

CYCLIST

TOOLKIT



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Appendix

Literature Review on Youth Civic Engagement

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CYCLIST Toolkit Goal

Welcome to the Capacity Building for Youth Civic Leadership for Issues in Science and Society (CYCLIST) toolkit! Here on the CYCLIST leadership team, it is our hope that this toolkit will help educators incorporate civic engagement into their programming.

CYCLIST'S leadership organizations include the New England Aquarium, The Wild Center, and Action for the Climate Emergency (ACE). Partner organizations include the Mote Marine Laboratory and Aquarium, the Audubon Nature Institute, the Saint Louis Zoo, and the Woodland Park Zoo. This diverse group of organizations collaborated to provide case studies demonstrating how each builds civic engagement into their educational programming.

Beyond case studies, this toolkit outlines theories, definitions, and a literature review to help educators learn from CYCLIST's programs as well as incorporate civic engagement into their positive youth development programs. The theory and best practices shared by CYCLIST's community of practice (CoP) have helped hone the civic engagement present in our youth development programs.

For a visual representation of how civic engagement intersects with youth development, check out this graphic from CIRCLE, part of the Jonathan M. Tisch College of Civic Life at Tufts University.

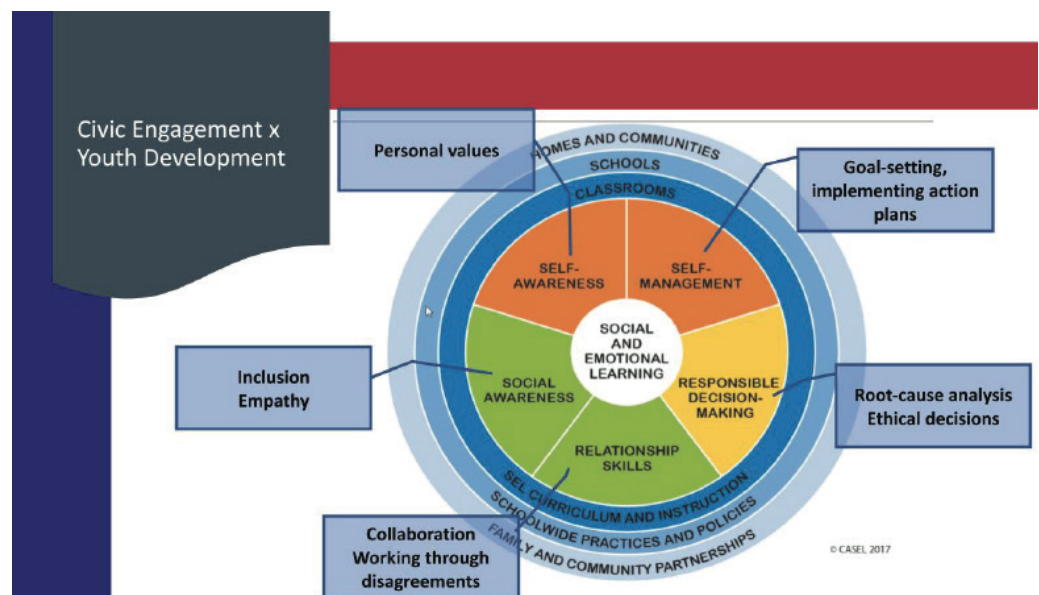


Figure 1. Civic Engagement and Youth Development.

How We Define Civic Engagement

Civic engagement is an activity, often undertaken in collaboration with others, to solve issues of public concern. Within the CYCLIST community, we have focused on youth civic engagement centered on environmental concerns like climate change. However, youth civic engagement can touch on any aspect of society based on the interests of individuals and partnering organizations. One goal of youth civic engagement is young people gaining a sense of power to influence change (i.e., civic efficacy). To help youth fully understand the issues they are engaging around, it can be useful to lay a foundation through civic learning. This requires educators to mentally engage with learners by discussing issues, teaching volunteers techniques for taking action, and providing opportunities to practice civic engagement so that learners can become agents of change.

There are many entry points to and forms of civic engagement, ranging from individual and community actions that address specific problems—that is, the *symptoms* of systemic issues—to initiatives or actions designed to tackle systemic issues—that is, the *root causes* of problems (Figure 2).

Some examples of individual actions are picking up litter, refusing to use plastic bags, and turning off lights. On a collective level, community actions can include joining or supporting a larger organization with one’s time (volunteering), money (donations), and involving others in group action. Finally, systemic actions—actions targeting root causes of issues—include voting or campaigning, working to change policies, and holding leadership positions within one’s community (e.g., the school board).

“What Kind of Citizen? The Politics of Educating for Democracy”
by Joel Westheimer & Joseph Kahne *American Educational Research Journal*.
Volume 41 No. 2, Summer 2004, 237-269.

	Personally Responsible Citizen	Participatory Citizen	Justice-Oriented Citizen
Description	<ul style="list-style-type: none"> Volunteers in times of crisis Works and pays taxes Recycles and gives blood 	<ul style="list-style-type: none"> Active member of community groups Organizes efforts Knows how government agencies work 	<ul style="list-style-type: none"> Critically analyzes problems to seek out “root causes” Seeks out and addresses areas of injustice Knows how to effect systemic change.
Sample action	Takes trash home when visiting nature trail, refuses straws at restaurants	Teaches friends how to recycle, attends sierra club meetings	Co-develops a proposal to change emission standards for local factories next to low-income neighborhoods

Figure 2. Forms of Civic Engagement.



About CYCLIST Who We Are

Community of Practice

“A Community of Practice is a community of professionals who share a common set of problems and systematically share their knowledge, expertise and tools in order to improve their practice and the performance of their organization by interacting on an ongoing basis.”

– Etienne and Beverly Wenger-Trayner, 2015

The CYCLIST project focused on forming a community of practice (CoP) with its previously listed project partners as a space to share best practices, challenges, solutions, research, theory, and program structure related to educational programming. With monthly virtual meetings and in-person meetings (pre-pandemic), the CoP became a strong locus of support, sharing, learning, and growing. Assuming core tenets of CoPs, the CYCLIST leadership team guided the group using *Communities of Practice a Brief Introduction* by Etienne and Beverly Wenger-Trayner. That resource helped establish the domain, the community, and the practice of our CoP.

Once our CoP’s mindset cohered, CYCLIST quickly discovered that the advancement of civic engagement practices in youth programs at cultural institutions would create a path toward community growth and learning. After sharing lessons learned and best practices for the wide variety of youth programming that exist within our CoP, we decided to organize our newfound knowledge into a toolkit for use by other cultural institutions. This includes classroom teachers, club advisors, and anyone else interested in building a lens of civic engagement into their youth programming.

This toolkit

By pooling our CoP’s thought leadership, we created a toolkit outlining how (and where) to start incorporating civic engagement and action into youth programming. The toolkit includes both points of consideration and activities that will ramp up civic awareness and engagement with issues that are important to young people. Each program highlighted here is different in its scope and ability. Please note that the toolkit programs are described in their pre-pandemic format. Many have had to adapt or even build from the group up using this CoP as a basis for ameliorating program areas.



Values Statements

The values described in this section serve as CYCLIST's foundation, and they are woven into everything that we do. These values are based on the best practices of climate change education. Integrating them into your own activities is the surest way to successful civic learning.

Place-based: Climate change isn't something that happens far away—it affects each of us in our own communities. Youth need to connect with climate change and environmental challenges in their own lives by learning about local climate impacts, solutions, community partners, and successful local projects.

Action-oriented: Don't just sit there—do something! Expose youth to tools and pathways to take action on climate change and environmental challenges in their schools and communities, not just learn about it. This is a key component to support youth finding agency and developing leadership skills.

Solutions-focused: Aim high—but keep it real. Emphasize solutions that work on a local level and are accessible to students.

Youth-driven: Remember: It's a YOUTH program, initiative, event, or project. Make sure youth are deeply involved in every aspect including design, planning, and implementation.

Hopeful: This is a team effort. When participants leave your program, they'll feel energized by knowing they're part of a community acting together on climate change and environmental solutions.

Equitable: Every community is touched by climate change—and often, the ones that are least responsible for causing it are affected the most. Make sure youth from all backgrounds get the support they need to participate, and that participants learn from their diverse peers.

Collaborative: Our collective ideas, knowledge and experiences help to enrich our programs, conversations and best practices. Working together we can accomplish more than separately.

Considerations

Racial equity / anti-racism intersectional work

This toolkit was created in 2021, one year after the murder of George Floyd. The nationwide racial justice uprisings of 2020 impacted all of CYCLIST: program staff, leadership at our institutions, and the young people we work with. To many denizens of the United States, racism is both an obvious systemic problem and an ongoing lived experience; however, there are also many who were not aware of its pervasiveness until recently. These events combined with the lack of racial justice in the United States have fundamentally impacted our work and this toolkit.

One of the primary impacts the national racial justice awakening had on CYCLIST was the conversations it sparked. These conversations often included the young people we work with and focused on how racial justice, systemic racism, the dominance of white cultural norms, and accompanying white privilege all intersect with environmental and climate justice, civic engagement, and democratic participation.

One example of racial justice-oriented CYCLIST programming is the New England Aquarium's ClimaTeens yearlong program. This program centered the concept of intersectionality—how different social justice issues, including environmental issues, overlap and intersect. ClimaTeens examined the historical context of racist practices such as redlining and the creation of sacrifice communities in their own city of Boston, and how those practices led to the creation of [current environmental justice communities](#). (See this [New York Times article](#) for more on the connection between redlining, climate change, and urban heat islands.) Finally, the ClimaTeens examined how [those same communities are now at higher risk for COVID-19](#).

Beyond the content of our programs, the CYCLIST team also discussed practices that perpetuated racial inequality in programming. Several project partners have worked to improve hiring practices to ensure that staff are representative of the young people they work with. Project partners also added language to job postings and interview questions about expertise with diversity, equity, and inclusion (DEI) work.

Other ways we changed our practices to be more racial justice-oriented include relocating youth programs, hosting meetings at community partner sites that are closer to youths' neighborhoods, and providing transportation stipends for youth to get to programs. We also found that a hybrid online / in-person program model made programs more accessible to students in more rural communities without access to in-person programs. Several project partners worked toward providing stipends to youth volunteers who weren't able to do an unpaid program because they needed income.

One of our partner organizations, Mote Marine Laboratory, identified program location, time commitment, and the financial burden of unpaid internships as the primary barriers to making their college and high school internships more accessible to students of all backgrounds. They are working to address these barriers using a three-year NSF grant for recruitment, support, and retention of underrepresented students in marine STEM fields.

Racial justice can be taught through collective action. The Wild Center, a CYCLIST leadership program, centers racial justice as a key component of its youth climate summits, where it mentors other sites to do their own summits. Several CYCLIST project partners also incorporated teaching racial justice in their program. One learning exercise they used was the “tallest tower” activity, where groups are told to build the tallest tower they can, but are given inequitable access to materials to do so. You can check out the toolkit’s youth climate summit and climate justice sections for more information on these approaches to teaching.

Allyship with Adults

Due to the seriousness of the topic, creating successful messaging around climate change is delicate, and it can easily become a challenge. There are some common challenges with climate action messaging that can appear in youth climate programming, events, and initiatives—most notably, the notion that the entire weight of solving the climate crisis falls on the shoulders of young people.

Adults can sometimes be so optimistic at the prospect of youth solving climate change that they forget to assume responsibility themselves. This leads them to “pass the buck” of the climate issue to young people. Adults can sometimes appear overly apologetic for creating such an unwieldy, dangerous issue that future generations have to deal with, but without asserting that they still have power to contribute towards solutions. While young people are essential messengers of climate action and their presence can have a unique convening effect on communities, this does not absolve other parties from assuming responsibility for climate action. Frustration with this messaging led one youth leader to state to a room of adults, “We are not your safety net.” This messaging pitfall can be corrected by ensuring that everyone realizes their responsibility for climate action, while giving space for youth to be equal partners in solutions.

