



EXECUTIVE SUMMARY

OCEAN DISCOVERY INSTITUTE EVALUATION PLAN

ABOUT OCEAN DISCOVERY INSTITUTE

Ocean Discovery Institute uses ocean science to empower young people of color from underserved urban communities of color to transform their lives, their community, and our world as science and conservation leaders. Working in the San Diego community of City Heights, we provide continuous science opportunities paired with mentoring and the tools to overcome challenges so that young people unlock their potential.

PURPOSE OF OUR COMPREHENSIVE EVALUATION PLAN

Evaluation is a significant component of our educational model. Evaluation of our programs and our students provides critical data that guides us in determining progress towards our goals, informs subsequent enhancements to our programs, and keeps our efforts aligned with our mission.

The Comprehensive Evaluation Plan documents our programmatic evaluation, our organization-wide evaluation strategy, and provides a framework to ensure the integrity and effectiveness of our programs and related evaluation processes.

An important companion document to our Comprehensive Evaluation Plan is our Education Foundation. The Education Foundation document provides a programmatic framework for the evolution of our initiatives and the design of associated educational activities.

OUR EDUCATIONAL INITIATIVES AND PROGRAMMATIC GOALS

We provide our programs through three distinct, and progressively rigorous, educational initiatives (Figure 1):

- The Student Initiative serves entire classes of students during the school day with hands-on science activities and field trips.
- The Community Initiative serves our Members, who are students of all ages, when they visit the Living Lab after school and participate in science camps and academic supports.
- The Leaders Initiative serves students beginning in 8th grade and is a rigorous pathway program to prepare students to go to college and become science and conservation leaders.

As a result of our programming, our students will (Figure 1):

- BELIEVE that science is something they can do and a scientist is someone they can be.
- ACHIEVE in their understanding of science and math content and positive academic performance.
- LEAD in science and conservation to make a difference.

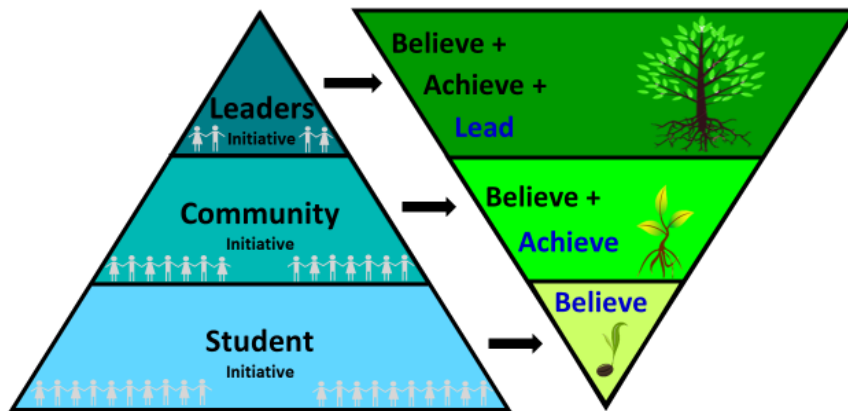


Figure 1: Our initiatives (left) decrease in size while increasing in intensity, while our programmatic goals (right) build upon one another as students progress through our programs.

OUR COMPREHENSIVE EVALUATION APPROACH

Our comprehensive evaluation approach incorporates three key elements: Program Quality, Near-Term Outcomes, and Long-Term Outcomes.

1. Program Quality

Our Program Quality assessment ensures that programs are designed and implemented using a specific framework of organizational philosophies and design principles informed by our experience working in the community we serve. We assess progress towards fully realizing our design principles during program implementation, communicate relevant feedback, and subsequently enhance programs.

Our Program Quality assessment consists of three components:

- I. Observations of program alignment with our Education Foundation
- II. Observations of instructor alignment with our Educator Principles (a document of guidelines for how our instructors teach students across all programs)
- III. Collection of stakeholder feedback (Teacher and/or Family)

2. Assessment of Near-Term Outcomes

For each of our three initiatives, we identify annual evaluation goals that are functional yet aspirational and provide an indicator of success in the near-term. We use a variety of assessment methods to assess student outcomes, including research-informed qualitative surveys, quantitative assessments, comparisons of academic data, and student interviews. We implement these methods during programs, then analyze the data and communicate outcomes via a variety of internal and external channels.



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The following is a summary of each initiative's near-term evaluation goals, our methods to measure progress towards those goals, and our data analysis and conclusions:

I. Student Initiative:

a. Evaluation Goals:

Our Student Initiative aims to break down barriers of perception toward science, to build community ownership of a place of science, and to nurture our students to BELIEVE that science is something they can do and a scientist is someone they can be.

b. Evaluation Methods:

Beginning in 3rd grade, we implement our ten-question, self-evaluation "Believe Survey" with every student participating in Student Initiative programs. Each student completes a survey one per grade level during the final lesson of their curriculum at the Living Lab.

c. Data Analysis and Conclusions:

We code all student survey responses on a 1-5 scale and enter all survey results into a database. We then calculate the average response for each question, as well as the percentage of students selecting a positive response (either 4 or 5). We can then assess, by grade level, the percentage of students who express belief in their ability to do science and be a scientist.

