual survey, many respondents shared that **they greatly appreciate the professional development opportunities to learn about new pedagogical ideas and resources for their classroom, and especially value the community connections which allow for networking, camaraderie, and idea sharing.**

"OPTYC has a created a space for TYC faculty to share experience and learn from other colleagues. It has allowed me to connect with some new physics faculty at TYC and bring closer the ones which I already had."

OPTYCs continues to communicate through various platforms.

- The colleagues, conferences, and the AAPT eNNOUNCER seem to be the most effective advertising mechanism for people to learn about OPTYCs. Once they know about OPTYCs, they learn about events through the OPTYCs website, colleagues, AAPT, and the TYC Google Group.
- The Google Group, Facebook, and Slack channels (which pre-date OPTYCs) have over 600 subscribers on them (so some are likely overlapping), and though the subscription numbers are slowly increasing, they have not grown significantly. OPTYCs has seen more engagement through the Newsletter Spotlight to the Google Group, with individuals clicking Newsletter links to learn more about an OPTYCs event.
- OPTYCs YouTube subscriptions and views are steadily growing with more content, with participants greatly valuing these recordings as a resource.
- Website views are strong, with nearly 2,100 hits in Q1 (January - March 2024). An increasing number of visitors is coming to the site due to direct sources (i.e., when a

visitor arrives directly to the website without having clicked on a link on another website), organic searches (e.g., a Google search that leads them to OPTYCs), and organic social sources (e.g., social media), showing greater visibility.

Event attendees are very positive about the experience. Based on feedback from the annual survey, and post-event surveys from across programs (CPDW, PER, Mentoring, DEI, and LI), we see that:

- Respondents indicate OPTYCs is a good use of their time, with meaningful professional and community impact, and the majority of respondents (90%) plan to engage in the future.
- In response to the annual survey, respondents report feeling more connected to others since OPTYCs began (79%) and feel that OPTYCs has enabled them to get ideas about teaching (87%), expand their professional network (79%), and get to know people (82%).
- OPTYCs has impacted participants positively: Respondents indicate they are likely to use what they learn in their classroom or that it has impacted their work. Almost all could name tangible benefits from their engagement, particularly in community-building and learning from professional development.
- Respondents appreciate the information and resources they get from these events, including the opportunity to try things out in the event and discuss with others.
- Respondents would like even more opportunities for discussion in virtual events.
- Some annual survey respondents said they would like a platform or accessible online space for discussion among OPTYCs members to share or troubleshoot ideas.

> ***"I'd love a forum for meaningful discussions of such things [teaching ideas]. It would need to be easy to find from the OPTYCs home page to be useful to busy adjuncts."***

Respondents feel less isolated and lonely, and more connected, belonging, welcome, value, and satisfaction in the TYC physics and astronomy community since being involved in OPTYCs.

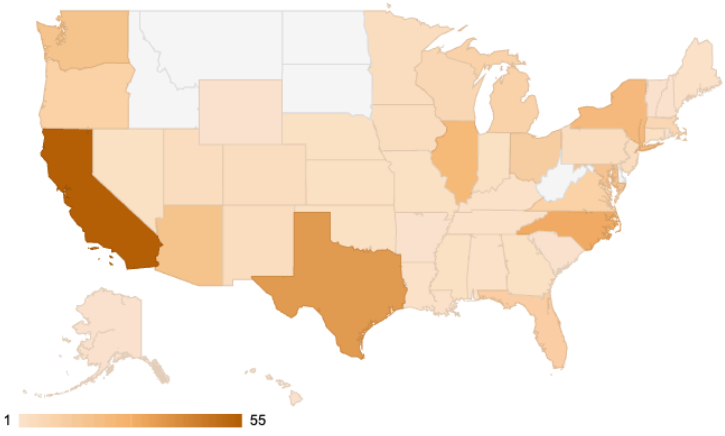
- On identity questions, respondents on the annual survey strongly agreed that they feel more connected in the community and great personal satisfaction from their work.
- Respondents ranged from "sometimes" to "never" in feeling that they lack community and

> ***"I am the only full-time physics instructor at my college. Collaboration with other physics teachers is a rarity for me. This cohort has provided invaluable resources, strategies, and relationships that I will use for the rest of my career."***

feel like outsiders in the TYC physics and astronomy community, and "sometimes" to "very often" in feeling connected. This result is good, but there is room for growth.

> ***"I want to take a moment to express my gratitude for OPTYCs and the incredible support it provides to two-year college educators like myself. The resources, networking opportunities, and collaborative initiatives offered by OPTYCs have been invaluable in my professional journey, and I am deeply thankful for the tireless efforts of the organization's leadership and members in advancing physics/astronomy education at the two-year college level. Your dedication and commitment to excellence inspire me, and I am honored to be a part of this vibrant community. Thank you, OPTYCs, for all that you do!"***

Generally, **depth is being reached, individuals are invested in the community and often stay involved in at least one program over time** (e.g., CPDW, PER, LI, DEI, Mentoring), and a few even traverse across OPTYCs programs and become involved in multiple programs. Repeat attendance is necessary for community building, and that is slowly occurring. **However, breadth may still need work.** We have **96 unique individuals left to go before reaching our benchmark for the OPTYCs program as a whole.** Geographically, OPTYCs may still need to reach places that have TYC physics faculty, but have not yet become involved in OPTYCs (e.g., north western states). However, OPTYCs has thus far had a far reach even internationally!



OPTYCs workshops and events are cracking the formula for highly successful events, leading to higher attendance, interest, and engagement ultimately. Especially seen in the data collected from CPDW events this year, workshops that include elements such as **high interactivity, opportunities to engage and practice the content directly, opportunities for questions and discussion among peers and facilitators, and easily accessible resources pre- and post-event,** lead to engagement flourishing among participants.

OPTYCs' Year 3 will be critical in the start of sowing the seeds for future OPTYCs leaders that can help support the program post-NSF funding or help continue the program with new funding and new ideas. With the new OPTYCs' Fellowship program and many of the Cohort 2s of various programs launching, OPTYCs has a readily available pool of already involved individuals (the Cohort 1s) to invite into leadership and ultimately OPTYCs' sustainability.

Recommendations

Below are some recommendations from this evaluation and for discussion at the next team meeting.

1) **Continue to broaden the representation of engaged participants to include all areas of the U.S., more under-represented minorities, and more adjunct/part-time faculty.** Since much of the ways in which individuals learn about OPTYCs is through colleagues, conferences, and the AAPT eNNOUNCER, continue to leverage those mediums to try to get word out there about OPTYCs programs and events. Similar to Y1, try to reach out to individuals you know in TYCs in geographic areas with little reach to get them involved. Question for the team: *Can we leverage the high attendance of high school teachers at OPTYCs events for this purpose?*

2) **Reflect on recruitment related to DEI Change Teams and Mentoring Groups to consider how to best reach target benchmarks.** With 28 and 60 participants needed for each program, respectfully, to hit proposal targets, and 2 years left on this grant, we want to be proactive about outreach to prospective participants. Perhaps soliciting the thoughts of those already involved in increasing recruitment of their colleagues into each program may be considered. Particularly with the DEI

program, there may be lower numbers in applicants due to its name and state regulations about involvement in DEI programs. For Mentoring, consider a kickoff event once a year or semester with all participants to gather them together to support their scheduling of future meetings or answer questions about the structure of meetings.

3) **Consider developing and advertising a space for the community to also share resources or point them to a place that already exists for that to occur in the TYC physics community. Alternatively, advertise more that the Slack exists for this very purpose. This will contribute to community building.** In the annual survey, fewer participants agreed that OPTYCs has helped them to share their ideas with others, making this a potential area for growth. In the open responses, one respondent indicated that there was not a space for them to share their ideas or resources that they knew of, so we may want to consider how to open up a discussion board or better direct them to a space (e.g., Slack) where this may occur already for the physics education community.

4) **Continue highlighting OPTYCs programs to raise awareness about them**. Survey respondents who have been involved in OPTYCs are still unaware about other OPTYCs programs like PER (n=11), CPDW (n=12), NFDS (n=7), LI (n=7), DEI (n=9), Tandem (n=9), and Mentoring (n=10). It may be worthwhile to loop a place in the Newsletter to highlight an OPTYCs program, especially when recruitment for that program is happening (e.g., Mentoring, Cohort 2 for NFDS, DEI, or LI).

5) **Consider providing a small checklist to OPTYCs event facilitators (e.g., CPDW workshop leaders) to continue replicating that successful workshop/event formula.** This checklist would encourage facilitators to reflect on their workshop before presenting to see if their planned event has high interactivity, opportunities to engage with the content directly, opportunities for questions and discussion, and easily accessible resources for participants. This would not be a requirement for facilitators, but simply a guide for what we have found to be the ingredients to a successful workshop for our population.

6) **Consider how to increase PER awareness and involvement, perhaps partially through providing funding support for participants to attend PERC.** In light of the long-term goal for OPTYCs to raise awareness and practice of PER within and among TYC physics faculty, there is still lack of awareness or lack of involvement in

PER by OPTYCs members. Even those involved in the PER Interest Group who responded to the survey have not attended PERC before. To address this, perhaps continue to encourage participants to form a horizontal Mentoring Group among very interested individuals if this has not yet happened and see if there can be funding opportunities (e.g., "OPTYCs PER travel awards" to apply for) for attendance at PERC.

7) **Begin focusing on a different kind of recruitment—for future leaders!** With the Fellowship Program in OPTYCs launching, giving recognition to those highly involved in OPTYCs will help the formation of the next set of leaders who may be interested and motivated to continue OPTYCs vision. **Contact the list of interested volunteers (n=16) from the annual participant survey to share how they could participate in OPTYCs and look for these individuals at AAPT if they attend.**

OPTYCs team reflection and action plan

What does the OPTYCs leadership team want to take up from this report (e.g., reactions, impressions, action plans)?

About OPTYCs and the evaluation

OPTYCs' vision and goals

The evaluators collaborated with the OPTYCs team to refine their stated vision and goals – across the project and per OPTYCs activity. These more specific consensus goals and vision will support effective project evaluation and activity implementation. Below are the consensus vision and goals, which were arrived at collaboratively.

Vision	A future in which TYC physics faculty and students thrive. • TYC faculty are embraced within and empowered by an inclusive national physics education community, and • TYC students experience excellent evidence-based physics instruction which prepares them for their future endeavors.
Goals	• **Knowledge and practice:** The quality of physics education* in TYCs is reinvigorated and improved: TYC physics faculty use more evidence-based classroom practices, resulting in direct benefits** to students in their classrooms. • **Continuous improvement:** TYC physics faculty engage in continuous improvement of their teaching. • **Community:** TYC physics faculty feel connected to a national TYC community of practice. • **Support:** TYC physics faculty feel that they have the support they need to thrive professionally. • **PER:** TYC physics is integrated within national physics education in terms of attitudes and structure; TYC and non-TYC physics educators feel that TYC faculty and institutions belong and matter, and physics education research and implementation efforts honor TYCs contributions. • **National model:** OPTYCs is recognized as *the* organization and community for TYC faculty professional growth and development, supporting sustainability and serving as a national model for other STEM disciplines.

	The quality of physics education includes the use of evidence-based practices, and improved quality of leadership, and improved use of diversity, equity, and inclusion practices.* * The direct benefits to students include but are not limited to: Increased learning for diverse students, increased persistence in physics, retention in the institution, increased probability of achieving career goals, increased belonging.*

Alignment between outcomes and goals

Below are the short-term outcomes that are expected to lead to the project goals.

Knowledge and practice to improve 2YC quality	
Short term outcomes	Long term goal
• Diverse TYC faculty gain knowledge, motivation, and self-efficacy to use evidence-based classroom practices.* • Diverse TYC faculty gain knowledge and self-efficacy in leadership skills. (LI) • Diverse TYC faculty identify and bring about needed change in their institutions. (LI) • Diverse TYC faculty gain knowledge, motivation and self-efficacy in implementing DEI practices in physics classrooms. (DEI) • Diverse TYC faculty identify and bring about needed change in DEI in their institutions. (DEI) • Diverse TYC faculty value PER practices and their positive impacts on student learning. (PER)	• The quality of physics education in TYCs is reinvigorated and improved: TYC physics faculty use more evidence-based classroom practices, resulting in direct benefits to students in their classrooms.* Specific longer-term goals for LI and DEI that support the above goal: • The quality of leadership in TYCs is improved: Some TYC physics faculty become effective and engaged change leaders, supporting positive change for their institutions and for the national community. (LI) • The quality of physics education (vis-a-vis DEI) in TYCs is improved: TYC physics faculty use more DEI classroom practices, resulting in direct benefits to students in TYC classrooms. (DEI)

Reflection and continuous improvement of teaching	
Short term outcomes	Long term goal
• Engaged faculty reflect on and improve their teaching.* • Additionally, they enhance their ability, growth mindset, and self-efficacy to use evidence-based classroom practices. (NFDS)	• TYC physics faculty engage in continuous improvement of their teaching.*

Community building and community of practice	
Short term outcomes	Long term goal
• Diverse TYC faculty interact with others in the TYC physics community, and grow the network among TYC physics instructors.* • Engagement leads to future engagement in other OPTYCs events.* • Numerous faculty engage, and this leads to future engagement in other OPTYCs events. (Tandem)	• TYC physics faculty feel connected to a national community of practice.*

Support and feelings of being supported as a 2YC faculty	
Short term outcomes	Long term goal
• Diverse TYC physics faculty feel supported and get targeted help in implementation practice. (NFDS) • Diverse TYC faculty feel more supported in achieving their social	• TYC physics faculty feel that they have the support they need to thrive professionally.*

and intellectual pursuits. (Mentoring)	

PER and resources that develop knowledge and data	
Short term outcomes	Long term goal
• Diverse TYC faculty have opportunities to contribute to PER knowledge (though publishing, giving feedback, contributing student data, or collaborations). (PER) • Valuable resources are developed to support TYC physics faculty in their work (archived materials, website, TYC Guidelines). (Resources) • There is new and updated data about students, faculty, and programs at TYCs. (Resources, AIP survey) • TYC faculty and national organizers are aware of these resources, value them, and use them. (Resources, AIP survey)	• TYC physics is integrated within national physics education in terms of attitudes and structure; TYC and non-TYC physics educators feel that TYC faculty and institutions belong and matter, and physics education research and implementation efforts honor TYCs contributions. Sub-goals of the above goal: • There is a culture of PER among TYC faculty: More TYC physics faculty are engaged as knowledgeable and active participants of the PER community, including producing or contributing to PER. • PER products are better adapted and relevant to TYC students and classrooms • The physics community (TYC and 4YC and national stakeholders) are more knowledgeable and able to better target and support the needs of TYC faculty and students.

Evaluation questions

At the inception of OPTYCs, the evaluators collaboratively developed a detailed evaluation plan after conducting "listening tours" with each OPTYCs working group. Below are the evaluation questions that arose from that work which will be used to help guide the conclusions of Year 2's evaluation.

(1) Is the project on track to achieve its intended goals?
(2) To what degree do students and faculty gain the desired knowledge and skills and implement them?
(3) To what degree is there a vibrant TYC physics-related community or potential for such a community?
(4) To what degree is the project achieving the desired impacts in practice in teaching, PER, and institutional change?
(5) To what degree does OPTYCs have the potential for sustainability of key initiatives and engagement?

Findings

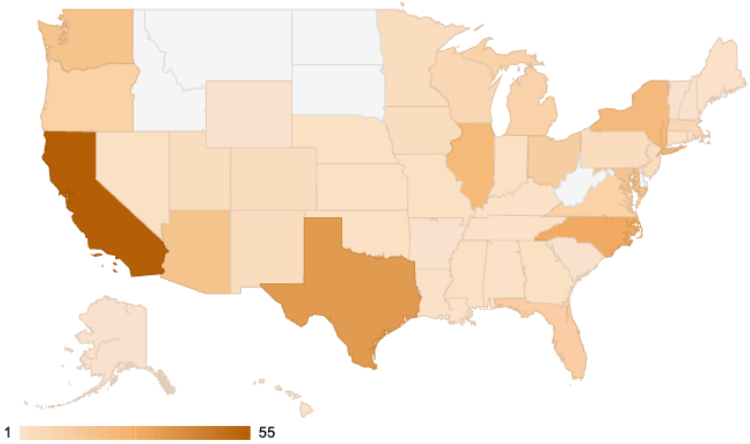
Overall impacts from event participation

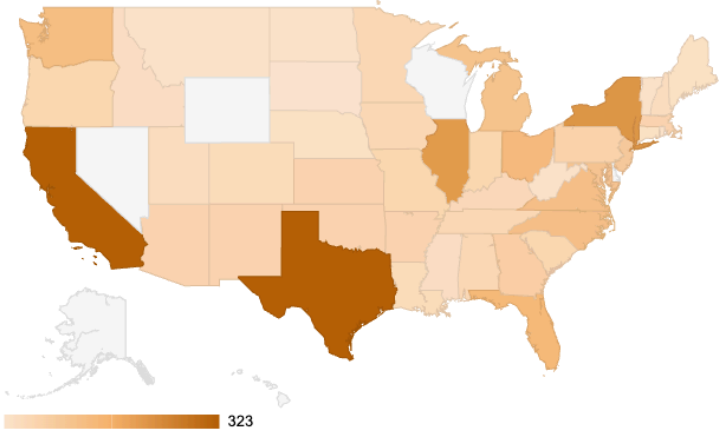
229 unique institutions have participated in OPTYCs, but the north-central regions continue to be underserved.

