



Chaminade University

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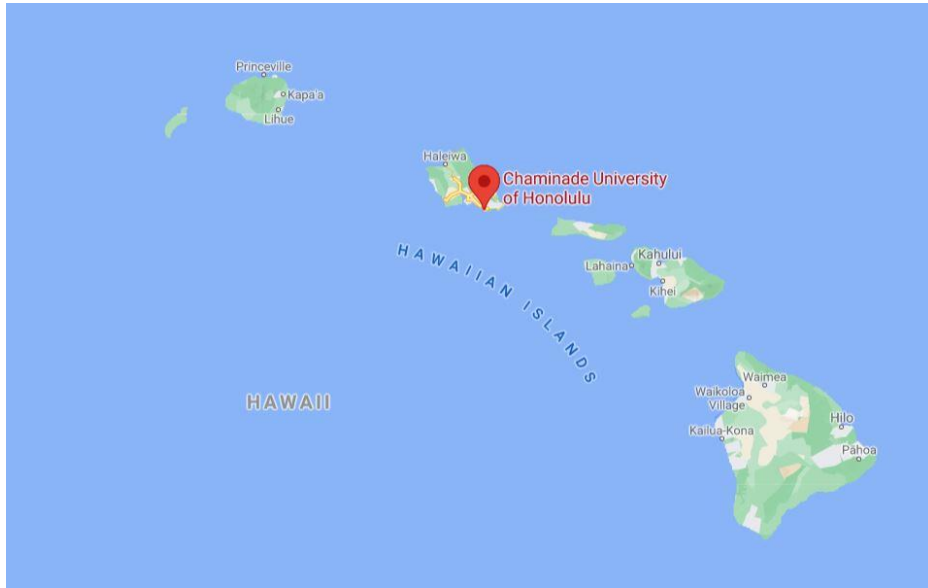
Curriculum Development Workshop

Advance Computing for Social Change

Overview

- Chaminade University
- CUH Data Science program
- Where students are going or at
- Challenges, opportunities, and understanding
- `Ohana
- Data Science program success factors
- Curriculum
- ACSC and SPICE programs
- Research projects
- Outcomes

Chaminade University - Location



Chaminade University - Background

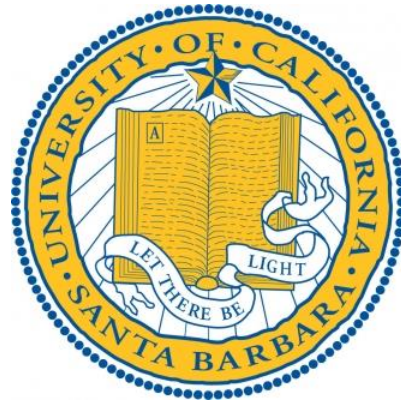
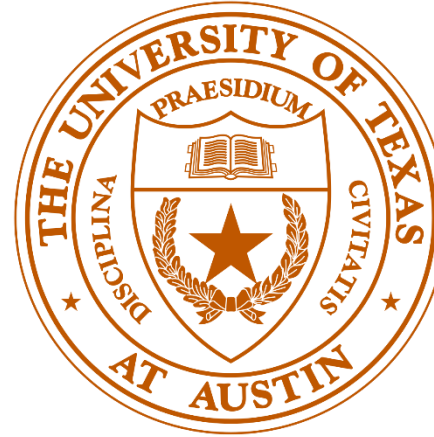
- **Federally-designated Native Hawaiian serving institution**
- **Engage underrepresented students in Hawai'i and Pacific region**
 - Hawai'i, Samoa, Guam, Saipan, Marshall Islands, and Federated States of Micronesia (Chuuk, Yap, Pohnpei, and Kosrae)
- **In 2018, Chaminade had the highest percentage of Native Hawaiian undergraduates in the nation.**
- **High proportion are first gen and pell-eligible**
- **Launched the 1st Data Science program in Hawai'i and the Pacific**