Tips for adults working with youth from Climate Strike Sept 20

Authentic intergenerational collaboration is essential to making this the strongest and most powerful movement possible. However, in order for relationships between adult and youth activists to be successful, they require work on both ends. This guide focuses specifically on how adults can work with youth in a productive, engaging way, which benefits adults, young people, and the movement itself.

Allow young people a seat at the table

Young people are uniquely impacted by social issues, and it’s important to give them a space to be heard. Youth are often motivated, passionate, and energetic about these issues, and are capable of having innovative, creative ideas to generate change. Including young people in every part of the work and letting them speak for themselves will benefit everyone.





Take young people and their ideas seriously

The biggest thing you can do to alienate and push away young people is to not take them seriously. Most young people are dedicated and hardworking, and truly believe in the work they're doing. To be brushed off as "just a kid" is extremely frustrating and discouraging. Young people's ideas tend to be big and bold. Instead of telling a young person that their idea is not possible or will never happen, work with them to find a way to make it happen, or find a way to adjust it so it can happen.

Provide help when and where it's needed

Like all people, youth hate it when someone insists that they need help or are doing something wrong. You can always offer your help, but if they refuse, accept it and move on. Though their refusal may lead to mistakes happening, mistakes are learning experiences. Plus, if you're too insistent on helping them, it could jeopardize your relationship with them—as well as their trust—which are arguably more important in the long run.

Be understanding when mistakes are made

At the end of the day, youth do have less experience than adults, and therefore may make decisions without knowing the potential consequences. When mistakes do happen, do your best to be understanding. Know that mistakes usually come from a lack of experience, and they'll learn from it. This doesn't mean educators should act like nothing happened, but don't rub it in their face either—they probably know they messed up.

Advise, not order

While young people tend to be energetic and good at generating ideas, they also can be stubborn and believe they know everything. It is often more effective to advise young people rather than give them orders. This approach is more conducive to a reciprocally respectful relationship. You should assume the best intentions when working with young people, even if it appears that something is being done for the wrong reason. Asking questions instead of giving answers is a good way to stay on track!

Don't tokenize or isolate

When you're working with young people, evaluate your intentions. Don't use young people just to promote your platform or organization, and don't include youth in your work without giving them decision making power or a chance to share their ideas.

You should also avoid having only one young person on your team or in a meeting. For most young people, being in a situation populated exclusively by adults is intimidating. A young person will be less likely to speak frankly and without reservation when so outnumbered. Don't rely on the same young person for all your "young people needs" either. One youth's effort should not compensate for the fact that you aren't involving more youth.



Step back

Though it may be hard, your role as an adult is sometimes to simply step back. Respect that the fight for climate justice is a youth-led movement, and recognize the power in that. Know that the youth-led movement is grateful for the support of adult allies, and that your help is valuable. If you need to, think of it as a long-term investment—if you give young people the chance to lead and make change now, they'll be experts in climate leadership by the time they reach adulthood.

Barriers: Institutional Hesitancy

CYCLIST's community of practice is made up of a variety of institutions with differing structures. While our institutions have similar goals around environmental stewardship and education, we have each faced and navigated unique barriers in our implementation of youth civic engagement.

Often times civic engagement is associated with political advocacy, and this perception may prevent institutions from incorporating it into youth programming. However, civic engagement can come in many forms.

Mote Marine Laboratory is a research and science education institution that provides hands-on research experiences to students. Mote's High School Internship Program offers teens research experiences alongside working scientists. A need was identified in the program to provide students additional professional skills in order to translate scientific findings to the public. The program added components like volunteer event organization, public speaking workshops, and CAPstone conservation projects to provide interns with more experience in communication, teamwork, and leadership. These new components were based upon the research experience: volunteer coastal cleanups for peers were conducted in the research location, public speaking workshops were held to practice interpreting scientific papers, and the teens developed public outreach activities as CAPstone projects that were based on the research. These experiences helped the teens develop civic leadership skills to engage and activate their community about the local environment.

Covid adaptations

The COVID-19 pandemic impacted all education facilities in different but similarly traumatic ways. At the Audubon Nature Institute, for example, about 90% of education staff were cut. The youth development program was hit especially hard due to the furlough and permanent layoff of direct supervisors across multiple facilities.

With the pandemic's rules and guidelines changing rapidly, the Audubon's team had to think on their feet to modify interactions with students. First, they spoke with their Youth Council team to discuss what they could do to pivot the program to fully online. At the time, they did not realize they would continue to be exclusively virtual for over a year. With rapid changes impacting their community, they felt it was a perfect time to shine light on climate change and plastic reduction.



Below are the steps the Audubon Nature Institute took to identify strengths in the program and how to pivot to a virtual platform without overwhelming students with screen time.

Covid Adaptations:

- Youth Volunteer focus group
- Created a virtual platform and continued rapport with students
- Youth identified speakers they wanted to learn from
- Picked dates and coordinated virtual events
- Wrote thank you notes to speakers
- Set up quarterly check ins with youth volunteers to hear thoughts, answer questions, and continue to maintain relationships
- Found development opportunities for students to interact with youth volunteers from different facilities
- Coordinated Virtual Social events for the Youth Corps
- Designed a Youth Volunteer Newsletter
- Hosted documentary events with topics such as plastic reduction and climate change
- Participated in civic engagement with videos produced by youth volunteers that were put on Audubon Nature Institute's social media
- Development team found opportunities for Youth voices to be amplified throughout their community on multiple platforms connected to sustainability and conservation
- Applied past knowledge to implement more service hour opportunities while continuing to stay virtual from March 2020 to June 2021

Pitfalls of Covid Adaptation:

- Compassion fatigue
- Staff were unable to deliver clear expectations for future programming (no dates set for returning on grounds, no information about what future opportunities would look like)
- Relying too heavily on virtual interaction platforms (which created Zoom fatigue)
- Students phasing out of program or graduating
- Growing distance between staff relationships because of less face time and more responsibilities

Other considerations are the mental health impacts of fighting injustices like climate change. CYCLIST's project partner ACE recently released a campaign (spring 2022) called [Let's Talk About It](#) which helps youth and the adults that support them focus more fully on taking care of their mental and physical health in light of all of the advocacy they are doing while dealing with climate anxiety.

Key Terms

Used by the CYCLIST community of practice

Leadership “Change agent” or “Change maker”?

- Accepting responsibility for enabling others to achieve shared purpose in the face of uncertainty [Marshall Ganz](#)
- Building youth leadership skills: Empowering youth with the skills and confidence to engage in advocacy, train others, participate in civic engagement, and beyond; helping youth develop tools to problem solve, make decisions, and create change for themselves and in partnership with others
- Building adult leadership skills and capacity: Supporting adults with the skills and mindset to create space and provide guidance for youth to grow their leadership

Self-efficacy

- Believing that you have the power to influence change with your actions

Civic engagement (from CIRCLE)

- Work, often with others, to solve a public problem

Civic engagement can include any of the following:

- Volunteering
- Following, discussing, and producing media
- Deliberating
- Changing policies
- Engaging with an issue
- Supporting institutions
- Military and national service
- Voting and voter engagement
- Developing/improving civic tech
- Running for office
- Community organizing
- Building social capital/neighborhood

Civic efficacy

- Believing that you have the power to influence change with a public problem

Civic learning

- Development of knowledge, skills, and attitudes necessary for effective civic engagement, often learned through simulated and authentic practice





Agency

- “The sense that I am the one who is causing or generating an action” (Gallagher 2000, p.15)

A person with a sense of personal agency perceives himself/herself as the subject influencing his/her own actions and life circumstances (Bandura 2006; Gallagher 2000)

Empowerment

Helping and guiding all people, but especially youth, to feel confidence in their thoughts, convictions and ability to affect change in the world. This includes lifting up everyone’s thoughts and ideas and encouraging them to take the lead, or the microphone, or the pen to be the voice of the movement.

Advocacy

Seeking to ensure that earth’s inhabitants, particularly those who are most vulnerable in society and nature, are able to:

- Have their voice heard on issues that are important to them
- Defend and safeguard their rights
- Have their needs considered when decisions are being made about their lives

theadvocacypeople.org.uk

Cultural competency

A set of congruent behaviors, attitudes, and policies that enable effective work in cross-cultural situations, practicing cultural competence leads to a more inclusive, representative work culture (Cultural Competency Learning Institute).

Educators who practice cultural competency ([source](#)):

- Have an understanding of and honor histories, cultures, languages, traditions
- Value different capacities and abilities of individuals and youth
- Recognize that diversity contributes to the richness of our society and provides a valid evidence base about ways of knowing
- Demonstrate an ongoing commitment to developing their own cultural competence in a two-way process with colleagues and youth
- Teach, role-model, and encourage cultural competence in youth
- Engage in ongoing reflection relating to their cultural competence and how they build cultural competence in youth and program staff

Lobbying

- Communicating, directly or indirectly, with policymakers for the purpose of trying to influence legislation (federal, state, local, or foreign)
- This is for legislation only; as 501(c)(3) organizations, we cannot support individual candidates or political parties at all
- As 501(c)(3)’s, we are allowed to spend a portion of our time/budget on lobbying

[Resource for future training from ACE](#)

Program



Name of Institution: Alliance for Climate Education (ACE)

City, State: National organization

Program Name: ACE Action Fellowship

Ages of youth: 14–18

Youth Engaged: Urban Suburban Rural
(geographic student populations)

Program description

The ACE Action Fellowship is an advocacy training program that gives youth the skills and experience to become powerful climate activists. Action Fellows are trained in foundational climate knowledge, personal narrative, public speaking, anti-oppression, the history of the role that young people have played in spearheading social justice movements, organizing, and advocacy strategies and tactics.

Fellows are provided with mentorship and opportunities to take action and leadership in local and national advocacy campaigns, including testifying before elected leaders, organizing climate strikes, leading campaigns to overwhelm graduation ceremonies with messages of climate justice, interviewing and amplifying the voices of climate movement leaders, mobilizing peers to vote for climate justice, advocating for a just transition to clean energy, holding corporations accountable, and opposing fossil fuel development.

In 2021, ACE launched an expanded version of the Action Fellowship that will allow young people in all parts of the U.S. to create or join an ACE Chapter in their area. ACE Chapters will be engaged in climate advocacy campaigns and be supported by ACE staff. Crucially, they will be organized and led by young people.

How civic engagement is incorporated into this program

The ACE Action Fellowship incorporates civic engagement as a core component of the program and as a foundational strategy to solve the climate crisis. Early on in the program, Fellows learn about the history of social justice movements, including the Civil Rights Movement. They learn how coalitions of dedicated activists can make change at the ballot box and by holding public officials accountable to their voters.

Fellows learn about the connections between voting and climate, and how voters can counteract the billions of dollars spent by the fossil fuel industry to lobby elected leaders to act on their behalf over the interests of people. Fellows have one-on-one conversations about the importance of voting with family and friends—a tactic called relational voter organizing—as well as send postcards and text messages to likely voters.



Outside of electoral work, Fellows engage in civic action by including, developing, and working on advocacy campaigns to end the era of fossil fuels and implement a just transition to a renewable energy future.

Program evaluation

In 2015, ACE conducted an [evaluation of the Action Fellowship program](#). The evaluation found that the program increases young people's confidence and gives them tangible leadership skills like creative problem solving and public speaking. It also motivates young people to speak about climate change with family and friends. The Fellowship positively influences young people's intent to study a climate-, energy-, or sustainability-related field in college, as well as to take action on climate change in their career, regardless of what that career is.