229 unique institutions represented in attendees of OPTYCs Events

Based on participant attendee data downloaded April 30th, 2024, from PER, NFDS, CPDW, Tandem, LI, and DEI Change teams, 229 unique institutions across 45 states of the United States were represented, with the most concentrated number of participants coming from the West and South (California and Texas) and some in the midwest and out East (New York). Sixty-nine participants were out of the country (not represented in the map). Future OPTYCs outreach may focus on further efforts to engage the north-central and middle of the country. Potentially holding regional meetings closer to these states may increase participation. Compared to Year 1, more ground has been covered, as there was less representation from south-east TYCs previously, but now participation from the region is occurring.

Below is a map of the number of **OPTYCs participants across the United States (left)** compared to the **count of the number of TYC Physics and Astronomy Faculty (right) we have record of across the country** (Note: we are missing Nevada, Wyoming, and Wisconsin data).

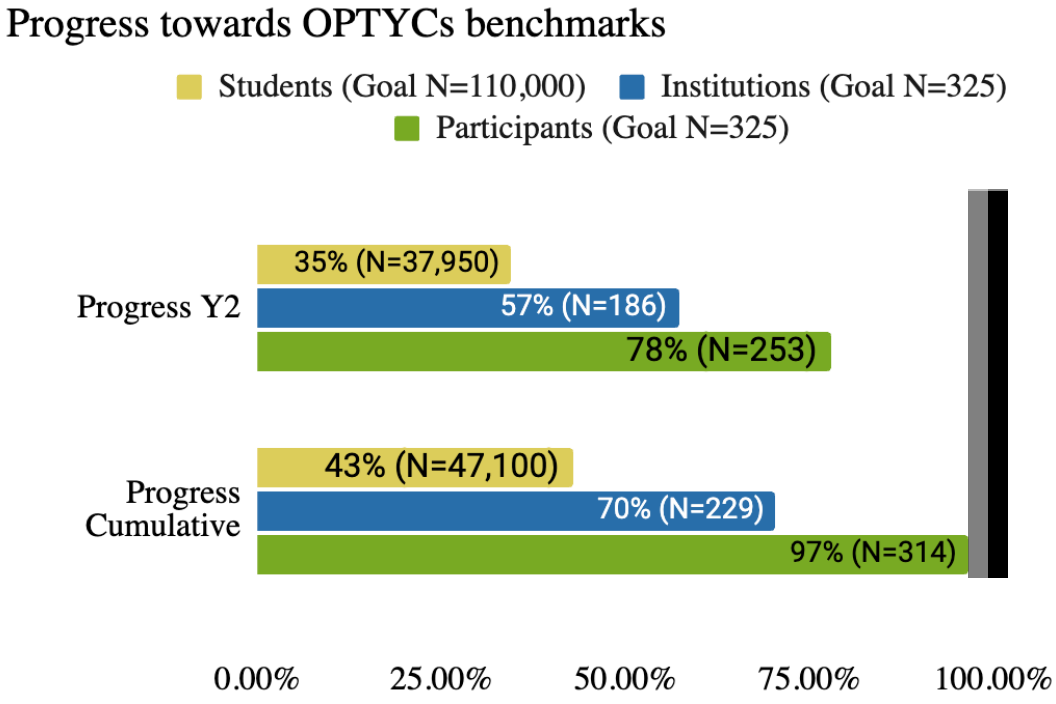




OPTYCs has impacted about 47,100 students.
With **314** unique participants attending at least one OPTYCs event cumulatively, and assuming 150 students per TYC faculty participant per year, potentially 47,100 students may be impacted by OPTYCs programming.

47,100 students potentially impacted by OPTYCs Events

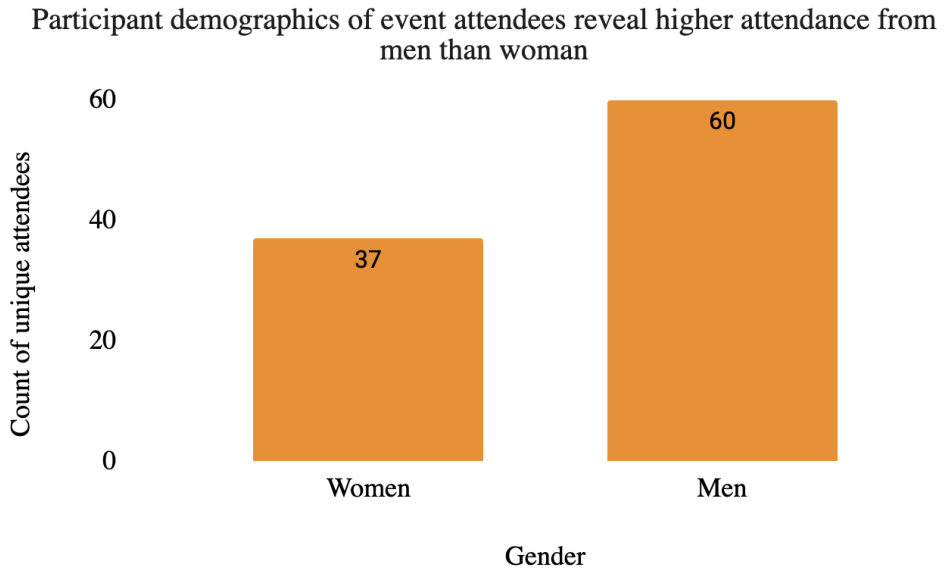
OPTYCs is making strides to meet its proposed targets of students affected and institutions and participants reached.
In the proposal, OPTYCs identified benchmarks for reaching target numbers of faculty, students, and institutions. With 50% of the project timeline having passed, the number of institutions and faculty is on target with a cumulative 70% and 97% of the desired benchmarks reached for each respectively. We may need to reconsider how we are calculating students reached, because with the current estimations, even if the number of unique participant goal is reached, the number of students reached indirectly would not equal or exceed the target 110,000 students.



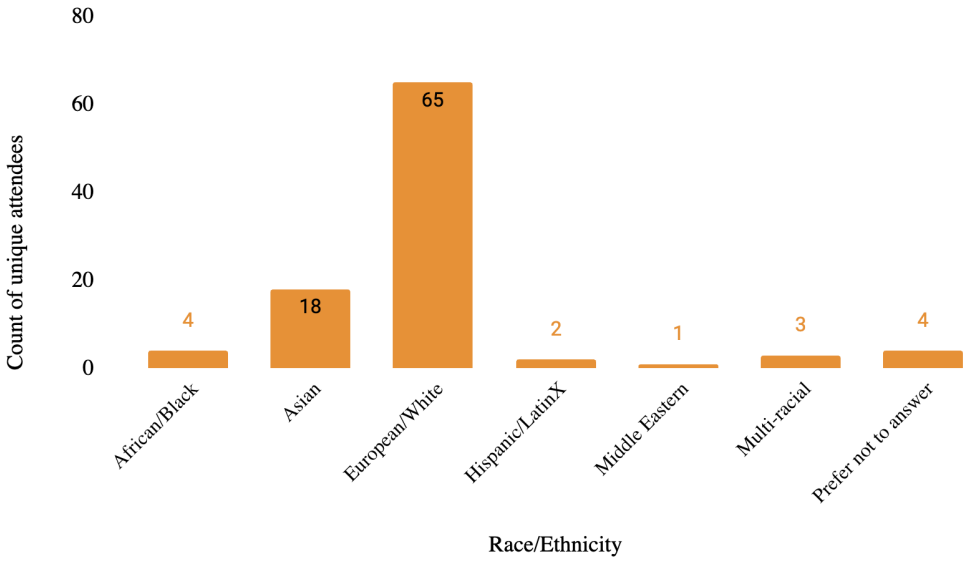
Participant demographics

Of overall participant registrations, there still remained a high engagement of men (almost double that of women), White groups, and Asian groups. I wonder how much of our OPTYCs population reflects the demographics of TYC physics faculty broadly. OPTYCs participants have reached mostly **TYCs faculty, who are full-time instructors and teach physics**.

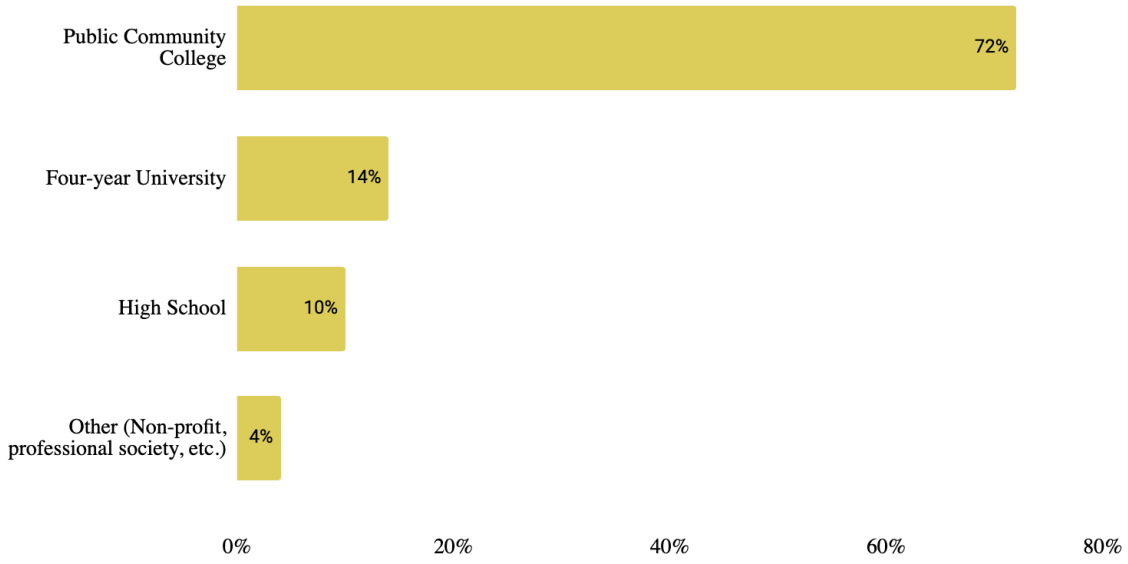
Below are details on demographics from registrations.



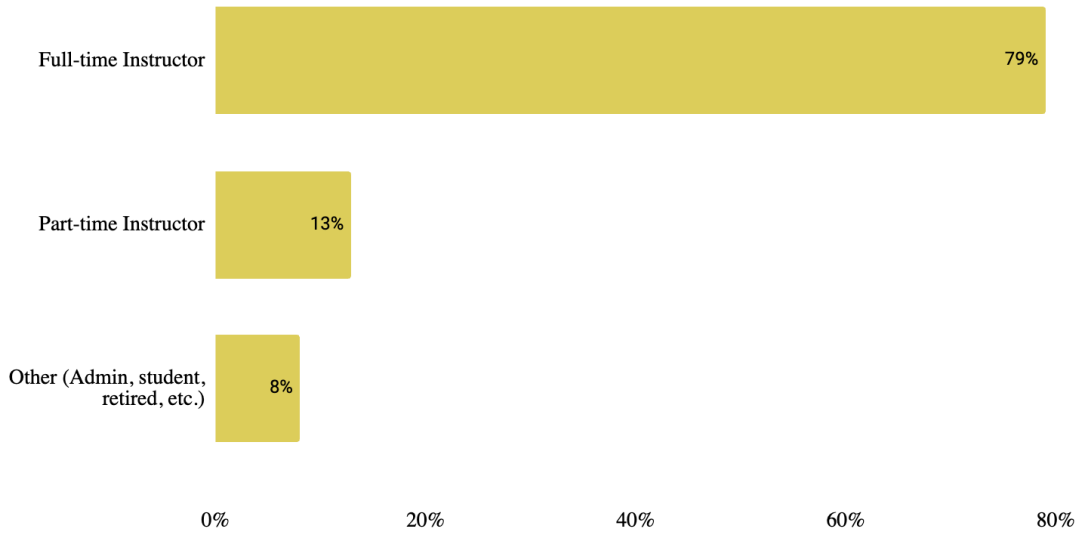
Participant demographics of event attendees reveal higher attendance from White and Asian groups



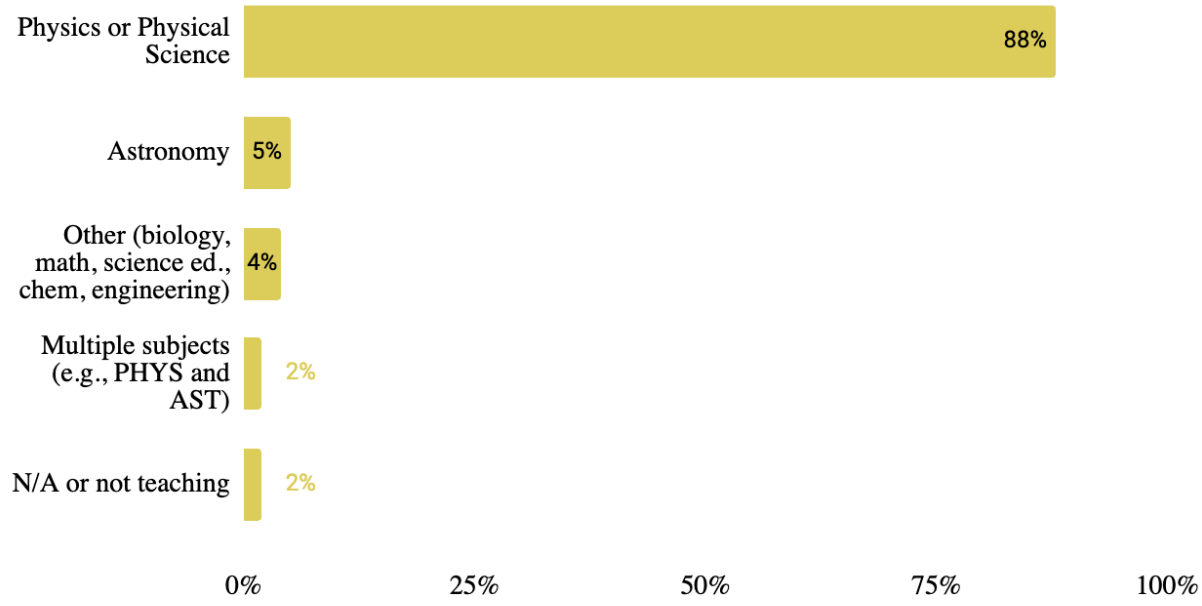
Respondents came from mostly community colleges



Most respondents were full-time instructors



Most participants predominantly teach physics in their roles



Website and social media statistics

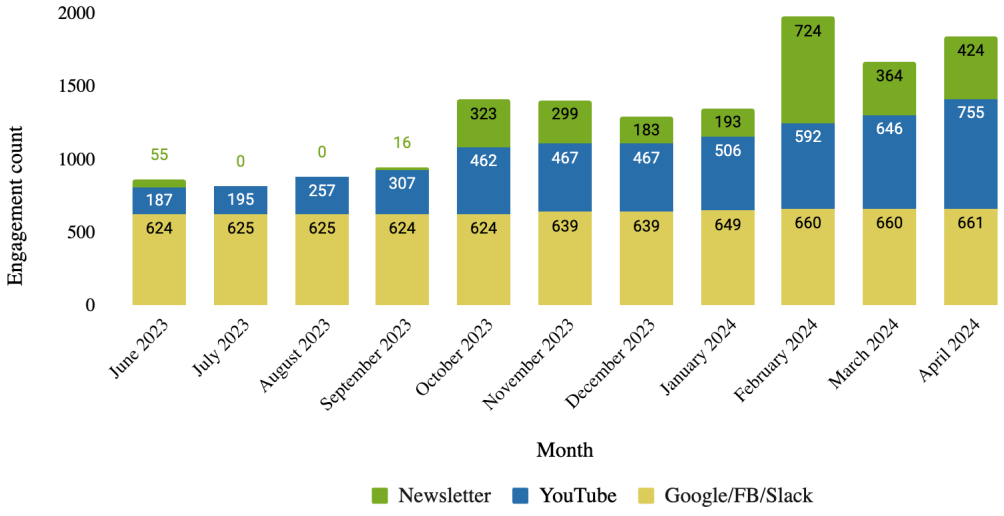
OPTYCs engaged the community through different platforms.
OPTYCs used a variety of mechanisms for community engagement and advertising. Throughout 2023-2024, **there was little change in the number of subscriptions to OPTYCs-advertised outlets**, such as the TYC Google Group Listserv, the TYC Facebook page, and TYC Slack Channel, indicating that OPTYCs may not be drawing new participation into the current TYC online community. Most individuals cited going to the OPTYCs website to learn about events, more than the abovementioned mediums. However, **with more content consistently being provided, via CPDW events particularly, views increased for the OPTYCs YouTube page**. Subscription numbers as of April 2024 were:

- 466 on Google Group*
- 66 on Facebook page*
- 129 on Slack*
- 130 YouTube Subscribers
- 725 YouTube views of the channel

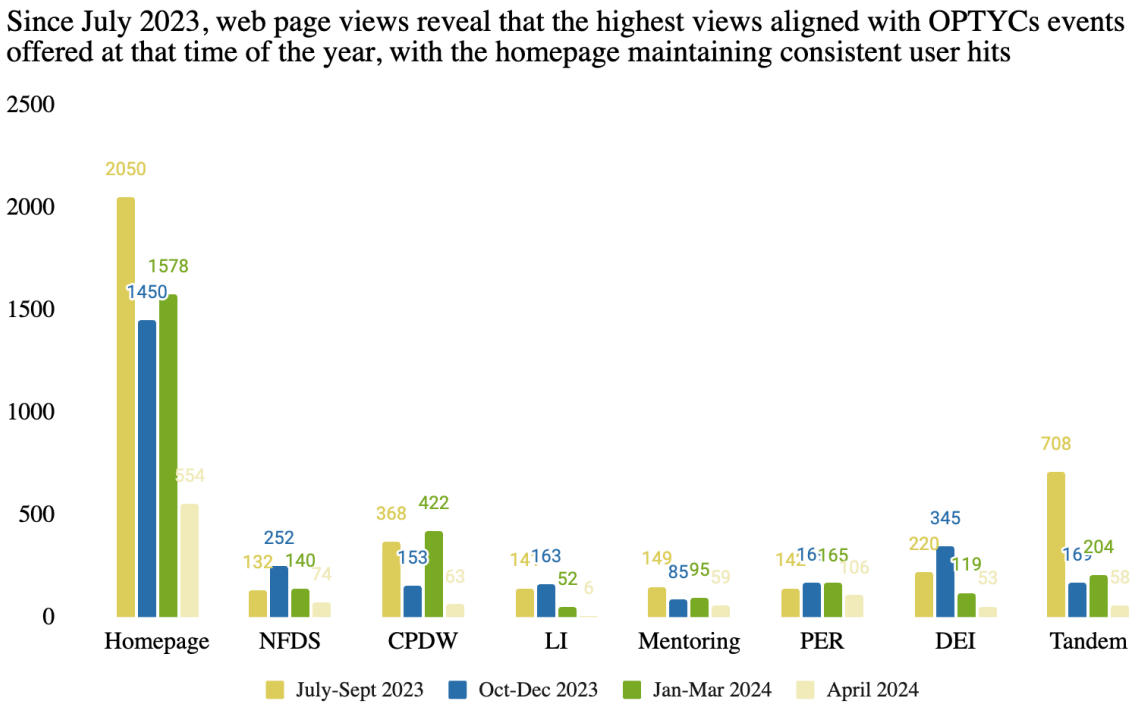
**Note that Google Group, Facebook, and Slack pre-date OPTYCs.*

In some months, we have been able to also track the traffic to the OPTYCs page due to clicks on the emailed newsletter. In February these referred hits were relatively high (724 clicks); this will continue to be monitored. The newsletter is currently sent to the Google Group primarily.

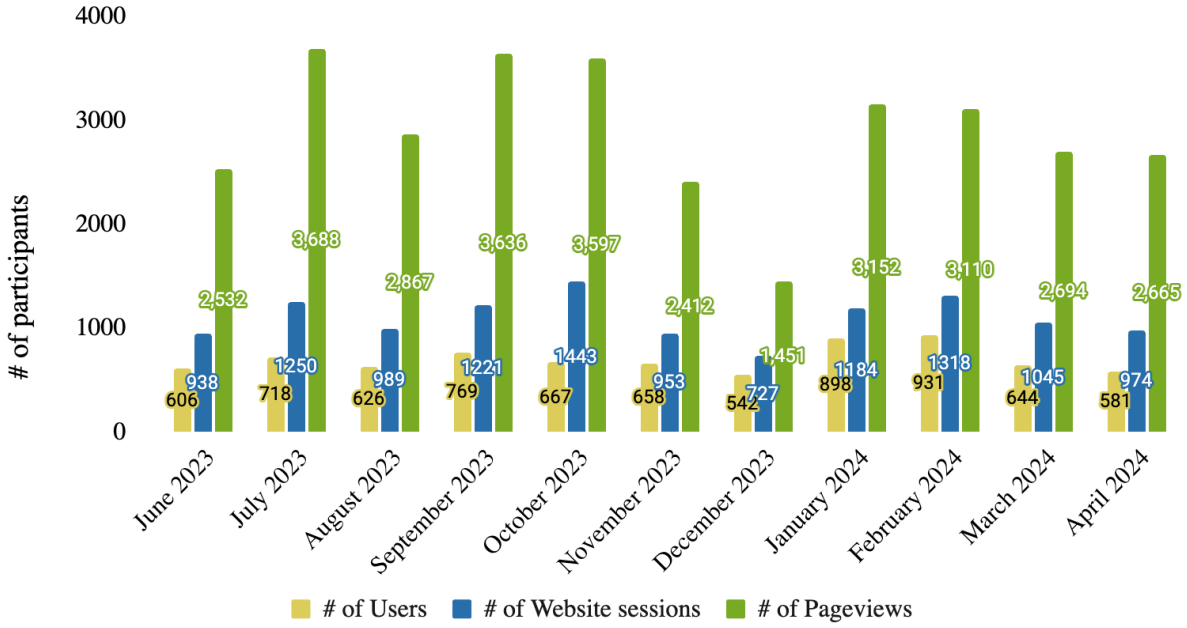
There were little to no changes in subscription numbers from outlets like the Google Group, Facebook, or Slack Channel, with the Newsletter fluctuating in engagement. However, YouTube subscriptions and views continue to rise.



Website views are strong and align with OPTYCs events and the academic calendar. Tracking of web analytic data related to the OPTYCs website and online reach (e.g., TYC Google Group, newsletters) continued monthly for Y2. With 2,050 hits in the first quarter (January - March 2024), the OPTYCs homepage drew the most traffic. Pages with frequently offered events, such as Tandem, CPDW, and DEI, followed with higher page hits, particularly in quarters where events from each program took place (e.g., Tandem in July 2023). As OPTYCs has provided more content and events, we see more activity on the OPTYCs website, with pageviews peaking at 3,688 views in July and similar pageview counts in subsequent months that mirror activity in the academic year. We see similar trends in the number of non-unique users engaged in the OPTYCs website and the number of website sessions begun, where a session is a period during which a user interacts with the website.

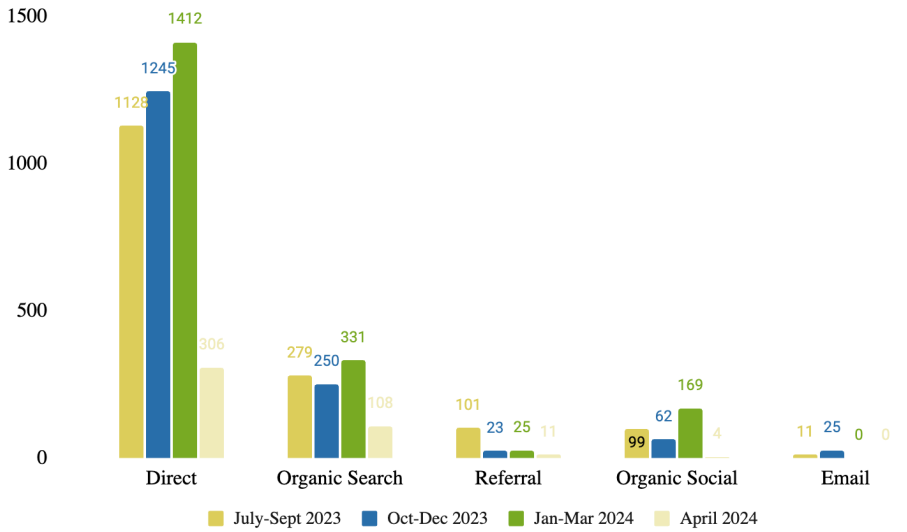


OPTYCs Website user count, pageviews, and new sessions open maintained very consisted levels of activity that mirror the academic year



Most website visitors go directly to the URL. Search and referrals are increasing. The majority of users accessed the OPTYCs website primarily through direct sources (i.e., when a visitor arrives directly to the website without having clicked on a link on another website), while the remaining users arrived at the website through organic search sources (e.g., Google search) and organic social (e.g., social media) sources. Note that the last quarter of Y2 for OPTYCs is not yet complete so we have only up to April 2024. There were increases in organic search, referrals (i.e., traffic that comes to the site through unpaid links on other websites, not

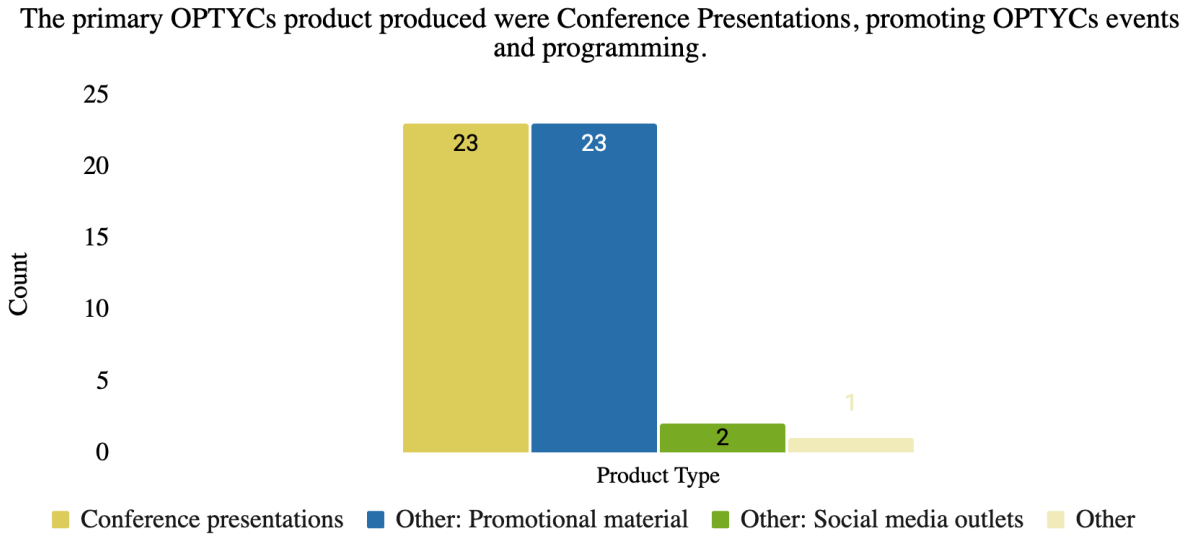
Since July 2023, users arrived at the OPTYCs website primarily through Direct Sources



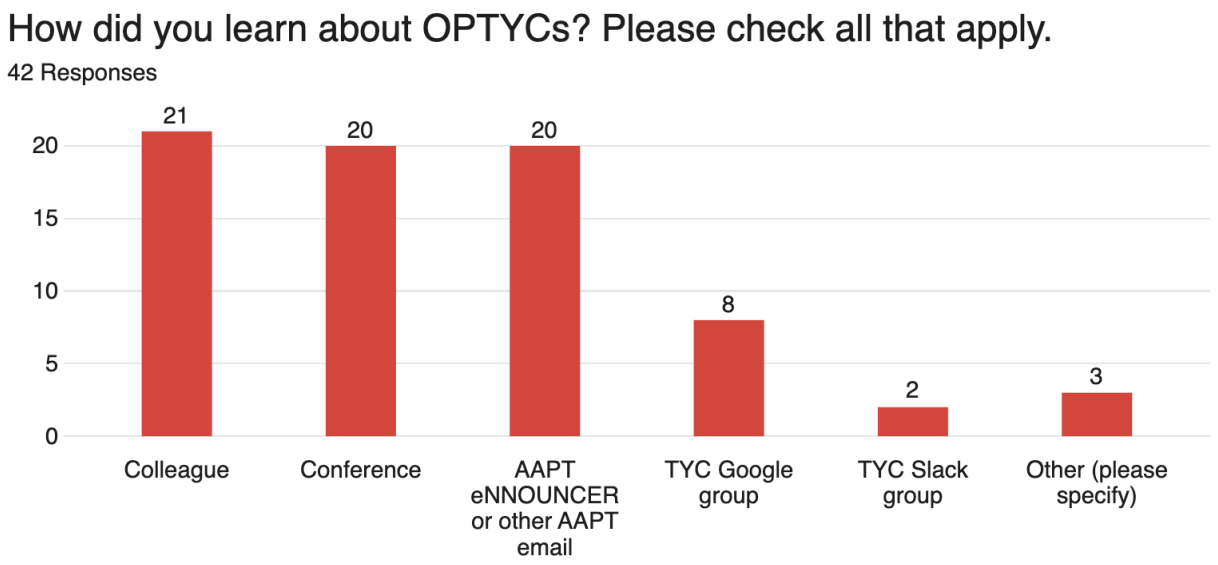
including search engines and social media sites), and even email, showing that OPTYCs reach is increasing.

OPTYCs advertising and resources

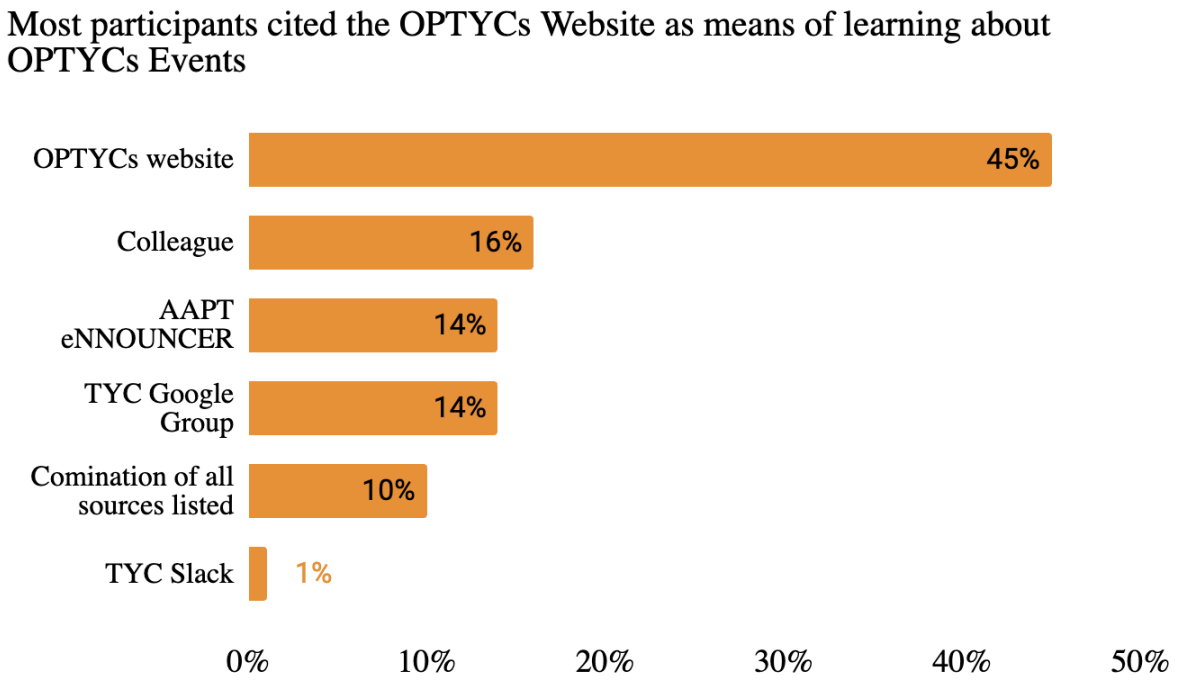
OPTYCs products have included many conference presentations and promotional activities. OPTYCs products this year have focused on continuing to recruit participants into programs, while also showcasing the results of program progress. Several conference presentations have been held across regional and national AAPT meetings to share OPTYCs programming, and promotional materials, such as the bi-weekly newsletters and fliers for recruitment have been produced.



Colleagues, conferences, and AAPT announcements continue to be critical advertising for OPTYCs. OPTYCs uses a variety of advertising venues, including the community engagement opportunities described above. On the OPTYCs annual survey, we asked where people learned about OPTYCs. Most indicated colleagues, conferences, and AAPT announcements as where they learned about OPTYCs.

