HUDSON RIVER
COMMUNITY SAILING

Youth Development Programs Final Report
2018-19

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Hudson River Community Sailing develops leadership and academic success in underserved New York City youth through sailing education and provides maritime education and recreation to the community at large.

Introduction

Hudson River Community Sailing serves 175 middle and high school students from eight public schools in two locations over the course of an academic year through Sail Academy. In Sail Academy Chelsea, students enter the program in the fall of their freshman year and over the course of four years they learn to sail, build wooden boats, and work as a team. In Sailing by Numbers, 9th grade students gain skills in math as they are introduced to sailing. 10th grade students in Ocean Literacy study the science of the Hudson and learn to become stewards of the river. As students enter their 11th and 12th grade years, they gain more independence and have the opportunity to specialize based on their interests. They choose between elective tracks taught by various HRCS staff in areas of expertise including racing, passage-making, engine maintenance, and boat building. This specialization both engages students and gives them a taste of the structured independence of college courses.

Sail Academy Inwood serves 25 middle school students who attend after school programming offered by Children's Aid at the Salomé Ureña Campus. This campus has two schools, but all Sail Academy Inwood students currently come from the City College Academy of the Arts (CCAA). This is the first full school year of Sail Academy Inwood, after the successful pilot last spring. Students are in 6th and 7th grade, and the program follows a similar progression to Sail Academy Chelsea, with sailing in the fall and spring and boat building in the winter. The Sail Academy Inwood curriculum is adapted from the US Sailing Reach curriculum.

We operate Sail Academy in the context of a vibrant Community Sailing center that gives NYC affordable access to the water. The Community Sailing program also provides our youth with meaningful internships and connects them with diverse volunteers, career speakers, and mentors.

This report will begin by evaluating Sail Academy Chelsea, and then move on to Sail Academy Inwood. We evaluate our programs according to foundational outcomes.

Sail Academy Chelsea aims to:

1. Prepare students for success in college and career
2. Build leadership skills including self-confidence, communication, and teamwork

3. Foster a greater interest in STEM subjects and environmental stewardship
4. Develop student sailing and boat building skills

Our Chelsea partner schools are:

1. Hudson High School of Learning Technologies
2. Manhattan Business Academy
3. NYC Museum School
4. NYC Lab School for Collaborative Studies
5. Harvest Collegiate School
6. James Baldwin School for Expeditionary Learning
7. Quest to Learn

Progress Assessment

In order to impact our students through our program, we must assure that we have satisfactory attendance and enrollment data. With this in mind, we shifted our attendance entry to Salesforce two years ago. This new system enables us to capture attendance and enrollment data accurately and consistently, evaluate patterns weekly, and take follow up action. This allows us to better serve our students. The average attendance rates for each program year are shown in Table 1 below, with a comparison to last year.

Average Attendance by Grade Comparison

Grade	Average Student Attendance Rate 2017-18	Average Student Attendance Rate 2018-19
9	80.00%	79%
10	78%	85%
11	87%	83%
12	81%	80%
Total	83%	82%

This data demonstrates a relatively stable average attendance rate in the low 80% range. We feel that this is satisfactory, but we continue to strive for a higher average attendance rate,

because we feel that the more often students attend our programs, the more they will benefit from them.

We use several other measures to evaluate our programs. Currently, we use an internal survey, the Student Success Network survey for social emotional learning, and exit tickets to demonstrate content mastery. After piloting the PEAR Institute Common Instrument Suite (CIS) Survey last year, we felt that it did not meet our needs. We added measures to our internal survey to determine STEM identity and interest. In addition, instructors meet with students individually and generate observational data. The data and findings below are compiled from a combination of all of these sources.

Outcomes: Key Findings

Sail Academy students are more prepared for success in college and career.

During their time at HRCS, students are exposed to many unfamiliar career and college paths through the wide and committed network of adult volunteers and members.

100% of HRCS seniors who applied were accepted to college, 86% are planning to attend a 4-year college or university, and 50% plan to major in a STEM field. One student did not choose to apply to college, and will be joining the US Navy (See Appendix for a list of postsecondary plans).

This year, we created a separate time for College Prep in the First Mates program schedule, with the opportunity to meet Tuesdays between 3:30 and 6:30. Several students have taken advantage of this time over the course of the year thus far to work on applications, and students continue to come in on Tuesdays for financial aid support.

42 11-12th grade students received ongoing 1:1 coaching focusing on college choice, completing applications and financial aid forms, and SAT support using Khan Academy or referrals to Let's Get Ready

14 12th grade students participated in college essay workshops and 1:1 ongoing college essay and application support

42 11-12th grade students had the opportunity to visit colleges with HRCS, including: SUNY Maritime, Stevens Institute of Technology, NYU, Stony Brook, Columbia, Vassar, and Baruch.

