WHERE THE JOY OF LEARNING MEETS THE SCIENCE OF SUSTAINABILITY.

ANNUAL REPORT 2021 - 2022
A MESSAGE FROM THE EXECUTIVE DIRECTOR

Dear Friends of NY Sun Works:

It’s my pleasure to share our 2021-2022 Annual Report with you. This report in fact spans 18 months from January 2021 to June 2022, which brings our reporting schedule in line with our new July 1-June 30th fiscal year. The fiscal year shift will streamline our budgeting and planning process by aligning our fiscal year with both the NYC school calendar and the city’s budget schedule. Moving forward, our annual reporting will cover the 12 months between July and June but for now, welcome to our 18-month “Annual Report.”

These 18 months have been a period of tremendous growth and exciting new initiatives for NY Sun Works. We grew from 141 school partners in January 2021 to 203 in June 2022, increasing our presence in schools by 44%. We are on track to grow to 250 school partnerships by the end of 2022. Our grade-specific sustainability science curriculum now impacts over 65,000 students per year and our newly launched Harvest Program ensures that the food grown in the classroom is distributed among the school community, connecting families to the classroom and supporting healthy eating. We also ran our first-ever Pop Up Hydroponic Classroom on Astor Place in Manhattan’s East Village. The two-month exhibit brought in hundreds of visitors to see our hydroponic classroom in action and learn how our program is changing students’ lives in NYC public schools.

The start of 2021 also marked a change in national leadership that brought renewed focus to many issues that sit at the heart of NY Sun Works’ mission, from equity in education, to food security, to the urgent need for climate and sustainability education. This shift in policy priorities brought new opportunities for NY Sun Works to participate in policy conversations and share our expertise on national and international levels. We were honored to be invited to present before the U.S. House of Representatives Sustainable Energy and Environment Coalition (SEEC) and at the World Environmental Education Congress in Prague. We also secured more than $1 million in federal funding for our programs, including a significant grant award from the USDA and $800,000 in Congressionally Directed Spending to bring our program to 20 Brooklyn schools in Congressional District 07.

During this time, we also undertook a strategic planning process to determine our growth priorities for the next five years. This intensive and rewarding process was instrumental in defining our strengths, opportunities, and resource needs as we prepare for geographic and programmatic expansion and continue toward our goal of recognition as climate and sustainability education leaders.

The greatest highlight of the past 18 months has been seeing students back in school, exploring science, sustainability, and climate education as they farm in their hydroponic classrooms. Thank you for supporting our work and for sharing our commitment to quality education.

Sincerely yours,

Manuela Zamora
Executive Director, NY Sun Works
MISSION
NY Sun Works is a non-profit organization that builds innovative science labs in urban schools. Through our Greenhouse Project initiative, we use hydroponic farming technology to educate students and teachers about the science of sustainability.

VISION
We envision a generation of environmental innovators, empowered to create solutions to global climate challenges.
BUILD, TEACH, CONNECT

**203** GREENHOUSE CLASSROOMS

**793** SYSTEMS INSTALLED

**750** TEACHERS TRAINED

---

*Includes labs built from Jan 2019 to June 2020*
NY Sun Works serves a diverse population of students primarily across the five boroughs of New York City, with a small but growing number of schools in the greater metropolitan area. We strive to make our program accessible to all types of learners, especially students who are at-risk, require special accommodations, or are currently underrepresented in STEM fields.

We focus on bringing our robust programming and curriculum to higher needs public schools, with 83% of our partners qualifying for Title I, the federal education program that provides financial assistance to schools with high percentages of children from low-income families. The ethnicity chart was created using data from the NYC Department of Education Demographic Snapshot (SY 2021-2022), and our Title I status chart was created using data from the National Center for Education Statistics school search database (SY 2021-2022).
**IMPACT AND REACH 2021 - 2022 SCHOOL YEAR**

- **65,000 Students Reached**
- **96% Teachers satisfied with NYSW support services**
- **1,072 hours Mentoring/Training provided by NYSW team to 150+ teachers**
- **85% Students conscious about the environment after 1 year with a NYSW lab**
- **86% Students interested in Science & Sustainability after 1 year with a NYSW lab**
- **96% Students willing to eat fresh food harvested in their hydroponic classrooms**
The pandemic required a tremendous amount of innovation within NY Sun Works to help our school partners adjust to remote learning, but this period also offered an opportunity for the team to take a deep look at the work that we were currently doing, where we wanted to be in the future, and the path to get there. To facilitate this challenging process, we engaged a consultant from the organizational strategy and design firm Future Work Design in March 2021. The consultant guided us through a 3-stage process - 1) Listening Sessions; 2) Current State Assessment; and 3) Future State Assessment - that ultimately resulted in the development of a 5-Year Strategic Plan.

Listening Sessions: Stakeholder Engagement
In the first phase, we developed a set of strategic questions designed to get input on the current and future state of NY Sun Works from a wide array of internal and external stakeholders. External stakeholders included principals and teachers from current partner schools; funders and corporate partners in the urban agriculture field; and elected officials who have supported the organization in the past. Current staff and board members provided insights as internal stakeholders. These insights were gathered through a series of one-on-one interviews conducted by the consultant as well as through questionnaires and group sessions.

Current State Assessment
In June 2021, the consultant delivered an Insights Report that assessed relevant trends, as well as an analysis of NY Sun Works’ strengths, weaknesses, opportunities and threats (SWOT) based on the results of the stakeholder engagement sessions. Principals and teachers overwhelmingly viewed the NY Sun Works program and services as great strengths. Comments included: “If I have to rank all the companies we work with, and I work with hundreds, they’re probably my favorite. I really have to nitpick to find anything wrong. Satisfaction is very high.”

Strengths identified in stakeholder feedback included:
• Service
• Teacher Support
• Powerful Learning Experience
• Lean Operation
• Purpose Driven
• Flexibility
• Serves Many Students
• Always Improving

Though strengths outweighed weaknesses, the report identified areas for improvement that are now priority areas of focus for the organization. These include increasing opportunities for schools to share best practices with one another, improving marketing of our program and its impacts, and ensuring that we have the staff and internal capacity for growth.