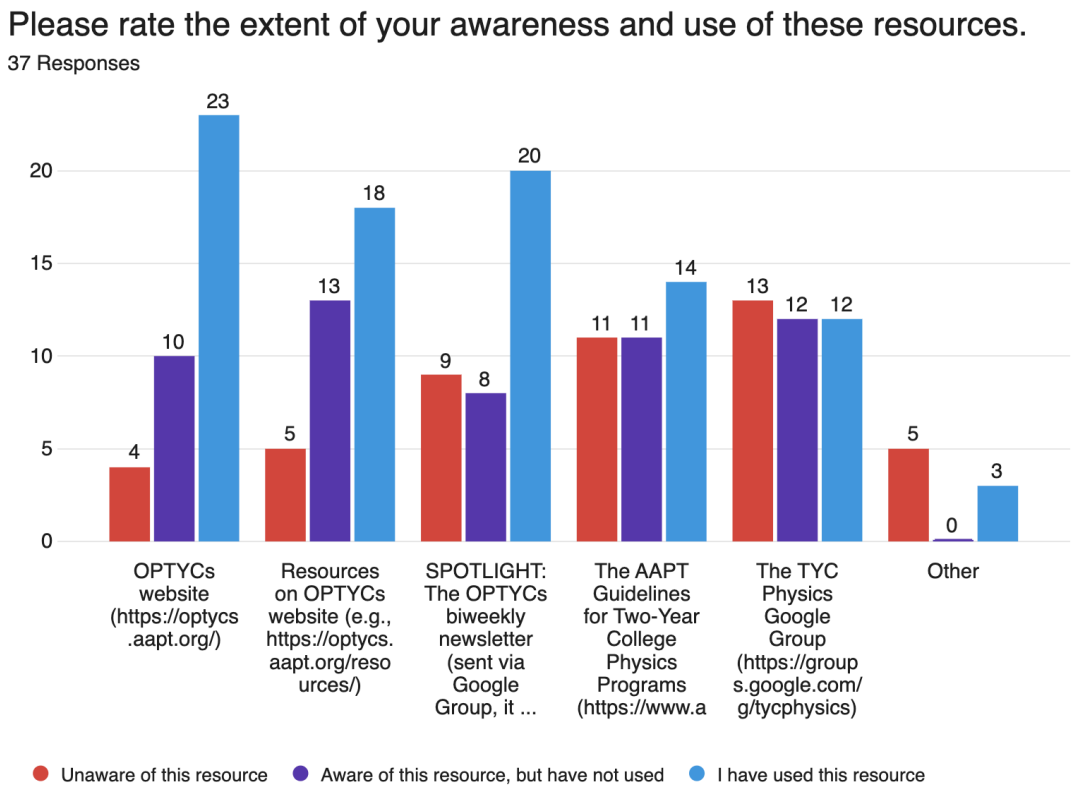


Once people know about OPTYCs, they learn about events through the OPTYCs website, colleagues, AAPT, and the TYC Google Group. We asked people participating in registered events where they learned about the event they were attending. They mentioned the OPTYCs website, colleagues' word of mouth, and also listservs like AAPT eNNOUNCER and the TYC Google Group.



OPTYCs is sharing resources, but the Guidelines and TYC Physics Google Group rank lower in awareness. One of OPTYCs' goals is to share information about resources available to TYC faculty. The charts below indicate the level of awareness and use of these resources, with the OPTYCs website and Newsletter being widely used, and the AAPT Guidelines and, surprisingly, the TYC Physics Google Group, being less known. There may be confusion around listing the Google Group as a resource because faculty may not realize that being part of the listserv, or that accessing the listserv could be a resource.

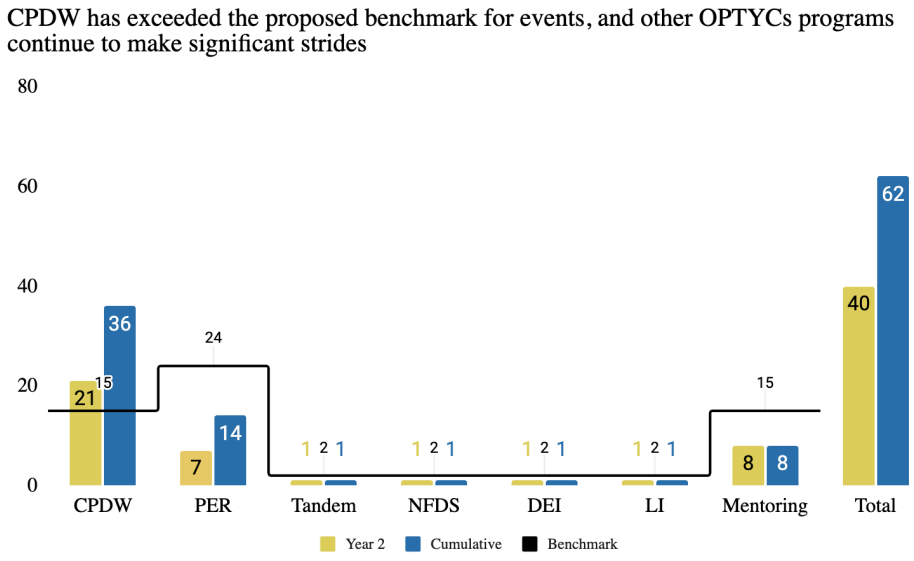
Additionally, 38% of annual survey respondents indicated they were using resources that they learned about in OPTYCs (but not necessarily created by OPTYCs), such as Experimental Design labs and Underrepresented Curricula.



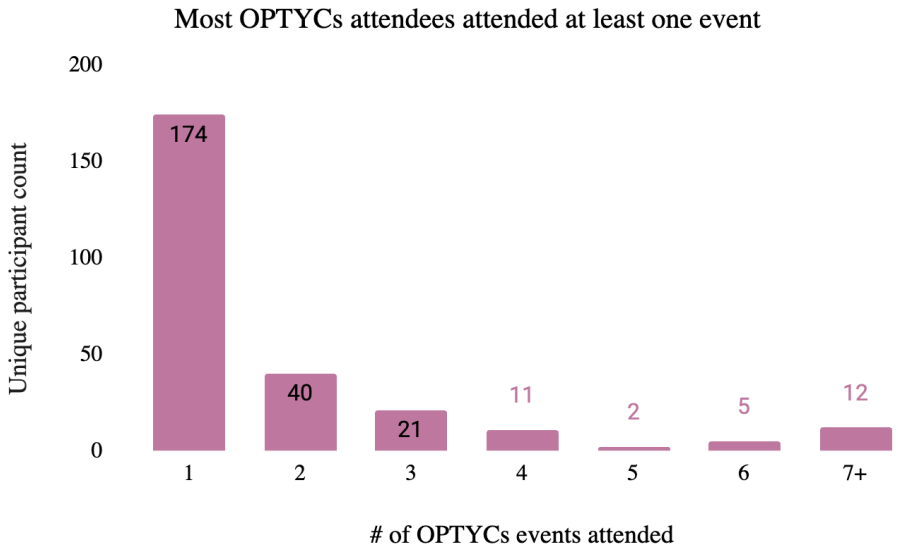
Events

OPTYCs is meeting or exceeding its targets in terms of events offered, with 62 total events cumulatively, and 40 events in Year 2.

As of April 2024, OPTYCs has provided a total of 62 cumulative events across a variety of programming. CPDW is already exceeding proposed event targets, and all other programs are on track to hit benchmarks by Y4 or earlier. Note: For Mentoring, this was number of active groups from last I had seen.

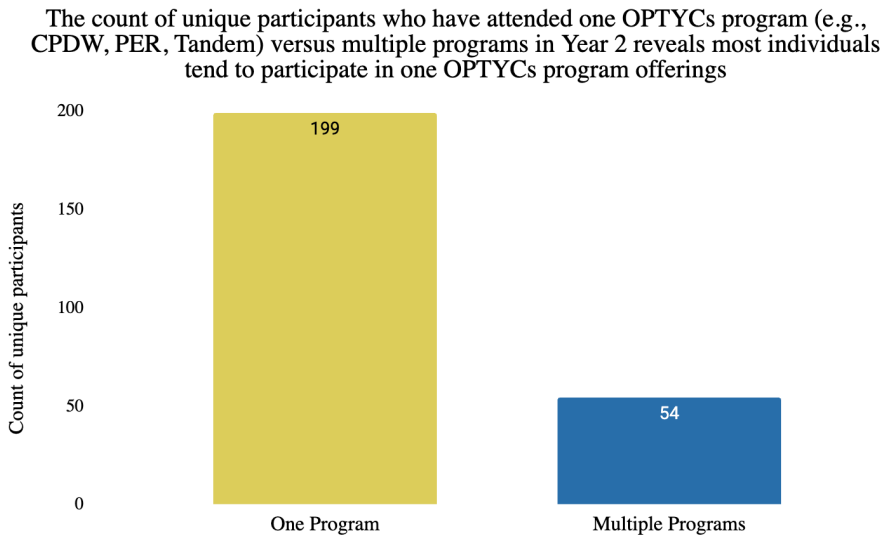


Most participants attend just one event, but there are increases in the number of participants who attend more than one online event compared to Year 1. When reviewing the total unique participants in OPTYCs events (only CPDW and PER) cumulatively via registration data (N=265 of only CPDW and PER registered folks), most participants attended at least one event, many two or three, and fewer attended 4+ events.

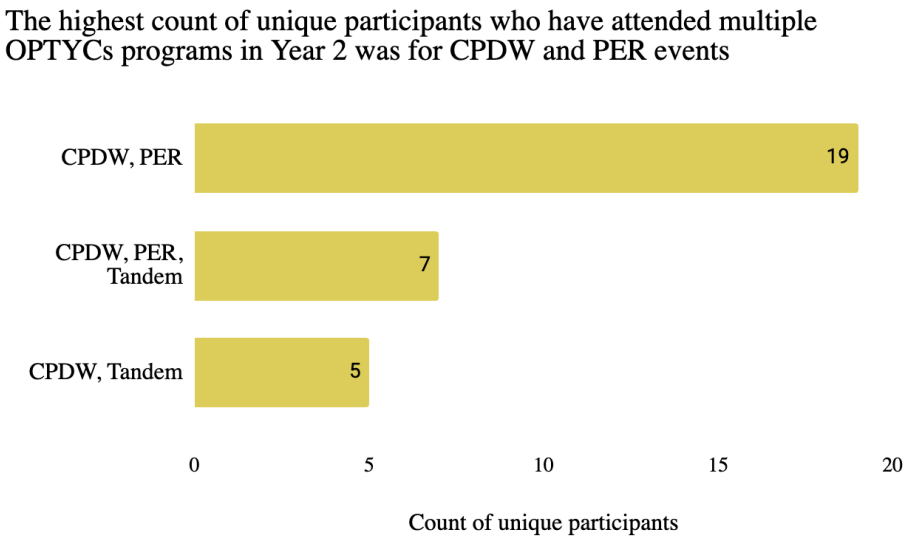


Participants

Of 253 unique attendees that have participated in OPTYCs for Year 2, 79% (n=199) have participated in one OPTYCs program (e.g., CPDW, PER, LI, DEI, NFDS, Tandem), while 21% (n= 54) have attended across multiple OPTYCs programs.

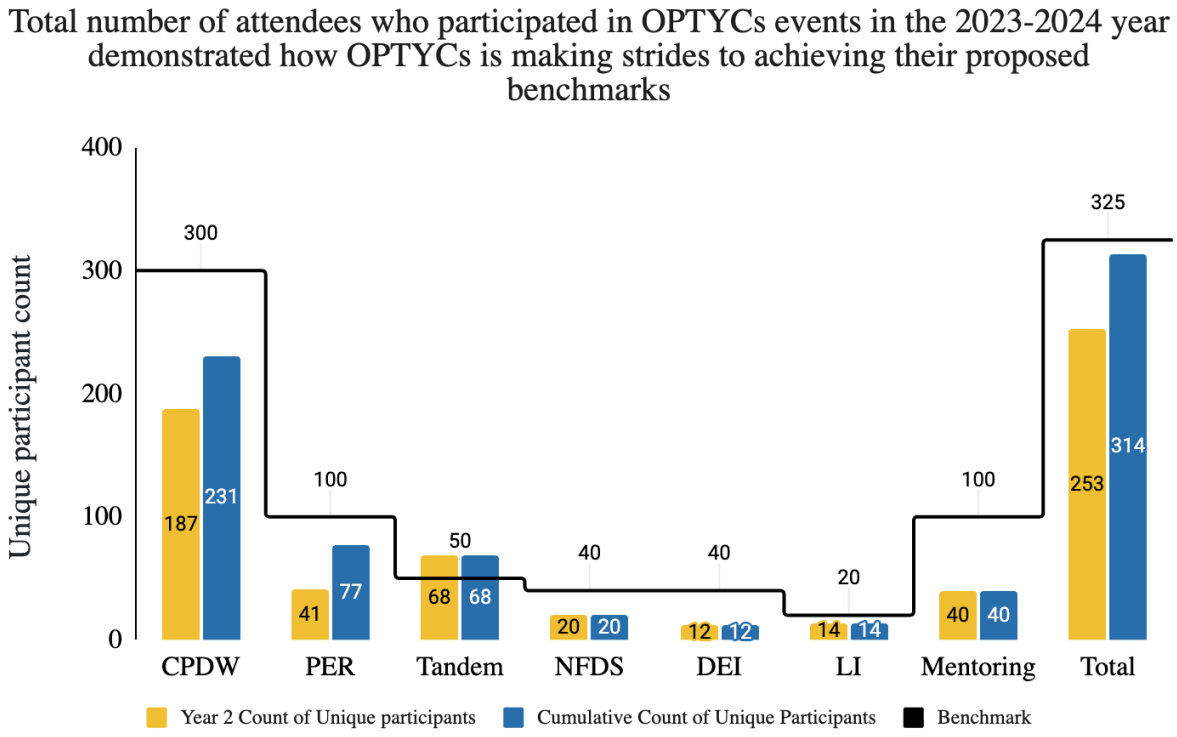


As of registration data downloaded on 04/30/2024, N=199 unique attendees participated in at least one OPTYCs event: in CPDW only, PER only, LI only, DEI only, NFDS only, or Tandem only. However, there is a growing number of individuals who are attending across OPTYCs programs, with 54 participants attending one or more OPTYCs programs. The most popular crossovers of programs were between CPDW and PER, with (n=19).

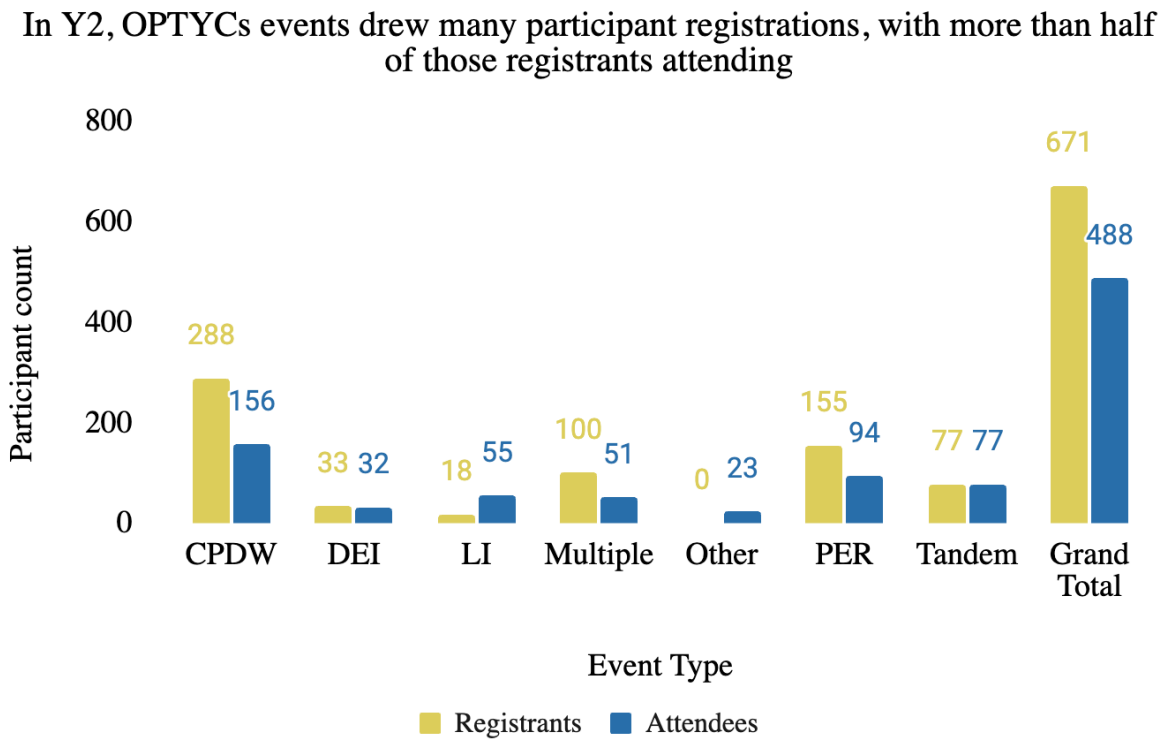


***Note** that only the top 3 combinations of events unique participants attended are displayed. Other combinations such as PER, Tandem, DEI exist but for a range of 1-3 individuals.

Target numbers of participants are steadily being reached by most programs, some are exceeded, and others need to be carefully considered how targets can best be met. When comparing these totals with the target number of unique participants throughout the program, CPDW, PER, NFDS, and LI are making solid strides toward their benchmark targets. Tandem has already exceeded its target goal, with another Tandem Conference to be held in Y3. At the same time, I am concerned that the DEI Change Team and Mentoring Group will need to prepare for greater recruitment efforts, with 28 and 60 participants needed for each program, respectfully, to hit targets.



