

Team  
Guam



PAC-Step  
HAWAII

Hosted by  
University  
of Hawaii  
at Manoa  
  
Oahu,  
Hawaii



SUMMER

JUNE 18 - JUNE 30, 2023

Camp



# PACSTEP HAWAII 2023 SCHEDULE

		Week 1 - Session 1						
		Sunday 6/18/2023	Monday 6/19/2023	Tuesday 6/20/2023	Wednesday 6/21/2023	Thursday 6/22/2023	Friday 6/23/2023	Saturday 6/24/2023
8AM	9AM		Pickup and Walk Over	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast
9AM	10AM		Participant Welcome and Program Overview (1.5 hrs) Campus Center? Breakfast	Start-ups Workshop: Visit to ELEMENTAL EXCELERATOR - leave at 9:15?	Biking	STEM	Walking	Outdoor Excursion - Diamond Head
10AM	11AM							
11AM	12PM		Manoa Campus Tour (1hr) 11-12 - varney circle					
12PM	1PM		Lunch - Dorm	Lunch - Dorm	Lunch - Dorm	Lunch - Dorm	Lunch - Dorm	Lunch - Dorm
1PM	2PM							
2PM	3PM	Arrival and Check-in		STEM - Lesson on GPS Data Collection + Scavenger Hunt - Poya	STEM	STEM	STEM	
3PM	4PM							
4PM	5PM							
5PM	6PM		REST	REST	REST	REST	REST	
6PM	7PM		Dinner - Dorm	Dinner - Dorm	Dinner - Dorm	Dinner - Dorm	Dinner - Dorm	Dinner - Off Campus
7PM	8PM					Fireworks		
8PM	9PM		REST	REST	REST	REST	REST	REST
9PM	10PM		Bed Check	Bed Check	Bed Check	Bed Check	Bed Check	Bed Check

		Week 2 - Session 1						
		Sunday 6/25/2023	Monday 6/26/2023	Tuesday 6/27/2023	Wednesday 6/28/2023	Thursday 6/29/2023	Friday 6/30/2023	Saturday 7/1/2023
8AM	9AM	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast		
9AM	10AM		H3 Tunnel	STEM - Preston ML - POST 208	ThoBus - Middle St. Transit Ctr	STEM Finish Up- Poya + Preston	Breakfast and Check-Out	
10AM	11AM							
11AM	12PM							
12PM	1PM	Lunch - Dorm	Hosted Lunch - Off Campus	Lunch - Dorm	Hosted Lunch - Off Campus	Hosted Lunch - Campus Center		
1PM	2PM			REST + Transition		Program Closing (1.5 hrs) - Campus Center		
2PM	3PM				Honolulu Joint Traffic Management Center (JTMC) - 1:30	REST + Transition	Departure and Check-Out	
3PM	4PM		HNL 1:30	Visit HART				
4PM	5PM				REST/STEM?			
5PM	6PM			REST				
6PM	7PM	Dinner - Off Campus	Dinner	Dinner - Dorm	Dinner	Hosted Dinner - Off Campus		
7PM	8PM							
8PM	9PM	REST	REST	REST	REST	REST		
9PM	10PM	Bed Check	Bed Check	Bed Check	Bed Check	Bed Check		

**LEGEND**

- STEM Education Activity
- Enrichment Activity
- Field Trip Activity
- REST
- Programmatic Activity
- Meals