Most notably, the study found that despite entering the Fellowship with significantly lower self-ratings than white students, the 63% of participants who identified as young people of color reported greater improvement in the areas of public speaking and petitioning.

Equity and inclusion

ACE believes that injustice is at the core of the causes and consequences of the climate crisis, and therefore justice must be at the heart of the solutions. The fight against climate change requires us to dismantle all forms of oppression, including: racism, white supremacy culture, exploitative capitalism, heteropatriarchy, ableism, colonization, and imperialism.

The people that face the worst impacts from fossil fuel extraction and the climate crisis are often the same people already disproportionately burdened by systemic racism. This understanding is at the core of ACE's work and influences all that ACE does.

Several ACE Action Fellowship core lessons (or modules) focus on justice and equity. One is the Climate Justice module (included in the toolkit) that helps young people understand the inequities within injustices at the heart of the climate crisis.

Outcomes

- 355,000 hand-written postcards mailed to potential voters by Fellows in lead-up to 2020 election
- 59,000 youth climate voters registered in 2020 election
- 48,000 voters contacted by Fellows and other relational voter leaders, asking them to vote and encourage their friends and family to vote in the upcoming election





Pitfalls and opportunities for growth

The ACE Action Fellowship, while impactful on the ~150 teens who participate each year, is also staff- and resource-intensive, and at too small a scale to have the impact needed to achieve meaningful climate action in the U.S. For this reason, ACE is expanding and evolving the program into a distributed organizing model of ACE Chapters across the country. These chapters will be supported by ACE staff but led by young people, allowing far more young people to participate in ACE's programs and ultimately have a greater impact on climate.

Teen and stakeholder voices

“I hope to continue working on local projects that help educate people about climate justice and to be extremely involved in local politics to make sure my generation’s voices are being heard.”

– Ananya, North Carolina

“I plan on incorporating the knowledge I learn from the fellowship into my own organization as well as making getting involved with voter registration and campaigns a part of my everyday life.”

– Selin, Florida

“I plan on making a career out of politics, and climate change is one of the most important issues to me, so I will incorporate climate justice into my conversations about racial injustice. I will continue to fight for climate justice.”

– Leilinia, Florida



ACE Action Fellows at NYC Climate Strike, September 2019

Program



Audubon Nature Institute
Celebrating the Wonders of Nature

Name of Institution: Audubon Nature Institute

City, State: New Orleans, LA

Program Name: Junior Keepers

Ages of Youth: 12–18

Youth Engaged: Urban Suburban Rural
(geographic student populations)

Program description

The Junior Keeper program is a youth development opportunity for students in the 7th–12th grades in the Greater New Orleans area. Youth entering the 7th–9th grades begin the program by participating in a four-week training period over the summer. The training covers a broad range of topics, such as ecology, biology, conservation, public speaking, and youth leadership.

After completing training, Junior Keepers can volunteer year-round in placements throughout the zoo helping with guest engagement, Zoo camp, special event days, training volunteers, or animal husbandry. After the first year of volunteering at Audubon Nature Institute, youth volunteers are eligible to apply to be a leader among the youth corp. Leadership opportunities include Youth Council, Youth Captains, and Youth Trainers for new and upcoming youth volunteers. These leadership roles create and implement team building activities, provide feedback for interpretation volunteers, design and coordinate new guest interactions, and plan volunteer opportunities for the greater youth corp. These leadership positions are incremental and vital to sustaining and growing our overall program goals, as well as individual youth development. The majority of Junior Keepers remain in the program through their entire high school career.

How civic engagement is incorporated into this program

At Audubon Nature Institute, civic engagement is incorporated through projects inside its facility walls and out in the community. For instance, youth volunteers at Audubon Nature Institute are very involved in the Plastic Free New Orleans campaign during Plastic Free July. They take initiative by planning different clean up events, designing waste sculptures, and presenting those sculptures to their community to display the waste present in the community. Another way the Junior Keeper program displays civic engagement is to empower youth to speak at Audubon board meetings. The board members, as well as the youth volunteer program, believe it is important to have youth voices amplified to the public. Audubon Nature Institute wants both to instill a mindset of lifelong learning, and also provide the tools our next generation



needs to tackle different complex conservation issues. Yet another way the Audubon Nature Institute provides opportunities for civic engagement is interacting with the public to talk about issues such as climate change and plastic pollution. Students find it an exciting challenge to connect to guests by defining the issues and also pathways to solve big problems.

When youth volunteers complete the four-week training program, their efforts toward civic engagement within their community are apparent. This is true specifically in the New Orleans private, public, and charter school systems. Junior Keepers take their knowledge and put it towards climate walk-outs at school, looking for sustainable alternatives in their lunch rooms, and even raising funds for their favorite conservation organizations to increase awareness among their peers. Ultimately, Junior Keepers develop skills that they incorporate into their everyday lives as conservation leaders, creating both tangible and intangible positive impacts on their lives.

Program evaluation

Program evaluations across Audubon facilities are an ongoing process to better audience reach and the ability to continue to grow the program. Program evaluation is based on how many applications the organization receives every spring semester, in addition to how many students continue in the program until graduating from high school. Currently, Junior Keepers sees approximately 200 applications every spring. Junior Keepers sustains more than half of its volunteers throughout their middle and high school education in some capacity. They also utilize self-evaluation tools for incoming youth volunteers, and use the feedback provided by the youth-led training team and the trainees to re-evaluate program deliverables to build on current curriculum.

Equity and inclusion

In the context of Audubon Nature Institute youth programs, facilitating equity and inclusion means making ongoing efforts to provide a safe space for all. Audubon Nature Institute provides 12 full scholarships for its youth programs every summer. Eligibility to apply to the scholarships hinges on students receiving free and reduced lunch at school. If the student doesn't attend in-person school, they base qualification on the family's previous year's tax return. Audubon youth programs also utilize the Youth Council leadership team to interview new program applicants. This provides a sense of representation for our applicants, and for existing Youth Council to build on their interviewing skills after being in the program for two or more years.

Audubon Nature Institute seeks other avenues to bring more DEAI into facilities, and welcomes 360 feedback about what they can do better to support all walks of life.

Outcomes

Based on 2019 participants:

- 106 continuing volunteers maintained active service
- 21 new volunteers completed training
- 127 total teen participants contributed a total of 14,116 hours
- Junior Keepers assisted 9 departments across Audubon facilities



Teen and stakeholder voices

“I’ve been fascinated by the zoo from a very young age. When I was younger, I went to the zoo almost every weekend. I went to Zoo Camp and wanted to work as a wildlife rehabilitator. My younger self would be so happy to see that I’ve been working as a youth volunteer at the zoo for almost four years now. Audubon has helped me develop my goals in life and has helped me work towards them. Volunteering allows me to educate people on the importance of wildlife conservation through one-on-one conversations with zoo guests. I now have a community where I can be around people who share the same values as me and who are as passionate as I am. I have gotten the chance to meet adults who I can learn from and who are brilliant role models. Since I’ve become a volunteer, I’ve learned public speaking, leadership, the importance of communication, teamwork, and so much more.”

-Shiloh S.



Program



Name of Institution: Mote Marine Laboratory

City, State: Sarasota, FL

Program Name: High School Internship Program

Ages of youth: 14–18

Youth Engaged: Urban Suburban Rural
(geographic student populations)

Program Description

The Mote High School Internship Program provides high school students with a dynamic, hands-on marine science experience that complements their traditional academic studies. Participants are local southwest Florida high school students interested in marine science and ocean conservation. The program provides these teens with a collaborative workspace to connect with fellow engaged peers and Mote's education and research staff. The program hosts about 35 interns per year.

Interns are selected through a competitive application process and commit to an extensive calendar of required activities that run from August through April. Requirements include biweekly workshops, a minimum number of volunteer hours, and occasional events.

Interns begin their experience in the First Year internship program, which aims to give them an understanding of Mote, general knowledge of marine science, research and professional development skills, and an introduction to STEM careers. The primary program requirements include attending regular workshops and completing volunteer hours. The workshops provide interns with professional development opportunities and practice in marine research. Students work in teams to complete a research project and coordinate educational and service activities for their peers. Additionally, interns are asked to volunteer with Mote's Education Division in educational programming. As students earn volunteer hours, they gain confidence in translating science to different audiences. This program offers interns a variety of marine science experiences outside of the classroom.

Upon completion of their First Year, interns can apply for the High School Advanced Program (HAP). Interns work in teams with a science advisor to participate in research projects related to the scientist's current work. These research projects are determined and developed by the science advisor. The students participate in project set up, data collection, and analysis. Interns create an end of the year project to showcase their work throughout the program and share in a final graduate ceremony and at Mote Aquarium's public World Ocean's Day event. Throughout the internship, interns continue to develop their professional development skills. They are given monthly public speaking assignments, asked to adhere to deadlines to practice time management, and tasked with planning educational events for peers to develop collaboration and mentorship skills.

How Civic Engagement is incorporated into this program

Mote's goal for the High School Internship Program is to foster youth engagement in marine science and conservation. The internship is designed as a positive youth development program and provides interns the tools to confidently connect with their peers and community. Through professional development workshops like public speaking and event coordination, interns develop skills in communication, organization, and team management.

Interns volunteer with Mote's Education Department as teaching assistants in a variety of programming. Programs are offered onsite, out in the community, and even virtually, and to audiences that range from pre-K through elderly participants. By interacting with such a varied audience in different settings, interns develop the necessary skills to engage with the public, translate research, and communicate conservation messaging.

Additionally, interns are responsible for coordinating events for fellow youth. Mote is a host site of NSF's Teen Science Café program, which connects professionals to teens to facilitate casual conversations about STEM. Mote's interns plan and host the Cafés for the Sarasota community. Interns also plan community cleanups and recruit local teens to participate. During the cleanup, a Mote scientist collects and utilizes data about the trash and then presents it to the community, demonstrating the importance of keeping our local waterways clean.

Finally, interns develop and showcase conservation projects based on the research they have participated in throughout the program. One former intern had the idea to create his own nonprofit organization to promote recycling used fishing line, since interns were studying local wildlife entanglement. His years of work on the project lead to the creation of the Youth Ocean Conservation Summit (YOCS), an internationally recognized, annual event that highlights current threats to marine ecosystems and inspires collaboration between peers and mentors to develop solutions through conservation projects. YOCS just celebrated its 10th anniversary with over 400 participants, including the current class of Mote's interns.

Program evaluation

Once accepted to the internship program, interns are asked to complete a pre-survey to evaluate their goals for participation. The survey includes questions about potential future education and careers, interest in marine research and conservation, and comfort with existing level of professional skills. Throughout the year, interns are asked to report feedback after events and activities. If interns choose to apply for the Advanced program in consecutive years, they are also asked to provide feedback about the overall program during an interview. They are invited to reflect on the skills they gained in the program and those they hope to continue building.

One of the first meetings in the program has interns establish goals for themselves for the year. Program Coordinators evaluate these goals and provide suggestions to the interns on how to accomplish them. Coordinators then check in mid-way through the program to offer assistance to interns to ensure they reach their goals.





Some program evaluation is informal. Mote makes note of incoming interns that have been past participants in their education programming or have participated in the intern-hosted events like the Teen Science Cafés, cleanups, and YOCS. Continued participation in Mote programs demonstrates an individual’s interest and engagement in marine research and conservation.