About 72% of registrants attend events, which is up by 22% since Y1.
OPTYCs events drew many participant registrations, with now more than half of these registrants attending (72% total). Specifically, 54% of registrants attended CPDW events and 61% of registrants attended PER events, 51% attended multiple events, and 100% attended DEI, LI*, and Tandem.

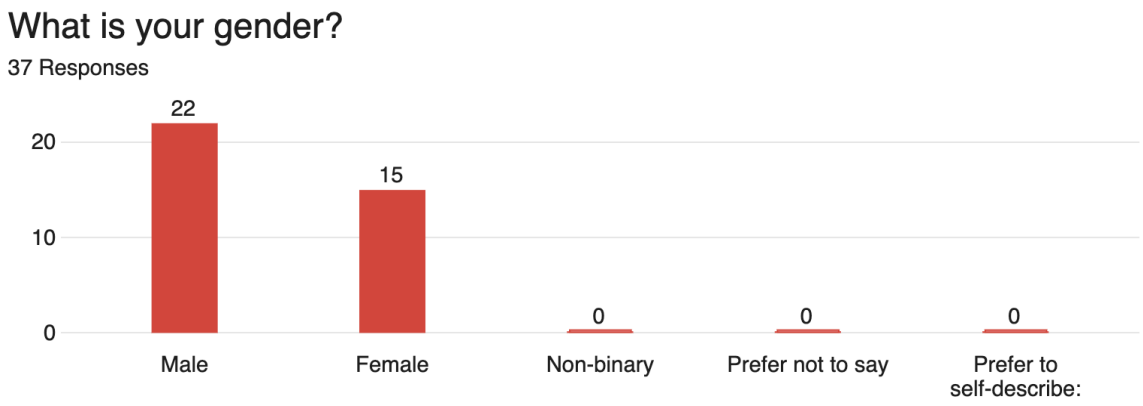


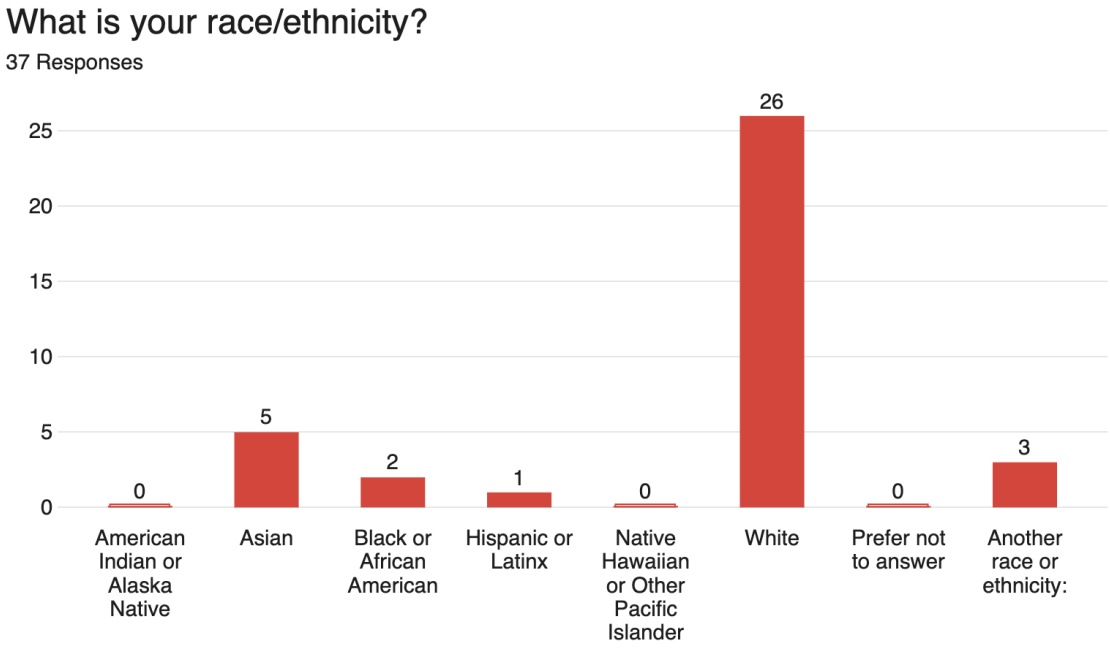
***Note** that these data were taken from the Events tab in the OPTYCs Portfolio. The LI had some blanks in the number of registrants surrounding their virtual Kick-off Meetings, and only had records of attendance numbers (not registrants and attendance). Other events include Advisory Board meetings or Guidelines Working meetings, etc.

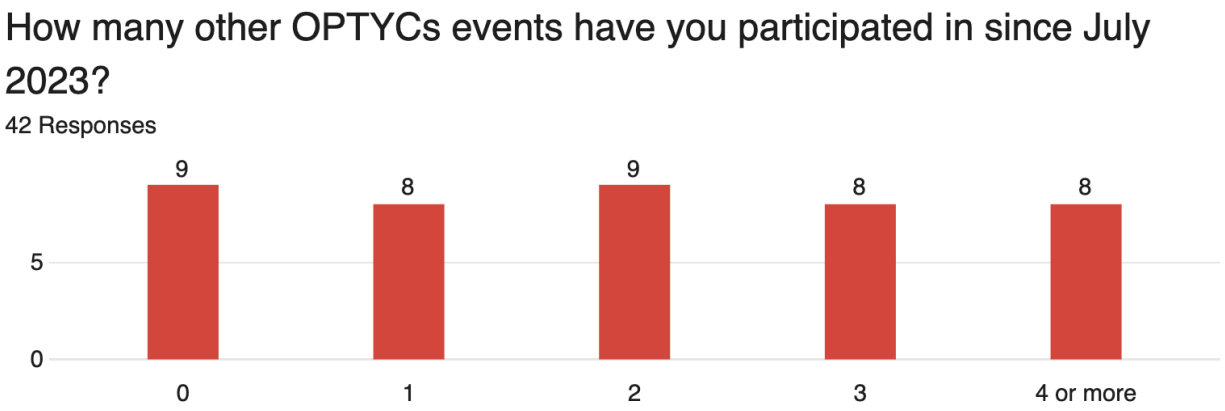
Annual participant survey

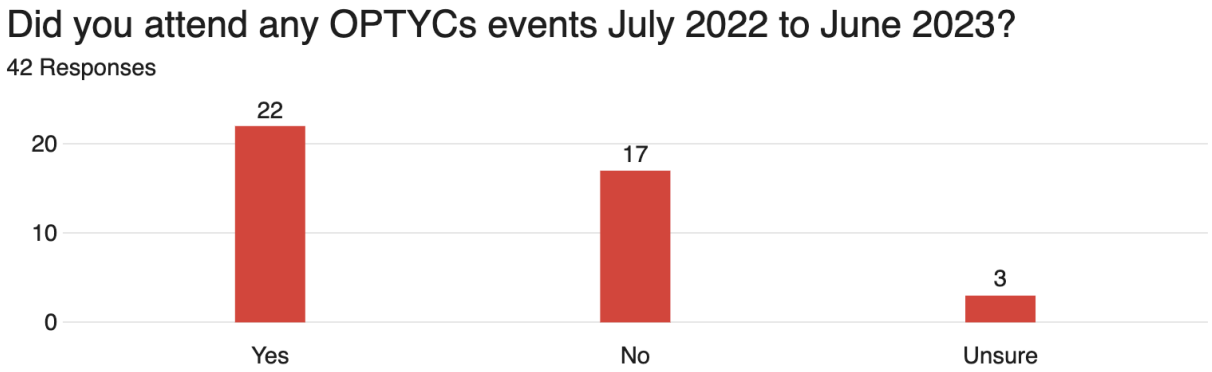
About the respondents

We received about 42 responses for the annual participant survey, though not everyone completed all survey questions, making responses range from 37-42 throughout. **This number represents about ~13% of the 314 unique participants in OPTYCs cumulatively, and ~17% of the 253 OPTYCs participants from just Year 2, which is very small.** The sample demographics are similar to event registration data regarding race and ethnicity, however. **Many respondents were also regular returnees,** who have participated in more than 1 event in Y2 and more than half (n=22) have attended OPTYCs events in Y1 (July 2022-2023).



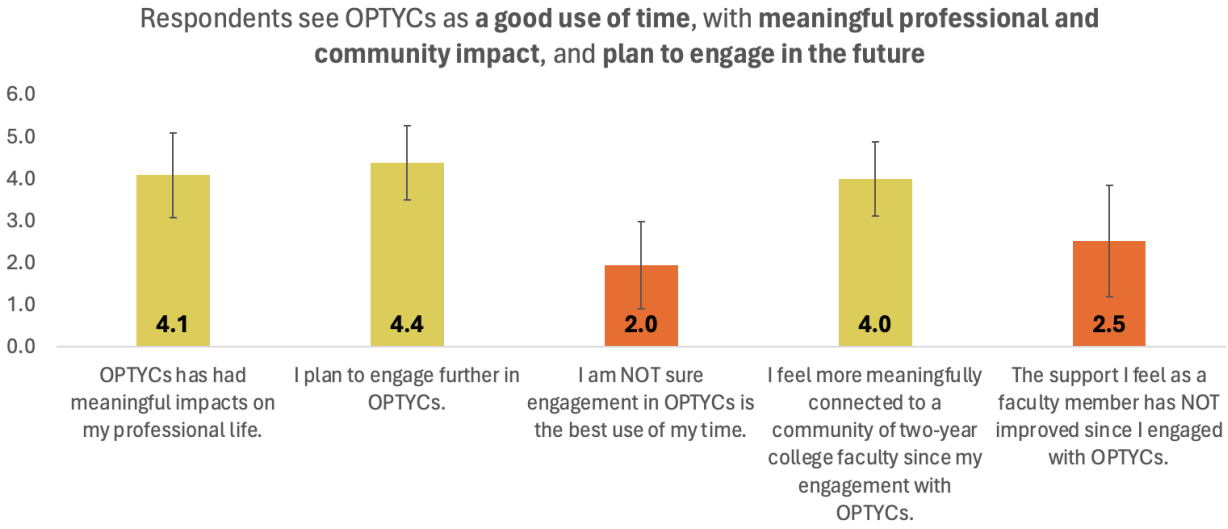






Benefits and satisfaction with OPTYCs

Respondents see OPTYCs as a good use of time, with meaningful professional and community impact, and 90% (n=38) of respondents plan to engage in the future. These results are compelling and show that participants value what they get from their engagement in OPTYCs. Respondents indicate that they have received meaningful support already from OPTYCs; 83% feel OPTYCs has had meaningful impacts on their professional life, 73% feel more meaningfully connected to other TYC faculty, and 50% feel their support has increased since engaging with OPTYCs.



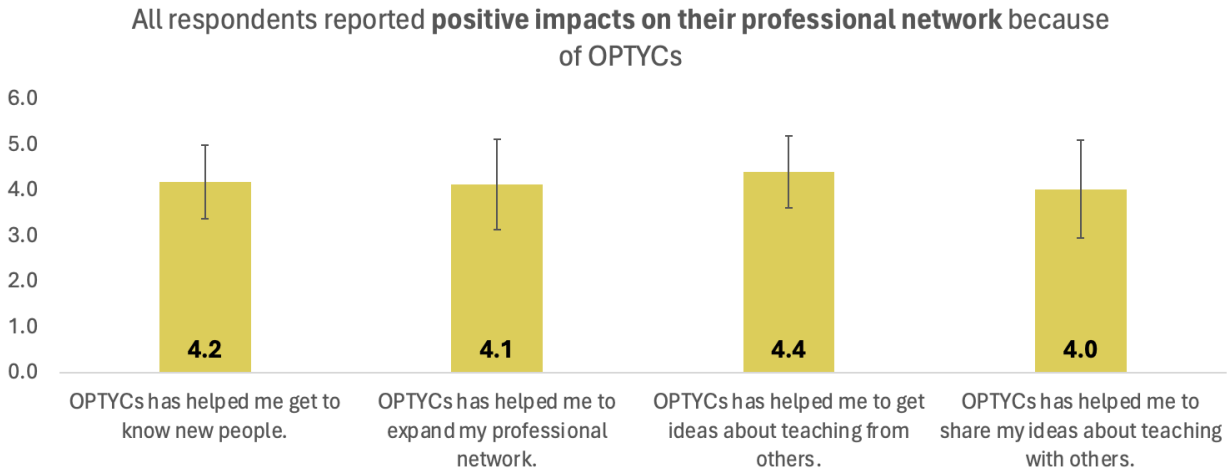
One individual beautifully articulated their thoughts on the impacts of OPTYCs personally and professionally:

"My engagement with OPTYCs has been an immensely rewarding experience, both ***personally*** *and* ***professionally****. On a personal level, OPTYCs has provided me with wonderful opportunities to* ***connect with colleagues who share my passion for physics education at two year colleges****. Through Tandem workshops, the Leadership Institute and collaborative projects, I've had the pleasure of* ***forming meaningful relationships and gaining new perspectives that have enriched my life in countless ways.***

Professionally, OPTYCs has been invaluable in ***supporting my growth as an educator. The resources and insights shared within the OPTCs community have helped me refine my teaching practices and develop innovative approaches to engage my students."***

OPTYCs has benefited the community through resources, support, and community building. Additionally, respondents generally agreed that OPTYCs has helped them learn from this community, particularly getting ideas about teaching (82%), meeting new people (82%), and expanding their professional network (71%). Fewer agreed that OPTYCs has helped them to share their ideas with others, making this a potential area for growth. In the open responses, one respondent indicated that there was not a space for them to share their ideas or resources that they knew of, so we may want to consider how to open up a discussion board or direct them to a space where this may occur already for the physics education community.

"OPTYC has a created a space for TYC faculty to share experience and learn from other colleagues. It has allowed me to connect with some new physics faculty at TYC and bring closer the ones which I already had."



Almost all respondents could name tangible benefits as a result of their participation in OPTYCs, especially community and learning.

Out of 42 respondents, 86% (n=36) could name benefits they had received already as a result of their engagement. When discussing the benefits, they listed resources, learning new teaching ideas, community building, networking, and attending programs as professional development.

- Resources and learning new ideas (N=22)
- Community building, networking, and idea sharing (N=17)
- Attending professional development and events (N=3)

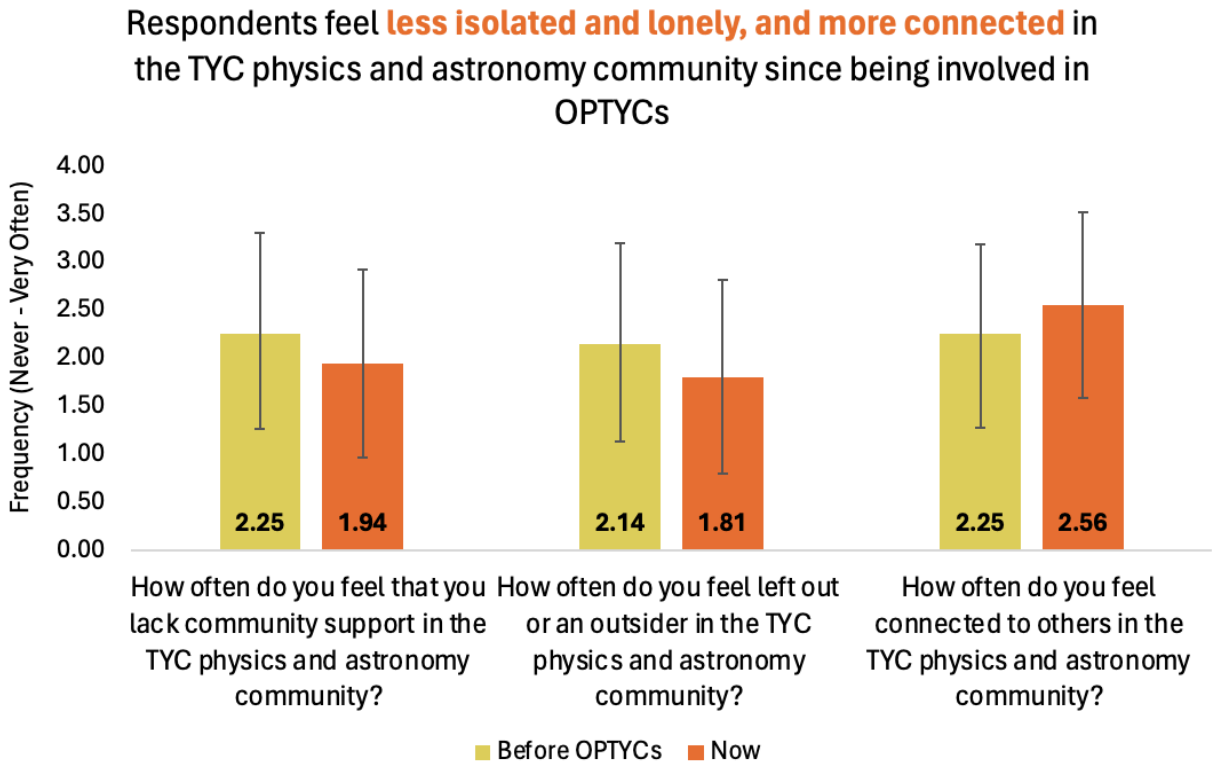
For example:

- *The OPTYCs program has been a great resource for connecting me to other TYC faculty which has eased my immersion into AAPT on the whole.*
- *I have been able to attend webinars to learn about topics in physics teaching and hear what my TYC colleagues are thinking about and doing.*
- *I really enjoyed talking to new colleagues. I appreciated the seminars/talks that have been offered.*
- *Yes, OPTYCs has helped with spreading ideas about teaching that have been useful to me, as well as introducing me to a wide variety of people who also teach at two year colleges.*
- *I have attended webinars, utilized tools, and sent information to other colleges. It is nice to have this resource.*

- *Yes, I have made personal and professional connections through networking in the DEI program.*

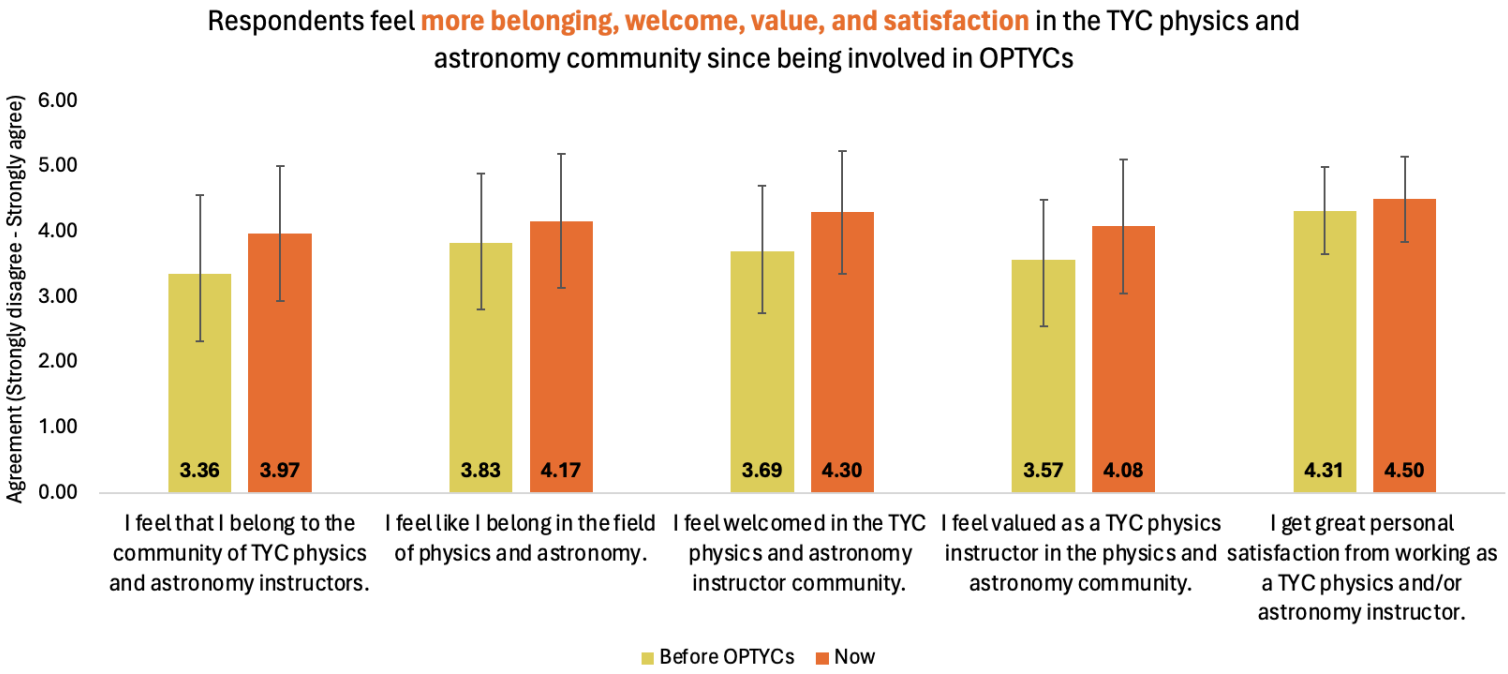
Identity and belonging

Respondents feel less isolated and lonely, and more connected in the TYC physics and astronomy community since being involved in OPTYCs. Two sets of questions measured community connection/loneliness, and a sense of belonging. Respondents feel community connections have shifted in positive directions since OPTYCs (less loneliness and more connection). However, some do still feel moderate to low loneliness, despite it not being as much as before OPTYCs participation. Thus, **continued facilitation of authentic community connection will be imperative for OPTYCs to support the TYC physics instructors**.



Respondents feel more belonging, welcome, value, and satisfaction in the TYC physics and astronomy community since being involved in OPTYCs. However, of all the belonging questions, the lowest two averages were for (1) *feelings of belonging to the TYC physics and astronomy instructor community* and (2) *feeling valued as a TYC physics*

instructor within the community at large. These may be two places to consider future work in. They strongly agree that they get great personal satisfaction from their job; this passion can continue to be leveraged by OPTYCs to achieve their goals, especially around leadership development.



Feedback for OPTYCs and Suggestions for Improvement

Many participants praised OPTYCs efforts and the impacts they are making, with some places to consider changing. Though many individuals did not have suggestions at this time and encouraged OPTYCs to "keep doing what you're doing!", other respondents provided places they pointed to for OPTYCs to consider adding or changing, such as:

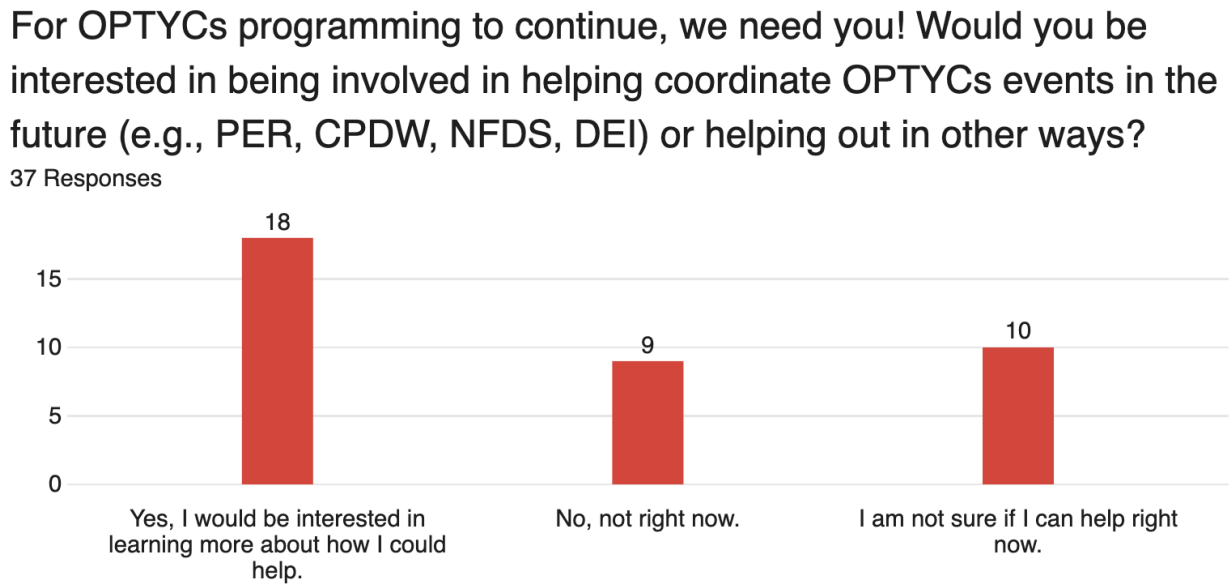
- **Continue workshops and consider adding more workshops/resources with specific topics** such as teaching physics online both asynchronously and synchronously, or how to contribute to Openstax courses.
- **Place for resources and/or discussion from the community to be held -** *"I'd love a forum for meaningful discussions of such things [teaching ideas]. It would need to be easy to find from the OPTYCs home page to be useful to busy adjuncts."*
- **Longer events (e.g., LI, Tandem) - "***By extending the duration of these key events, OPTYCs can better support the professional growth and development of its members,*

fostering a stronger sense of community and collaboration among two-year college educators in the field of physics/astronomy."

- **Continue regular communication - "***I like that it's there and I get regular email reminders about events that I can participate in or not."*

Interest in Future involvement from annual survey

When asked if respondents would be interested in helping coordinate OPTYCs events or getting involved, **16 individuals left their emails! Please see the list of interested volunteers emails in the survey results linked to get in contact with them this summer.** This may be a good pool of individuals to draw from for help and may be the beginning of a list of people to add to throughout the year.



Specific program feedback from the annual survey: PER

On the annual survey, 8 people indicated that they have been involved in the PER interest group, but an additional 13 said they would like to be interested in the future and 11 individuals were still unaware of the program. For those 8,

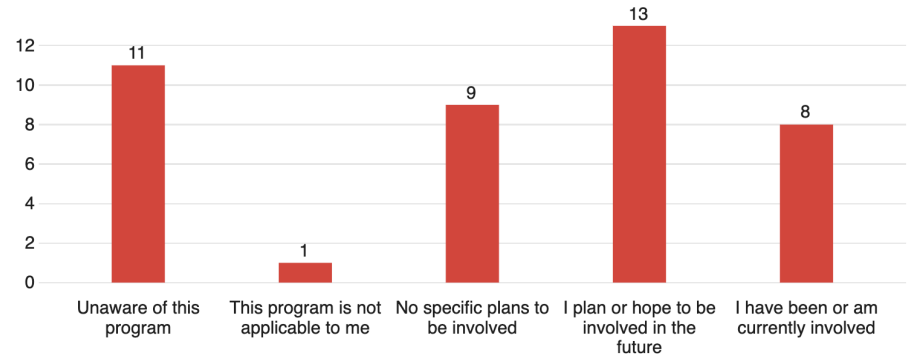
- Almost all, 88% (n=7), indicated that they have used what they learned from a PER event in their work listing examples like reevaluating grading approaches, modifying curriculum based on PER, and adding to courses. Unfortunately, Many other

examples were vague, citing "ideas to change my class" without particularities about how.

- Most (n=5) felt that PER group has supported two year college faculty in pursuing their various interests in PER "to a large extent."
- Many (n=6) of the PER respondents plan to continue participating. All were "likely" or "extremely likely) to attend at least one PER event in the next semester, and
- All (n=8) agreed that they have grown in their knowledge of PER-related topics because of OPTYCs.
- When asking all the survey respondents about their use of the Data Explorer Tool in PhysPort, 78% (n=29) had not.

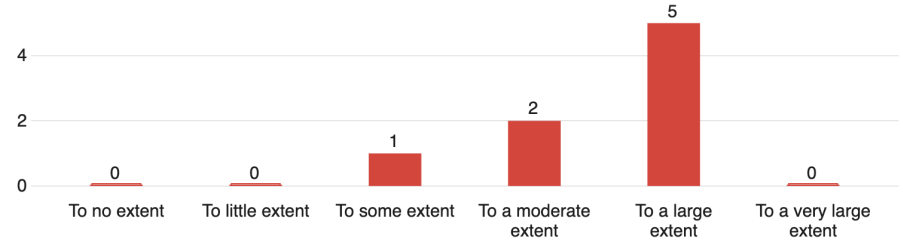
Have you participated in the OPTYCs Physics Education Research (PER) Interest Group since OPTYCs began (July 2022)?

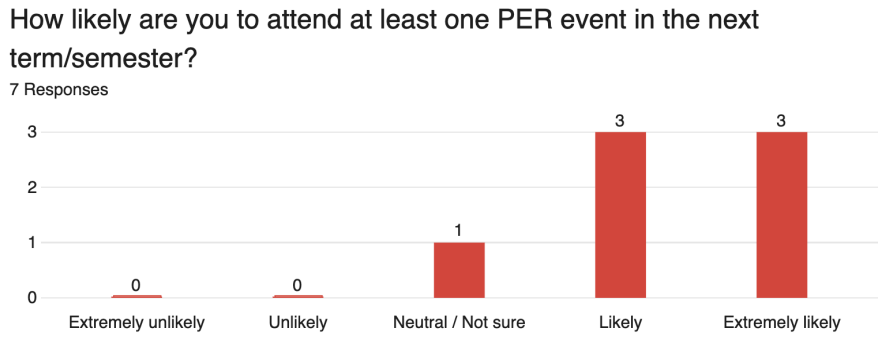
42 Responses

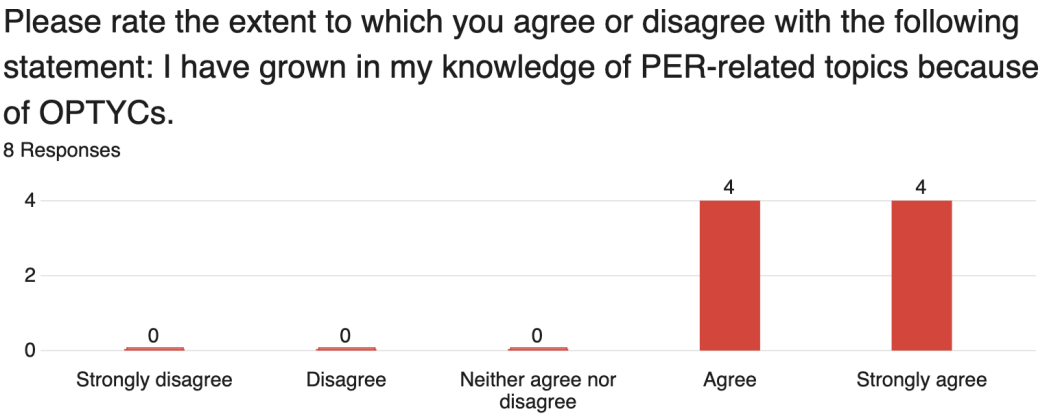


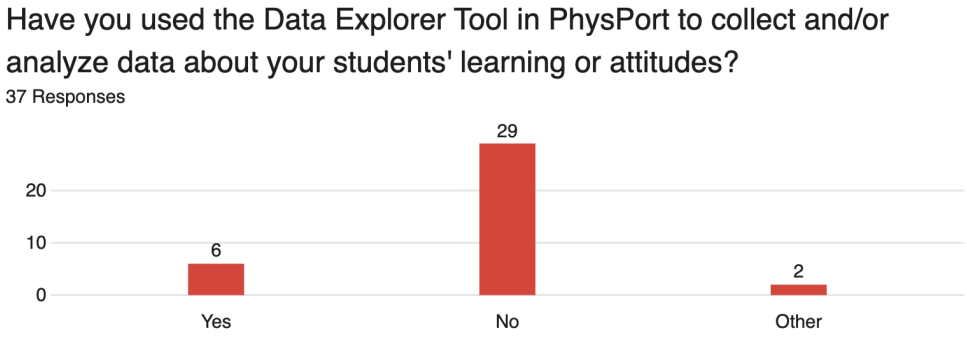
To what extent do you feel that the Physics Education Research (PER) Interest Group so far has supported two-year faculty in pursuing their various interests in PER?

8 Responses









Some benefits they discussed were:

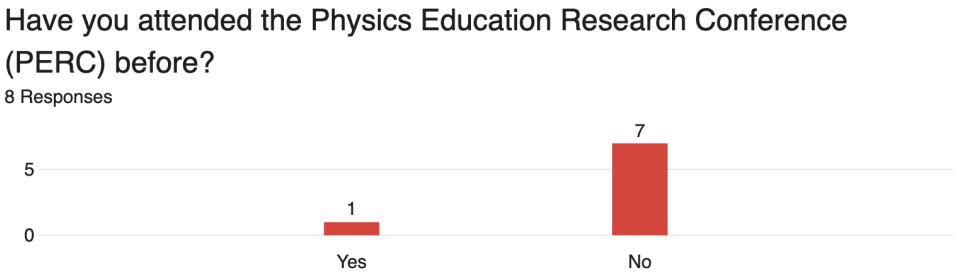
- *"I find it useful to hear from colleagues about their PER experiences because I don't have enough time to keep fully up to date on my own."*
- *"Learning what others are doing, and incorporating materials into my courses."*
- *"It has helped in my planning regarding lab curriculum changes and in looking at overall approach to teaching Introductory physics."*

Some suggestions were:

- **More topics**: *"addressing challenges like online teaching of physics labs and its*

- *impact. Do online labs achieve the same learning goals as on-ground hands-on labs?", "Have a session just on teaching mechanics using PER supported curricular. They could do the same for electricity and magnetism and other topics."*
- **Connect them to Mentoring Groups -** *"I was hoping to join some kind of Community of Practice related to PER"*

When asked about PERC, many had not participated in it before, often citing **not enough time, conflicts with other responsibilities and obligations, travel and financial constraints.** This may be a place to have support to those in the PER Interest Group if there is room in the budget.