The report also identified a variety of opportunities for improvement and growth, including expanding the types of services offered and increasing the number of school partnerships within and beyond New York City. These insights and identified opportunities for growth were used to develop Stage 3, the 5-Year Strategic Plan.
Future State Assessment: 5-Year Strategic Plan
The 2022-2026 Strategic Plan outlines the priorities and metrics for the organization’s growth in the near term.

The following five Key Growth Strategies were decided upon as a result of the comprehensive planning process undertaken by the NY Sun Works staff and board and drawing on the feedback received in Stages 1 and 2.

1. Grow in NYC Metro K-12 Schools
2. CEA Certification and Growing Into Community Colleges
3. Growth Beyond Schools to Other Youth-Focused Educational Programs
4. Expand Remote/Virtual Learning Opportunities
5. Pilot New Geographic Location

“As we prepare for geographic and programmatic growth, in FY23 NY Sun Works is committed to maintaining a focus on quality program implementation through solidifying internal operations and building a team that can allow us to scale quickly. A focus on operational excellence in the short term is essential to ensure that we are able to take advantage of future growth opportunities.” —Manuela Zamora, Executive Director, NY Sun Works

Five Strategic Priorities were identified to ensure that growth is feasible:

- Strengthen Operations
- Scalable Quality
- Expand Services
- Diversity Funding
- Prepare for Geographic Growth
HYDROPONIC STEM KITS: AN ENGINE FOR INNOVATION

In 2021, NY Sun Works partnered with Knology, a social science research organization, to assess the impact of our Home Hydroponic STEM Kits and Discovering Sustainability Science curriculum. We introduced the STEM Kit program in September 2020 to support hands-on science and sustainability teaching during remote and hybrid learning; between September 2020 and March 2021, our team assembled and delivered 12,500 kits to students from 79 schools, and another 5,000+ in the 2021-22 school year.

The Knology study confirmed the anecdotal evidence we’d heard and seen from teachers, parents, and students, concluding that the Kits and curriculum definitively bolster science knowledge and critical thinking skills and nurture students’ social-emotional well-being.

As stated in the Knology report, Impacts of NY Sun Works’ Discovering Sustainability Science, “At their core, the Discovering Sustainability Science curriculum and the Home Hydroponic Kits embody innovation, flexibility, hands-on learning, and critical thinking that meet the challenges of an uncertain education landscape created by the COVID-19 pandemic.” Further, “The NY Sun Works team was the engine for innovation and creativity in envisioning a resource that could cultivate students and educators during the pandemic.”

Knology’s evaluation incorporated interviews, focus groups, and a written survey encompassing all grade levels (elementary, middle, and high school) and a mix of new and returning teachers, to ensure a broad range of teacher feedback. Across all cohorts, teachers unanimously reported that the curriculum and kits effectively helped students learn science concepts and sparked students’ curiosity, creativity, and problem-solving skills. One teacher captured students’ overall response with the comment, “Every time we did a lesson they wanted more.”

Teachers observed that having a plant to nurture at home provided much-needed social-emotional support in a trying time, giving students something positive to focus on and creating a sense of continuity for students who had previously used the Greenhouse Classrooms at school. The benefits extended to students’ families, generating enthusiasm about using the kits and caring for the plants, and creating a shared learning experience and activity to participate in together during quarantine. Teachers also reported that students became more curious about science in general, including expressing an interest in pursuing science-related activities in the future, and that the kits helped students feel more connected with nature — particularly important in a time when access to green space was highly limited.
In October and November 2021, NY Sun Works ran our first-ever Pop-Up Model Hydroponic Classroom. Located on a bustling corner of Astor Place & Lafayette Street, the Pop-Up introduced visitors to our hydroponic farm-classrooms and showcased how hydroponic farming is changing the way science is taught in city schools.

Over the two months, we welcomed nearly 400 event guests and walk-in visitors to the space and grew 110 pounds of basil, swiss chard, romaine lettuce, and other produce - all of which was donated to the food pantry at Hour Children in Queens!

“Thank you, thank you, thank you! The smiles were endless. Good food grown well – a source of energy and health for the people in our community – what could be better? Gratitude from all at Hour Children!”
—Kellie Phelan, Hour Children’s Program Coordinator

Our tremendous thanks to Jeff Gural and GFP Real Estate, who graciously donated the space for our Pop-up Classroom, as well as to Kay-Twelve, Lettuce Grow, Tower Garden, and Gotham Greens, who generously donated hydroponic equipment and furniture for the space. The systems and furniture were sent to partner schools immediately following the event. Also, many thanks to Food Fleet and Nuchas for their generous (and delicious) support of our Pop-Up events.
LAUNCH RECEPTION

Special events included our Launch Reception, hosted by Mayor Eric Adams, NYPA CEO Gil Quiniones, and Jeff Gural of GFP Real Estate, bringing together new friends and our long-time supporters to celebrate the official opening. Guests honored NY Sun Works’ contribution to science and climate education in New York City while our guest speakers all spoke to the critical need to grow the NY Sun Works program in the coming years, reaching even more students with sustainability science and climate education and helping students develop healthy habits that will stay with them as adults.

FAMILY DAY

Little hands made big things happen at our weekend family event. From toddlers to teens, kids had a chance to plant seeds and create their own hydroponic system, and learn, along with their parents, how indoor farming can help create a more sustainable food supply.

After they had built up an appetite from planting, families enjoyed delicious empanadas and drinks from a Nuchas food truck parked out front, all generously donated by Food Fleet.

November 2021

Staff from the NY Power Authority, a long-time NY Sun Works partner, joined us at our Pop-Up @ Astor Place for a special Harvest Day. Nearly 30 NYPA staff members came out to harvest the leafy greens and herbs that filled the hydroponic systems, as part of their Community Volunteer Corps Initiative. With guidance from our Greenhouse Support Team, NYPA staff picked 110 pounds of basil, swiss chard, romaine lettuce, and other produce - all of which was donated to the food pantry at Hour Children in Queens.

Hour Children helps incarcerated and formerly incarcerated women and their children successfully rejoin the community, reunite with their families, and build healthy, independent lives.
TEACHER TRAINING

2021-2022 ASPDP COURSE

Every year, NY Sun Works offers our 45-hour ASPDP (After School Professional Development Program) course, “Energy, Water and Waste: Integrating Themes of Sustainability Into Your Classroom.” The course is approved for teacher continuing education credits by the NYC Department of Education (DOE) and focuses on incorporating sustainability content into the K-12th grade classroom. In 2021-22, our courses were hybrid online and in-person and reached 46 teachers over 4 sessions.