Equity and inclusion

Mote recognizes that there is a severe lack of diversity in marine STEM, and is evaluating educational programming to ensure all opportunities are equitable and inclusive. The High School Internship Program does present some barriers, but once many barriers were identified, Mote started to modify and adapt the program. The internship is unpaid, and there is a cost to participate and to attend optional activities like field trips. To ease the financial burden of the program, Mote obtained philanthropy support for financial need scholarships. They also created a summer program, modeled off the internship, that paid participants for the work they were doing in the community. Mote also decided to host the internship’s professional development workshops publicly online. This allowed teens outside of the program to participate, making it more inclusive and eliminating the barrier that the application process may present. Additionally, the location of Mote’s campus is not conducive to public transportation, so it also provided access to those who couldn’t physically get to Mote.

Outcomes

- Number of TSC and cleanup participants
- Number of outreach projects created
- Hours spent educating the public



Intern Cleanup

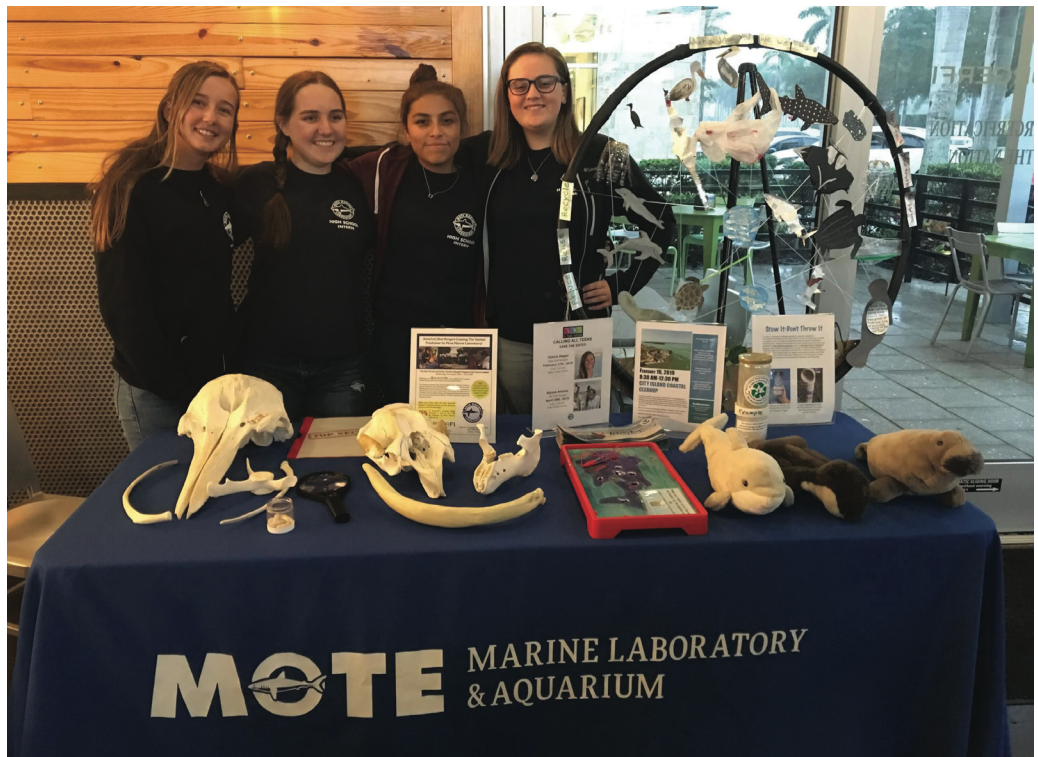
Teen and stakeholder voices

“One of the most useful skills I’ve taken out of this internship is science communication—breaking down complex or controversial topics for everyone, from little kids to seniors. I find it one of the most rewarding parts of the program, because I believe that the only way to combat the somewhat overwhelming problems we face is to get everyday people on board. Scientists are doing amazing research into these issues, but science has no value if it can’t be communicated. This skill will be useful in college and my career, since I plan to pursue a career as a scientific researcher.”

– HS Intern, 2019



Community Outreach



Mote Intern Outreach

Program



**New England
Aquarium**

Protecting the blue planet

Name of Institution: New England Aquarium

City, State: Boston, MA

Program Name: Youth Development Programs

Ages of youth: 14–18

Youth Engaged: Urban Suburban Rural
(geographic student populations)

Program description

“We aim to empower youth to understand their connections to the ocean and participate as members of a community of informed citizens who are inspired to change the world.”

The root of the New England Aquarium’s work within Youth Development Programs is Positive Youth Development theory. Programs use this theory to ensure they meet the New England Aquarium’s stated mission statement above. The Aquarium has two Youth Development programs that work on increasing civic engagement, Teen Internships, and ClimaTeens. Its paid teen internships started in the 90’s, and have evolved to not only provide meaningful work and job experience, but also to develop new job and life skills through professional development. Internship meetings usually take place on a weekly or biweekly basis, and afford teen interns new areas of growth helping to build their confidence and set them up for a successful future. The ClimaTeens program began in 2012 thanks to the young people in Aquarium programs who wanted to learn more—and do more—about climate change. What started as a small group of young people has grown to a cohort of 35–40 teens per year.

The paid Teen Internship program operates in two sessions throughout the year, during the school year, and over the summer. During the summer, teens participate in a weekly civic engagement workshop as part of their professional development. This workshop focuses on how civic engagement plays an important role in ocean stewardship. During the academic year program, as part of their professional development, teen interns participate in ClimaTeens programming.

ClimaTeens is composed of our academic year teen interns, as well as advanced students participating in other youth development programming. During weekly or biweekly ClimaTeens meetings, participants engage in team building activities, learn about climate science and climate communication strategies, and different aspects of civic engagement that further amplify their voices.

How civic engagement is incorporated into this program

To encourage growth, the syllabus for the ClimaTeens program focuses on a specific topic and skill building each year so that youth who participate for more than one year do not encounter repetitive material. Through the years, the ClimaTeens program has covered many different aspects of civic engagement, from how to locate one's national, state, and local politicians to learning how to make public comments on legislation. Each year, program participants work on public speaking skills, build knowledge, and explore subjects they are interested in and passionate about.

Helping teens to find their voice is core to the ClimaTeens program. It is necessary for them to feel knowledgeable, empowered, and in a safe space to explore issues that they find important. Building this base of knowledge and confidence helps teens to find their voice and feel that they are able to take action (and know HOW to take action). The program wants them to leave with the ability to speak out and stand up for whatever issues matter to them, be it climate change, environmental justice, food insecurity, sea level rise, or something else. The teens will know how to identify a problem and find a solution—or pathway towards a solution. To do this means that they understand systems thinking and how to navigate different systems, such as our political system.

Program evaluation

Participants are asked to fill out a pre- and post-program survey each session they attend. Through these surveys, the New England Aquarium tracks what knowledge and skills ClimaTeens are building, make improvements on the program based on teens' experience, and provides career advice for life after high school—keeping track of any changes in teens' goals.

Each class, workshop, or trip is also evaluated and rated during a debrief at the end of each gathering. This real-time feedback allows program staff to adjust both activities and overall direction in future meetings and workshops.

Finally, interns participate in one-on-one mentoring and check-ins with an adult they work with. This provides feedback in a different setting and helps them gauge job preparedness and life skill development. All data is compiled and analyzed to measure trends in learning and growth over the course of the program.

Equity and inclusion

ClimaTeens participants come from all walks of life. Recruitment for this program comes from the New England Aquarium's Teen Internship pool as well as its service program live blue Ambassadors (LBA). The makeup of this group consists of urban and suburban youth who offer different perspectives from their lived experiences. The staff for this program are intentional about building space for the youth to understand their similarities and differences, and to appreciate and value other experiences.





Youth voices are paramount to the advancement of this program. There have been many structures in which youth voices have helped guide the education and project-based learning of ClimaTeens year to year. This equity in voice and leadership has become a success of the program. Regarding inclusion, the project-based work takes into account different learning styles and abilities of both ClimaTeens and the intended audiences for each project.

Outcomes

- Represented the Aquarium at two Climate Strike marches in the fall of 2019
- Presented at the Boston Latin School’s YouthCAN (Climate Action Network) Summit for the past eight years; presentations covered civic engagement surrounding the ocean and climate change

Teen and stakeholder voices

“I found my voice and how powerful it is to really speak up for things you are passionate about—and believe it. I truly found my gut and my voice because of ClimaTeens.”

–Vaishnavi



Climate strike at the Massachusetts State House.

Program



Saint Louis Zoo
Animals Always®

Name of Institution: Saint Louis Zoo

City, State: Saint Louis, MO

Program Name: Zoo ALIVE

Ages of youth: 15–18

Youth Engaged: Urban Suburban Rural
(geographic student populations)

Program description


Zoo ALIVE is a year-long volunteer program for high school students over 15 years old. Zoo ALIVE volunteers (ZAs) come from all around the Saint Louis Metro Area. The program attracts a diverse group of teens with an interest in animals, conservation, the Saint Louis Zoo, and education. The program provides a place for these like-minded teens to connect with each other, positive adult role models, and the Zoo's mission. The program's maximum capacity is 75 teens.

Zoo ALIVE is a Positive Youth Development (PYD) program focusing on conservation education and volunteerism. While volunteering at the Zoo and in their communities, and attending meetings and trainings with the Zoo ALIVE leaders, ZAs develop the 6 C's of PYD—Connection, Confidence, Character, Competence, Contribution, and Caring. These characteristics naturally lead to workplace skills, leadership and communication skills, and civic engagement.

ZAs are asked to commit to a full year of volunteering twice per month, as well as attend a monthly meeting. Zoo ALIVE volunteers apply each spring and complete an interview process. They are selected in April, and then start volunteering in June. Their year-long commitment is June–May. Approximately a third of ZAs continue in the program for a second year, and some stay for a third year or longer.

Our Zoo ALIVE volunteers are led by an elected ZA board consisting of a president, vice president, secretary, treasurer, media chair, social chair, off-site events chair, and garden chair. Elections occur in April for the following year (which begins in June). The ZA board meets monthly and gains additional leadership skills as they fulfill their roles.

During the summer, volunteers help with our summer day camp, and throughout the year they help with various programs for youth, take care of our stingray habitat, and engage Zoo visitors at activity stations. They also help with some animal care at our Insectarium, where they provide daily care for American Burying Beetles and Partula Snails, two endangered species. They have also helped with the American Burying Beetle reintroduction program for the past six years. ZAs have the opportunity to go on several weekend camping trips and, biannually, an international trip to learn more about nature, conservation, and different cultures.



Conservation Action is a key component of Zoo ALIVE. The program hosts an annual workshop for ZAs to learn how to plan for a conservation action project, and supports them as they work on those projects. One ongoing project that ZAs started is the #byetobags program. Through tabling at the Zoo and other venues, ZAs ask people to sign a pledge to use reusable bags instead of single-use plastic bags. Through their efforts, over 13,000 pledges have been made, and the Zoo stopped using single-use bags in its gift shops. ZAs have presented their #byetobags accomplishments at natural resource and environmental education conferences.

How civic engagement is incorporated into this program

During their time in Zoo ALIVE, youth volunteers fulfill the majority of their service requirements educating campers and Zoo visitors about the environment and wildlife conservation. Topics include wildlife biology, animal welfare, and conservation actions. Activities range from assisting staff with set-up and clean-up and helping to keep track of children during Zoo Camp, to independently volunteering at a table leading an engaging activity for Zoo guests. Since the pandemic necessitated virtual engagement, ZAs have participated in many community science (or, citizen science) projects, including FrogWatch, BeeSpotter, iNaturalist, and other projects on Zooniverse.