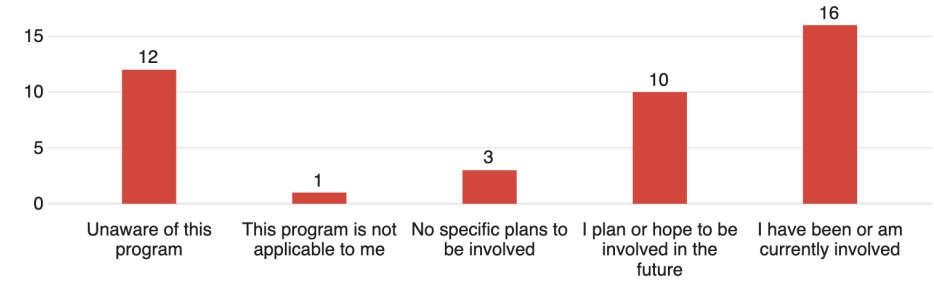
Specific program feedback from the annual survey: CPDW

On the annual survey, 16 people said that they had participated in CPDW events, another 10 said they would like to be involved in the future, and 12 said they were unaware of the CPDW program. Of those 16 who were involved:

- Almost all (n=15) said that they had used what they learned from CPDW in their life or work, listing examples like reconsidering small group work composition, surveying students, assignment changes, etc. Similar to PER, however, many other examples were vague, with participants saying "I have implemented things seen" without particularities about how.
- 93% (n=14) felt that CPDW events had directly impacted their students to at least some extent.
- 93% (n=14) felt that the CPDW events had supported a networked community so far
- All respondents were likely to attend at least one CPDW event in the future.

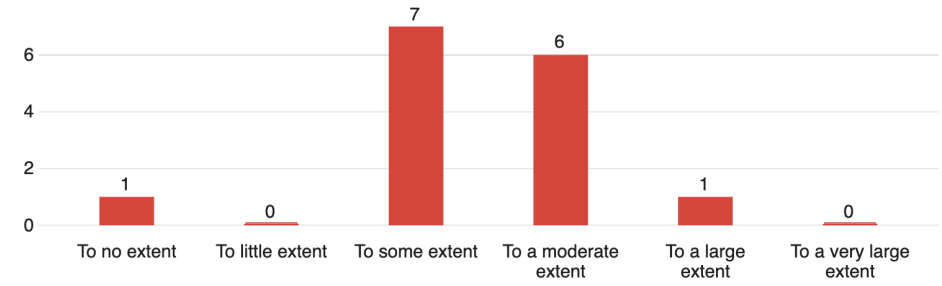
Have you participated in the OPTYCs program "Continuing Professional Development Workshops" (CPDW) since OPTYCs began (July 2022)?

42 Responses



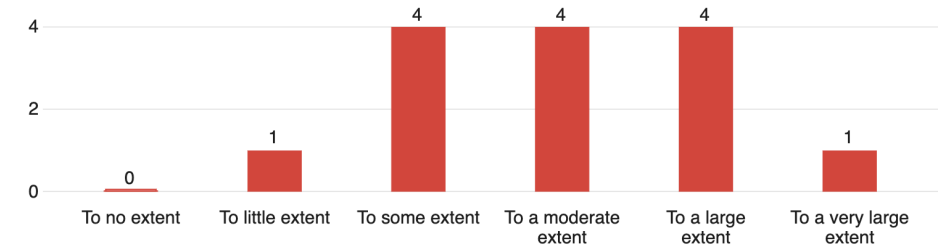
To what extent do you feel that the CPDW events so far have directly impacted your students?

15 Responses



To what extent do you feel that the CPDW events so far have supported a networked community among two-year college faculty?

14 Responses



How likely are you to attend at least one Continuing Professional Development Workshop (CPDW) event in the next term/semester?

14 Responses

Some benefits to both themselves and/or their students indicated were:

- *"Yes, the events have been most helpful to go to live and engage with the conversation, which I've done several times. I also like the way that the events are available afterwards if they are not at a great time. I got some great ideas for a couple of assignments to add to my classes, which I've tried but am still tweaking to improve."*
- *"I have learned a number of different "tools" to use. For instance, I can see how to use LaTeX in my courses. I can see how to modify my lab curriculum to include a scientific reasoning approach. There are a number of other ideas gained from the CPDW workshops that I would like to implement."*
- *"I had no idea there were so many resources already to help me become a better instructor."*
- *"It's hard to point to one specific thing, but I hear a tidbit or two and that would sound interesting enough for me to do/implement/evaluate in my course."*
- *"Students like the variety of instructional techniques I use in classes. These have come from many PD efforts of TYC groups."*
- *"Mostly improved [student] engagement."*

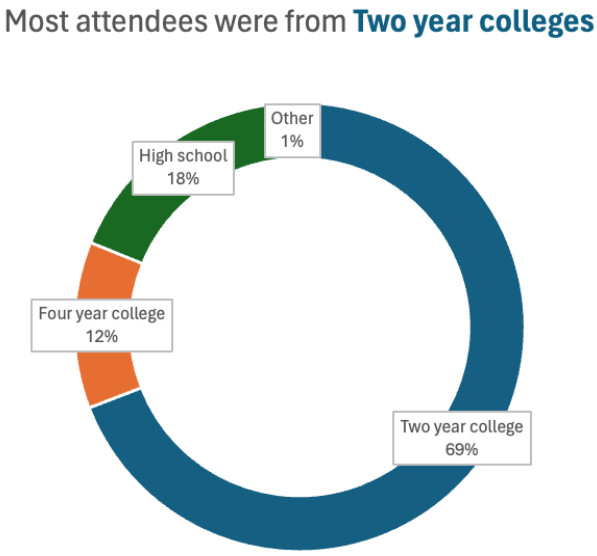
Some suggestions were:

- **Other workshop ideas -** *"Maybe a workshop or two on how a faculty member has implemented some of the ideas into their curriculum and any idea of their impact on their students.", "More stuff on AI.", "How do physics faculty at TYC approach online and Hybrid teaching of physics courses that involve lab?"*
- **Consider how to increase interaction for interested individuals after the workshop** (Mentoring Group formation for this?) **-** *"There isn't much chance for further interaction after the workshop. Not sure how that could be changed, though, since everyone is very busy and incorporating new things into a schedule is difficult."*
- **Continue recording and posting workshops online -** *"Please keep the recordings of the Zoom meetings. That's been the only way I can participate."*

Feedback surveys for CPDW and PER events

A short feedback survey was given at the end of each CPDW and PER OPTYCs event. A total of 175 responses were received from N=26 events (including partnerships with STEPUP and in-person events at Section Meetings), representing at least 61% of those receiving the survey (258 non-unique attendees across 26 events). The average response rate was 67% of attendees. Below are aggregate responses across events.

Most respondents were at TYCs, and these TYC attendees had often attended another OPTYCs event. Events were widely open, but most attendees (N=121, 69%) were at TYC. High school teachers were also of high attendance at OPTYCs CPDW and PER events. Additionally, before we removed the question, many individuals had attended 1 or more OPTYCs events, with some newcomers.



Respondents reported a high likelihood of using what they learned in their classroom. The most common response was at the top of the scale (5 = "very likely") to implement something they learned from today's event (n=82, 47% respondents), and both averages were nearly as high (average of 4.26). This finding was true of all respondents and of TYC-only respondents. Comments on what worked best at the workshop ranged in responses, but the main themes followed:

- **Interactive, hands-on activities -** *"The interaction among participants, the "hands-on" activities and, of course, the information provided."*
- **Discussion or work with others, sharing ideas with others, especially in small groups -** *"I think I enjoyed the whole group discussion to hear all of the ideas instead of the breakout rooms.", "The discussion both in the chat and in the call were both great.", "Chatting with other faculty.", "Sharing lab ideas from colleagues.", "I really liked the participation spaces."*
- **Learning new ideas and new resources -** *"Finding activities and resources for my classroom.", "Sharing the materials in the one-drive"*
- **A knowledgeable facilitator, answering questions -** *"Knowledgeable hosts, quick, useful responses to chats.", "Interactive session and knowledge and wisdom of presenters.", "Good presentation and thoughtful answers to all questions."*

Suggestions for improvement often included timing/pacing or requests for more discussion. Most had no suggestions for improvement, but many did give comments. Those comments frequently related to:

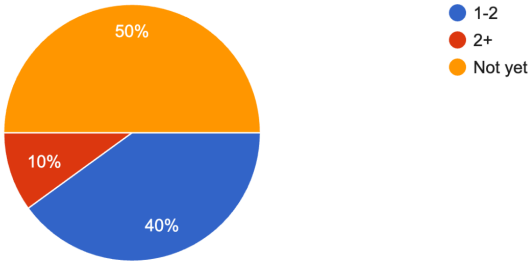
- **Pacing, more time, less time, shorter introduction to save time** - *"It felt rushed. Maybe fewer example activities & more Q&A?", "Longer time in the 2nd breakout room.", "To save time, introductions (name/college/location/fun fact) in the Zoom chat, instead of going around everyone."*
- **More time for discussion or less talking** - *"I wish we could have had more time for discussion! But I think there are other good reasons for limiting it to 1 hour."*
- **Technical, audio, or visual issues, access to resources issues** - *"The Menti slides didn't work (oh well!)", "Better to have a folder with discussion materials we can all access at once.", "It was tough to draw on the whiteboard within Zoom. We are all searching for a good option since JamBoards are disappearing."*

Overall, this data suggests that OPTYCs is hitting suitable topics, presenting information of great interest to the community. It is critical to continue to weave in opportunities to try out the ideas presented and discuss them, as that is what most respondents enjoyed the interaction most. It is also important to attend to timing or pacing issues, giving appropriate time to introductions (not too long if any), leaving adequate time for discussion and interaction, and help keep the agenda on track.

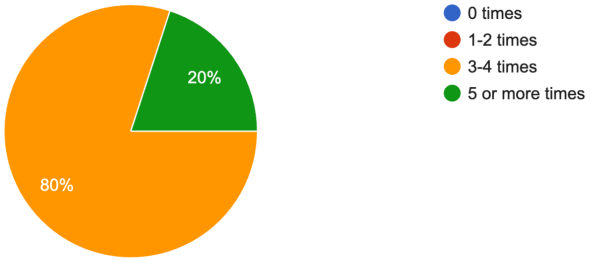
Program Focus: Mentoring Group

In Year 2, we conducted two check-ins with mentoring groups by sending quick feedback surveys, one sent on November 28th, 2023 (n=10), and a second on April 23rd, 2024 (n=6), asking about how things were going, if they needed support, and suggestions for improvement. Initially, half of the participants indicated their groups were meeting regularly, and the other half were not, though by the second check-in survey, respondents had met at least 3-4 times in the last 6 months.

How many times have you met with your group?
10 responses



How many times has your mentoring group met in the past 6 months? (Virtually
5 responses



The main benefits they listed of being part of the Mentoring group were:

- **Connecting to the TYC community** - *"it has been nice to have folks to bounce around ideas with", "It's pretty lonely being the only astronomy instructor at my institution", "it is a great way to connect to others in similar situations, especially if you are at a small institution"*
- **Resource sharing** - *"Lots of curricular ideas", "folks sharing resources that they may not have otherwise thought of sharing", "It has given me some really good ideas professionally and helped to talk to other Astronomy instructors."*
- **A place to share, hear, and learn from different experiences** - *"The open conversation format we have adopted has been nice.", "It has provided the metaphorical "water cooler", to have free-flowing conversations leading to discussion of topics I may not have otherwise thought of"*
- **Being in a like-minded group** - *"A well-matched group with similar needs", "or "It is really nice to connect with other physics professors at similar institutions who have similar work ethics and values! This is especially true because I don't have this at my institution."*

Challenges and places they needed support were:

- **Difficulty scheduling** - *"It was hard to schedule them across time zones and schedules", "time zones make scheduling a meeting difficult and schedules making scheduling a meeting difficult"*
- **Meeting structure and guidance** - *"Because it's a casual meeting there can be moments where everyone is unsure of what to do/talk about next, which creates awkward silences.", "Maybe a bit more scaffolding about action steps?" "Maybe*

some direction from the OPTYCS team regarding whether or not there's anything the group should do, other than staying connected with one another."

Recommendations to support Mentoring Groups:

- **Support with scheduling -** *"This group would really benefit from having someone from OPTYCs do the first round of scheduling."*
- **Once a semester kick-off event** - *"I think that having a day where we all meet at the beginning that is facilitated by OPTYCs would help a lot. I think our group needed the leadership to start it off - like a bit more scaffolding, maybe even a kick-off event online - to get us into a synchronous breakout room together to connect."*

The Mentoring Group leadership has worked hard this year to try to solicit interest across OPTYCs programs (e.g., NFDS, DEI), at national meetings (via buddy system), and continue to check on and shuffle groups to the most effective combinations of individuals based on changing circumstances. Based on the abovementioned recommendations, supporting groups by scheduling that first meeting and having a once-a-semester or beginning-of-the-year kick-off event to gather everyone and then send folks out into breakout rooms within their mentoring group may continue to foster that sense of community.

Please see these Google Form Reports for all results:
Mentoring Group Check-in 1, Mentoring Group Check-in 2.

Program Focus: Continuing Professional Development (CPDW)

In Year 2, we focused on evaluating the CPDW program from OPTYCs in greater depth. Outside the normal post-event feedback surveys, we conducted 1) two virtual CPDW observations, and 2) two virtual CPDW Focus Groups with past participants.

CPDW Observations

The CPDW Observations focused on the participant's experience with the content, workshop leaders' facilitation, and community in the virtual environment. Below I outline some general comparisons between the two observed workshops:

Energy-First Workshop (Feb 2024)	**Scientific Reasoning (SR) Workshop (March 2024)**

- **Virtual** - **Duration:** 2 hours - Led by a 4YC Faculty (male, white) who is less involved in the TYC physics community - **Lightly attended:** 29 registrants, 10 participants (34% attendance rate) - **Audience:** Half TYC and half high school teachers, with a few from four-year institutions	- **Virtual** - **Duration:** 3 hours - Led by one TYC Faculty and one 4YC Faculty (both females, white) who are very involved in the TYC physics community - **Heavily attended:** 47 registrants, 25 participants (53% attendance rate) - **Audience:** A majority of TYC full-time faculty

The **Energy-First workshop provided a welcoming environment that encouraged engagement, however, most participant engagement came later and resided mostly in the chat.** This was due to how questions were asked, which much of it asked folks for their answers to real calculus-based physics questions, and that can make participants nervous to answer incorrectly in front of others, and thus, reduce engagement. The curricular resources for participants were also not easily accessible, as they were asked to contact the facilitator afterward if they were interested.

The **SR workshop was a great example of an ideal workshop**—it was **highly interactive with resources participants could access and use immediately**. Facilitators tag-teamed the event, with both leaders helping to answer questions and provide support in breakout rooms. Participants seemed to feel comfortable sharing stories, experiences, and lots of questions in this space. Despite it being the longer workshop between the two, by the end, there were still n=15 individuals in the room wanting to ask questions to the facilitators, listen, and discuss implementing the curriculum in their classroom and using the materials! **What a great testament to the engagement, approachability, and relevant content to the community.**

In conclusion, there were common positive elements in both CPDW workshops, however, the SR workshop had more of these elements present, leading to higher attendance, interest, and engagement ultimately. I believe that if CPDW workshops can continue to replicate or resemble the successful elements of both workshops, especially the SR workshop, such as **high interactivity, opportunities to engage the content directly, opportunities for questions and discussion, and easy accessibility to resources,** such engagement among participants can flourish.

Please see the Memo for further details:

OPTYCs CPDW Observation Memo - Spring 2024

CPDW Focus groups (FGs)

The CPDW Focus Groups (n=2 FGs with n=4 individuals total) delved further into understanding the participant's experience participating in virtual CPDW events. Below I outline some highlights and take-homes based on the two Focus Groups.

Highlights:

- They enjoyed **hands-on, breakout room activities in virtual CPDW events** (e.g., Scientific Reasoning workshop) or ones where there were **tangible, customizable activities** (e.g., Computational physics workshop).
- Their motivations for attending were to **learn, gain new ideas, and resources** to support innovation in their classroom. Less so related to networking, unless it is in person.
- For Virtual events, they appreciate the number of participants (~10-30), except for one instance where it was just the participant and the speaker.
- **They enjoy being able to look back on missed workshops** via the recorded workshops.

> *"We are all very isolated at our institutions and this kind of opportunity for sharing ideas that are appropriate for our demographic is wonderful!"*

Suggestions for future workshops and improvement:

- They would like to see more **interdisciplinary collaborations** in the CPDW workshops perhaps, like between Math and Physics or 2YC and 4YCs.
- They hope that the **workshops continue**, with recordings, and perhaps increase visibility within AAPT for greater participation.
- **Time is a barrier to figuring out how best to implement and integrate** what is learned at a CPDW event in their classes. This may be a place for CPDW to hold an event for folks to "workshop" ideas they want to try to implement from ideas learned from CPDW.