Chaminade University Data Science Program

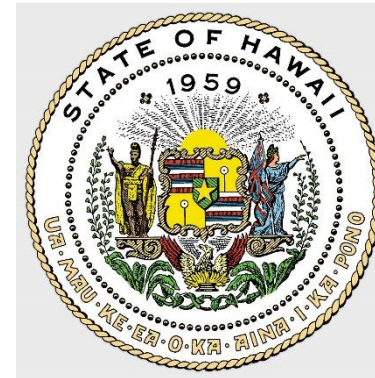


- In 2019 we debuted Hawai'i's first Data Science undergraduate program.
 - Major, Minor, Certificate, and Pacific-Wide Online Proficiency Programs
 - Partnerships across the Pacific, XSEDE, and University of Texas at Austin TACC
- 21 students (13 women, 10 Native Hawaiians [NH] women, and 12 Total NH).
- Ho'oulu scholarships, Data Science NSF-STEM scholarships, NSM S-STEM scholarship.
- ~All of our students are funded. Half of our students are fully funded, some are on the NSF-STEM, and others are funded through various avenues.
- Graduated our first Data Science Minor students Spring 2021.
- Will be graduating first Data Science Majors 2021-2022.

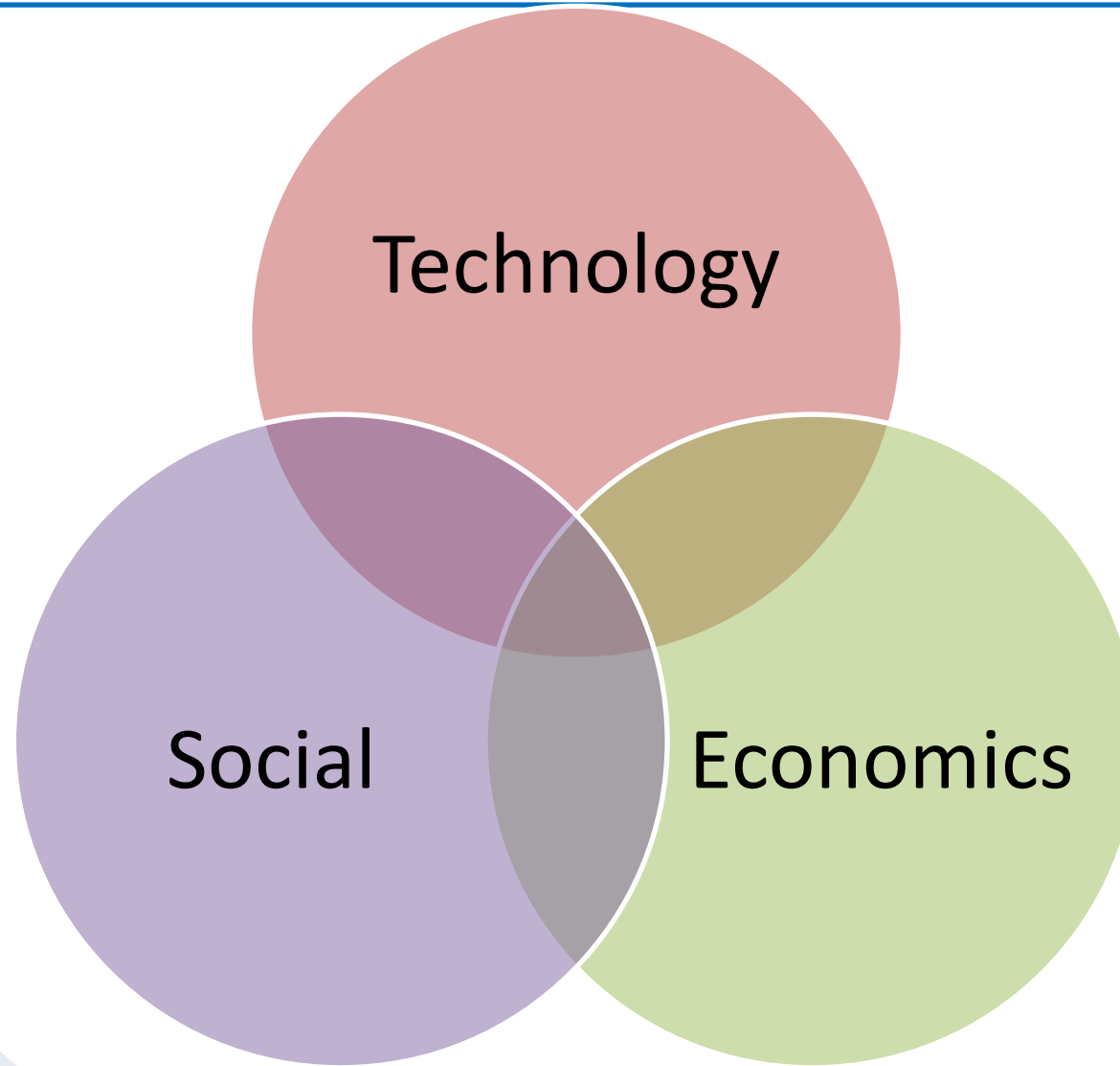
Where are DS Students Going or At?