12 Career Speakers exposed 10th-12th Grade students to new careers and pathways including: patent lawyer, brand manager, and NYTimes software developer. 9th grade students piloted a career speaker this Spring as well.

5 9-12th grade students attended a courtroom visit and lunch with a judge.

30 10th grade students attended a trip to the Newtown Creek Wastewater Treatment Plant, and 20 students attended a trip to SIMS Municipal Recycling Center. Both trips introduced students to environmental occupations on New York Harbor, all while learning about sewage, recycling, water quality, and urban planning.

37 10th grade students received training in resume writing

12 Students completed advanced intern training. Trainings focused on transferable job skills such as professional communication (phone, email), operations, bookkeeping, and database management. These students were then placed in departments based on their interests, where they continued more specific training, and joined the cadre of interns from the previous year in paid year round work.

22 Students will participate in our expanded Junior Educator Internship (more information in the Internships section below)

100% of 9th grade students surveyed agreed with the statement, "I am aware of the opportunities for me in the program if I decide to continue after this year."

100% of 11th grade students surveyed agreed with the statement, "I feel supported in exploring and preparing for opportunities for after high school (college, career, etc.)."

100% of 12th grade students surveyed agreed with the statement, "I am better prepared to succeed in whatever I decide to do after high school (college, career, etc.)."

57% of students from all grades (76% of students from 11th-12th grades) responded positively to statements about Problem Solving[1], 7% higher than the Student Success Network average[2].

"Through HRCS, I've learned to listen. I've learned how to talk to people that look different than me. I appreciate perspectives that are different than my own." - Bushra Naqi, graduating Sail Academy student

Sail Academy develops leadership skills including self-confidence, communication and teamwork.

This year, we have added more team building and social emotional content to our programming to create more opportunities for students to develop and practice leadership skills. During their first year in Sail Academy, students also have the opportunity to apply for the summer Leadership Intensive internship, which continues to develop leadership and communication skills.

In our Ocean Literacy curriculum, students are placed in small teams and work together to complete activities and experiments like monitoring our oyster cages, collecting marine debris, and building weather instruments, which allows them to work in interpersonal and communications skills while creatively solving problems and working towards solutions.
All students have set programmatic, academic, and personal goals for this school year that we check in on each semester in one-on-one conversations. Ocean Literacy students also have the opportunity to apply for the Junior Educator Internship, which teaches higher level communication and leadership skills.

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[1] "Problem Solving" is defined as "Ability to identify a problem, analyze possible plans to resolve the problem, select and implement a plan, and evaluate the outcome."
[2] Students were administered a pre-survey formulated by the Student Success Network and HRCS results was compared with 3,247 other students

Students in grades 10-12 serve as “first mates” on boats with 1st year students. Teaching younger students provides an opportunity for leadership, and more extensive work on interpersonal and communication skills.

100% of Students learn teamwork when rigging and de-rigging sailboats, and communication skills by learning to tack and jibe using sailing commands

31 First year students will participate in the Leadership Intensive Internship, which focuses on leadership development, communication skills, and professionalism

100% of 9th grade students surveyed agree with the statement “By helping out and making contributions, I am able to make the program better.”

100% of 9th grade students surveyed agree with the statement “Because of the skills I have learned in program, I am more confident.”

97% of 10th grade students surveyed agreed with the statement “I communicate more effectively with others (peers and adults).”

100% of 11th grade students surveyed agree with the statement “I am a more effective role model to peers/students younger than me.”

100% of 12th grade students surveyed agree with the statement “I am a more effective leader within groups and a stronger mentor to younger students.”

100% of 10th-12th grade students surveyed agree with the statement “Because of the skills I have learned in program, I am more confident.”

31 students will participate in an 8 hour First Aid CPR/AED training and receive a certification from the Red Cross as part of the Leadership Intensive.

72% of students from all grades (84% of students in grades 11-12) responded positively to statements about Interpersonal Skills[3], 9% higher than the Student Success Network average[4].

"The program has helped me communicate more effectively with my peers by teaching me how to work in a team and cooperate with others in order to get results." - Sydney Tirado, 10th grade Sail Academy student

Sail Academy fosters a greater interest in STEM subjects.

By creating connections between what they are learning on the water and in the classroom, students become excited about math and science. This year, we continued to implement exit tickets, which acted as a formative assessment of content mastery for 9th and 10th grades. However, our key goal remains to increase student interest in these subjects, with content mastery as a secondary goal.

First year students focus on math concepts related to sailing and boat building, introducing them to our focus of applied STEM concepts. Students are taught how to read technical documents associated with boat construction, and use fractions in the workshop. During the sailing season, students learn how to convert units of measurement such as boat and wind speed.

