

CALIFORNIA INSTITUTE OF TECHNOLOGY

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December 14, 2023

To: The CCE Community
From: The CCE Diversity, Equity, and Inclusion Committee
Date: December 14, 2023
Re: Third Annual Report, AY 2022-2023

The CCE DEI Committee continues to increase our focus on improving inclusion, diversity, equity, and accessibility in the division. We continue our commitment to work with the Division's Diversity Officer toward the development and support of new initiatives and continue stewarding ongoing programs. We will continue to assist in coordinating efforts across the Division, while interfacing with Institute level activities that enhance DEI efforts across campus.

CCE Diversity Committee Roster 2022-2023. Brian M. Stoltz (CCE Diversity Officer and chair), Bil Clemons (faculty), Scott Cushing (faculty), Julia Kornfield (faculty), Kim See (faculty), Reina Buenconsejo (Grad Student), Kyle Virgil (Grad Student), Stephanie Threatt (Postdoc), Paolina Martinez (CCE staff, *ex officio*), Elyse Garlock (CCE staff, administrative support), Lindsey Malcom-Piqueux (CCID standing invited guest), two additional invited guests were added in Spring 2023, Layla Tremalio, Senior Director of Development for CCE and Devon Dobbs (CCID Program Manager for Advocacy). During the Spring Quarter the committee's original two graduate students and postdoctoral scholar representatives rotated off of the committee. We thank them for their service to the division and institute.

The committee added one undergraduate student representative position and one staff representative position for the 2023-2024 academic year and replaced the students and postdoc representatives. The committee continued work with the active CCE DEI student groups throughout the 2022-2023 academic year, including DICI (Diversity in Chemistry Initiative), CGSC (Chemistry Graduate Studies Committee and their DEI subcommittee), and WIC (Women in Chemistry). The student groups continue their focus on existing programs while introducing new DEI related ideas to the division with new outreach programs. They work to improve the existing CCE DEI coordinator program and Big Sib/Little Sib mentoring program.



The current CCE DEI committee roster for AY 2023-2024 is Brian M. Stoltz (CCE Diversity Officer and chair), Scott Cushing (faculty), Julia Kornfield (faculty), Kim See (faculty), Carlos Del Angel Aguilar (undergrad), David Cagan (Grad Student), Kim Pham (Grad Student), Elisabetta Benazzi (Postdoc), Alison Ross (CCE staff), Paolina Martinez (CCE staff, *ex officio*), Elyse Garlock (CCE staff, administrative support), Lindsey Malcom-Piqueux (CCID standing invited guest), Layla Tremalio (Development standing invited guest) and Devon Dobbs (CCID standing invited guest).

CCE DEI Webpage: Please visit our website where information regarding details on DEI initiatives in the division as well as contact information for CCE DEI organizations can be found: <https://www.cce.caltech.edu/about/dei>

CCE DEI Committee Meeting Minutes are located on the CCE DEI website. Committee meetings throughout the fall, winter and spring focused on many aspects of DEI concerns in CCE and throughout campus.

Special Events in AY 2022-2023:

Rising Tide Program:

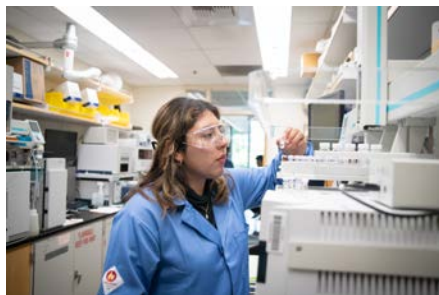


Rising Tide is a research techniques training program that is directed at increasing the participation of students from historically underrepresented backgrounds in science and engineering Ph.D. programs by making Caltech's programs more visible and accessible to students not traditionally exposed to Caltech. In its pilot years (2023-2024), the program is restricted to applicants from Pasadena City College. The 2023 Rising Tide Program was highlighted by Caltech News (caltech.edu/about/news/rising-tide)

September 14, 2022, David Cagan, Chemistry grad student, presented his program “**Rising Tide**” to the committee with uniform approval for its implementation during the summer of 2023.