PROFESSIONAL LEARNING SERIES

NY Sun Works’ Education Team is honored to provide partner schools and students with resources to support learning about sustainability science, urban agriculture, and hydroponics year-round. During the 2021-2022 school year, our Education Team introduced significantly expanded professional learning programming with new training sessions, workshops, and events on topics including: classroom management in the Greenhouse Classroom, incorporating environmental justice and advocacy into curriculum, engaging diverse learners in the Greenhouse Classroom, supporting students in designing and implementing their own scientific investigations, and more! Here are some highlights of our 2021-22 professional learning programming:

January Curriculum PLs:
Farming Foundations and Student-Centered, Inquiry-Based Learning:
Designed for new Greenhouse Classroom teachers who were growing food and teaching in their hydroponic classrooms for the first time, this session gave participants the chance to delve deeper into the Farming Foundations introductory unit, work with fellow Greenhouse Classroom teachers, and generate specific ideas to bring back to their classrooms. In the second half of the session, teachers practiced creating inquiry-based learning experiences to drive hands-on, student-generated learning in their hydroponic labs.

“I enjoyed how the course was interactive, how we switched between activities, information, and guest speakers. It made the course engaging. I really connected to what we were doing. I can see myself using what we talked about in my own teaching.” —Adele, Spring 2021
Student-Led Investigations and Community Connections in the GHC: This session was designed for Greenhouse Classroom teachers who have been growing food and teaching in their hydroponic classrooms for one year or more (but any teacher was welcome to join). Participants had the opportunity to adapt & develop student-led investigations to enhance students’ identities as farmer scientists and increase student knowledge surrounding hydroponic technology & human impact on the environment. Participants also developed community outreach goals to connect the fresh produce being grown in the hydroponic lab to the larger school and surrounding communities.

Chancellor’s Day PLs:
Teacher-Led Round Table Discussions: We closed out the school year with round-table discussion professional learning sessions on Chancellor’s Day. These sessions gave teachers the opportunity to share stories and projects from their classrooms, hear from veteran Greenhouse Classroom teachers, and set goals for the following year. The sessions were co-led by nine partner teachers from different NY Sun Works partner schools, who shared advice and led participants in brainstorming on topics such as: Classroom Management in the Greenhouse Classroom; Engaging Multiple Classes in the Greenhouse Classroom; Community Connections and the Greenhouse Classroom; and Environmental Justice and the Greenhouse Classroom.

Harvest Fair PL:
District 19 Design Challenge: NY Sun Works is proud to partner with many schools in Brooklyn’s District 19. In collaboration with the School District 19 central office, the NY Sun Works Education Team hosted a professional learning session for teachers from our District 19 partner schools to prepare for their Harvest Fair event on May 14, 2022. The session introduced teachers to a district-wide design challenge in which students would work collaboratively to create their own passive hydroponic systems. NY Sun Works guided teachers through creating their own systems and designing lessons to facilitate this learning with students. The student-created systems were on display at the Harvest Fair that followed and many of our partner teachers shared fresh produce from their hydroponic systems for attendees to enjoy!

The NY Sun Works Education Team also provided professional development sessions in: The STEM Hydroponic Kit Curriculum, implementing the Harvest Program, and Youth Conference support and informational sessions.

We look forward to continuing to expand our professional programming for our partner schools and teachers in the years to come and continue to connect with our partner schools and teachers in meaningful ways.

“I have so many new ideas to try in my classroom and I can’t wait!”
— Erica, Fall 2021
In November 2021, NY Sun Works announced the launch of our brand new middle school curriculum, available online on the NY Sun Works Learning Center. Based on years of teacher feedback and research-backed teaching pedagogy, new lessons were created and current lessons substantially revised to meet teaching standards and engage students in hands-on, student-led investigative opportunities and real-world applications of sustainability science. These units and the associated lessons were more differentiated, more visual, and focused on environmental equity and action, while still based on the standards required in partner teachers’ classrooms. These lesson plans and the associated student journal pages are now scaffolded and supportive of our students’ different needs; at the same time, these new lessons call on students to bring their own funds of knowledge from their communities into the classroom and take action both locally and in the world.

Here are a few example units that are available from our updated NY Sun Works middle school curriculum:

**6th Grade - Human Impacts On Climate:**
This unit explores the effect humans have on our world and our changing climate. Students collect data about the air quality inside and outside of their school, compare the data to the air quality of their own neighborhood and work together to brainstorm possible solutions to improve air quality. Students also explore the causes of air pollution and the effects of air pollution on the atmosphere.

**7th Grade - Ethylene and Acidification:**
In this unit, students explore the role of sugars in plants and connect their understanding to the broader cycling of matter and nutrients in an ecosystem. Students identify the inputs and outputs of photosynthesis and how sugar is an output and has many uses in the plant that relate to the plant’s ability to survive, grow, and reproduce. Students also examine the fruit ripening process through hands-on student-led investigations. Students further explore the phenomenon of ocean acidification, the current impact it is having on the ocean overall, (including trophic impacts), how scientists are monitoring ocean acidification, and how humans are linked to these global impacts.

**8th Grade - From Waste to Wow:**
In this unit, students are introduced to what waste is and how it is managed in urban areas like New York City compared to other geographic areas. Students work collaboratively to design and implement their own action projects aimed at reforming waste mismanagement and creating better systems for waste management in their schools or communities. Students also explore decomposition and composting, how decomposers turn organic waste into nutrients that plants can use, and how energy is transferred in an ecosystem.

Sixth, seventh, and eighth grade teachers now have enough material to teach at least one lesson per week for the entire school year from these new grade band lessons (in addition to the Farming Foundations unit). We were thrilled to share these new and improved lessons with our teaching partners and have already received positive feedback from teachers following the implementation of this new curriculum.
Our Harvest Program, which engages families with classroom learning and expands access to healthy, fresh produce, is integral to our mission of delivering high-quality sustainability science education. Through take-home games and discussion cards for students to share with their families and regular distributions of lettuce, greens, and herbs grown in the classrooms, the program brings the learning home, extending the message about the role of urban farming in building sustainable, climate-resilient communities to students’ families while also supporting healthy eating and increasing food security.