Additionally, ZAs develop and promote the #byetobags program, created by ZAs in the spring of 2016, at events on Zoo grounds and in the Saint Louis community. During monthly meetings, they brainstorm ways to expand or improve the #byetobags program, and create videos and created memes for the #byetobags social media. They have researched plastic bag use at other Zoos and Aquariums, and presented their findings and ideas to Zoo Leadership.

Throughout the year, ZAs work on new conservation projects, usually as part of a group. Project development kicks off during our annual workshop, where ZAs learn about civic engagement strategies, conservation challenges, and project management skills, as well as pick a conservation topic to work on. As a group, ZAs determine the scope of the project, the resources they will require, and set short-, mid-, and long-term goals. Each group meets independently to track progress and come up with action plans. At the end of the year, after the completion of their project, ZAs present to Zoo employees and volunteers.

During our monthly meetings, the Zoo incorporates lessons and activities to aid ZAs in their civic engagement.

Topics covered include:

- Zoo education philosophy
- WildCare Institute conservation projects
- One Health
- Animal enrichment
- Start with your Why
- Fundraising and sending letters
- Conservation behaviors

- Contacting your civic leaders
- Effective messaging, presentations
- Leadership, all kinds of leaders
- Justice

Program evaluation

When teens apply for Zoo ALIVE in the spring, the application itself contains a survey that is used as a pre-assessment. We ask the same questions again on our “Future Plans” form the following spring, when ZAs have the option to leave the program after one year or commit to a second or third year. Some of the metrics we assess are: interest in science, animals and the outdoors/nature; comfort level speaking to children and adults; comfort at being a leader; identification as “a conservationist;” willingness to try new things; and desire to pursue a STEM career. In addition to this more formal evaluation, we continually give ZAs the opportunity to give feedback about their experience in the program, and suggest changes or improvements.

On an individual level, Zoo staff are asked to complete a short evaluation of ZAs when they volunteer for a shift at the Zoo. In this survey, we ask staff to rate the ZA from 1–5 on: Appearance (wearing uniform), Punctuality, Initiative, Interactions with Staff and Other Volunteers, Interactions with Guests/Participants, Overall Performance, and Overall Attitude.

We also track the number of hours that ZAs volunteer, attendance at meetings, and time spent as a volunteer.

Equity and inclusion

Zoo ALIVE has always had a commitment to equity and inclusion in our program; however, we recognize that the unpaid aspect of the program can make participation impossible for some teens. When it is time to recruit new volunteers, we reach out to all schools in the region and keep diversity in mind when selecting teens for the program. Diversity and inclusion training is provided to volunteers annually. When discussing conservation issues and current events, we include information and open discussion about social and environmental justice as key to a sustainable future. Once teens are in the Zoo ALIVE program, we have funding available to help pay for trips, so that all aspects of the program are financially accessible.

Outcomes

- Number of #byetobags pledges
- Conservation Action Project completion
- Hours spent educating the public





Teen and stakeholder voices

“I’m really passionate about animals and conservation. Getting involved in #byetobags kind of shaped me and my future because it made me see that there are aspects to conservation and helping the planet and helping wildlife that has nothing to do with animal taxonomy. I’m an environmental studies major with a concentration in sustainability. I loved doing #byetobags so much—and getting out there and promoting these habits—that I decided that I wanted to do it when I got to college.”



Program



Name of Institution: The Wild Center

City, State: Tupper Lake, NY

Program Name: Youth Climate Program

Ages of youth: 14–22

Youth Engaged: Urban Suburban Rural
(geographic student populations)

Program Description

The Wild Center's Youth Climate Program is a global initiative that convenes, engages, and empowers young people to act on climate change related activities in their schools and communities through Youth Climate Summits. Each Youth Climate Summit is a 1–3 day, in-person or virtual event that brings youth together to learn about climate change impacts and solutions.

Through speakers, workshops, and activities, a Summit culminates with student participants writing a Climate Action Plan that can be implemented in their schools, communities, and regions. Students gain the knowledge, confidence, and skills necessary to communicate with decision-makers and community leaders. The solutions-focused education they receive at a Summit inspires them to begin a collaborative and productive dialogue with their respective civic and government leaders as they seek participation in their communities' climate change mitigation and adaptation plans. Organizing a Youth Climate Summit is a great way to educate and motivate students, connect with new partners, showcase green job pathways, and build capacity for youth leadership. Additionally, the Youth Climate Program helps other schools and organizations hoping to host their own youth climate summit by providing a free online toolkit and their experiences to promote youth involvement in climate action globally. This Youth Climate Summit model has been replicated and scaled in over 100 Summits in 8 countries around the globe, including New York State, Ohio, Massachusetts, Colorado, Tennessee, Maryland, Florida, California, Pennsylvania, Canada, Finland, Germany, Nigeria, Bahamas, and Sri Lanka. The Wild Center's free [Youth Climate Summit toolkit](#) offers a detailed organizational framework, slide deck templates, budget, agenda, timeline, and other resources that can be replicated in communities world-wide.

The annual summit is part of The Wild Center's Youth Climate program—a year-round program based at the Center and across the greater Adirondack region. The program has two main focuses: 1) increasing participants' climate change awareness and decision-making skills through an annual, place-based Adirondack Youth Climate Summit, and 2) enhancing young people's capacity to lead climate and service projects through a year-long *Youth Climate Leadership Practicum*. The overarching goal is to support youth in implementing their Climate Action Plans (CAP), which create frameworks for reducing emissions and climate change impacts



in one's community. The success of CAPs is tangible, and has led to the completion of school gardens, art installations, composting projects, recycling programs, carbon neutral dances, ban the bag campaigns, outdoor classroom construction, student-run community climate awareness events, and even an invitation to The White House and the UN COP 26 conference. The Youth Climate Program is a positive youth development program that works with youth passionate about the intersectional nature of climate change.

Other resources The Wild Center offers include Youth Climate Summit Network meet-ups, Climate Educator and Youth Climate Leader Retreats, a monthly Climate Newsflash. Please visit this website to sign up: www.wildcenter.org/youthclimate.

How civic engagement is incorporated into this program

Climate change is a complex phenomenon, and many local government leaders struggle to understand how best to respond and protect their communities. A representative from the New York State Department of Environmental Conservation's Office of Climate Change (OCC), Dazzle Ekblad, said, "Education is a fundamental first step in taking action. The most effective local climate action programs are rooted in smart planning and educational processes that involve gathering information and helping communities evaluate their options."

The Wild Center's Youth Climate Summit supports local students by providing guidance on how their communities can plan for climate action through their educational campaigns, which are key components of expanding local Climate Smart Communities programs.

At the core of The Wild Center's Youth Climate Program is youth civic engagement and positive youth development. Youth learn essential skills to succeed in the 21st century workforce, including critical thinking, problem solving, and communication. By creating Climate Action Plans (CAPs) during the Summit, students end up working with peers, teachers, and science professionals to devise innovative strategies to tackle local impacts of climate change. The Summit inspires passion while motivating students to take initiative, think creatively, and feel empowered. After the Summit, students return to school to begin implementing innovative ideas, researching technologies, and collaborating with local officials to realize plans.

The Wild Center's Youth Climate Program promotes civic engagement and social responsibility during the year-long program through active participation in the community, engaging with professionals, innovative partnerships, and sharing tools and resources. It equips students with the tools they need to address the global issue of climate change through direct local action in the following ways:

- Connects high school students with climate scientists, policy makers, professionals, educators and other community partners to learn about climate change and climate resilience
- Teaches communication skills through regular leadership modules on public speaking, media, and professionalism
- Provides opportunities to share and dialogue with their communities by participating in community events, creating speaking opportunities at schools and with civic organizations



- Creates opportunity for civic action and service learning through the student-driven implementation of the Climate Action Plan and planning community climate events including campaigns for renewable energy, community climate awareness events, writing for local papers and magazines, and connecting with the NYS Climate Smart Communities Program— please see this short [video case study](#) on The Wild Center’s work with NYS
- Documents student actions and initiatives to share with others through The Wild Center’s Youth Climate Program webpage www.wildcenter.org/youthclimate and social media

The Wild Center facilitates student collaboration on research projects with scientists, community members, teachers, and peers through CAP proposals and experiential opportunities all year long. These offerings promote engagement to students in E-STEM learning and to community members through climate action. Offerings include field trips to: local farms to help with harvesting and learn about agricultural ecology; waste management facilities to understand the technology behind recycling and waste; bog wetlands to explore carbon-dating and coring with a climate scientist; The Wild Center’s Silver LEED certified campus to learn about green design; and tech schools to learn about solar panel installation.

Through implementing Climate Action Plans and planning Community Climate events, students learn project and event planning, project management, and problem-solving skills. On an interpersonal level, they learn how to engage in dialogue with community members about why they care about climate change. In addition to creating strong leadership with the schools, student climate leaders present their experiences at town board meetings, speak at community events, and meet with civic groups and regional leaders and decision-makers.

Program evaluation

The Wild Center’s evaluation process is manifold. First, through grants with the EPA and NOAA’s Office of Education, it has worked with RK&A (now Kera Collective) to extensively evaluate the impact of the Youth Climate Summits and the program. One evaluation on the Youth Climate Summit approach found “increased awareness, understanding and implementation of environmentally-friendly behaviors” in attending students, and concluded that they “increased their ability to effectively communicate issues... [and some also] described overall gains in their ability to lead, communicate, or delegate tasks.” In fact, student leaders drive the creation, planning, and implementation of the Summit, from deciding on speakers, to providing local food, to waste management logistics. Summit workshops are all hands-on and experiential.

The Wild Center also consistently seeks feedback from our youth participants, alumni, and Youth Climate Advisory Board. Our youth serve as on-project and exhibition advisory committees, review grant applications, assist in the co-creating of materials (including the Youth Climate Summit Toolkit) and all of the accompanying resources. They also provide valuable feedback, perspectives, and insights into the strategic direction of our work. The Wild Center also has a youth climate alumna (from the first Youth Summit in 2009!) who is now on The Wild Center’s Board of Directors.



Equity and inclusion

The Wild Center's Youth Climate Program fully acknowledges and asserts that climate change is a deeply complex issue, intertwined tightly with social justice and equity. As such, relying on science alone may reduce the carbon in our atmosphere, but it will not reduce the number of BIPOC (Black, Indigenous, and People of Color) communities that have been and will continue to be disproportionately negatively affected by the results of climate change. In order to truly work for a future that is more equitable, we are committed to elevating diverse voices and using our platform to actively address the racial, economic, and social disparities that have led to injustice in our society.

To date, the Youth Climate Program has actively centered equity through:

- Highlighting equity as a core value of the Youth Climate Program and a topic that must be prominently featured in all activities, including Youth Climate Summits, Teacher Climate Institutes, Youth Climate Leadership Retreats, climate action planning, and other work
- Highlighting equity throughout the [Youth Climate Summit Toolkit](#), and directly communicating equity as a core value to all Youth Climate Summit organizers
- Featuring a workshop on Climate Justice in all major programs, including Youth Climate Summits, Teacher Climate Institutes, and Youth Climate Leadership Retreats; YCP staff were trained in facilitating a Climate Justice workshop from the Alliance for Climate Education (ACE), and The Wild Center frequently invites ACE staff of color to facilitate those workshops
- Prioritizing partnerships with schools and organizations that primarily serve underserved audiences—this includes supporting Youth Climate Summits in inner cities (Seattle, Detroit, and Houston in 2015; Kurt Hahn YCS in Brooklyn, 2018–2019) and in rural areas (Catskill YCS, 2017–2019; Central NY YCS 2017–2019)
- Creating opportunities for students from different backgrounds to build friendships with each other, including supporting Kurt Hahn students to travel to the Adirondacks/Catskills for multiple summits/retreats, bringing students from the Adirondacks to climate-focused events that feature diverse audiences, and working with the Center for Native People and the Environment Youth
- Creating the Youth Climate Advisory Board to ensure youth perspectives are considered equally with staff in program development
- Serving on multiple stakeholder groups, boards, and committees that focus on equity and justice as it relates to climate change including: NYC Climate Resilience and Education Task Force; ECOS - Education, Communication and Outreach Stakeholder Group; We ACT environmental justice team Advisor for EJ work across NYS; and the Adirondack Diversity Initiative
- Highlighting climate justice and equity-focused resources in the Youth Climate Program email newsflash and social media



Outcomes

- Over 100 Youth Climate Summits reaching thousands of students in 8 countries (May 2022)
- Over 10,000 students reached globally through Youth Climate Summits
- Two rural communities are bronze-level certified with the NYS Climate Smart Communities
- The Wild Center's Youth Climate Program sent a youth delegation to the UN COP 26 conference in Glasgow, and was only one of two science centers in the world participating

Teen and stakeholder voices

“Make climate action a partnership across the generational divide, with a healthy dose of support from and trust of youths, the elderly... and everyone in between.”