*hawaii*

*guam*

*american  
samoa*



# Hawaii will forever be memorable..

**Tiyan  
High  
School**

HARRIET GORRE

**My experience in Hawaii will forever be memorable.** Until now, I still can't believe that I was part of that. The people in the camp were just spectacular. They weren't any short of a family. I was and still am very proud of myself that I was able to get in. One thing that stood out to me throughout the camp was their transportation, not only because that was the whole entire point of our visit there but it really amazed me how the locals' lives are easier because of how easy they get around places. The first transportation that we took there was technically the car that took us from the airport to the dorms but I would like to say that the first official one was walking. After settling in our dorms for about 20 minutes, we already went outside and just walked with our GPS on hand. It was not a hassle to walk around unlike other places where it feels unsafe. I loved it because it didn't fall short of pedestrians and street lights. The next day we immediately took the next public transportation which is the bus and I was not even half surprised when it was also really convenient. First, we looked up our destination and searched how we can take the bus to go there. It was really easy in my opinion. The third one was biking which was my, and most of the campers, favorite part of the whole itinerary. It was really cool how the bikers were "seen" by the people. "seen" because the bikers feel recognized as a driver and an owner of the road too no matter how small they are. It was fascinating how they have their own marks and roads, referring to the bike lanes. I never once knew that I could bike on a highway alongside big cars feeling safe and comfortable. The last one we took was the skyline train. That was literally historical because we were in its history as one of the few people to ride before it opened to the public. That is Hawaii's first ever train which took 21 years and a lot of funding. I heard that it took that long because the people in Hawaii didn't really know how to build trains. Nonetheless, it was pretty cool but it wasn't my favorite. I would choose to take the bus rather than the train because of how bumpy the train was. Going back to the social part of the camp, I was very satisfied by what they had in store for us in the agenda. It was really packed but we had so much fun. I experienced how it's like to go be a college student and I enjoyed it very much.

# BRANDON HO

Father Duenas  
Memorial School



**Our first day in Hawaii was a very different environment compared to Guam.** The advancement of public transportation in Oahu is drastically different. I noticed that the local bus system denoted as "The Bus," was able to depressurize the top right tire of the vehicle to make it more accessible for people with disability, in sync, with a ramp that descends for people with a wheelchair to move their way onto the bus safely.

We also did a Scavenger Hunt Activity. We downloaded a GPS tracking app and walked around the University of Hawaii at Manoa campus. I got to see the various scenic aspects of the campus, whilst gaining pertinent information about the type of software and analysis tools used by transportation engineers, including GIS software, such as "qGIS."

A lecture was taught on the Global Positioning System (GPS). The system helps locate where you are standing on Earth. It uses latitude and longitudinal technology to accurately pinpoint your location. It also involves signaling between satellites to your phone. The GPS system was originally a military invention, called NAVSTAR. They eventually released it for civilian use in May 2000. There are three essential parts that are involved with the GPS system, which are satellites, receivers, and ground stations. A GPS system consists of thirty-two satellites, twenty-four core satellites, and eight emergency replacements, which last about ten years. I also learned that the signals sent out to communicate between the phone and satellite have a time signature attached to them. The GPS System also has atomic clocks, which are extremely precise and helps update your current location.

We also learned about Surveying. I learned about the various instruments used to perform a survey, such as an Optical Theodolite. It helps measure horizontal and vertical angles. I also learned about the Robotic Total Station, which combines both the optical level and theodolite, which is like two instruments combined into one. An optical level is like a telescope that has crosshairs on them, and it is used with a rod. Measurement in surveying is a combination of angles, distances, and relative positioning.

There are different types of surveying. The most common type is Geodesic Surveying. It relies on the modeled form of the earth. The model of the Earth in this type of surveying is more squashed, like an ellipsoid. The second is Plane Surveying. It is applicable to smaller areas. It does not account for errors encountered because of the curvature of the earth.

There is a lot of variety within these types of surveying. For Plane Surveying, it has Chain Surveying, Traverse Surveying, Plane Table Surveying, and Ordinary Leveling. Geodesic Surveying has Triangulation, Reciprocal Leveling, Tacheometry or Stadia Surveying, Astronomical Surveying, and Photographic Surveying.

We also had a group project with the counselors and people from the different islands. We were tasked with creating a mock community. The goal of the activity was to see how we can create a community with certain roadblocks in the way.

Moreover, we also explored Chinatown and the history behind the streets and the town. We learned that Chinatown has the lowest car ownership because the main form of transportation is through walking. The block sizes are extremely short, which means it is good for pedestrians, and bad for cars. The size of the blocks also increases congestion causing traffic. With such a limited space, business owners need to be cautious of how far they extend their stand for their stores. Roadway Design was another topic that was discussed during the trip. Road Design is everything on the ground that people interact with. It is the positioning of the physical elements of the roadway according to standards and constraints. We learned about Highway Designs, such as horizontal curve, and vertical curve, which deals with the theory of Centripetal Force. We also toured various parts of transportation infrastructures in Hawaii, such as the H3 Tunnel, the Rail, the Bus, etc.

**“Love at first sight” would typically be used with partners and a slow song**, but my own started with a college program and engineering lectures. The lessons weren’t the only highlight that made the trip worth the two weeks. It was the counselors who endlessly told stories about their college memories, the chaperons who reminded me what missing family felt like, and my peers that helped me through it all. This program, my newfound family, is called PAC-Step.