The Harvest Program has the additional benefit of promoting parent involvement with their child’s education. Several studies have shown that students have better academic outcomes and improved social-emotional well-being when their parents are engaged with their school and curriculum. The produce and discussion cards encourage conversations at home about healthy eating, where food comes from, and other science topics, helping students build confidence and self-esteem as they share what they’re learning in school and helping families feel connected to the classroom even when they can’t be physically present at the school.

During the 2021-2022 school year, the NY Sun Works Education Team piloted an updated version of the Harvest Program. Working with eight schools, all funded by New York Power Authority, the team led professional development sessions, teacher training workshops, and assisted teachers in harvesting. Through a collaborative effort between the NY Sun Works’ education and greenhouse support teams, we were able to gather data from principals, teachers, and students on the successes and challenges of the Harvest Program throughout its pilot year. We are excited to use this data to expand our efforts to all of our partner schools during the 2022-2023 school year.
On May 19th, students from public schools around NYC came together virtually to share their research and celebrate their scientific accomplishments at NY Sun Works’ 10th Annual Discovering Sustainability Science Youth Conference. The Conference, typically hosted at Symphony Space to accommodate the large audience, was presented in an online format again this year due to continuing restrictions imposed by COVID-19. Sponsored by COFRA Foundation, Con Edison, and New York Power Authority, the virtual setting didn’t tamp down the enthusiasm or energy of the students, all of whom showed impressive perseverance in shifting gears and continuing their months-long research projects from home under the remote guidance of their teachers.

“I was able to have them watch it in class today and they were really excited to see their work featured and a ton of kids want to volunteer in the greenhouse next year,” said Ginny Sullivan, a teacher at Edward R. Murrow High School. “So watching the youth conference really motivated them.”

The students were joined remotely by members of our Greenhouse Support Team and Education Director Hannah Jaris, with special guests Daniella Piper, regional manager in New York Power Authority’s Western Region and chief transformation officer; and Danielle Corbin, teacher and author of the children’s book I Am A Mini Entrepreneur.

“You and only you are the author of your life. Every significant thing that will happen to you, good and bad, are individual chapters of the book that you are writing. Taken all together they become YOUR UNIQUE STORY.

—Daniella Piper, Chief Transformation Officer at NYPA
On May 24th, students from NY Sun Works’ partner schools came together virtually to share their science and environmental research at our 11th Annual Discovering Sustainability Science Youth Conference. A total of 68 student researchers, from Kindergarten to 12th grade, presented their independent and collaborative projects to an audience of their peers, parents, and teachers across our 200 partner schools. Students presented on a range of science and sustainability topics, including how ocean acidity affects plant health, the role of photosynthetic active radiation in plant growth, and how to grow food hydroponically.

Students also enthusiastically shared how their hydroponic classrooms inspire them as scientists and to support their communities. “We learned that fresh produce can help bring a community together, and show students that fresh, nutritious food is just as good,” said one student from Rachel Carson High School. “I believe that every school should have a greenhouse classroom. There are so many priceless educational benefits,” shared another student, from Kennedy-King Elementary.

In addition to the incredible presentations by our student Farmer Scientists, NY Sun Works was honored to host two guest speakers: Kedaar Raman, electrical engineer and director of corporate strategy at New York Power Authority, the largest state public power authority in the US, and Tinia Pina, founder and CEO of Re-Nuble, an agricultural technology company dedicated to furthering sustainable farming.

We thank our generous Youth Conference sponsors Con Edison, Grodan, and New York Power Authority.
NY SUN WORKS IN THE NEWS

In October 2021, NBC News 4 visited PS/IS 180 The Hugo Newman School in Harlem to see our program in action. Their story, which ran on the 5 o’clock news, showcased how we use hydroponic farming to teach students about climate change and sustainability science. The fifth graders featured in the story were the stars of the show, showing reporter John Chandler different parts of the hydroponic systems and speaking the blunt truth about climate change we all need to hear. To quote one student, “People should stop using fossil fuels and use more reusable sources of energy.”

NBC News 4 also joined the celebration at The Longwood Academy in the South Bronx in April 2022 for the opening of their new hydroponic farm-classroom, funded by Green Mountain Energy Sun Club.

Reporter Gilma Avalos was on hand to tour the systems and interviewed several fifth grade farmer-scientists about how the systems work and what they love about growing food in the classroom.

Fox 5 NY visited John F. Kennedy, Jr High School in Queens in March 2022. The story, which aired on the 5 o’clock news, showcased how high school students with special needs are learning science and sustainability through our hydroponic farming program. Speaking with reporter Dana Arschin, students in the class shared their favorite crops to grow – from eggplant and snow peas to arugula and tomatoes – and what they love about hydroponic farming. Said 12th grader Jarule Boapeah, speaking through his electronic communication device, “I love to see plants growing — I feel proud.”
In 2021, we opened our first-ever community-based hydroponic farm. The new indoor farm and learning center, located at UPROSE’s community center in Sunset Park, Brooklyn, was launched in collaboration with UPROSE and the NY Power Authority. The farm will enable local teens to grow fresh produce while learning about sustainability, nutrition, and local food production.

In 2022, we collaborated with the New York City Housing Authority (NYCHA), NYPA, and HANAC, a NYC-based community services organization, to open NYCHA’s hydroponic learning lab at its Astoria Houses Community Center. The community hydroponic lab — the first of its kind on a NYCHA campus — engages youth and community residents in urban farming, environmental justice and sustainability programming, while providing fresh, delicious produce for community residents to enjoy.

NY Sun Works handled design and installation and will also provide ongoing maintenance, curriculum, and harvest support. Funding partner NYPA will also organize community education events while HANAC Cornerstone will manage day-to-day operations and programming. Programs will be available to both students and adults and eventually be expanded to include intergenerational offerings.

These exciting new initiatives align with a core growth priority defined in our 5-year Strategic Plan: to reach more of New York City’s youth by building partnerships with educational organizations outside of schools. We look forward to growing our collaborations in the coming years.