Ocean Literacy is teaming up with Hudson River Park Trust on a cutting edge survey of fish DNA in the river. HRPT representatives and Ocean Literacy staff collected water samples on a bi-weekly basis, and cooperated on trainings. By the second half of Ocean Literacy, students were sampling Hudson River water and extracting organic matter themselves during program. By participating in this study, students gained experience in cutting edge biological science that could open the door to future careers in science.

[3] "Interpersonal Skills" is defined as "Ability to clearly communicate one's thoughts, be aware of one's own communication style and those of others, and be empathetic."
[4] Students were administered a pre-survey formulated by the Student Success Network and HRCS results was compared with 3,230 other students

Third and fourth year First Mates students are offered 4 tracks to choose from: Skipper, Building, Exploring, and Racing. Each track delves deeper into an area that students have experiences in previous years of program, such as sailing, boat building, and navigation skills.

96% of 9th grade students earned an average of 2 (out of 3) or higher on exit tickets.

98% of 9th grade students earned at least one credit in program this year.

96% of 9th grade students surveyed agree with the statement, "I am excited to learn more about STEM subjects in this program"

10th Grade students completed units on Marine Debris, Marine Ecology, and Weather, closely mirroring the topics covered in NYS Earth Science and Living Environment curricula. For their winter project, students designed a saltwater aquarium exhibit, built a cart from scratch, and collected organisms from the river for display. Residents of the exhibit so far have included grass shrimp, mud dog whelks, blue crabs, a lined seahorse, and a tautog.

100% of 10th grade students earned an average of 2.5 (out of 3 points) or higher on exit tickets.

26 10th Grade students sailed to Palisades State Park, where they identified local flora and fauna, collected marine debris, and practiced seining. Notable organisms found included blue crabs and several Juvenile striped bass. Our spring trip brought us to the Center for the Urban River at Beczak, a nature center on the Yonkers waterfront. After dropping anchors and ferrying ashore, students put on waders and seined with the CURB education staff in the Hudson.

97% of 10th grade students earned at least one credit in program this year.

86% of students surveyed agreed with the statement "I have a better understanding of science concepts related to sailing and marine life."

11-12th Grade students are offered 4 tracks to choose from: Skipper, Building, Exploring, and Racing. Each track delves deeper into an area that students have experiences in previous years of program, such as sailing, boat building, and navigation skills.

"The two most important things I have gotten out of attending the program is a better understanding of marine life and its ecosystem and marine debris consequences." - Lottie Ward, 10th grade Sail Academy student

Sail Academy students develop sailing and boat building skills.

Students progress through a tiered set of skills and earn certifications along the way. With the addition of a third instructor for second year program, we were able to offer 3 hour sessions of sailing for the 8 weeks of the fall season, doubling the sailing time available in previous years. The addition of more sailing time has allowed us to build in specific lessons on material from the US Sailing Basic Keelboat Curriculum including Points of Sail, Anchoring, reefing, heaving-to, and crew-overboards. Students have also had the opportunity to practice their skills on our new J/80s both during regular sailing session and during our fall trip to Palisades state park.

35 Students passed the NY State Safe Boating Certification.

50 9th grade students participated in an 8 hour expedition from Pier 66 to the Dyckman Marina

45 9th grade students participated in an 8 hour expedition to Liberty State Park

51 9th Grade students spent 20 hours each building two wooden Optimist sailboats after learning to safely use tools such as saws, drills, and files.

51 9th grade students completed 30 hours each of on-water sailing

8 11-12th Grade students participated in the Building Track, where they restored a wooden duck boat.

6 Students earned a US Sailing Basic Keelboat Certification through their work in the Sailing Track.

1 Student earned the Student Skipper Certification, which allows students to operate a boat without a staff member.

2 Recent program Alumni have earned the Basic Keelboat Instructor Certification, and will be teaching in our City Sail summer camp

“I do feel confident demonstrating the 2nd year sailing skills that I learned. I believe that in the beginning of the year, I wasn't that good at sailing. But now, I can see that I'm more efficient at sailing.” - Second Year Sail Academy student

Conclusions

The preceding evidence demonstrates that all four years of program have demonstrated success in each outcome. In all of our program areas, we’ve found that students are progressing in their skills and confidence. We have made several changes to program this year to better meet our outcomes.

We instituted a significant schedule change for the first year of program. We lowered the number of program days from four to three, dropping Wednesdays from the schedule completely. This change was put into place for two reasons. First, several of the schools that we work with have shortened school days on Wednesdays, which resulted in consistently lower attendance in program. Second, with the addition of Sail Academy Inwood, our schedule changed to accommodate the growth. Although we have had a smaller cohort of 9th grade students this year, this cohort has attended more frequently and progressed in several outcomes at a higher level than previous years.