Rising Tide Program Summer 2023:

- **July 12, 2023**, Rising Tide Mentor Training Lunch with seventeen (17) grad student and post doc mentors.
- **July 18, 2023, Rising Tide Orientation Day**, “Making the Most of Rising Tide” with six mentees: Seiji Sakamoto, Chaw Soe, Rebecca Ramirez, Pablo Romero, Vincent Vu, and Xiaoli Wang. (Welcome from Professor Stoltz; Presentations from Carol Casey and Maria Manzanares).
- **July 24 -August 1, 2023**, Rising Tide Program Begins with **Rotation A “Synthetic Chemistry”**
- Weekly Lunch Workshop: July 27 – “Finding Belonging in Science” (Yazmin Gonzalez (CCID) & Maria Manzanares (SFP)). Weekly Lunch Recap, July 28 “Program Expectations.” End of Rotation A.
- **August 2 – August 11, 2023, Rotation B “Analytical Chemistry”** Weekly Lunch Workshop Aug. 3 – “Writing a Resume or CV.” Weekly Lunch Recap, Aug 4 – Synthetic Chemistry. Weekly Lunch Workshop Aug 10 – “Why a PhD? Student Panel” with Camila Suarez and Victor Garcia Ruiz. Weekly Lunch Recap Aug 11 – “Analytical Chemistry.” End of Rotation B.
- **August 14 – August 22, 2023, Rotation C “Computational Chemistry”** Weekly Lunch Workshop Aug 17 – “Applying for Summer Research Programs” (Maria Manzanares (SFP)). Weekly Lunch Recap, Aug 18 – “Computational Chemistry.” End of Rotation C.
- **August 23- Start Advanced Techniques – August 24- End Advanced Techniques**
- **August 25, 2023, “Rising Tide Program” Ends: Celebration Luncheon** with the mentees receiving their Caltech “Rising Tide” Laboratory Research Certificate. (Funding Support from: CCE DEI Committee, The Carina Initiative (The office of the AVP for Diversity, Equity, Inclusion, and Assessment) and a portion from Professor Hadt’s NSF Career Award plus administrative support from the CCE DEI Committee and the office of Student-Faculty Programs).



James Ellis LuValle Award established in 2021, by the CCE DEI Committee to honor those graduate students and postdoctoral scholars who have continually worked to bring ideas and programs focused on improving inclusion, diversity, equity, and accessibility to the CCE division.

The **2022-2023** James Ellis LuValle Award recipients were **Levi Palmer** (graduate student), **Rebecca Warmack** (postdoctoral scholar), and **Paresh Samantary** (postdoctoral scholar).



Levi Palmer (graduate student) Levi introduced the Diversity Equity and Inclusion Moment, into the CCE DEI coordinator program. A DEI moment promotes a culture of acceptance, support, respect, belongingness, and awareness in the division. Levi was instrumental in the incorporation of Caltech's gender inclusive restrooms. He established an outreach program for undergraduates in STEM (out of the closet). He bridged the Liquid Sunlight Alliance outreach program with DICl to send underrepresented minorities to the ACS conference in March 2023.



Rebecca Warmack (postdoctoral scholar) Dr. Warmack is a Caltech Diversity & Inclusion Ambassador and the CCE DEI coordinator for Professor Rees' group. She started the DEI Journal Club in 2021, with fellow postdocs and graduate students for the merged Clemons-Rees groups, meeting monthly to discuss challenges in STEM, based on the experiences of minoritized groups. Rebecca led an inspiring presentation on mentorship issues and a discussion on accessibility and accommodation issues (mobility, visual, hearing) in STEM fields. Dr. Warmack is co-chair of Caltech Postdoctoral Association's Diversity Committee. With the diversity committee's ongoing Disability in STEM seminar series, she invited Dr. April Hill to present on "Accessible Chemical Education for Visually Impaired Learners". With her mentorship experiences, she developed an inclusive mentorship workshop for fellow postdoctoral scholars at Caltech.



Paresh Samantary (postdoctoral scholar) During the past academic year Paresh worked tirelessly in advancing efforts related to diversity, equity, and inclusion both inside the CCE division as a DEI Coordinator. In the fall of 2022, he organized the Diwali event on the Caltech campus – a very popular event among graduate students and postdocs. This event provided a rare opportunity for many students to truly celebrate their culture featuring food, music, dance shows, and art. As the communications chair of the Caltech Postdoc Association's Diversity committee, Paresh hosted an event celebrating Black history month as well as Dr. Caroline Yitalo's seminar on her work inspiring young women in STEM. He also assisted CPA's "Disability in STEM" seminar series by inviting former Fulbright scholar Itto Outini, an accessibility advocate who was left blinded after an attack to speak at Caltech. Following Itto's seminar, an audience member came up to Paresh and Itto saying that it was the first time they had been in the same room as a fellow blind person at Caltech.