“We know climate change is going to disrupt food systems and supply chains. Partnerships like this are central to building the local knowledge necessary to address a common threat. This partnership provides a hands-on opportunity for our community, especially our young people, to learn to grow food locally.”

— Elizabeth Yeampierre, UPROSE Executive Director
As food equity and environmental education have gained increasing prominence, NY Sun Works has been invited to share our expertise & experience in both these areas with leading policy-makers.

Supporting a Healthier NYC
In December 2021, Executive Director Manuela Zamora was invited to join Eric Adams’ Food Policy Transition Team, one of several committees he convened on key policy issues to prepare him for Day 1 as NYC’s new mayor. Joining Manuela on the team were food policy and nutrition experts, policy-makers, non-profit leaders, and representatives from community gardens and commercial farms who shared their guidance and expertise.

NY Sun Works Goes to Washington… (top, left and bottom, right)
Also in December 2021, we presented before the U.S. House of Representatives Sustainable Energy and Environment Coalition (SEEC), consisting of approximately 70 Congress members working to address climate change. Manuela Zamora & Megan Nordgrén shared how we are bringing science, sustainability & climate education through hydroponic farming to 180 NYC schools, and growing. Thanks to Rep. Yvette Clarke of Brooklyn for inviting us to participate in this important conversation. We met with several local members of the House of Representatives, including Rep. Grace Meng of Queens, Rep. Gregory Meeks of Queens and Rep. Adriano Espaillat of Northern Manhattan, to discuss our program & the impacts we are having in schools throughout the NYC region. Special thanks to Rep. Rosa DeLauro, Chair of the House Appropriations Committee, for hosting NYSW for an instructive, worthwhile meeting.

…and to Prague! (top, right)
NY Sun Works was honored to be invited to the World Environmental Education Congress (WEEC), to present, along with study author Alex Kudryavtsev of Cornell University, the preliminary findings of his research, “Urban Agriculture Education and Civic Engagement.” Our program was used as a case study in the research and Executive Director Manuela Zamora and Director of Program Development Megan Nordgrén presented on the NYC hydroponic sustainability science program. The theme of the 3-day conference, held in Prague, Czech Republic in March 2022, was “Building Bridges In Times of Climate Urgency.” The Conference included hundreds of environmental educators from around the world as well as policymakers from education ministries.

POLICY INITIATIVES
A MESSAGE FROM THE CHAIR OF THE BOARD

Dear Friends of NY Sun Works:

NY Sun Works wraps up the January 2021 to June 2022 reporting period in a solid financial position. Through Service to School revenues, support from elected officials, and grant revenue we finished the new fiscal year with an important increase in net assets. In parallel, we have accomplished our goal to develop and document procedures to ensure we follow proper GAAP standards.

The 18 months covered in this report reflects NY Sun Works’ shift from a calendar to a July 1 to June 30th fiscal year. This adjustment brings NY Sun Works’ fiscal year in line with New York City’s budgeting schedule and the city school calendar, which will facilitate all of our budgeting and reporting processes.

During this reporting period, NY Sun Works has seen substantial growth in its school partnerships, from 141 to 203 schools and will reach 250 by the end of 2022. Also during this period, NY Sun Works’ presentation to Congressional representatives and the World Environmental Education Congress in Prague, and, closer to home, its participation on New York City Mayor Eric Adams’ Food Policy Transition team demonstrates its growing recognition as a leader in sustainability science and climate education.

As we began this new fiscal year, new data from the National Assessment of Educational Progress underscored Covid’s deleterious impact on student learning across all race and income levels, but especially for underserved students. At the same time, the need for climate education has only become more evident. NY Sun Works will continue to work at its full capacity to meet both these needs, expanding school partnerships in NYC and beyond to reach even more students with science and climate education that enables them to build and participate in a sustainable and equitable future.

Thank you for your continued support.

Ted Caplow, Ph.D.
# FINANCIALS

## REVENUE

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021* (Jan-June)</th>
<th>2022 (Jul-June)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contract Revenue</td>
<td>1,019,115</td>
<td>1,457,024</td>
<td>1,178,341</td>
<td>830,674</td>
<td>2,454,669</td>
</tr>
<tr>
<td>Grants and Contributions</td>
<td>311,452</td>
<td>215,248</td>
<td>427,753</td>
<td>194,417</td>
<td>825,461</td>
</tr>
<tr>
<td>Special Events</td>
<td>70,357</td>
<td>25,599</td>
<td>-1,200</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Investment</td>
<td>24</td>
<td>4</td>
<td>57</td>
<td>15</td>
<td>24.92</td>
</tr>
<tr>
<td>Other Income</td>
<td></td>
<td></td>
<td></td>
<td>114,625</td>
<td>137,617</td>
</tr>
<tr>
<td>Total Revenue</td>
<td>1,400,048</td>
<td>1,667,875</td>
<td>1,719,776</td>
<td>1,072,723</td>
<td>3,280,854.94</td>
</tr>
</tbody>
</table>

## EXPENSES

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021* (Jan-June)</th>
<th>2022 (Jul-June)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Services</td>
<td>861,224</td>
<td>1,404,464</td>
<td>1,665,079</td>
<td>625,086</td>
<td>2,254,033</td>
</tr>
<tr>
<td>Management and General</td>
<td>97,903</td>
<td>131,543</td>
<td>290,190</td>
<td>198,025</td>
<td>500,232</td>
</tr>
<tr>
<td>Fundraising</td>
<td>33,493</td>
<td>48,864</td>
<td>147,287</td>
<td>66,963</td>
<td>227,564</td>
</tr>
<tr>
<td>Total Expenses</td>
<td>992,620</td>
<td>1,674,871</td>
<td>1,502,556</td>
<td>894,075</td>
<td>2,081,829</td>
</tr>
</tbody>
</table>

## NET

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021* (Jan-June)</th>
<th>2022 (Jul-June)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018-2021 (Audited Numbers)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2022 (Draft from Financial Controllers)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*2021 was a short year, starting July 2021 NYSW transitioned from fiscal year (Jan to Dec) to fiscal year (July to June)
**Starting in 2020 fundraising expenses include a percentage of salaries based on allocated time
***Starting in 2021 benefits, taxes, occupancy and salaries are allocated based on salary distribution and head count