**Simon Sanchez  
High School**

Everyone entered with the same schedule, similar to a typical week during the school year. Monday through Friday, we’d learn about transportation systems, road designs, and geographic scales, and listen to panels that offered tips on college prep. My favorite activities were biking through live traffic and building mini towns since we worked as a team, obligated to depend on one another. Instead complaining and panicking over mistakes, we had a quick laugh and continued problem solving since it was a new journey for all of us . Whereas, the weekend would be free days to bond or explore areas that may be a once-in-a-lifetime chance. The field trips surprisingly helped with the lessons. I would never have had that much fun learning without the new friends around me.

It’s not an exaggeration when I say this camp changed me. It genuinely shined a light on serious issues displayed as daily routines. A connection sparked between all of us pac-steppers. Traveling and developing friendships with peers that I feel like I’ve known forever was an honor. Not only are these people going to be lifelong friends, but aspiring leaders for future generations. The thing that connected all of us was our main goal, be the change the world needs, the change you aspire to see, the change that would start many more groups equivalent to our PAC-Step family. Hopefully, not solely inspiring themselves to be the change but pursuing to inspire others.

AUNDRREA ELIANA

**love  
at first  
sight**





# JULIAN BONIN

Guam  
High School

**When I first applied to this camp I really had no idea what I was getting into.** I also did not expect to make it in. When I found out that I would be flown out to Hawaii I was super excited and a little scared. Even just traversing the airport with a group filled with complete strangers was a whole new experience to me. I not only learned how to live and manage myself on my own time but I also learned so much regarding transportation engineering. The camp has allowed me to gain firsthand experience with multiple sites and challenges. The camp helped me realize that there is much more that meets the eyes when it comes to engineering. I learned that you cannot do anything by yourself as an engineer. Everyone works together to achieve the common goal of developing safe and user-friendly infrastructure. We were able to learn about all the different parts and how they all correlate. For example, an engineer wanting to make a new road will first need someone to survey and get their exact coordinates in order for the construction to begin. I learned that everything is intertwined and connected.

Visiting all the different sites created memories that I will never forget. The H3 tunnels and the bike riding were the most memorable.

The 15 mile H3 tunnels was something outstanding to see. Never in my life have I seen something similar to it and due to the fact that it is 15 miles of tunnel having traffic in there would cause the people in the tunnel to not be able to have access to breathable air. So, the engineers overcame this problem by implementing a ventilation system in order to supply the people with clean air in case there is traffic backup. I have never seen any bike riding infrastructure before. So seeing it for the first time and learning all the safety rules for bike riders had me shocked. I never knew that having traffic with all modes of transportation was really Julian 2 possible. However, this camp showed me that if everyone works together to achieve a common goal of developing safe and user friendly infrastructure all modes of transportation can be implemented and used.



**PAC-Step HAWAII**

Learn about Oahu's transportation system!  
All expenses paid for summer camp

**When**  
June 18 - June 30 2023

**Location**  
UH Manoa Conference Housing

**Application Deadline**  
Friday, March 31 2023  
at 11:59 pm

Questions? Contact Dr. Chen  
By Email: rbchen@hawaii.edu  
By Phone: (808) 956-5060

**Apply Now!**

<http://www.eng.hawaii.edu/pacstep>

# Team Guam



**Julian** Guam High School

**Harriet** Tiyan High School

**Aundrea** Simon Sanchez High School

**Brandon** Father Duenas Memorial School

Chaperone  
**Christine Sison**  
Guam Community College







# meeting *with the governor*





## *Si Yu'us Ma'aise and Thank you.*

**Front Row:** Brandon Ho -Father Duenas Memorial School, Aundrea Eliana - Simon Sanchez High School  
Harriet Gorre - Tiyen High School, Julian Bonin - Guam High School

**Back Row:** Monica Guzman - Galaide Group, Mary AY Okada ED.D - Guam Community College, President & CEO  
Governor Lou Leon Guerrero, Vincent Arriola - Department of Public Works - Director,  
Pilar Perez Willams - GCC School of Trades and Professional Services, Dean,  
Christine B. Sison, Ph.D. - GCC School of Trades and Professional Services, Associate Dean