Barbara J. Burger Fellowship and Prize



The **Barbara J. Burger Graduate Fellowship and Prize** is awarded annually to a female Chemistry graduate student in at least her fourth year with interest in pursuing a career outside of academia. The fellowship covers a portion of the awardee's stipend and tuition in addition to a \$3.5K prize supporting research-related expenses incurred by the Barbara J. Burger Graduate Fellowship awardee. An ad hoc selection committee of the CCE DEI committee and broader CCE faculty selects the annual winner. The awardee for AY 2022-2023 was Anna C. Overholts.

Summary of CCE DEI Activities throughout 2022-2023 Academic year.

CCE DEI Coordinators: June 12, 2023, Coordinator Spring Quarter Lunch meeting, an updated DEI Coordinator Role was introduced. **August 23, 2023**, announced the addition of the **DEI Coordinator Position** to the **“Research Supervisors Group List”**. **August 25, 2023**, in person CCID CCE DEI Coordinator’s training **“Inclusive Leadership”**

Accessibility See Disability in STEM Series below.

Future Ignited: October 8, 2022, Future Ignited focuses on raising awareness of our doctoral programs for underrepresented minority graduate student applicants. The virtual Future Ignited began with a Welcome to Caltech by President Rosenbaum, Overview of Research, and an introduction to Future Ignited by CCE Professor Bil Clemons. On the Panel of Caltech Graduate Students, CCE was represented by Isabel Hernandez Rodriguez. Two Workshop Sessions followed with Session 1- Option 1 “Funding for Graduate School” or Option 2 “Securing Strong Letter of Recommendation.” Session 2 Option 1 “Writing a Compelling Personal Statement” or Option 2 “Undergraduate Research Opportunities”. There were also Breakout Sessions with specific divisions. CCE Division Breakout Sessions: Chemistry, Brian Stoltz, Chemical Engineering, Mike Vicic and BMB, Bil Clemons. The Alstadt Workshop Gift supported Future Ignited with funds for CCE related materials given to prospective URM graduate students.

Caltech Shines: March 25, 2023, continued as a virtual multi-divisional, multi-option event to celebrate graduate student life at Caltech. The 4-hour event focused on 1) *Why Caltech?* Where First-Year Graduate Students Share Why They Chose to Come to Caltech. 2) Caltech’s Commitment to DEI 3) Meet the Community Affinity Groups, 4) Campus Resource Showcase. 5) Reflections with Division Option Representatives.

Caltech “Frontiers in Science” Outreach Program, On July 17, 2023, Professor Andre Hoelz took over the Caltech “Frontiers in Science” outreach program to Pierce College, a community college in Woodland Hills from Professor Emeritus Peter Dervan. Pierce College has a diverse undergraduate student body. As Professor Devan noted, “this was DEI in CCE commencing some 23 years ago”. The twenty-six Caltech speakers are: Dr. J. Barton, Dr. J. Bercaw, Dr. P. Bjorkman, Dr. W. Clemons, Dr. M. Davis, Dr. P. Dervan, Dr. R. Deshaies, Dr. D. Dougherty, Dr. S. Fraser, Dr. H. Gray, Dr. L. Hsieh-Wilson, Dr. A. Hoelz, Dr. G. Jensen, Dr. H. Lester, Dr. S. Mayo, Dr. E. Meyerowitz, Dr. D. Newman, Dr. M. Okumura, Dr. J. Peters, Dr. D. Rees, Dr. Reisman, Dr. S. Shan, Dr. C. Smolke, Dr. B. Stoltz, Dr. D. Tirrell, and Dr. B. Wold.

Graduate Admissions: We are continuing efforts to recruit and build a pipeline of potential graduate students in CCE. The final graduate admission numbers for CCE are encouraging in terms of diversity in Chemistry (51% Women, 62 % URM), in Chem Eng. (29% Women, 14% URM) in BMB. (53% Women, 14% URM). We look forward to welcoming and supporting this diverse incoming graduate class as they begin their journey at Caltech.

The Center for Inclusion and Diversity (CCID) Celebration of Excellence Awards are in recognition of the work by campus community members that have contributed to inclusion diversity, equity, and accessibility initiatives at Caltech during the last year. CCE Division awardees include The Outreach and Educator Award recipient was **David Cagan**, a CCE graduate student. The CCID Activist Scholar Award recipient was **Arianne Hunter**, a CCE Postdoctoral Scholar.