![Expense Pie Chart]

- **Program Services**: 75.6%
- **Management and General**: 16.8%
- **Fundraising**: 7.6%
FUNDERS & SUPPORTERS

$250,000+
- New York Power Authority
- Green Mountain Energy Sun Club
- US Department of Agriculture

$100,000+
- Allen Family Foundation
- COFRA Foundation

$50,000+
- Green Mountain Energy Sun Club
- US Department of Agriculture

$30,000+
- Ted Caplow
- Champions of Love Foundation
- Gray Foundation

$20,000+
- ConEdison
- Seth Gins
- Karin Bain and John Kukral Foundation
- Donald Rosenfeld
- Spindrift Family Foundation

$10,000+
- Clarence and Anne Dillon Dunwalke Trust
- Sarah Horowitz

$5,000+
- Jeff and Nancy Bergman
- Classy Awards
- Amy Shen

$1,000+
- Connecticut Invention Convention
- Beverly Israely (with matching gift from PJT Partners)
- Carine Joannou
- The John Finley and Stan McGee Giving Fund
- Arpi Lal
- The Laurel and Michael Skarbinski Charitable Fund
- Sidsel Robards
- Gonzalo and Ximena Sanchez de Lozada
- Peter Wiener (with matching gift from Bank of America)
- Kelsey and Samuel Wirth-Myers Family Fund

$500+
- Amazon Smile
- Kory Apton
- Manuela Arnal
- Deborah Miller Catering and Events
- BeeBee Horowitz
- Sebastian Nordgrén (with matching gift from MUFG)
- Cynthia Russo
- Steele Powell Family Fund
- Rose and Scott Young

$250+
- Amanda Foster (with matching gift from TD Bank)
- Dede Lahan
- Mark Loughlin
- Eduardo Mazzi

$100+
- Efrem Sigel
- Susan Tenner
- Visit.org

$50+
- Joseph Geary
- Seneca Gray
- Sara Healey
- Tania Konishi

In Kind Donations
- Carol Krakowski
- Jessica Olsen
- Catherine Quiroz
- David Silverman
- Julian Silverman
- Sharene Williams

- Rachel Biderman
- Brittany Kaplan
- Stephanie Litsas
- Casey Madura
- Alex Mendelson
- Jennine Meyer
- Alex Morse
- Kelly Restuccia
- Megan Sullivan
- Sarah Sullivan
- Bryn Tulip
- Sam Wilson
- Caitlin Zavist

- Food Fleet
- GFP Real Estate
- Gotham Greens
- Kay-Twelve
- Lettuce Grow
- Nuchas
- NYPÁ
- Tower Garden
ELECTED OFFICIALS

Thank you to our Elected Officials who have Funded Lab Construction and Programming:

BOROUGH PRESIDENTS

Brooklyn Borough President Eric L. Adams
Manhattan Borough President Gale Brewer
Queens Borough President Donovan J. Richards
Bronx Borough President Ruben Diaz, Jr.

CITY COUNCIL MEMBERS

Adrienne E. Adams         Mark Levine
Diana Ayala              Carlos Menchaca
Margaret S. Chin         Keith Powers
Andrew Cohen             Antonio Reynoso
Costa Constantinides     Ydanis Rodriguez
Laurie A. Cumbo          Helen Rosenthal
Darma Diaz               Rafael Salamanca
Rafael L. Espinal        Mark Treyger
Vanessa Gibson           Paul Vallone
Ben Kallos               Queens Delegation
Brad Lander
In September 2022, NY Sun Works was pleased to welcome Chris Collins, Susan Tenner, and Sarah Horowitz to our Board of Directors. We look forward to collaborating with them and thank them for sharing their time and expertise.

Mr. Collins is an attorney with a long history of working with non-profit organizations. He was a founder of New York City’s Lesbian, Gay, Bisexual and Transgender (LGBT) Community Services Center and the Callan-Lourde Health Clinic, and served as co-chair of the LGBT Center between 1985 and 1989. He was also a member of the Board of Directors of the National Gay and Lesbian Task Force between 1991 and 1996 and served as Board Co-chair between 1994 and 1996. In 2004, he was named Executive Director of Solar One, a position he held for 17 years before retiring in December 2021.

Ms. Tenner is the Executive Director and Co-Founder of the Brooklyn Urban Garden Charter School (BUGS), where she oversees the educational, operational, and financial aspects of the school. BUGS, a middle school, was created by a group of committed community members and currently provides a unique and rigorous learning community that embodies the sustainability mission of NY Sun Works. An education expert with nearly 3 decades in the education field, Ms. Tenner brought the NY Sun Works program to BUGS, where it is thriving, and she knows the program in action. Ms. Tenner is also a skilled grant writer and fundraiser with extensive board experience.

Ms. Horowitz is producer as well as a project management and development consultant. She is currently working as a producer of the upcoming film, Acts of Reparation, directed by Macky Alston and Selina Lewis Davidson, and serves as a pro bono project manager and fundraising consultant for The Greene County African American Museum in Greensboro, Georgia. Prior to spending her days focused on family and volunteering, Sarah worked at Jones Lang LaSalle, a global real estate company, focusing on the adaptive reuse of historic buildings, including the redevelopment of Times Square and the renovation of Grand Central Terminal. At Grand Central she became the Director of Programming and Events at the historic station and created a diverse series of arts programming at Vanderbilt Hall.
ASSOCIATE BOARD

The AB, established in 2019, consists of young professionals who want to make a difference in the education and sustainability movement in NYC. The Associate Board raises awareness about NY Sun Works’ mission through social media outreach and events and helps drive resources to the organization through fundraising initiatives.

After taking a pause during Covid closures, the AB has had a busy and successful 2021 and 2022, hosting several exciting events to introduce NY Sun Works to friends and colleagues and welcoming new board members to grow the AB’s capacity and reach.

September 2021
The Associate Board, along with their friends and colleagues, joined NY Sun Works for a tour and harvest at our flagship Greenhouse Classroom at PS 333 Manhattan School for Children.

The event was part of NYC Climate Week, a week of workshops and panels organized by Climate International, the UN, COP26 and the City of New York to showcase leading climate action and discuss how to do more to solve the climate crisis. The event offered an opportunity to see hydroponic farming in action and to learn about the importance of the NY Sun Works program as a hands-on educational tool for students to learn about climate science – as well as for guests to bring home fresh and fragrant basil and other greens.