–Andrew Fagerheim, Youth Climate Advisory Board

“[We realized] the power of youth voice [at the Youth Climate Summit]. Next year, we want to have more of the speakers be students because having a student keynote was so powerful, and students [usually] hear from teachers all the time. That’s something we are focusing more on this year, getting students who are taking action in New York City to be speakers...There is such a strong youth climate movement now, that to have them learning from their peers is really powerful.”

–NYC DOE Office of Sustainability Youth Climate Summit

“When we were talking about solutions during the lectures, that brought to my attention there’s more that I can do as a young adult...We have the power to help fix what’s going on...So, the role of young people is probably the most important role of all.”

–Youth Climate Summit participant

“There are younger individuals who are passionate about [climate change], and are acting on it...That makes my job easier from a village official’s perspective to get things done. Instead of me having to pound on the table or persistently educate the rest of the board members, the youth are highly educated, highly motivated, highly organized... Essentially, they are doing the heavy lifting and I just help refine their approach.”

–Village board member



“Young people have been instrumental in advancing the sustainability work of Lake Placid through educational campaigns, presentations, and open dialogue that raise awareness about the local impacts of and solutions to climate change. Lake Placid is a showcase community that draws visitors from all over the world for its world-renowned events and natural environment. The village board recognizes the vital role young people play in protecting our natural ecosystems so that Lake Placid can continue to build on this legacy.”

–Lake Placid Mayor Craig Randall and Village Board member Jason Leon

“The youth climate summit taught me students have the ability to change how our school systems operate. That you don’t have to accept the status quo and can effect positive change. The summit got me interested in the larger dynamics of how countries tackle these issues...It started me on a life-long quest/journey that has catapulted me into the discipline of ecological economics and the finances of environmentalism.”

–Dan Coffrin (student)

“Creating the Summit was like creating a miracle: ignorance was replaced by knowledge, and a solitary hope for a healthier world was replaced by a strong passionate youth movement. In the end, the summit taught me much more than teamwork, group dynamics, and climate change facts...most importantly, I felt my own passion and saw my own potential. I was astounded at how much energy I had and was willing to give, and was surprised by my own abilities and competence. It taught me not to underestimate myself, that passion and hard work can create miracles, and that when the world calls for help you must rise to the occasion and answer with everything you have.”

–Celeste Bickford (student)

“The youth summit allowed me to participate in an ongoing research and community project called the Bionic Belly...[or] anaerobic digester to help with waste removal. This past summer, I was able to really get involved with the project and help with the pilot study weighing and collecting the waste, researching productivity outputs and greenhouse designs for expansion of the project; it will be cool to see some of what I researched used in the coming years.”

–Chris Williams (student)



“The Wild Center’s Youth Climate Program gave me a platform for action, be it for my own personal interests or for positive political change. When presenting to the New York State Department of Environmental Conservation’s Bureau of Public Outreach, I emphasized that this is a unique opportunity for anyone that attends or comes in contact with our efforts. Being a part of this youth movement, creating more sustainable schools, honors the fact that we’re the first generation to feel the effects of climate change and the last to be able to do anything about it. As a student you create credibility through action, showing society that after spending your whole life learning, you have made this a priority, creating green schools.”

–Silas Swanson (student)

“For Earth Day, we received donations to create reusable bags to reduce the use of plastic bags. We got logos from businesses in our community printed on reusable bags and handed these out for free outside local stores. I really like seeing the bags around town and know we are helping to spread awareness and doing something good for our community.”

–Ivy Huber (student)



Youth meet with NYS DEC Commissioner Seggos.



Youth climate leaders at Summit retreat.

Resources



[Youth Climate Summit Toolkit](#)

[Climate Education Resources](#)

[Climate Action Plan Worksheet](#)



Public Narrative Storytelling Module

[Public Narrative Slides](#)

[Public Narrative Storytelling – Facilitator’s Guide, Part 1](#)

[Public Narrative Storytelling – Facilitator’s Guide, Part 2](#)

[Creating Your Public Narrative Guide – Students](#)

[Public Narrative Peer Coaching Tips](#)

Climate Justice Module

[Climate Justice Slides](#)

[Climate Justice – Facilitator’s Guide](#)



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Literature Review on Youth Civic Engagement

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Executive Summary

With support from the Institute of Museum and Library Services, a consortium of informal science learning centers launched The Capacity-Building for Youth Civic Leadership for Issues in Science and Society (CYCLIST) project. Its goals are to devise ways to incorporate civic engagement in youth programs, build supportive social networks around shared goals, and improve professional practices to support youth civic engagement as a new standard component of programs at various institutions. Research described in the literature review looks at civic engagement across the lifespan, from elementary school to adulthood. This review also seeks to explore specific opportunities for youth to engage in civic activity through involvement in initiatives focused on locally relevant environmental issues.

Youth civic engagement has been defined in numerous ways depending on the practitioner and field, and remains a highly debated subject. Given these diverse definitions of the topic, deciding how to approach matters pertaining to youth civic engagement is not an easy question to answer. This literature review highlights and defines key terms and concepts associated with youth civic engagement. These terms act as entrance ways into the subject and create a web of connective tissue that captures the breadth and depth of what youth civic engagement could mean. We also take a focused look at how youth civic engagement relates to environmental change and informal learning centers. At the end of each topic chapter, we provide recommendations based on the best practices we have described in the literature. These recommendations are designed to both support the project team's ongoing dialogue and help informal learning centers such as zoos, aquariums, marine laboratories, science centers, nature centers, or institutes to develop and design youth civic engagement programs that encourage youth to become civically engaged stewards of environmental change.

We consider three topics in this review, which are described in three corresponding chapters. Topic I: Youth Civic Engagement covers a number of terms and concepts that reflect the landscape of characteristics and resources necessary for effective engagement: self-efficacy, capacity building, cultural competency, intergenerational dialogues, hope, youthsourcing, strategies for engagement, systemic barriers, and accessible research & resources. Topic II: Youth Civic Engagement and Environmental Change focuses on how these two concepts overlap through environmental education and service learning. Topic III: Youth Civic Engagement and Informal Learning Centers looks at existing programs and highlights the need for adequate evaluation to understand how these programs impact youth. At the end of each chapter, we provide recommendations based on best practices in research, for the project team to consider as they develop youth civic engagement programming at their ISLCs.

Crosscutting Considerations

The initial focus of this literature review was the term “youth civic leadership” as described in the original project proposal. The CYCLIST team’s understanding of the most relevant and appropriate focus, in the meantime, was evolving as we generally observed in team meetings and communications. The first draft of the literature review provided an opportunity for the leadership team to voice their thinking; at this point, “civic engagement” was deemed the most relevant term. While we have replaced “civic leadership” with “civic engagement” throughout, we emphasize that “leadership” was still a key term that emerged in the resources included in this review, and may still be an area of interest for the project team.

Additionally, this literature review covers research primarily conducted with youth in the formal learning context (i.e., schools), a reflection of the research focus. For CYCLIST, we see opportunities to learn from this research and incorporate into programming at informal learning centers. Informal learning centers have extensive pathways through which they facilitate youth civic engagement in their programs. However, there is limited information on how the programs advance youth outcomes, likely due to structural barriers in the informal sector (e.g., limited resources and capacity) rather than a lack of interest in learning about program outcomes. We highlight the best practices in the programs we describe and make recommendations related to this issue that CYCLIST team may be able to address.

Topic I: Youth Civic Engagement

Self-efficacy is defined as an individual’s judgement of their ability to accomplish a task. Leading effectively, in any sense, requires a level of confidence in one’s skills and abilities. However, instilling a sense of self-efficacy in youth is not an easy undertaking as many studies, primarily in the field of child psychology, have shown. The most effective programs provide enough but not too much adult supervision so that youth feel comfortable taking charge of tasks without losing the guidance and security that adults provide.

Capacity building focuses on providing strategies, materials, and tools necessary to accomplish a specific goal. In this sub-category, we can ask questions such as how does an institution build capacity for youth civic engagement? What tools and opportunities should an institution offer to encourage engagement? Current research suggests that theoretical and conceptual approaches to the self are necessary to effectively participate in society, so college students, being more cognitively developed than youth, are the most adept at assuming civic roles. Youth capacity building has relied on psychological and therapeutic interventions that focus on the individual. However, some studies suggest that by including community service activities, youth could at least gain civic experience before entering college.

Cultural competence has been defined at both the individual and organizational level, with the goal to grow skills and capacity to be more aware and respectful of different voices. In education, cultural competency is described as sensitivity to the surrounding environment and the backgrounds and life experiences of the individuals who inhabit the space. Equity audits are one common approach to improving cultural competency, where institutions scrutinize their own policies and procedures with an eye to towards supporting more diverse

communities. However, cultural competency thus far has had a limited scope focusing primarily on issues of gender, race, and ethnicity, while overlooking other components of social diversity including: political affiliation, economic status, and LGBTQ identities. In an attempt to correct this imbalance, recent reports exploring immigration, social justice, and social class have focused heavily on diversity in the context of many marginalized groups and identities.

There is a need for more research on intergenerational dialogues outside of the political sphere, but some child psychology studies have noted that treating children and adults as equals when designing and administering youth programming is crucial to helping youth feel engaged and valued. Programs that have included parents and allowed students to help design content have received positive reviews by participants, suggesting that intergenerational dialogues are helpful when creating youth curricula.

Hope is a key topic to emphasize in youth civic engagement. Without hope, students can feel disengaged and uninterested, leading to decreased civic participation. Research suggests that economic standing and hope are heavily correlated, and that parental involvement helps to maintain a sense of hope and engagement in children. It is important to focus on active measures that foster positive change and how people can make a difference, instead of the prevailing doom and gloom focus so often found in environmental literature today.

Literature on civic engagement mostly focuses on youthscaping learning environments to make it more relevant to students' interests and priorities. Under this topic, we can consider the following questions: What does civics in the classroom look like? How might approaches to civic learning in the classroom translate to more informal learning settings such as museums and libraries? Does the educational environment in the informal context invite youth to share their experiences and engage in issues that interest them? How can these conversations be extended beyond the classroom to more informal settings? What is the difference between social studies and civics, and how should those curricula differ?

Crafting strategies for civic engagement focuses on tailoring programs to meet the specific needs and interests of those involved. These specialized programs are designed to give voice to individuals who feel that their needs and concerns are drowned out in larger communities, while maintaining inclusivity. Other strategies described in the literature include short group trips, such as missions, to promote positive group dynamics and community outreach. Lastly, social media has been instrumental in increasing youth civic engagement and growing leadership potential. Young people today use social media to connect with like individuals and work together towards common goals without geographical constraints.