CCE DEI Funding and Outreach Support:

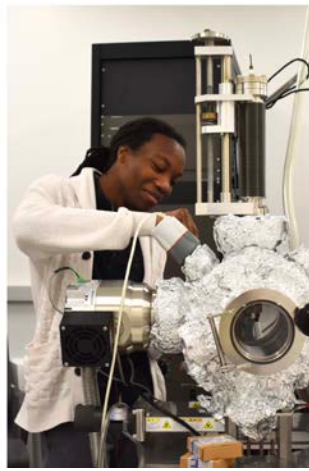


The Alstadt Workshop Gift:

With the Alstadt Gift, the CCE DEI Committee participated with a booth in our first NOBCChE Conference on September 11, 2023, in New Orleans. It was a successful beginning for representing CCE at a URM conference. Arianne Hunter a postdoctoral scholar and Daniel K. Mukasa a graduate student in Professor Gao's Materials Science Research group were the CCE booth representative and noted that the booth was very busy with requests from many of the NOBCChE participants.

The Preer Family Gift: There were two Summer Preer WAVE Fellows:

Kayla J. Smith, from Central State University, Wilberforce, Ohio. Her research project in Professor Yung's lab involved analyzing the atmospheric chemistry of Mars. Last summer Kayla was able to present her research at the Sagan Workshop that was held on campus. Kayla noted that as a WAVE fellow, "I have made some amazing professional and personal relationships that will last a lifetime. This would not have been possible without the generous support from the Preer family. Many students of color are not able to participate in amazing programs such as the Caltech WAVE Program because they simply do not have the resources to do so. It has been an honor to explore the universe at this amazing institution and I hope I continue to inspire other students of color to take



a leap into their dreams and never stop following them. Thank you so much to the Preer family for granting me the opportunity to continue to chase my dreams amongst the stars."

Samuel (Asad) Holloway, from Jackson State, Jackson Mississippi. Asad's research project was "*The instrumentation of an Ultra-Fast Electron Energy Loss Spectrometer*". "I performed my research in Professor Cushing's lab under the guidance of Postdoc Nick Heller.

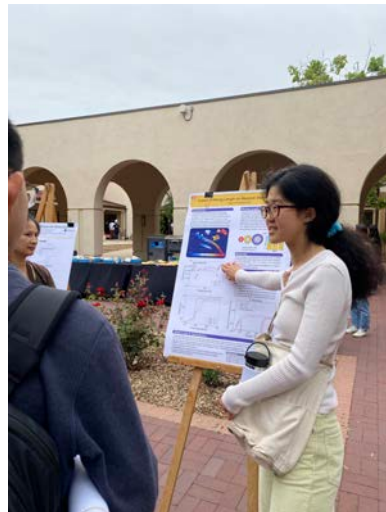
The project was broken down to three separate parts, designing and engineering parts for the instrument, creating experimental models for the instrument using Comsol, the Multiphysics engine, the actual building of the instrument itself. My program was very hands on and a multifaceted project that touched on a few portions of stem, all surrounding the process of the analyzation of the chemical, electrical, and bond structure of any solid-state substance." The Preer gift is set up to support three (3) WAVE Fellowships for students from HBCUs per year for three years. Creating connections with HBCU's is critical to the success of this gift.

Please spread the word that potential candidates may apply through the SFP WAVE program website: <https://sfp.caltech.edu/undergraduate-research/programs/wavefellows>

Caltech Connections -A Near-Peer Mentoring Approach for Advancing STEM Training:

A portion of the Preer family gift was designated for Caltech Connection.

While the WAVE program is a summer graduate student program, Caltech Connection is a year-long, undergraduate-graduate (or postdoc) mentoring program. While targeted summer STEM programs exist, they are often perceived as inaccessible by their target audience. The program uses near-peer mentoring with continual persistence up to the undergraduate's graduation, transfer, or similar career transition. The program supports one-on-one mentoring plans that individually scale with the mentee's skill and scientific identity. Professor-graduate-undergraduate triads are gradually formed to reduce the mentee's intimidation and remove the commonly expressed dissatisfaction from mentors with one-off programs.