Stanford
University

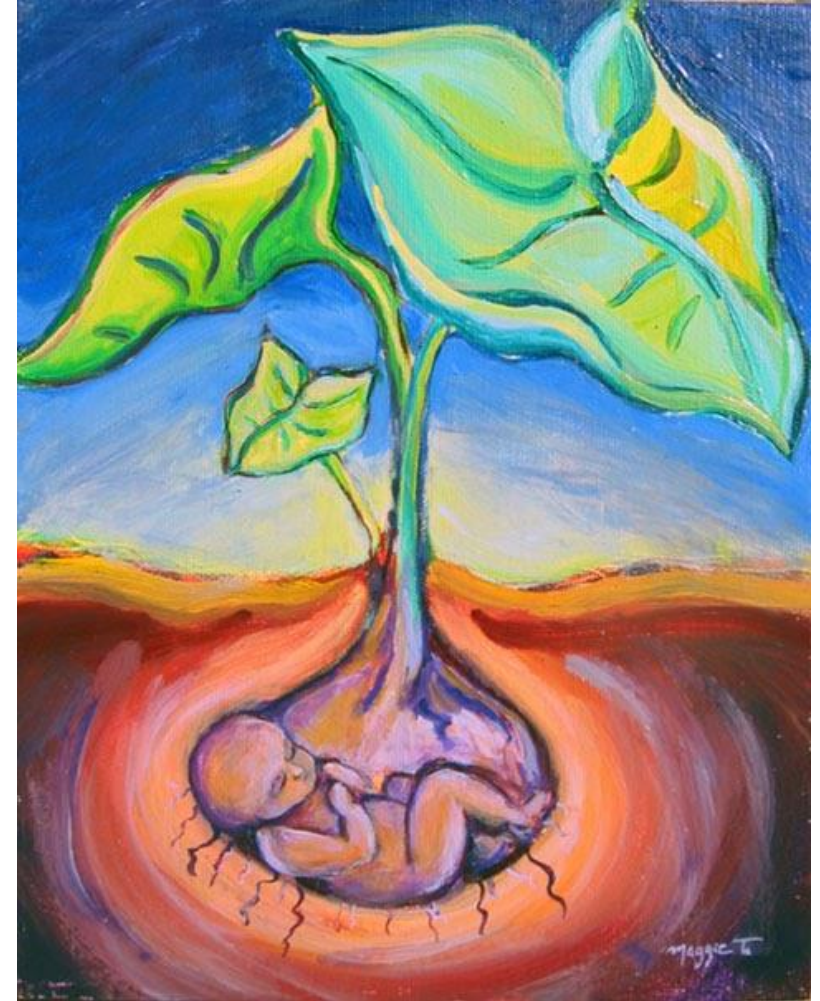


Challenges, Opportunities, and Understanding