Please see the Memo for further details:

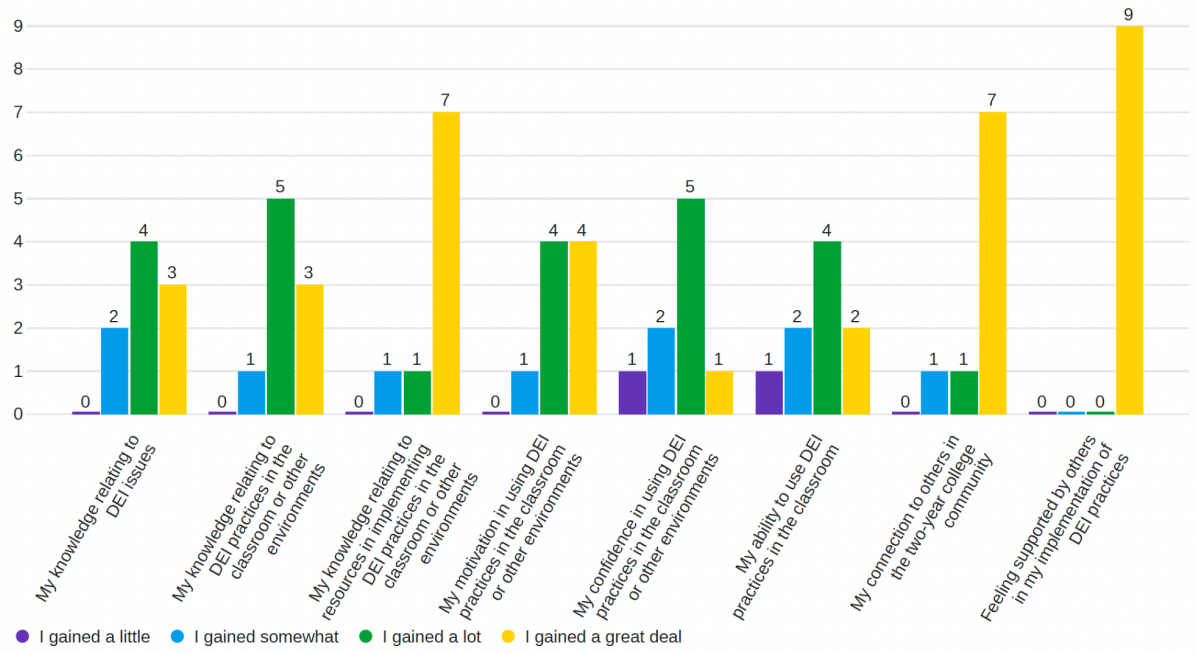
OPTYCs CPDW Focus Groups Memo - Spring 2024

Program Focus: Diversity, Equity, Inclusion (DEI) Change Team

In Year 2, the Diversity, Equity, Inclusion (DEI) Change Team launched its Cohort 1 on January 6, 2024, with a two-day event full of planned activities and presentations. A post-event survey was shared to understand participants' DEI Change Team experiences and obtain feedback for future improvement. The Evaluation and DEI team discussed these results at a team meeting following the event, so below is a brief summary of the highlights.

DEI Participants gained a great deal at the Immersion Retreat. Nine of 11 cohort members completed the post-event survey. For those 9,

- Almost all (n=7) indicated gaining a great deal in knowledge related to **resources** in implementing DEI practices in the classrooms, and connection to other in the TYC college community
- Most (n=7-8) indicated gaining a lot or a great deal in their knowledge to DEI issues, DEI practices in the classroom, motivations in using DEI practices.
- Many (n=4-5) indicated gaining a lot toward **confidence or ability in using DEI practices**, though these are the statements where more individuals felt they gained less.
- Everyone agreed that they felt supported by others in implementing DEI practices.
- Everyone agreed that the DEI Immersion Retreat changed the way they view or approach their classroom.



The main benefits they discussed were:

- **Community building -** *"Interacting and talking with the participants. This is the first DEI workshop where I felt individuals were truly open with sharing their feelings and perspectives. It was wonderful!", "The creation of safe space to ask questions and sort out ideas and experiences."*
- **Collaboration for project ideas** - *"Collaboration and lots of switching between people. I also liked being able to apply the ideas to what I specifically wanted/needed in my classes. The resources online are also really helpful, even though there are a lot of them. It will take a while to get through them all.", "Group work and instant feedback on my plans.", "My group really got the ideas flowing and we came up with amazing (and SMART) project ideas and goals!*

Challenges or Suggestions for Improvement for Cohort 2:

- **Prep time and background before the Immersion Conference - "***Perhaps some more prep before the conference so we could have more time to discuss and finish. For example, do the IAT tests before we arrive?", "Perhaps more of background knowledge of each institution shared between participants to give perspective for the*

discussions. Goals and objectives defined before we arrive so we can focus on the plan at the meeting.", "More info beforehand and links. "

- **More time for reflection -** *"Not so jam packed! Did not have time to fully think through some ideas. ", "More time!", "I really hope in the next year we have plenty of time to discuss our projects with each other and get constructive feedback on them."*
- **Consider external speakers on topics of interest -** *"You can bring one or two external speakers."*

Overall, participants came away with increased feelings of support in pursuing DEI practices in the classroom and felt the Immersion Retreat was a good use of their time in building community, collaborations, and receiving feedback for their ideas. It will be interesting to hear from this community to what extent the events throughout the year contribute to these initial sentiments.

Please see this DEI Change Teams Report for all results:
2024 Preliminary Results of DEI Post-Retreat Survey

Program Focus: Leadership Institute (LI)

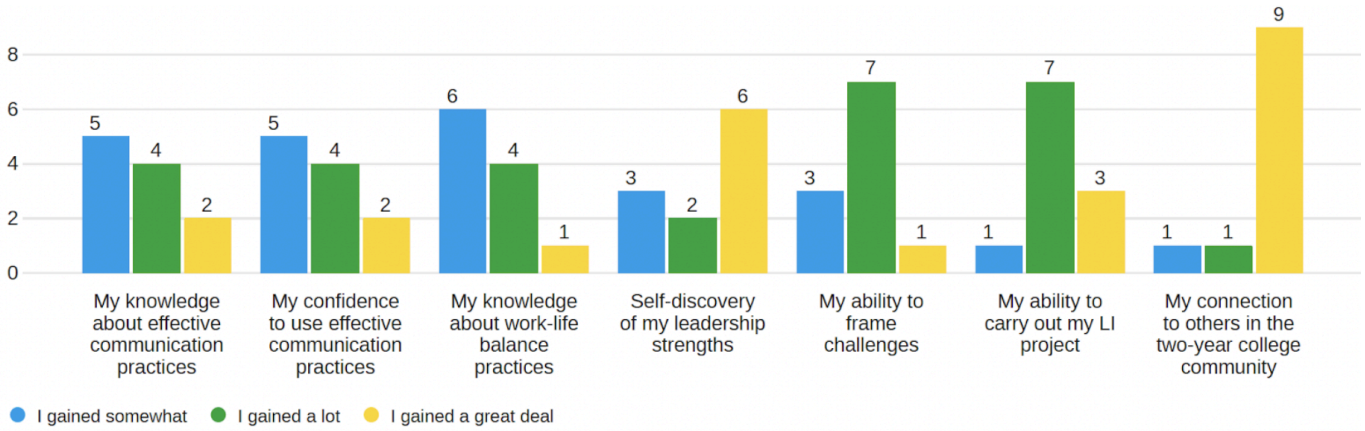
In Year 2, the Leadership Institute (LI) launched its Cohort 1 on January 6, 2024, with a one-day event full of planned activities. Two data collection efforts were conducted to understand participants' LI experiences and obtain feedback for future improvement: (1) An in-person observation by Dr. Jess Krim (Goshen Consulting), and (2) a post-event survey. The Evaluation and LI team discussed these results at a team meeting following the event, so below is a brief summary of the highlights:

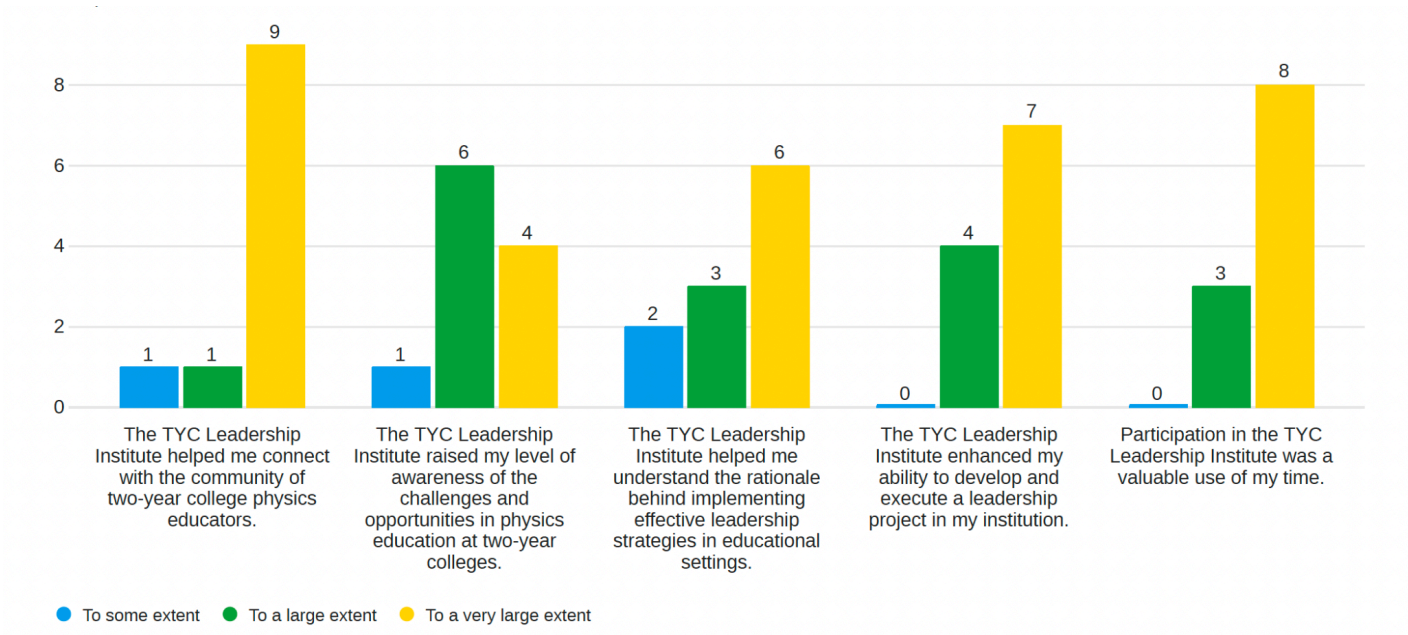
Leadership Institute Observations and Survey

LI participants reported gaining a great deal of at the Institute, particularly in self-discovery of leadership strengths and connection to others in the TYC college community. Eleven of 14 cohort members completed the post-event survey. For those 11,

- Many participants (n=5-6) said they made some gains towards knowledge about effective communication practices, confidence in those practices, and knowledge about work-life balance. These would be places to grow and emphasize in follow-up discussions or workshops.

- Most participants (n=8-10) reported a lot or a great deal of gain towards self-discovery of their leadership strengths, ability to frame challenges, and ability to carry out their LI project.
- Almost all (n=7-9) agreed to a very large extent that the Institute connected them to the TYC community to develop and execute a leadership project at their institution.
- Most (n=7-8) agreed to a large or very large extent that the Institute helped increase awareness of the opportunities and challenges in the TYC physics community, and understand the importance of using leadership strategies in educational settings
- Everyone agreed to a large or very large extent that the LI was a valuable use of their time.





When considering the benefits to attending LI, participants overwhelmingly said LI was engaging, interactive, inclusive, and worth the time of attending. In addition, all participants had multiple, meaningful interactions with other TYC faculty at LI:

- **Leadership growth, learning, and self-discovery** - *"It provided a structured platform to refine my leadership skills and allowed me to learn from experts and peers in the field.", "Recognizing my strengths, and recognizing how to keep my energy were very helpful."*
- **Community building and camaraderie** - *"The experience helped me connect with like-minded individuals passionate about leadership and gained insights from their experiences.", "I think I have benefited by being more closely connected with the larger TYC physics community. ", "I was able to see that colleague across the country facing similar challenges and I am not alone in it.", "kindled some fantastic professional relationships"*
- **Feedback on project** - *"I received valuable feedback about the project I plan to pursue this year."*

The Observations corroborate the survey results. Jessica felt the **authentic, professional and inclusive spirit among the leaders of this Leadership Institute**. Several participants were previously present during the last Leadership Institute, and these individuals were either observing, leading sessions, or participating to get more for themselves than they had the first time they had participated. It was clearly **an inclusive community of professionals, and it is due to the leaders and organizers commitment to a sustainable OPTYCs community that this occurred.**

Challenges or Suggestions for Improvement for Cohort 2:

- **Prep time and background before the Institute - "***The beginning seemed hurried and rushed. The diagnostic test could have been given prior to the meeting, saving some time. Perhaps the book's publisher could have given electronic codes and ebooks instead of the physical copy. ", "Cost and time may be an issue, but is there any way to have individual short meetings before the main institute workshop? This way, participants would have a better grasp of what needed to be completed."*
- **More time for other topics -** *"I would have liked to have spent a little more time on work-life balance and how that plays into a leadership role.", "For me personally,*

something on organization, prioritization, and time management would be a nice addition."

- **Consider longer time together at Institute -** *"Spreading the Leadership Institute over 2 days could have worked a bit better. Our day was almost 14 hours long, even with breaks, it was a lot and quite draining. I found myself tuning out a lot towards the end. I wonder if cutting off the day after dinner and then coming back for 4-6 hours the next day would have been more productive."*
- **Structured system for follow-up** (which I believe has been implemented by LI via Slack) - *"A more structured follow-up system for continued support and learning could have been beneficial. Regular check-ins or online forums for ongoing discussions could enhance the post-institute experience."*

Overall, participants greatly valued their time at the Institute and came away with increased knowledge of their own leadership strengths, feelings of camaraderie among peers, and important feedback to their proposed project. Though there were some topics which were not touched on as heavily (e.g., work-life balance, knowledge about effective communication practices), those topics may be addressed in future Cohort meetings or workshops.

Please see this LI Reports and Memos for all results:
Leadership Institute Observation - Jan 2024
2024 Preliminary Results of LI Post-Retreat Survey

Project Sustainability Reflections from Year 2

Though we did not survey using the Program Sustainability Assessment Tool (PSAT)[1] this year to reflect on OPTYCs' sustainability, it is an ongoing question discussed among OPTYCs leadership. Last year, those who completed the PSAT (n=4) indicated concern over potential funding opportunities in order to sustain OPTYCs post-NSF funding. To tackle these concerns, the leadership team and advisory board have been proactive in brainstorming

[1] The PSAT is a copyrighted instrument of Washington University, St. Louis, MO and licensed under a Creative Commons Share Alike License. http://www.sustaintool.org.

about how best to prepare the programs post-funding, all while considering potential funding sources.

Examples of ideas for the next year from the OPTYCs leadership team include:

- **Expand OPTYCs Leadership Team**
  - Work with CPTYC to build TYC leadership
  - Seek interested TYC faculty
  - Detail program coordinator tasks with time estimates for each of the OPTYCs programs
- **Collect and Distribute Evidence of Impact**
  - Create 2-page visual document
  - Advocate through CPTYC and AAPT TYC Board Member for part-time TYC coordinator
- **Solicit Future Funding**
  - NSF Grants
  - Other Foundations

These ideas, along with the Fellowship Program in OPTYCs launching and giving recognition to those highly involved in OPTYCs, will help the formation of the next set of leaders who may be interested and motivated to continue OPTYCs vision.

Conclusions

OPTYCs continues to make great strides towards achieving its goals regarding participation and program/event offerings. This report shows a solid showing for a project in its Year 2 of 4 and reflects the depth of commitment of the OPTYCs leadership. The main areas of concern are increasing participation among the intended audience in specific programs and in new TYCs in geographic locations previously untouched and creating strategic partnerships and plans to provide long-term support and sustainability for OPTYCs.

Below are the evaluation questions, with some initial responses.

(1) Is the project on track to achieve its intended goals?

To a great extent. There has been substantial progress towards the intended engagement of faculty in professional development, reaching target engagement, growing community

with repeat attendees across the nation, and increasing feelings of connection among the community. There is still quite a ways to go to achieve some of the long-term goals, especially in terms of growing PER culture, knowledge, and perceptions to include TYCs.

(2) To what degree do students and faculty gain the desired knowledge and skills and implement them?

To a great extent. All evaluations of events have been positive, with participants indicating that they learned valuable information that they plan to use in their work.

(3) To what degree is there a vibrant TYC physics-related community, or potential for such a community?

To a great extent. The number of unique participants engaged has increased and approached benchmarks, with many being repeat attendees. However, some parts of the country still need to be reached.

(4) To what degree is the project achieving the desired impacts in practice in teaching, PER, and institutional change?

To a great extent. Event attendees are positive about the impacts on their practice, but there is still a gap in PER awareness, use, and being involved in PERC.

(5) To what degree does OPTYCs have potential for sustainability of key initiatives and engagement?

To some extent. There are some concerns about financial stability and long-term strategic planning, however, they are being tackled early with a focus on building partnerships, nurturing leaders, and applying for future funding.