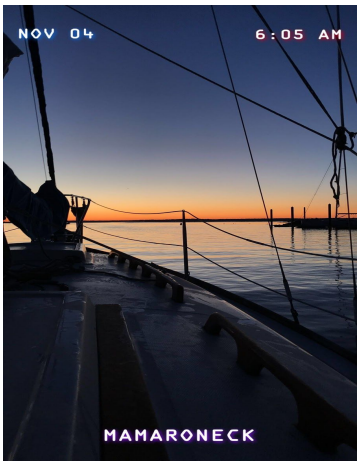
In the second year of program, more sailing time was added to improve students' sailing skills. As the weather changed, students continued to develop sailing skills while training as launch drivers in our dinghy. The addition of more sailing time allowed students to feel more comfortable in the boats, better preparing them for the Basic Keelboat exam and the possibility of becoming student skippers in the future. This restructuring has also resulted in a condensed schedule of academic units in the winter months, which has allowed us to focus on high-quality, engaging content when students are off the water.

Our marine debris education project was replaced by our student-designed aquarium, which furthered our organizational goal of educating our community about the environment of the Hudson River and the ways that humans affect that environment. An added benefit is that the aquarium serves as an educational platform for other programs, including our summer camp City Sail, where many of the students who built the aquarium will be using it to teach ecology lessons.

The addition of two winter trips that highlighted STEM careers rounded out the second year curriculum of college and career prep including career speakers, resume workshops, and internship applications. The consistent attendance in program demonstrates an improved level of engagement, and indicates that these changes have been successful.

At the end of last year, we prioritized incorporating more opportunities for students to advance their sailing skills, and earn higher level certifications in the First Mates program as well. We restructured the Skipper Track this year in order to best serve our older students in meeting those goals. The Skipper Track now meets in Fall and Spring, with most of the students completing Intern Training during the same time slot in the winter. This change has served to push forward the goal of having interns become student skippers, so that they can eventually complete the BKIC and become sailing instructors. While the Skipper track was well attended in the fall, there was a lapse in attendance in the spring after Intern Training ended. We often see new interns attend program less often once they receive their placement, and while we believe that the internship is also a beneficial program, this is an area for improvement in the future.

Program Highlights



Explore Track Overnight Trip

The Explore track executed an overnight trip during November on Long Island Sound! Students woke up to sail at sunrise.

First Year Spring Expedition

50 1st Year students participated in an 8 hour expedition from Pier 66 to the Dyckman Marina

Second Year Trip to CURB

Students Sydney Tirado and Syke Mayo seining at the Center for the Urban River at Beczak.

Second Year Trip to Newtown Creek

Students outside the Newtown Creek Wastewater Treatment Plant Digester Eggs.

Irvington Overnight Trip

3rd and 4th Year students completed the tradition of the overnight sail to Irvington, where they stayed on boats and in the beach club.

Return to the River

Students showed off their winter projects. First year students blessed and launched two wooden Optimist boats. Second year students displayed their aquarium and demonstrated checking traps off of the kayak dock.

Alumni Homecoming

11 Alumni gathered on January 3rd to reconnect and participate in a panel with current students, where they shared advice about the college process.

Alumni Programming

Leo Martinez, one of our alumni, has joined our year-round staff and is working as part of our Youth Development Department to expand alumni services. As our alumni cohort grows, we are continuing to prioritize the support of our program graduates.

This year we have continued providing social-emotional and academic support to our alumni post high school. We have revamped our check in style to better support students through in person or video chat meetings 2 times per year. So far we have had only 12% of our alumni check in but we are looking at ways to better connect with them and possibly have some incentives so we don't lose touch with them. Moving forward, seniors will sign a contract committing to these check ins at the time of graduation.

From the data we collected we saw that all of our students were in good standing, most were staying at their current school but we did have two students currently transfering. Also all of the check ins were with freshman so they had all recently graduated from the program. We hope that having our students sign contracts committing to those check ins, will increase that data. One of the difficulties is getting alumni that have been gone for 2+ years to start checking in.

In addition to increased check ins, we have expanded other touch points with alumni. We sent an Alumni Bulletin out this past Winter and Spring and will be looking to send another one out this fall. In the bulletin we have included job opportunities, surveys, events, and spotlights on specific alumni. We will also continue to hold our annual Alumni Homecoming. Although we scheduled an Alumni Regatta this summer, we did not get much interest. We definitely want to try it again possibly earlier in the summer when students are less busy. In July we are holding two workshops on budgeting and interviews. We want to continue to provide more events like these to engage alumni and keep them involved.