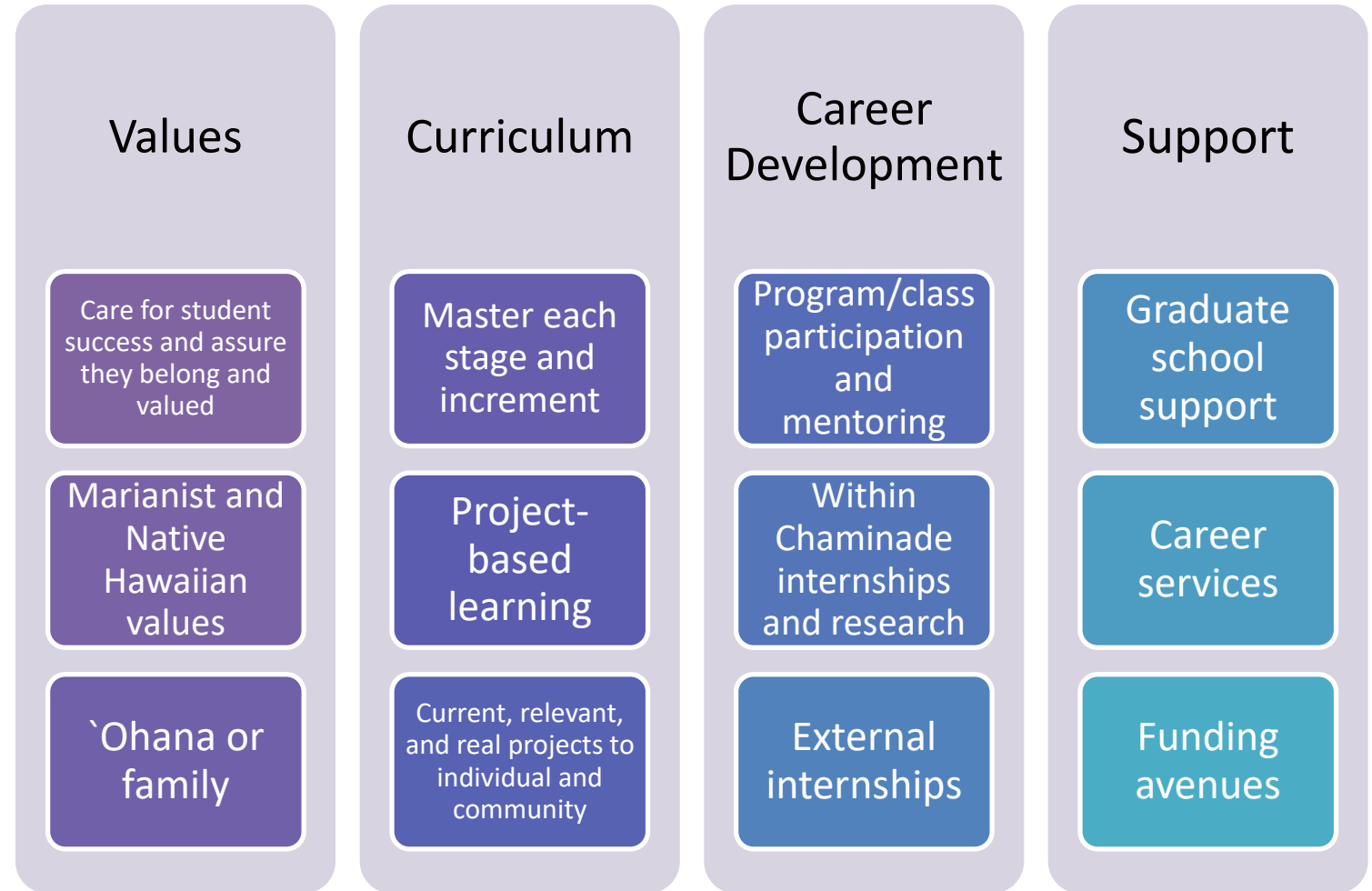
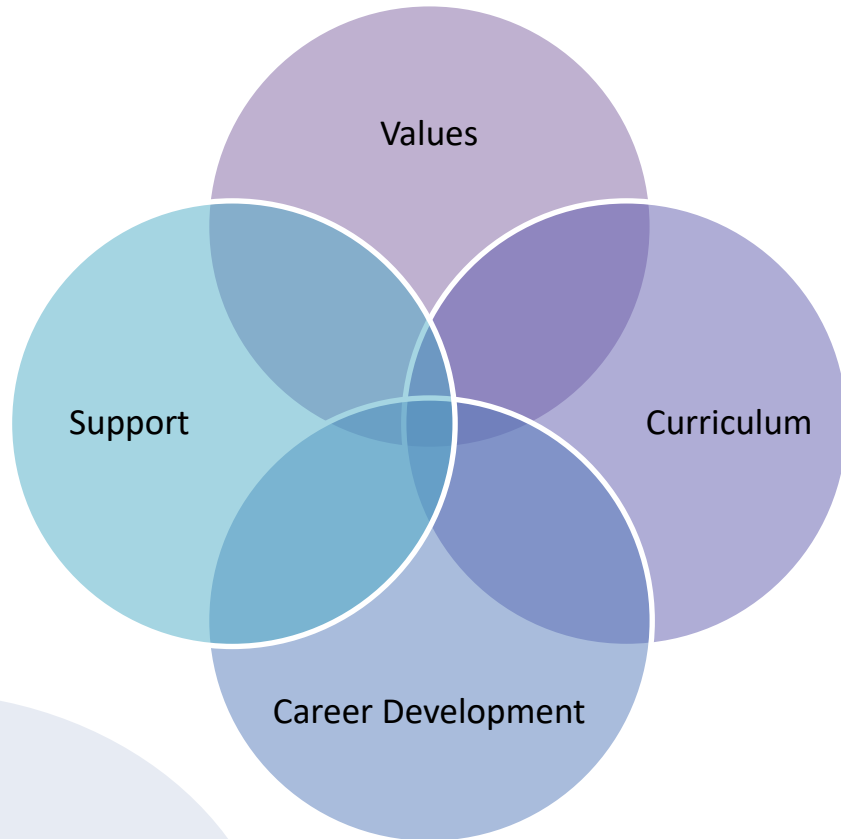