The pilot program that has been running for the last four years. For the last two years, the program population included a cohort of ~40 mentees recruited from a local HBCU, an HSI, and two community colleges (Compton College, Charles Drew University, Pasadena City College, Santa Monica College, Cal State LA). The graduate student mentor population covers all STEM disciplines supported at Caltech. The implemented real-time mentoring strategy has led to mentees learning skills ranging from time management and presentation skills all the way to complete experimental and computational research that ultimately led to placement in STEM career

pathways. The mentors, in return, receive the training needed to be future inclusive STEM leaders not regularly included in a PhD or postdoc. Yearly exit surveys consistently find that >90% of participants end the program able to gauge whether a career in STEM is for them and how to pursue it, whereas the entry surveys usually report less than 10% of mentees even having a conception of available STEM pathways. Equally important, matriculation statistics are showing that >90% of students are transferring to a four year or research-intensive university, whereas community college students outside of the program average a <10% transfer probability. Highlights of program outcomes include transfer to top R1 schools (e.g., UCLA, Harvard, and MIT), entering advanced technical and research programs including Rising Tide and Caltech WAVE, taking part in publications, multiple Goldwater Scholarship, and transitioning their technical skills into immediate careers. The success, sustainability, and scalability of the program is tested using real-time assessment and evaluation with respect to the individualized but collective mentor-mentee evolution groups.

The Caltech Connection model allows per-student-tailored mentoring experiences that increase scientific education, identity, research, and STEM career opportunities for underrepresented groups at MSI's and community colleges. The nation's community colleges alone represent a >7-million-person diverse pool of potential STEM leaders. The Caltech Connection model makes these pathways a reality at MSI's and community colleges.

DEI Funding: This academic year, the DEI funds have been utilized extensively for DEI related events, outreach, and special seminar speakers. CCE DEI funds are limited, and additional funds are needed to continue supporting the requests. If you are interested in contributing to the fund, please contact the chair of the CCE DEI committee for more information (stoltz@caltech.edu).

2022-2023 Fall, Winter, Spring, and Summer Events funded on part through CCE DEI:

October 28, 2022, CPA Diwali Celebration Event – (Rebeccah Warmack & Paresh Samantary)
Over 320 Attendees (Funding Support - DEI Committee)

November 1, 2022, CPA Disability in STEM Series (Rebeccah Warmack & Paresh Samantary)

Dr. Caroline Yitalo, Division Scientist in the 3M Personal Safety Division, ACS award for encouraging women into careers in the chemical sciences.

Title: “How to Build a Successful Mentoring Legacy (Funding support - DEI Committee)

December 2, 2022, DICI PCC-Caltech STEM Lab Visit Day Funded by the Alstadt Workshop Gift DICI
Event Objectives: Engage with PCC students casually, allow PCC students to see research labs, allow PCC students to explore different and interesting fields of STEM. There were 15 Caltech volunteers with four (4) PCC Pods (Caltech POD Leaders: Levi Palmer, Stephanie Threatt, Camila Suarez & Edwin Alfonzo) and the Pod Types: Nanoscience, Nanoscience, Chemistry/Biology and Chemistry/Biology. Caltech students from URM or community college backgrounds were prioritized as volunteers. 25 PCC attendees. (Funding support - DEI Committee)

December 12, 2022, CPA Disability in STEM Series (Virtual)

Professor Scott Cushing, Chemistry Title: “Hidden Medical Conditions and My Journey of Mental & Physical Health Barriers in Academia. (Support - DEI Committee)

January 27, 2023, CCE DEI Winter Social hosted by DICI, WiC, and CGSC. The social focused on community building of underrepresented minorities and allies and as a recruitment event for the hosting organizations. (Funding Support DEI Committee, WiC and CGSC).

March 4, 2023, Holi Celebration, is a celebration of colors, amidst significant pomp, peoples of the Indian subcontinent and beyond, celebrate the victory of good over evil in the form of the advent of spring and the end of the winter. It is a celebration that occurs throughout India and its people around the world, uniting over a billion people. (Funding Support-DEI Committee)

March 15 ,2023, Joint IES/OCS Seminar – Professor Osvaldo Gutierrez, “Recent Advances in Fe-Catalyzed Radical Cascades/Cross- Couplings (Funding Support- IES, OCS and DEI Committee)

March 16,2023, CCE DEI/DICI Lunch Seminar – Professor Osvaldo Gutierrez, “A Dreamer’s Pathway to Become a Professor: Tips and Tricks” (Funding Support- IES, OCS and DEI Committee)