Internships

Since 2009, HRCS students have volunteered and been hired to support staff roles in a variety of ways, from occasional launch driving, to maintenance and simple administrative tasks. Over recent years, student roles have increased in number and significance, to a full time in-season launch schedule, independent engine repair, and sophisticated administrative support. As

student support has grown,HRCS has formalized their involvement into a leveled internship program beginning the summer after the ninth grade, and progressing until students leave for college.

HRCS internships serve two goals: they provide a safe and supportive arena in which students can develop their mindset from youth to adult, using the professional workplace as a setting; and trained interns provide necessary staff support to all HRCS program areas.

The internship progression, and associated training and work, is designed to lead the student through the process of group work towards individual work, and to develop the student from dependent youth to independent professional. HRCS's unique environment of a self-sufficient waterfront sailing and education center provides opportunities for students to gain experience in areas unusual for their background. Interns have the opportunity to learn a variety of STEM concepts and professional behaviors through performing marine and customer service operations. The internship program combines both social and technical skills and aims to develop individuals better prepared to participate and succeed in the adult world.

Intern roles and programs developed organically, starting with just two supporting students in the summer of 2009. Since then, the program has grown into a large corps of seasonal and year-round interns who receive training on a regular basis, and on whom the organization relies.

Structure Overview

Name	Time Frame	Students Served	Schedule	Content
Leadership Intensive	Summer 9/10th	32-40	4, 1 week sessions, Mon-Fri, summer (8-10 students per session)	Leadership, introduction to effective communication, team coordination.
Junior Educator	Summer 10/11th	15-20	5 weeks, Mon-Fri, summer	Basics of instruction as camp support staff, office behavior, launch training, working as a group
Junior Intern	Fall/Winter 11th	8-10	Weekly schedule during sailing season,	Training with/shadowing interns and staff. Technical STEM concepts/skills

			50 hrs volunteering/training	
Intern	Year Round starting Spring 11th	5 - 8	Weekly schedule during sailing season, 10-20 hrs/week, paid	Technical STEM subjects reviewed, customer service and professional skills reinforced. Boat repair and maintenance, office management, dinghy operation, and development/exploration of new areas of interest
Assistant	Alumni	3-5	Flexible schedule depending on demand and student qualifications	Alumni fill positions with higher levels of responsibility throughout the organization

Inwood Youth Programs

Inwood Sail Academy

Inwood Sail Academy is a school year long program for 25 middle school students who attend after school programming offered by Children's Aid at the Salome Urena Campus.. All students are from the City College Academy of the Arts (CCAA). All participants are recruited and selected by Children's Aid. All Participants selected from CCAA for Sail Academy are part of the A.C.E. (Academic Enrichment) program with Children's Aid.

This program is modeled after our Chelsea program, with adjustments made to meet the needs of the differing location and age group. Key elements of the program include: learning to sail, STEM based activities, working with hand tools to build small wooden boats,

teambuilding and small group activities to develop confidence and self-esteem. Students are exposed to math and science topics related to sailing and the Hudson River, and learn how to be comfortable and safe on and near the water. Students also spent time exploring the natural environment of Fort Tryon Park, most notably the diverse bird population.

Progress Assessment

This program served 25 students, and included 52 sessions, which averaged 2.5 hours each. An average of 17 students attended each session (70%). Each student attended an average of 88 program hours.

Students completed two surveys, similar to the Chelsea model of assessment. One was distributed at the beginning of the program year and one at the end, to measure impact. These results have been combined with instructor observations to produce the data below.

Outcomes: Key Findings

Sail Academy develops leadership skills including self-confidence, communication and teamwork

During program, all students participate in 1 hour of team building per classroom session. All staff and volunteers participated in 2 youth development training sessions to help with leadership and confidence development and to improve the quality of interactions and lesson delivery. Students learn teamwork when rigging and de-rigging sailboats. Students learn to tack and jibe using sailing commands. Students were given opportunities for public speaking by leading the blessings of the Optimist in front of an audience of families, staff and supporters.

> 90% of students agreed with the statement, “When I struggle with something, I try harder to overcome it.''

> 100% of students agreed with the statement, “I understand how my behavior impacts the group.”

"The accomplishments in program were realizing the boat was done because we all worked together, and being able to sail without help." - Lia Issa, Sail Academy Inwood student

"We learned how competitive we can be and how dedicated we are to accomplish things as a group." - Jonromiel Peralta, Sail Academy Inwood student

Instructor Analysis: I think we were successful in this outcome because the students were constantly willing to step up and share ideas during leadership activities, use the commands on the boat and felt comfortable sharing opinions when given opportunities.

Sail Academy fosters a greater interest in STEM subjects.