Chaminade University - `Ohana

- Nature is where it all begins for Native Hawaiians.
- `Keiki o ka `aina or children of the land.
- Origins of `Ohana
 - Two Hawaiian gods, Wakea and Hoohokukalani had a still born named Haloa.
 - An elder recognized the child looked like a root, in which the gods wrapped the child in cloth and buried the child into the land that grew into kalo (taro).
 - When the main kalo plant matures, it creates a corm called `Oha (keiki) in which is removed to start another plant to start its life cycle.
 - The word `Ohana (family), comes from the word `Oha and describe human families as kalo plants.
- Logical question
 - **How can we build a program that will help build more kalo plants that will have the confidence to know who they are and where they want to go?**



Data Science Program Success Factors



Case 1: Curriculum

- **DS 301 Community-Engaged Computing**
 - Engage with a community in a meaningful way that honors the true meaning of partnership.
 - Semester long project collaborating with the Wai`anae Coast community and NHPI organizations.
 - It is a student and community driven project on a scorecard and dashboard to measure the sentiments and opinions of the Wai`anae Coast community in the areas of water, food, housing, income, health, personal security/safety, and sense of belonging.
 - Goal – Prioritize and emerge initiatives and projects relevant for the community.
 - Students work in a team with a mentor.
- **Approaches incorporating cultural practices within a course**
 - Cultural specialist guest speaker
 - Select a personal or community project within Health, Environment, and Social Justice
 - Subtexting
 - Topic and discussion
 - Participation in a cultural activities