October 2021
The Young Professionals Cocktail Party at the Pop Up @ Astor Place brought together a dynamic group of professionals committed to equitable science education and a more sustainable NYC. Guests toured the hydroponic systems, played a Hydroponics Bingo icebreaker over drinks and hors d’oeuvres, and assembled their own mini-hydroponic system, complete with basil plants, to bring home with them! (pictured left)

May 2022
The AB hosted their Youth Conference Viewing Party at Big aLiCe Brewery as AB members, guests, and some of the Education Team gathered over beers and snacks to watch the Conference on a big screen and celebrate our student farmer-scientists. (pictured above)

2021-2022 ASSOCIATE BOARD MEMBERS

Andrew Chao
Treasurer, MBA candidate, Columbia University
TD Bank

Amanda Foster
Co-Chair, EY

Arpi Lal
Digital Product Manager

Alice Liang
Secretary, federal law clerk

Alexander Mendelson
Chair; DNV

Catherine Quiroz
CVC Capital Partners

Rikhil Shah
Professor of Chemistry, FIT

Julian Silverman
Accenture

Katya Smith
Deloitte

Sharone Williams
NY Sun Works is incredibly fortunate to have passionate and engaging interns and volunteers working with us on all aspects of our programming. Some assist with maintaining our hydroponic classrooms and supporting our partner school teachers, while others work behind the scenes, helping with graphic design for our curriculum and event materials, supporting mailing campaigns or helping with events. We are grateful to everyone who generously gave their time to support our work!

Our volunteer responsibilities include:

- Basic hydroponic systems operation (pH + EC monitoring, plant pest management on hydroponic systems)
- Basic aquaponics operation (water quality tracking, system cleaning, fish health assessment and feeding)
- Growing space upkeep (sweeping, cleaning and sterilizing equipment, cleaning up spills and water leak puddles)
- Teacher assistance (working with young students to help seed, harvest, and perform their greenhouse tasks—helping support the teacher in whichever way is needed)
- Helping produce and deliver our hydroponic STEM kits

The LIST is current as of the time of publication.

MEET OUR TEAM

Manuela Zamora: Executive Director
Megan Nordgrén: Director of Program Development
Margarita Rosas: Director of Finance & Operations
Dave Hazan: Director of CEA Operations
Nathaniel Coburn: Associate Director of Human Resources
Elana Mass: Senior Development Manager
Eva Chertow-Spence: Operations Manager
Ariel Duran: Area Manager
Carlos Quintana: Area Manager
Madeline Turner: Program Development Coordinator
Jake Bronstein: Communications and Social Media Coordinator
Asaph Charles: Finance Assistant
Melissa Arias: Purchasing Officer
Cindy Lee: Graphic Design

EDUCATION TEAM:
Becky Higgins: Curriculum Specialist/Teacher Trainer
Julia Levine: Curriculum Specialist/Teacher Trainer
Hannah Luna: Curriculum Specialist/Teacher Trainer
Joliette Mandel: Curriculum Specialist/Teacher Trainer
Sarah Young: Curriculum Specialist/Teacher Trainer

SUPPORT TEAM:
Evan Alexieff
Miguel Araujo
Jonathan Betancourt
Eamon Callahan
Mikaela Charalambous
Neratia Coleman
Aurora Collado
Dyaami D’Orazio
Mario Fong
Alvaro Gonzalez
Carter Hahn
Leslie Hiciano
Dahlia Jemmott-Wiley
Sasha Karleusa
Serena Kleeman
Isabel Ksenak
Melissa Loudenbach
Alex Le Coadic
Trevor Moynagh-Cronin
Kristen Rodriguez
Arneal Satram
Jasmin Wilson

GREENHOUSE SUPPORT TEAM:

INTERNS & VOLUNTEERS

NY Sun Works is incredibly fortunate to have passionate and engaging interns and volunteers working with us on all aspects of our programming. Some assist with maintaining our hydroponic classrooms and supporting our partner school teachers, while others work behind the scenes, helping with graphic design for our curriculum and event materials, supporting mailing campaigns or helping with events. We are grateful to everyone who generously gave their time to support our work!

Our volunteer responsibilities include:

- Basic hydroponic systems operation (pH + EC monitoring, plant pest management on hydroponic systems)
- Basic aquaponics operation (water quality tracking, system cleaning, fish health assessment and feeding)
- Growing space upkeep (sweeping, cleaning and sterilizing equipment, cleaning up spills and water leak puddles)
- Teacher assistance (working with young students to help seed, harvest, and perform their greenhouse tasks—helping support the teacher in whichever way is needed)
- Helping produce and deliver our hydroponic STEM kits

2021-2022 INTERNS & VOLUNTEERS

Sarah Acevedo
Anthony Bien
Charlotte Delany
Jedd Horowitz
Julia Klosk
Kristine Marxer
Mastura Mayesha
Clara Nordgrén
Savannah Russo
Rowan Vasquez
Jacklin Xie
Andres Zamora
Yujia Zhang