Students participate in US Sailing REACH-informed curriculum during the Fall and Spring. In addition to the REACH-informed lessons, students learned how to read technical documents associated with boat construction and used fractions related to boatbuilding. All students participated in a weekly fractions challenge during the Winter months.

> 62% of students agreed with the statement, "I am interested in science and/or math." (Increased from 58% in the fall).

"Aside from sailing, we also learned about marine debris with Emily. We learned about all the litter that humans dispose in the ocean. We also learned how to measure wind." - Arna Asad, Inwood Sail Academy student

Instructor Analysis: Even though we covered a wide range of STEM related content from the US Sailing REACH modules to lessons involving engineering and boatbuilding I believe that the connecting pieces to real world applications were inadequate and adding more background Information as well as connecting them under a common theme would increase students' interest.

Sail Academy students develop sailing and boat building skills and are comfortable doing water based activities.

All students participate in the construction of a wooden optimist sailboats. Students complete a first year checklist with appropriate sailing skills for middle school students.

> 100% of students agreed with the statement, "I am comfortable participating in water activities."

"One challenge I overcame this year was my fear of being on a boat." - Abigail Then, Inwood Sail Academy student

"I learned how to use the tiller, how to raise both of the sails, and how to identify where the wind is going." - Michelle Rosario, Inwood Sail Academy student

Instructor Analysis: We were successful with the building, launching, and sailing of the Opti as well as students demonstrating their sailing skills on the boat. We attempted to have students use a sailing checklist, but due to time constraints at the pier a different method should be used for students to verify their skills.

Conclusions

We succeeding in creating a program for middle school students from Inwood/Washington Heights that builds confidence, water comfort, sailing skills, and fosters an interest in STEM related activities.

Students learned sailing skills and related leadership and teamwork concepts, built an Optimist, and completed STEM based and social emotional learning activities.

Challenges

Working with Children's Aid has presented some challenges that we do not face with other partners. There is a series of background checks that must be completed before staff and volunteers can work with students. This process takes 2-4 weeks, which hampered our staffing in the beginning of the program year. Children's Aid also matriculates students into our program so we cannot actively recruit students from the school.

The Dyckman Marina was going through a transition of management and the docks or lack of adequate docks caused us to have to ferry the students to the docks with the boat and also initially limited the amount of boats we could have on the docks.

Next Steps

Next Year, we intend to recruit 25 new students from the 6th grade and use the curriculum from this years program. The 25 students currently in the program will complete the 2nd year program, which will include skills learned this year (water quality testing, buoyancy, simple machines) and incorporate a new winter project: Underwater Exploration Module Underwater (ROV) Remote Operated Vehicles. Both groups will continue to sail in the Fall and Spring.

To support this new project, staff will undergo a 1 week training in Dauphin Island Alabama where they will learn all about underwater ROVs (remotely operated vehicles), and how ROVs are used to explore, research, and work in ocean waters. In this multi-day workshop, Instructors will spend time on DISL's research vessels and see a research ROV in operation and talk with scientists who use ROVs in their research. Instructors will build a fully functional ROV from the circuit board up step by step and explore several relevant classroom activities that can get students building, learning and developing skills.

Atmosphere Academy

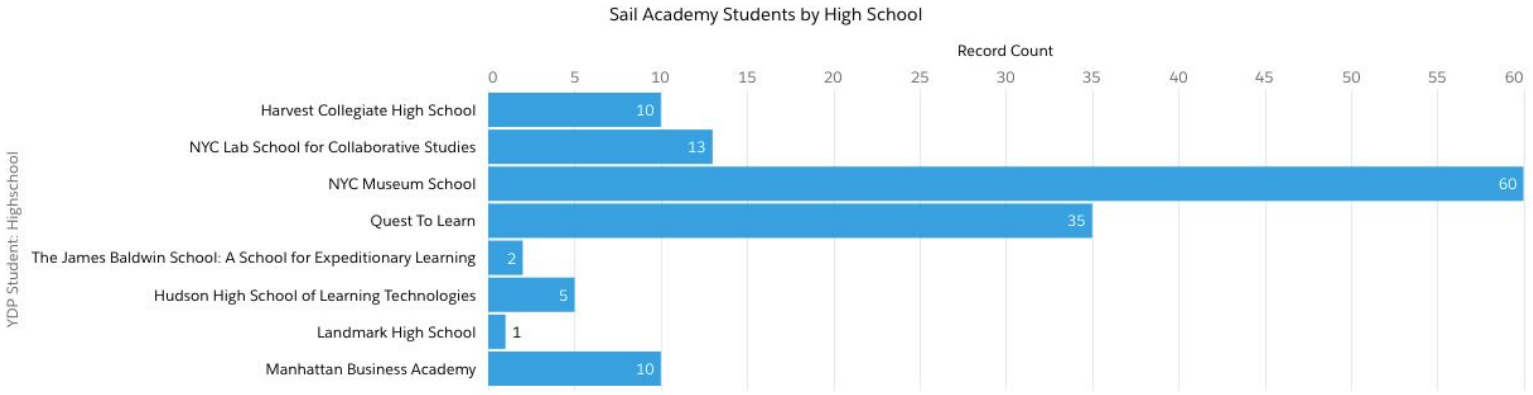
This year we began additional youth programming in Inwood with a new partner, Atmosphere Academy. This program was similar in curriculum to our Sail Academy program, but occurred once a week in a separate cohort. The program began in the Fall with introductory sailing, continued through the Winter when students built an optimist sailboat, and then culminated in the spring with a boat launch and sailing.