Researchers have identified both personal and systemic barriers to youth civic engagement and leadership. According to the literature, personal barriers include a lack of motivation or interest in a topic. Systemic barriers result in reduced opportunities and resources for civic participation that serve to prohibit and discourage youth participation. Interview data has shown that some students describe the dearth of political outreach in their neighborhoods as a sign that their voices were neither welcomed nor valued. Reports in the literature suggest that proactively seeking participation from both well-resourced and less well-

resourced neighborhoods promotes a more equitable playing field and helps combat economic and resource disparity.

Accessible research and resources focus on The Center for Information & Research on Civic Learning and Engagement (CIRCLE), which prioritizes nurturing civic-minded leaders as a continuous and meaningful objective in itself. To date, CIRCLE has generated research, evaluation, and student-driven resources to help individuals and organizations engage with civics outside of the classroom. It has also provided tools, materials, and analyses related to youth civic engagement demographics. CIRCLE focuses primarily on youth in the political sphere as well as voting trends, but their findings are applicable to any institution that wants to engage youth and understand their motivations for participating in civic programs and initiatives.

Based on the best practices in the literature, we make the following recommendations for the CYCLIST team:

- Actively engaging parents and caretakers in programming to help foster youth self-efficacy,
- Ensuring youth voices are heard and respected as equals during the process of program design or refinement,
- Using digital platforms and social media as tools to advance tasks and responsibilities,
- Preparing for and creating opportunities that meet the wide range of needs and priorities of youth in a given context.
- Conducting equity audits for the youth programs at your ISLC, while keeping in mind existing organizational goals alongside new opportunities for young people,
- Emphasizing issues or topics that may be addressed with diverse voices to advance cultural competency, and
- Acknowledging and embracing the diversity of the community that will be the focus of the youth projects.

Topic II: Youth Civic Engagement & Environmental Change

Youth civic engagement and environmental change were two concepts that did not frequently overlap in the literature. There are programs at informal learning centers, such as museums and libraries, that work to engage youth in environmental education. But even within those programs, there is little focus on the direct relationship between civic engagement and the environment. The promising programs that do exist, for the most part, have not been evaluated or reported on except by the host institution.

Despite the largely absent connection between civic engagement and environmental change in published literature, environmental education does have a strong presence outside the classroom. For example, PBS has developed a documentary series that highlights children's efforts to promote climate change awareness. Institutions such as the Climate Museum in New York City, The Museum of Natural History in New York City, the National Aquarium in Baltimore, and The Nature Conservancy all provide afterschool and summer activities, as well as internships, focused on science education and the environment. These programs teach skills that could be parlayed into civic roles, but for most civic engagement is not a

primary objective. Additionally, most of these programs have not been independently evaluated, making it difficult to assess how effectively they foster youth civic engagement.

Service learning is one approach that has been used to link environmental change and youth civic engagement. While many schools don't offer obvious service learning opportunities, the recent push in the United States to bring civics back into the classroom is promising. Given the renewed interest in service learning as part of the formal classroom experience, we see an opportunity for informal learning centers to make this an integral part of their programs. Because service learning connects students with their community, it's possible to tailor programming and projects to focus on environmental issues relevant in communities, thus providing practical avenues for discussing environmental change that extend outside of the traditional classroom setting.

In support of project-based learning, The United Nations University: Institute for the Advanced Study of Sustainability, recently released a brief emphasizing that action competence, and not just knowledge, is important in developing curriculums and learning outcomes related to climate change literacy. They also support creating learning environments that minimize operational policies and practices to make way for students to practice action competence in response to climate change. These recommendations support informal learning centers as pathways towards youth civic engagement.

For the CYCLIST team, our recommendations based on best practices in the literature on youth civic engagement and environmental change include:

- Defining and implementing youth civic engagement programs relevant to your institutional context,
- Being mindful of the nuanced ways that communities relate to and experience the natural and built environment where they live,
- Incorporating off-site opportunities for youth to hone and implement their civic engagement skills, and
- Leveraging young people's existing social groups, including close friends and relatives, to facilitate team work.

Topic III: Youth Civic Engagement & Informal Learning Centers

Informal learning centers have been defined as everything from museums, to libraries, to afterschool programs, to discussions around the kitchen table. Many of these centers concentrate on education programming for youth related to specific subjects or issues, focusing on areas including science learning and community outreach and advocacy, which potentially enhance civic engagement and leadership skills. However, in these contexts, building civic engagement skills is typically not the primary goal of these programs – though there are notable exceptions in several places across the US. Despite these programs being geared towards building youth civic engagement, there is also often limited information on how these programs impact youth's learning and development. We draw from the programs that we describe to highlight best practices at informal learning centers as well as make recommendations that CYCLIST can consider incorporating into the project work to prioritize learning about program outcomes.

Based on best practices in the literature we recommend the following for the CYCLIST team to consider when creating and developing youth civic engagement programs:

- Focusing on civic engagement as a goal rather than a byproduct of a program,
- Prioritizing evaluation of programs at ISLCs to learn how youth develop civic engagement through their participation in the programs, and
- Encouraging and recommending informal learning centers to build evaluative tools both in-house and collaboratively.



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Overview

In 2018, a group of informal science learning centers (ISLCs) – the New England Aquarium, The Alliance for Climate Education, the Audubon Zoo and Aquarium, Mote Marine Laboratory, Saint Louis Zoo, The Wild Center, and Woodland Park Zoo – received a three-year grant from the Institute of Museum and Library Services (#MG-70-18-0009-18) for the Capacity-building for Youth Civic Leadership for Issues in Science and Society (CYCLIST) project. The goals of the CYCLIST project are to build the capacity of ISLCs to incorporate civic leadership development in teenage youth programs, build supportive social networks around shared goals and mutual trust, and improve professional practices to support youth leadership development and civic engagement as new standard components of programs at partner ISLCs and many other institutions.

The CYCLIST team hopes to build a community of practice through meaningful collaboration with a cohort of youth program staff at six participating ISLCs within the first two years. In the third year of the project, the partners will expand to include six additional sites for a total of twelve participating ISLCs. The partners will examine program models and leadership development theory with an eye towards incorporating elements of the theory into programming for high school students. The expectation is that these changes will support young people's efforts to develop their capacity and willingness to work as positive change agents in their communities. Each ISLC will develop a plan to use the information and resources provided by project colleagues to support leadership development in their current programs.

The CYCLIST team is committed to helping more ISLCs make youth civic engagement and leadership a core part of their programs. Their goal is to develop an ISLC youth leadership toolkit featuring recommendations, curriculum with annotations about how it has been used and evaluated, and case studies of youth leadership and civic engagement in practice. This toolkit will be shared with colleagues from the wider museum field, leveraging the ISLC members of the National Network for Ocean and Climate Change Interpretation, along with others, to ensure that these lessons learned are shared and applied to future programs.

New Knowledge Organization Ltd. (NewKnowledge) is serving as the external evaluators of the project. This document has been developed to build knowledge of relevant theory and practice around youth civic engagement. This literature review will serve as a resource for the rest of the project team to inform the development of their youth programs through the CYCLIST project. Specifically, it will help team members identify opportunities to support youth leadership development, and ways to build the skills for civic engagement.

Literature Review Approach

To begin, CYCLIST partners were asked to share resources and key terms that they associate with youth civic leadership. These resources and terms were the starting point for the literature review. The source material was drawn from several online databases and an original list of 53 journal articles and supplementary materials. After discussions among the

NewKnowledge team internally, this list was whittled down to only include the articles and materials deemed most relevant to the purposes of this study and the goals of the partnering ISLCs.

After further discussions with CYCLIST partners, the focus on youth civic leadership shifted towards youth civic engagement. Youth civic engagement became the central focus of this review, although leadership remained a key term in procuring materials. In the end, this literature review references 50 journal articles and pieces of supplementary material including information from museum websites and educational programming.

This review is organized into three chapters about thematic topics that emerged from the literature mostly in the formal educational context. We note that informal learning centers have a plethora of pathways and programming towards youth civic engagement, but this review samples from published work to provide a foundational understanding of youth civic engagement which can then be applied to informal learning centers.

Topic I: addresses **Youth Civic Engagement** in general and key terms, representing the breadth and depth of how youth civic engagement can be defined.

Topic II: focuses on **Youth Civic Engagement and Environmental Change** by detailing how both environmental education and service learning overlap with youth civic engagement.

Topic III: explores **Youth Civic Engagement and Informal Learning Centers** by highlighting ISLCs that actively address youth civic engagement. This topic also addresses the need for targeted evaluation of ISLC civic engagement programs.

At the end of each topic, recommendations are made based on best practices noted in the literature. For the CYCLIST team, these recommendations are geared towards developing youth civic engagement programs in ISLCs, even though they relate to best practices in formal learning environments. We believe that the lessons learned from formal contexts are applicable to ISLCs and can be used to further enhance the robust youth civic engagement programs and pathways already in place and being developed at many ISLCs across the country.

Topic I:

Youth Civic Engagement

Self-Efficacy

Self-efficacy is defined as a person's judgement of their capabilities to perform given actions. In 1993, Albert Bandura, social scientist, psychologist, and self-efficacy champion, described his social cognitive theory of self-efficacy, and linked it to adolescent development and academic performance (Bandura, 1993). He asserted that an adolescent's beliefs are supported by their environment – including parents, teachers, and peers – which can predict their self-efficacy and academic performance (Tsang, 2012). Using Bandura's theory, Usher and Pajares identified how self-efficacy can qualitatively predict college major and vocational choices (Pajares & Urdan, 2006).

Self-efficacy has also been connected to academic procrastination and self-regulated learning. Greiman developed a 7-item scale to measure youth leadership self-efficacy (YLD-SE) and how it relates to self-regulated learning (Greiman, 2008). Greiman's study revealed that transformational and laissez-faire teaching styles correlate with increased participation in youth leadership (Greiman, 2008). This finding suggests that teachers who support these teaching styles instill the principles of leadership, engagement, and self-efficacy in their students.

The literature clearly shows a strong relationship between self-efficacy and youth civic engagement. If self-efficacy is important for youth to gain the capacity to engage in general, then it is reasonable to conclude that strong feelings of self-efficacy afford youth the confidence to engage civically.

Capacity Building

There are many definitions for capacity building as the concept pertains to learning contexts and communities, but they share common threads. Bringing those threads into one tapestry, we can define capacity building as a collection of domains, often referred to as characteristics, aspects, capabilities, or dimensions, that work together as part of a process or approach towards an ultimate outcome or rationale (Simmons et al., 2011).

A recent study of school social work professionals revealed that macro-level practices of in-school capacity building are often overlooked (Kelly et al., 2010). These practices include: family-based work, school culture improvement, and community engagement. Instead, preference is given to micro, individualized, capacity building initiatives for youth (McKay, Sanders & Wroblewski, 2011). Micro capacity building programs include those designed to refine employment skills and individual opportunities for civic engagement. However, since youth civic engagement aims to build healthy communities by encouraging youth to participate in civic affairs, focusing primarily on micro levels of support can limit positive youth development as it relates to society as a whole (McKay, Sanders & Wroblewski, 2011). As shown in the literature, macro level capacity building strategies that have been developed

by institutions to encourage youth civic engagement typically don't take priority until college or university.

A national study that included over 50,000 college students across 52 campuses in the United States, reported that expanding curricular and co-curricular civic engagement programs, and focusing on theoretical and conceptual leadership for students ages 17-22 can build the capacity needed to participate in civic activities (Dugan & Komives, 2007). According to this study, it is not until this age range that students develop a *consciousness of self*, which is necessary to effectively engage in society (Dugan & Komives, 2007).