Case 2: Programs ACSC and SPICE



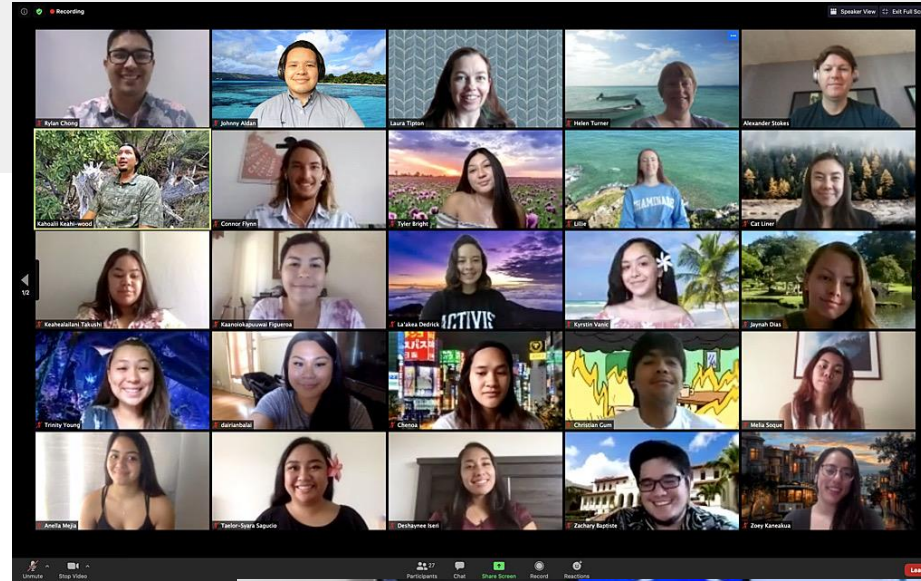
Representing 808 state at ACSC and
C4C



Case 2: Programs ACSC and SPICE



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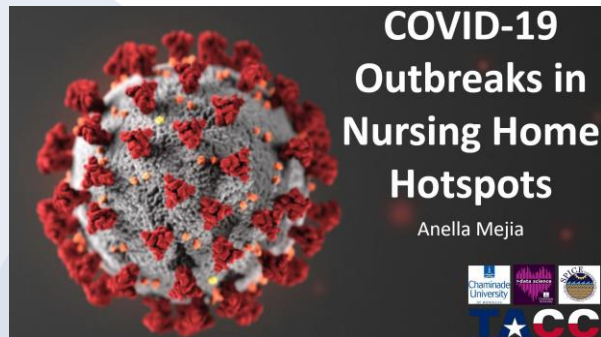
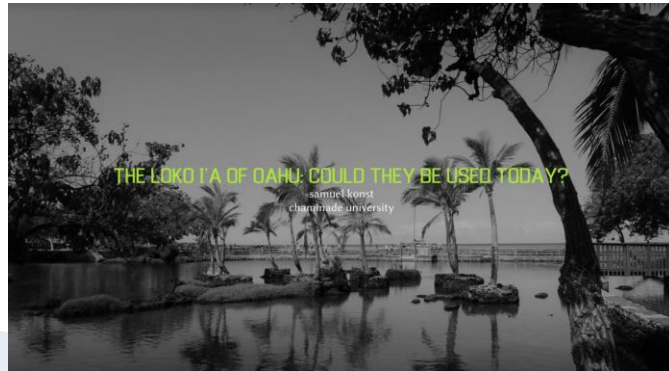
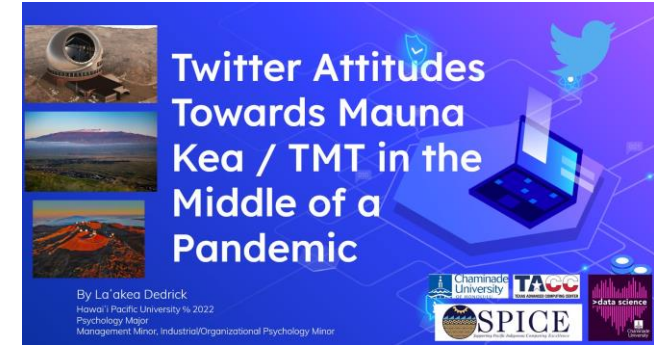
SPICE is a funded NSF INCLUDES program that is developing a model for data science preparation of Native Hawaiian and Pacific Islander (NHPI) students at the undergraduate levels.

It is a month-long summer training that takes place at CUH and focuses on data science, visualization, and analytics, where participants work on problems that require data science approaches and incorporate geographic, social and cultural-relevant research themes.

Case 2: Programs ACSC and SPICE

- **Directly - Aware**
 - Opening and closing `Oli protocol or prayer
 - Have students work on projects that relate to them and their community.
 - Incorporate the Data Science Program values and curriculum success factors.
- **Indirectly - Unaware**
 - Group meetings and check-ins with Chaminade students.
 - Assure the students from Chaminade they will not fail.

Data Science Research Projects



Outcomes

- **High** placement of students in a Data Science or Data Science related **graduate school**.
- **High** placement of students in Data Science or Data Science related **occupations**.
- Participating in an internship, REU, or program.
- Joined the Data Science program at Chaminade
 - Changed majors
 - Added DS as a second major
 - Added DS as a minor
 - Added DS as a certificate
 - Participated in one or more DS events – Pacific-wide
 - Transferred
 - Recruitment from 2-year colleges
 - Recruitment of traditional and untraditional students



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Mahalo

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