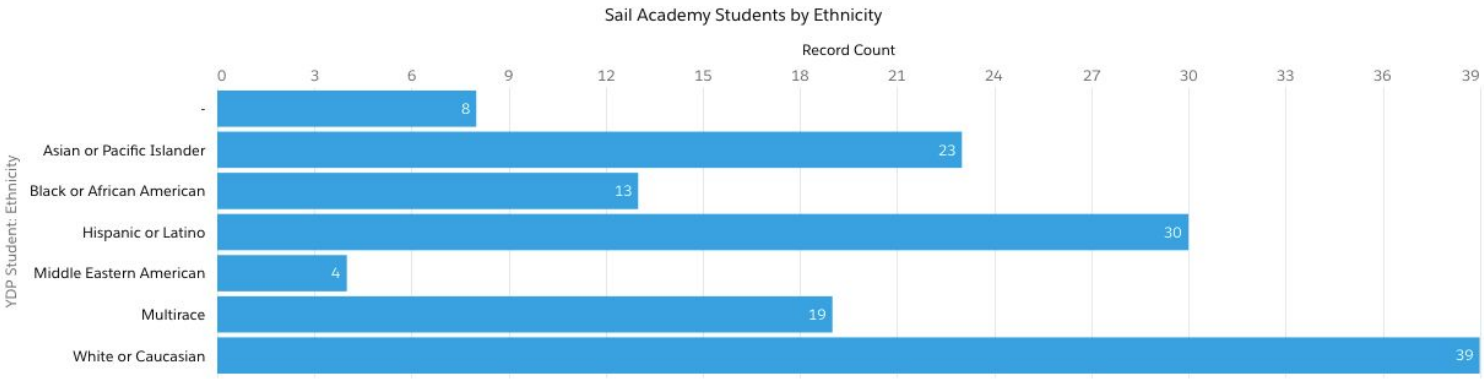
15 middle school students participated in this program

79% was the average attendance rate per student

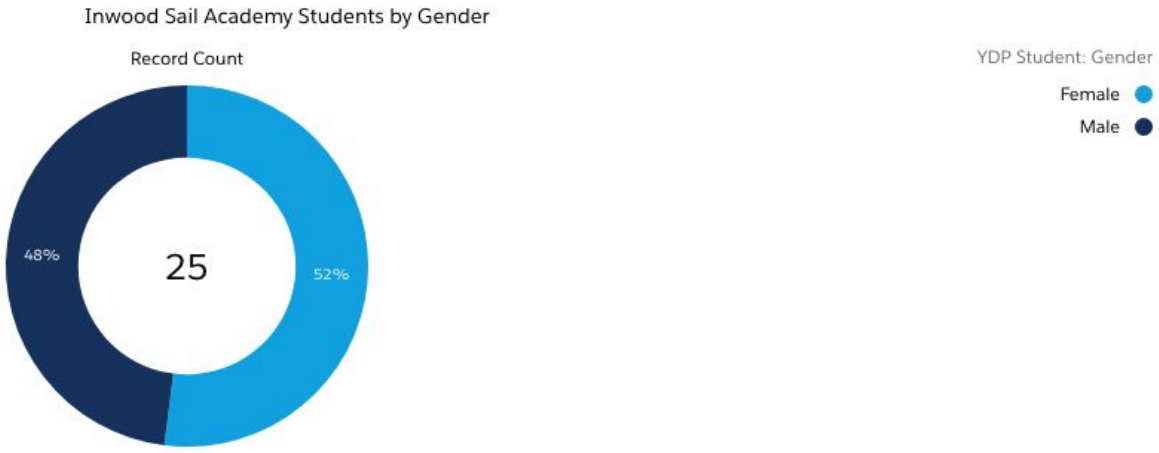
We plan to continue this program in the future, and develop the components to further reflect what we offer in our other youth programs.