Team list current as of time of publication.
SCHOOLS

A. Philip Randolph Campus High School
Academy for Conservation and the Environment
Academy for Excellence in Leadership
Academy for New Americans
Art and Design High School
Astoria Houses - NYCHA
Bayside High School
Bedford Stuyvesant New Beginnings Charter School
Boys and Girls High School
Bronx Charter School for Excellence 3
Bronx Charter School for Excellence 5
Bronxdale High School
Brooklyn Democracy Academy
Brooklyn Lab School
Brooklyn School of Inquiry
Brooklyn Technical High School
Brooklyn Urban Garden Charter School (BUGS)
Bushwick Community High School
City College Academy of the Arts
Comprehensive Model School Project
Corona Arts & Sciences Academy
County Prep High School
District 30 Pre-K Centers
Eagle Academy for Young Men of Harlem
East Brooklyn Community High School
East Orange STEM Academy
EBC High School for Community Service
Edward R. Murrow High School
Emerson Middle School
Energy Tech High School
Evergreen Middle School for Urban Exploration
Francis Lewis High School
Franklin Delano Roosevelt High School
Frederick Douglass Academy VII High School
Genovesi Environmental Study Center
George Westinghouse Career and Technical Education High School
Harlem Renaissance High School
High School for Climate Justice
High School for Environmental Studies
High School for Innovation in Advertising and Media
High School for Medical Professions
High School of Telecommunication Arts and Technology
Horace Greeley High School, Chappaqua
HS 527 The Urban Assembly Institute of Math and Science for Young Women
HS 560 City-As-School
Institute for Collaborative Education
IS 10 Horace Greeley
IS 126 Albert Shanker School For Visual And Performing Arts
IS 187 The Christa McAuliffe School
IS 211 John Wilson
IS 281 Joseph Cavallaro
IS 383 Philippa Schuyler Middle School for the Gifted and Talented
IS 5 The Walter Crowley Intermediate School
JHS 162 The Willoughby
JHS 223 The Montauk
JHS 292 Margaret S. Douglas
JHS 50 John D. Wells
JM Rapport High School for Career Development
John Adams High School
John Bowne High School
John Ericsson Middle School 126
John P. Holland Charter School
Jose Marti STEM Academy
Long Island City High School
Manhattan Hunter Science High School
Mark Twain IS 239 Intermediate School for the Gifted and Talented
Martin Van Buren High School
Midtown West School
Mott Hall II
MS 245 The Computer School
MS 297 75 Morton
MS 322 S.U.L.A.
MS 358 The Magnet School of STEAM Exploration and Experiential Learning
MS 582 The Magnet School for Multimedia, Technology, and Urban Planning
MS 890
MS 935
Multicultural High School
NEST+m
New Design Middle School
Northern Michigan University
Origins High School
Port Richmond High School
PS 11 Brooklyn
PS 118 The Maurice Sendak Community School
PS 12 Dr. Jacqueline Peek-Davis
PS 121 Nelson A. Rockefeller
PS 122 Mamie Fay
PS 123 The Suydam Magnet School for STEAM
PS 125 Ralph Bunche
PS 135 Sheldon A. Brookner
PS 14 The Fairview School
PS 141
PS 147 Isaac Remsen School for Environmental Engineering
PS 149 Danny Kaye
PS 149 Sojourner Truth
PS 15 Patrick F. Daly Magnet School of the Arts
PS 150 Queens
PS 150 Tribeca Learning Center
PS 151 Mary D. Carter School
SCHOOLS

PS 158 Warwick
PS 160 The William T. Sampson School
PS 165 Ida Posner
PS 166 Q
PS 17 Henry David Thoreau
PS 171 Peter G. Van Alst
PS 176 The Ovington School
PS 18 Multilingual Neighborhood School
PS 181 Brooklyn
PS 183 Robert Louis Stevenson
PS 188 Michael E. Berdy
PS 190 Sheffield
PS 196 The Williamsburg Bridge Magnet School for Communication and Mixed Media Arts (Ten Eyck)
PS 197 John B. Russwurm
PS 197 The Kings Highway Academy
PS 199 Jessie Isador Straus
PS 2 The Alfred Zimberg School
PS 20 Anna Silver
PS 21 Crispus Attucks
PS 21 Margaret Emery-Elm Park
PS 212 The Lady Deborah Moody School
PS 214 Michael Friedsam
PS 219 Kennedy-King Elementary
PS 226 Alfred De B. Mason
PS 233 Langston Hughes
PS 234
PS 274 The Kosciusko School
PS 279 Herman Schreiber
PS 28 Wright Brothers
PS 288 The Shirley Tanyhill
PS 290 A.C.E. Academy for Scholars
PS 297 Abraham Stockton
PS 31 Samuel F. Du Pont
PS 316 Queens Explorers Elementary School
PS 33 Chelsea Prep
PS 333 Manhattan School for Children
PS 333 The Longwood Academy of Discovery
PS 34 Oliver H. Perry Elementary
PS 354 The Jermaine L. Green STEM Institute of Queens
PS 373 Brooklyn Transition Center
PS 376 Felisa Rincon de Gautier School of Technology
PS 377 Alejandrina B. De Gautier
PS 380 John Wayne Elementary
PS 41 Francis White
PS 47 John Randolph
PS 48 P.O. Michael J. Buczak
PS 481 The Steam Bridge School
PS 58 The Carroll School
PS 59 William Floyd
PS 6
PS 70 Queens
PS 721 John F Kennedy Jr. School
PS 75 Mayda Cortiella
PS 81 Thaddeus Stevens
PS 82 Jose de Diego
PS 84 Steinway
PS 85 Great Expectations
PS 85 Judge Charles Vallone
PS 89 Cypress Hills Community School
PS 9 Sarah Smith Garnet
PS 938
PS 98 Shorac Kappock
PS K004
PS K721 Brooklyn Occupational Training Center
PS/IS 157 The Benjamin Franklin Magnet School for Civic Leadership in Health & Science
PS/IS 180 The Hugo Newman College Preparatory
PS/IS 50 Vito Marcantonio
PS/MS 042 R. Vernam
PS/MS 20 P.O.George J. Werdann, Ill
PS/MS 394 Mary McLeod Bethune
Q300 Citywide Gifted and Talented School
Rachel Carson High School for Coastal Studies
Research and Service High School
Sara M. Gilmore Academy
Satellite Academy High School
School of Performing Arts
Sojourner Truth Middle School - East Orange
South Bronx Early College Academy
St. Bernard's School
St. Matthias Catholic Academy
St. Saviour High School
St. Stanislaus Kostka Catholic Academy
The Academy Of Urban Planning and Engineering
The Allen Stevenson School
The Bronx School of Young Leaders
The East Harlem School
The Highbridge Green School
The Queens School for Leadership and Excellence
The Riverside School for Makers and Artists
The School for Human Rights
The Urban Assembly School for Green Careers
The Young Women’s Leadership School of Astoria
Thomas A. Edison Career and Technical Education High School
Thomas A. Edison School - NJ
United Nations International School
Unity Center for Urban Technologies
UPROSE
Veterans’ Memorial School
Vista Academy
Washington Heights Expeditionary Learning School (WHEELS)
Watchung Elementary School
Weehawken High School
West End Secondary School
Williamsburg Preparatory School