II. Community Initiative:

a. Evaluation Goals:

Our Community Initiative builds upon our Student Initiative by additionally supporting our students to ACHIEVE improved understanding of scientific concepts and the scientific process, as well as achievement of positive academic performance in school.

b. Evaluation Methods:

In addition to evaluating our BELIEVE goals as outlined above, through our data sharing contract with San Diego Unified School District (SDUSD), we are provided with grade level-specific academic data on a semester basis for all students in Kindergarten through 12th grade in the school-shed. We use these academic data as indicators of the efficacy of our Community Initiative efforts. We track students' attendance rates in our Community Initiative programs and take a closer look at the academic performance of students who meet a pre-determined attendance threshold (termed as "Committed Members") at which we expect they will experience measurable academic benefits by participating in our programs.

c. Data Analysis and Conclusions:

For each Committed Member, we evaluate their achievement in math and science courses (K-12), GPA (6-12), and English proficiency scores (K-12). We can then compare the percentage of our Committed Members who experience an annual increase, or maintain high scores, in these areas against a control group of their peers.

III. Leaders Initiative:

a. Evaluation Goals:

Our Leaders Initiative builds upon the science belief and achievement fostered in our Student and Community Initiatives and empowers our students to LEAD by taking the necessary steps to pursue and obtain a career in STEM, by taking opportunities to use science to make a difference; and by participating as servant leaders and mentors.

b. Evaluation Methods:

In addition to evaluating our BELIEVE and ACHIEVE goals as outlined above, we track the following near-term metrics for Leaders Initiative students (our “Ocean Leaders”):

- For 12th grade Ocean Leaders, we track college acceptances and matriculation into higher education institutions.
- For Ocean Leader alumni (high school graduates), we track participation in mentorship and volunteer roles within the organization.

Because Ocean Leader students and alumni are served and tracked longer than any other category of student, additional evaluation of this initiative is covered below in the “Long-Term Outcomes” section.

c. Data Analysis and Conclusions:

For 12th grade Ocean Leaders, we calculate the percentage of students who pursue higher education after high school graduation. For alumni, we calculate the percentage of students who participate as servant leaders and mentors through volunteering and serving in mentorship roles.

3. *Assessment of Long-Term Outcomes*

We pursue questions related to the longer-term impacts of our programming on our students as well as the wider impacts on our community. Many long-term outcomes require multiple years to evaluate. The following detail our intended long-term outcomes and their indicators we expect to see if our education efforts are working as intended.

1. Ocean Leader alumni embody STEM leadership in college, career, and service

We annually evaluate the following indicators to track progress towards this goal:

- % of Ocean Leader alumni who graduate from a 4-year college/university within 6 years of high school graduation.
- % of Ocean Leader college graduates who major in a STEM subject.
- % of Ocean Leader alumni who use STEM, in some capacity, in their careers.
- % of Ocean Leader alumni who are employed in STEM careers.

Our post-high school tracking data are obtained through three primary sources: program and volunteer attendance data, annual Ocean Leader alumni surveys, and National Student Clearinghouse data (provided via our data sharing agreement with SDUSD). We also annually track control group data for each of the above indicators to use as a comparison.



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II. The community demonstrates belief that science is a possibility for them

We annually evaluate the following indicators to track progress towards this goal:

- % of Members who stay engaged with us for more than 3 years.
- Increase in the % of 8th grade students who express positive science self-belief over time.

III. Our programming has a positive impact on formal academics within the Hoover Cluster

We annually evaluate the following indicators to track progress towards this goal:

- Increase, over time, in standardized test scores in math and science within the school-shed.
- Standardized test scores in math and science for students participating in Ocean Discovery programming compared to a control group consisting of all students in the school-shed.
- Increase, over time, in average number of STEM courses completed by Hoover High School graduates.
- Average number of STEM courses cumulatively completed per Ocean Discovery Member Graduate compared to a control group consisting of Hoover High School graduates, collectively.
- Increase, over time, in average course GPA in STEM courses taken by Hoover High School students, collectively.
- Increase, over time, in percentage of all Hoover High School students declaring STEM majors in college, collectively.

We obtain these data through a variety of external sources: we access standardized test scores through SDUSD; we track STEM course work through our database; and we receive college major data from the National Student Clearinghouse via SDUSD.

ANNUAL EVALUATION REPORT AND DISSEMINATION

After the end of each academic year, we conduct a final analysis of all evaluation data and create an Annual Evaluation Report. This report details all programmatic goals for the year, methods used for data collection, reports final programmatic data, and discusses key takeaways, successes, and areas for enhancement. The report is distributed internally to staff and used by program directors and managers to enhance programs. It is also distributed to external parties for whom the details of our evaluation processes are of interest.

We incorporate data and key takeaways into a variety of other dissemination materials. Our organizational Annual Report discusses our achievements and is distributed broadly through our networks. We also share outcomes on our website, to funders, and to all partners who provide support for our programs and students.