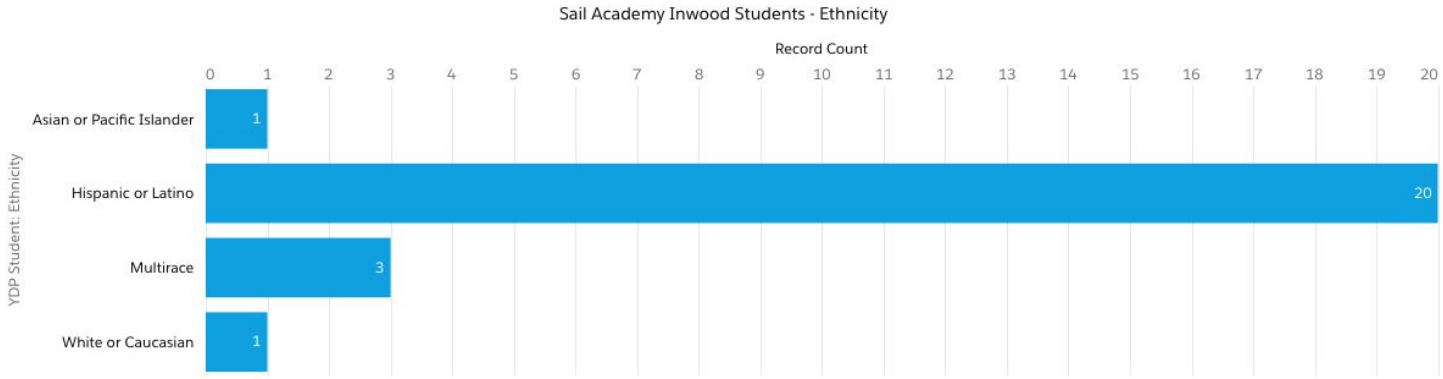
Appendix





Sail Academy Inwood





Credit Earners

Students who qualified to earn at least 1 credit in Math, Science, or Physical Education (Attended for 54 hours or more)

Overall	9	10
Percent	96%	97%

Seniors Postsecondary Plans

Student Name	Postsecondary Plan	Intended Major
Adid Rahman	Hunter College	Science
Bushra Naqi	Syracuse University	Communication
Chris Osker	SUNY Maritime	Marine Transportation
Christian Rodriguez	Community College	Undecided
Danna Chavez	Stony Brook University	Science
Devin Hohenstein	Franklin & Marshall	Undecided
Gwenyth Klomfas	Stony Brook University	Biology
Jasmine Izquierdo	College of Mount Saint Vincent	Visual Arts
Jonathan Dattoma	University of South Carolina	Marketing
Katherine Mattikow	SUNY Maritime	Marine Transportation
Liberty Abordo	City College	Science
Lucian Ascenso	US Navy	N/A
Rudra Shultz-Ray	Allegheny	Veterinary Medicine
Zofia Traczkowska	SUNY Albany	Undecided

Sail Academy by Year

Grade	Name	Scope and Schedule	Content

9	Sailing by the Numbers	4x/month, 2 hr/session	Discover how math applies to sailing, navigation, and boat building. Earn a math or PE credit.
10	Ocean Literacy	4x/month, 3 hr/session	Study the science of the Hudson and learn to become a steward of the river. Earn a science and PE credit.
11/12	First Mates	4x/month minimum, 3 hr/session	Become a stronger leader and sailor, prepare for college, gain job skills, and receive 1:1 counseling. Earn a sailing certification.

Grade 11/12 Tracks

Skipper	Racing	Exploring	Building
Sailors focus on earning the Basic Keelboat Certification, and then progress to the HRCS Student Skipper Certification.	Racers learn the skills and tactics necessary to compete at a high level against peers and adults.	Explorers venture beyond their home waters, and live aboard as sailors have done for generations, learning navigation, safety, and cruising skills.	Hearkening back to the glory days of sail and wooden boat construction, students focus on the classic, and often overlooked, skills and techniques around wood-working.

Key Staff and Volunteers

Grade / Name	Program Director	Supporting Staff	Volunteers
9 - Sailing by the Numbers	Mwenye Seville	Emily Martinez	Luis Jaramillo, Doug Blank, Peter Glusker, Peter Mant, Emma McGrath, Haim Farkas, David Florence, Thomas Mueller, Lynn Kraus, Nikolaus Sundholm, Nick Badal, Rich Leone, Mark Horowitz.

10 - Ocean Literacy	Alexe Taylor	Russell Jacobs	David Strack
11/12 - First Mates	Emily Griffin	Robert Burke, Jonathan Mercado, Alexe Taylor, Don Rotzien	Emma Coppack, Janine Haberl, Nigel Chase, Michael Kurtz, Nathan Carver, Eva Schatz.