

OPTYCs: The Organization for Physics at Two-Year Colleges

Chesapeake Section AAPT
2022 October 22 – Falls Church, VA
Kris Lui (AAPT, Director of OPTYCs)



OPTYCs



What Is OPTYCs?

Community

Culture

Collaboration

A virtual
one-stop shop
for people teaching
physics-related topics
at two-year colleges
(TYCs)

Programs & Deliverables

1. Continuing Professional Development Workshops
2. New Faculty Development Series
3. Leadership Institute
4. Diversity, Equity, and Inclusion Change Teams
5. Tandem Conferences
6. Mentorship Groups
7. TYC Program Guidelines
8. PER Facilitation
9. AIP Survey
10. Digital Materials

1. Professional Development Workshops

- Various topics, lengths, modalities
- Some TYC participant support for travel and projects
- Upcoming Workshops: **everyone is welcome!**
 - 2022-Nov-12: Computation with Spreadsheets (virtual, with PICUP)
 - 2023 AAPT Meeting Workshop: WebVPython for non-beginners
 - 2023-Feb-11: Using PhETs Effectively (virtual, with Rebecca Vieyra)
 - 2023 Spring: TEAM-UP Together (virtual)
- Program Coordinators: Tom O’Kuma, Joe Heafner, Kris Lui

2. New Faculty Development Series

- 16-month-long immersive, cohort training program
 - 2 months online discussions & journal club
 - 3 days in-person intense training
 - 14 months to implement changes, with mentoring
 - 2 day in-person Commencement conference (AAPT National Meeting) (more training & dissemination of implementations)
- Cohort 1 begins Mar 2023: Applications available soon
- Program Coordinators: Krista Wood, Brooke Haag, Dwain Desbien



3. Leadership Institute

- 1-year training program on effecting change
 - 2-months asynchronous literature review and discussion (virtual)
 - 1-day in-person intensive workshop
 - 1-year project:
 - Develop & implement a plan to positively lead
 - Support through mentoring groups & regular virtual meetings
- Cohort 1 begins Jan 2024
- Program Coordinators: Krista Wood, Brooke Haag, Dwain Desbien

4. DEI Change Teams

- Two-Year training program on augmenting DEI efforts in STEM
 - 2-day initial training session
 - Year 1: Implementing change in local environment
 - Year 2: Facilitating broader change at home institutions
 - 1-day reunion to disseminate
 - Supported with mentoring groups & regular virtual meetings
- Cohort 1 begins Jan 2024
- Program Coordinators: Kris Lui, Dwain Desbien, Glenda Denicolo

5. Tandem Meetings

- 1-day conference in tandem with AAPT National Meetings
 - Hosted at a nearby TYC
 - Workshops, posters, discussions devoted to TYCs
 - Serving ~30-50 participants
- Next Tandem: 2023 July 15(Sacramento, CA)
 - NASA-HEAT Workshop
 - Alternative Grading Strategies
- Program Coordinators: Tom O’Kuma, Joe Heafner, Kris Lui

6. Mentorship Program

- Horizontal (peer / mutual) and vertical (traditional) mentoring
 - Based on e-Alliance model (mutual mentoring for women in physics)
- TYC Mentorship Groups may be formed around:
 - Demographic identities (e.g., gender, family situation, race)
 - Teaching projects (e.g., lab curriculum, intro astronomy)
 - Professional concerns (e.g., applying for tenure, mid-career issues)
- Program Opens: Nov 2022
- Program Coordinators: David Marasco, Renee Lathrop, Kris Lui

7. TYC Program Guidelines

- *AAPT Guidelines for Two Year College Physics Programs*
 - Established national standards for creating & assessing TYC programs
 - Update this 20-year-old publication
- New edition will be available: Spring 2026
- Program Coordinators:
Sherry Savrda, Dwain Desbien, Glenda Denicolo

8. PER Facilitation

- Establish a culture of PER at/with TYCs
 - Regular virtual journal club discussions
 - Support TYC faculty in data collection and dissemination (with PhysPort)
 - Form collaborations with existing PER groups
- Upcoming Journal Clubs:
 - 2022-Oct-28: Using Short Multimedia Summaries
 - 2022-Dec-2: Gender Divide in Unstructured Labs
- Program Coordinators: Sherry Savrda, Karim Diff, Glenda Denicolo

9. AIP Survey

- AIP's Statistical Research Center will administer & analyze a comprehensive survey of TYC physics
 - In-depth surveys have occurred once per decade
 - Funded by TYC grants
 - Use data to inform best practices
- Spring 2023: Division Lead / Department Chair Survey
- Spring 2024: Faculty Survey
- Program Coordinators: Sherry Savrda, Karim Diff, Glenda Denicolo

10. Digital Materials

- Establish a Virtual Library:
 - Create virtual, asynchronous workshop-like programs
 - Develop on-demand professional development materials
 - Curate educational resources (e.g. using comPADRE.org)
 - Archive past projects, successful initiatives, guidelines, etc.
- Program Coordinators: Kris Lui, Dwain Desbien, Glenda Denicolo

Who is Supporting OPTYCs?

- NSF Program: *Advancing Innovation and Impact in Undergraduate STEM Education at Two-year Institutions of Higher Education*
 - Funding Period: 1 July 2022 – 30 June 2026
 - Budget: \$3M (with support for personnel, AIP, participant travel, project implementation)
- AAPT: Acts as fiduciary agent and provides support staff assistance
- Many Volunteers: Workshop facilitators, organizers, site hosts ...



Who is Supporting OPTYCs?

Project co-Directors:

- Kris Lui
- Bob Hilborn
- Glenda Denicolo
- Dwain Desbien

External Evaluators:

- Stephanie Chasteen
- Miranda Chen Musgrove

Advisory Board:

- Eric Baer
- Anne Cox
- Geraldine Cochran
- Alexis Knaub
- Todd Leif

Who is Supporting OPTYCs?

And YOU!

Check out our website
Join our GoogleGroup



OPTYCs@AAPT.org

Spread the word



OPTYCs.AAPT.org

Tell us about your
workshop interests



OPTYCs



Goals & Mission of OPTYCs

Institutionalize a community of practice to advance physics education at TYCs

Provide transformative professional development

Instill a culture of physics education research at TYCs

Gather, analyze & disseminate current data about students, faculty, and programs at TYCs

Create benchmarks for preparation & growth of new TYC physics faculty

Define & disseminate best practices in teaching & learning

Be a model for, and partner with, other STEM disciplines at TYCs