March 26-30, 2023, ACS Conference March 28, 2023, Symposium Title: “A Solar Fuels Nexus: Molecules and Materials for Light-Driven Catalysis”. CCE DEI Funding subcommittee approved the funding requested by two CCE LiSA graduate students (Levi Palmer & Katie Luedecke in the spring 2022 to bring URM undergraduate students to participate by applying and submitting an abstract. Seven undergraduates from different institutions were winners of the travel award. The seven awardees were: Isa Ahmed, a junior at Wayne State University, Nadia Barnard, as second year chemistry major attending the Clark Honors College at the University of Oregon, Anne-Amelie Campant a second year at Yale University, Caitlyn Cannan a sophomore chemistry major attending the Clark Honors College at the University of Oregon, Rahoul Banerjee Ghosh a second year chemistry major at the University of Washington, Seattle, Zek Kelly a senior chemistry major at Colorado School of Mines, and Melanie Rodriguez Pabon a third-year chemical engineering undergraduate student at Stanford University. (Funding support- DEI Committee)

The CCE DEI Committee also supported two FSRI students, Emma Olinger and Tanvi Ganapathy, research partners to present their research at the ACS Conference. (Funding Support- a portion from the DEI Committee, FSRI and CCID)

April 4, 2023, DICI All Members Lunch Meeting was a recap of the events and initiatives from the past year with an open discussion about them. The DICI Board had several open leadership positions available. The new member of the DICI Board: President – Melinda Chan, Vice President- Jacob Parres-Gold, Treasurer- Omar Santiago Reyes, Historian – Juliet Lee, Media Communications- Marva Tariq, Outreach Coordinator- Kevin Gonzalez, Event Coordinator – Noor Naji and DEI Leading Coordinator- Camila Suarez (Funding support -DEI Committee)

April 10,2023, CPA Disability in STEM Series

Itto Outini, Fulbright Scholar Title: “Personal Reflections on Overcoming Disability: Blindness in the Light” (Funding Support-DEI Committee)

April 14,2023, CPA Disability in STEM Series

Dr. April Hill, Metropolitan State University Denver Title: “Accessible Chemical Education for Visually Impaired Learners” (Funding Support-DEI Committee)

May 19, 2023, Blair High School Outreach Event

DICI, in collaboration with LiSA connected with Blair High School Chemistry teacher, Steve Cole to bring Caltech chemists to talk with students about their experiences while creating a short hands-on activity, which involved creating a simple solar-powered hydrogen “fuel cell” as a demonstration of how solar energy can be stored as a zero-emissions fuel. The CCE volunteers spoke briefly about their paths to science, answered questions about college and science careers. Volunteers: J. Parres-Gold, N. Friede, K. Dong, G. Gheibi, O. Santiago Reyes, L. Palmer, M. Gonzalvo, J. Zhang, D. Delgadillo, S. Johnson, M. Tariq, and F. Horns. (Funding Support-DEI Committee)

June 13, 2023, CGSC BIG SIB/LITTLE SIB Celebration of the Mentoring Program

The CGSC Big Sib/Little Sib program provides mentorships for all CCE grads and postdocs for the duration of the academic year. (Funding Support DEI Committee and CCID)

June 23, 2023, Empowering Women in Organic Chemistry (EWOC) Conference at the Amgen campus in Thousand Oaks. CCE had 21 attendees: S. Dorn, K. Flesch, K. Gallagher, S. Osler, S. Reisman, A. Stegner, P-J Chen, V. Hubble, V. Nair, A. Stanko, J. Wahlman, M. Akita, A. Carretero Cerdan, E. Chen, S. Bottcher, C. Cerione, G. Golsa, O. Morales, M. Ramirez, K. Sharp, and M. Tariq. (Funding and Swag Support-DEI Committee)

August 4, 2023, DICI WAVE AMGEN Rising Tide. The DICI lunch was focused on creating an opportunity for members of the Caltech community to interact with the WAVE and Amgen undergraduate scholars plus the Rising Tide PCC students. (Funding Support-DEI committee)

August 23, 2023, DICI WAVE AMGEN Rising Tide. The final DICI summer lunch was sharing their research experiences the WAVE, Amgen and Rising Tide students had over the summer with each other. (Funding Support-DEI committee).

Throughout the 2022- 2023 academic year the committee has continued to support existing programs and new projects throughout the division and campus with the hope that these programs and projects will become integral parts of the CCE Division into the future. In addition, we continue to look toward new ways to increase awareness in diversity, equity, inclusion, and accessibility in CCE and Caltech.

We thank everyone that has contributed to the work of the DEI Committee. The DEI committee understands that to “build community requires vigilant awareness of the work we must continually do to undermine all the socialization that leads us to behave in ways that perpetuate domination.” - *bell hooks*