Other studies on capacity building in high schools show that students think of and participate in civic activities within their communities. But most studies report low rates of civic engagement outside the boundaries of young people's immediate community and suggest that institutional capacity building strategies should encourage students to think outside of their family, school, and proximate community (Zaff, 2011).

Cultural Competency

The term *cultural competency* first appeared in the field of health care and human services due to the diverse clientele that access resources in these contexts (Bustamante, Nelson & Onwuegbuzie, 2009). The CCLI (Cultural Competence Learning Institute) has been offering processes and resources designed to increase an organization's capacity around diversity, inclusion, and culture. They define **cultural competence** as a set of congruent behaviors, attitudes, and policies that enable effective work in cross-cultural situations. We see cultural competence as a critical outcome for youth as they develop civic engagement skills. In their efforts to engage communities, youths' awareness and respect of the unique cultural perspectives of the groups with whom they are working will be essential to creating meaningful change.

In institutional contexts, cultural competency refers to policies, programs, practices, artifacts, and rituals, and how these reflect the needs and experiences of diverse groups both within the institution and the broader community in which it is located (Bustamante, 2006; National Center for Cultural Competency, 2005). Equity audits have become a common way to assess cultural competency, looking at teacher, programmatic, and achievement equity within educational contexts. According to the literature, addressing cultural competency is most often hindered by role and responsibility confusion, resource constraints, the absence of culturally responsive instructional strategies, a lack of awareness of cultural competency indicators, and personal bias (Lindsey, Robins & Terrill, 2003). Other constraints include the limited demographic scope of existing approaches. Most current cultural competency programs and strategies address members of the middle class, traditional families, and dominant cultural groups. However, there is a growing body of literature on developing programs geared specifically towards marginalized groups including immigrants and members of the LGBTQ community as a way to expand cultural competency (Russell & Campen, 2011).

It is important to note that even racially pluralistic institutions have had issues in addressing cultural competency and actively encouraging youth of various backgrounds to engage in civic activities. In fact, a national survey in 2012 revealed a relationship between attending a

racially pluralistic high school and a reduced likelihood of electoral and civic engagement (Kawashima-Ginsberg & Levine, 2014). Since attending culturally diverse schools has important benefits, schools can implement targeted programs to counteract the lack of engagement. For example, students can form issue-oriented discussion groups to respond to controversial topics in the classroom. This tactic could help compensate for the discrepancy between attending diverse schools and civic engagement (Kawashima-Ginsberg & Levine, 2014).

Outside of the educational sphere, institutions such as the CCLI have been working to support diversity, inclusion, and culture in organizational settings. The CCLI specifically targets museums, providing processes and resources to enhance cultural competence. However, they have partnered and worked with other organizations such as the Detroit Zoo and SciPort Louisiana Science Center, demonstrating that cultural competence is not an aim exclusive to museums and that informal learning centers of all sorts are working towards diversity, inclusion, and culture.

The definition of cultural competency as it pertains to learning contexts in general is still evolving, and as it solidifies so too will the strategies and programs designed to promote this concept. It is important to note that strategies to promote cultural competency depend heavily on the institutional context and community in which it is located. As such, it will be important to understand the overarching environment of the institution before attempting to develop cultural competency programs or initiatives.

Intergenerational Dialogue

The need for intergenerational dialogue when designing and administering youth civic engagement programs is not well described in the literature. However, all youth civic engagement programs that aim to include the community stress the need for collaboration between youth and adults. Crucial strategies for designing youth-centered programming prioritize treating youth as equal partners in the process, and maintaining constant communication between youth and adult members. Evidence supporting these recommendations comes from experts such as Jutta Dotterweich, a psychologist at Cornell University's Family Life Development Center, who authored the *Positive Youth Development Resource Manual*. The manual describes intergenerational dialogue as a vital ongoing exchange between youth and adults that fosters healthy youth development and brings about programs that are beneficial for all stakeholders. Dotterweich writes that dialogue is a necessity for youth to feel valued and for policy makers to remain grounded in their audience (Dotterweich, 2006).

Intergenerational dialogue also helps to create geographically and culturally relevant programs and activities that are inclusive of marginalized groups. For example, in a large city in the southern region of the US, Latina mothers, ages 25-45, shared their perspectives and advice on supporting adolescent girls during the transition to adulthood. They voiced their concerns surrounding ethnic identity and individuality, and how these two characteristics should be equally emphasized when developing programs for adolescent girls, especially those who come from immigrant families (Okumabua et al., 2015). Those discussions led to the development of a state-wide outreach program for Latina girls coming of age within the US context (Okumabua et al., 2015).

In spite of these relevant insights, most of the literature on intergenerational dialogue focuses on political viewpoints and the differences in trends across generations (Lee, 2012). Thus, there is a need for research focused specifically on intergenerational dialogue as it pertains to cultivating youth civic engagement. Such research should also consider the effects of intergenerational gaps when designing and promoting programs that target young people.

Hope

In the 1990s, psychologist Peter Benson used his theory of developmental assets to shift the focus of youth development studies towards hope, strength, and community empowerment (Roehlkepartian, 2012). Benson studied developmental assets as positive experiences and qualities in more than 3 million young people around the world. His work, which has been referenced in over 17,000 peer-reviewed journal articles and publications (Roehlkepartian, 2012), continues to shape much of the current thinking around youth development. For example, Benson's theory that developmentally attentive communities enhance youth development, and build leadership and civic engagement skills was adopted by several organizations such as the National Collaboration for Youth, the Salvation Army, and the YMCA as a foundation for their program models (Roehlkepartian, 2012).

In the early 2000s, Benson took his theories to a new level by focusing more closely on the concepts of hope and spirituality, and measuring how vital these properties are to addressing youth developmental issues. Social scientists and youth developmental social workers have adopted his teachings as a way to positively engage youth and focus on assets rather than detriments when designing programs for specific communities (Callina et al., 2014). Studies done over the past two decades show that higher levels of hope predict better academic success, psychosocial well-being, and athletic achievement (Callina et al., 2014). Positive youth development has been linked to hopeful future expectations (HFE), as well as improved indicators of self-efficacy, intentional self-regulation, and overall well-being (Callina et al., 2014). However, this link has not been explored in different geographical and cultural contexts.

Additionally, increased trust and hope for the well-being of society as a whole is correlated with better youth development (Callina et al., 2014). Differences in HFEs based on socioeconomic class have also been reported, but the information is limited and highlights a need for more in-depth explorations of intra-class dynamics. The literature does suggest that parental contribution to the adolescent period may be a factor in HFE differences between socioeconomic classes (Callina et al., 2014). The amount of time and effort that parents can afford to spend with their children during these important developmental years could greatly impact their children's HFEs.

Overall, it seems clear that hope, trust, and parental involvement are vital for youth development, but there is a need for more targeted research on how these three factors specifically affect self-efficacy and encourage youth civic engagement.

Furthermore, hope has been linked to a stronger likelihood to act on environmental issues. In a nationwide study of adults visiting ISLCs, researchers from the National Network for Ocean and Climate Change Interpretation project found that people who listened to skilled

presentations about climate change felt more knowledgeable about the topic, were more likely to talk about the issue and intend to take civic action (Geiger et al., 2017). Even though this study focused on adults, it underlines the role of hope in equipping individuals to engage in community-level issues.

Youthscaping

There is a lot of discourse in the literature about youthscaping classrooms to nurture civic engagement in young people (Aponte-Martinez & Gerardo, 2017). Youthscaping refers to constructing curriculum and environments that encourage youth to share their experiences and get involved in issues that interest them. In the literature, there are five major themes pertinent to promoting youth civic engagement through youthscaping (Wheeler & Edlebeck, 2006):

1. Building young people's connections to their own identity, culture, and community,
2. Recognizing that young people are assets to and experts about their own communities,
3. Engaging young people as community leaders on issues that matter to them,
4. Creating developmental opportunities that are sustained and supported over time, and
5. Treating young people and adults as equal partners in these pursuits.

We also found that disconnected youth — those who are gang-affiliated, involved with juvenile justice system, or homeless — can reengage with educational and workforce experiences through youth development programs and centers as a stepping-stone towards full civic reengagement (Zaff, Kawashima-Ginsberg, Boyd & Kakli, 2014). Clearly, youth with varying life experiences can successfully engage in civic activity if the environment around them is designed to foster their participation.

Youthscaping the classroom can help redefine the subject matter of social studies classes to activate youth civic engagement at an earlier age, during or even before high school (Zaff, 2011). Historically, social studies curricula have focused on global and national events and aspects of United States history deemed important to learn. One recommendation is to upend this stale dichotomy, and restructure curricula to use content that is familiar and interesting to students or youthscape social studies (Zaff, 2011). Expanding social studies to include a more present-day perspective could potentially bring civics into the learning context in a more relevant way. It would also help students better engage with the community and interact with a broader and more diverse population.

Strategies For Civic Engagement

Strategies to engage youth in civic opportunities seem to work best when tailored to specific demographic groups. A 2013 study of two Bronx-based community organizations focused on urban youth civic engagement practices, helps to demonstrate this observation. In both organizations, programming helped youth's civic engagement by aligning with their identities related to race and class (Shiller, 2013). As part of the program planning, the adult administrators prioritized interaction with youth participants and focused on the needs and concerns of their specific neighborhoods. This careful attention to the community's needs

and perspectives led to more personalized programming and empowered students to use their voices to advocate for change in their communities.

Another strategy to engage youth in civic issues is through religious short-term mission trips. Research suggests that civic engagement is predominately fostered during adolescence, but that actual engagement remains quite low until after high school, except for youth who engage in activities typically sponsored by religious organizations such as volunteering in homeless shelters, going on mission trips, and participating in youth groups (Zaff, 2011). These trips have become increasingly popular in the United States and participants often find these experiences transformative (Beyerlein, 2011). According to the National Survey of Youth Religion, mission trips significantly increase the likelihood that adolescents will participate in various forms of civic activity, and participants showed higher levels of civic engagement in and outside their communities even during high school (Beyerlein, 2011; Zaff, Kawashima-Ginsberg, Lin, Balsano, & Lerner, 2011). It stands to reason that similar volunteering trips, even if not religiously motivated or organized, could have similar results.

For groups that do not actively participate in any religiously based organizations or whose neighborhoods are overlooked, in-person and online conversations appear to be important motivators for youth participation in civic leadership and engagement opportunities. Namjin Lee, who has studied communication methods as a means to foster youth civic engagement, looked at the most effective forms of communications or invitations to engage youth in civic action (Lee, Shah, & McLeod, 2012). This paper compared youth who are exposed to civics and ethics-based conversations and deliberately constructed activities around civic issues in the classroom with those who don't have these experiences. The researchers found that students who engage in these classroom conversations and activities more often engage in civic activity *outside* of the classroom. Additionally, online pathways to participation are even more influential. Students who showed higher rates of news consumption and frequency of political expression via online postings were also more active in civic engagement, suggesting that the internet plays a role in this dynamic (Lee, Shah, & McLeod, 2012).

Systemic Barriers

In 2011, CIRCLE (The Center for Information & Research on Civic Learning and Engagement) found six distinct trends in youth civic engagement:

- Broadly engaged – youth fill many different leadership roles,
- Political specialists – youth focused only on voting and politics,
- Donors – youth volunteer time more than anything else,
- Under-mobilized – youth registered but did not vote,
- Talkers – youth discuss politics but don't act, and
- Civically alienated – youth hardly engage at all.

The reasons why a person might fall into a specific category indicate the presence of significant, systemic barriers to youth civic engagement (CIRCLE, 2010). The report suggests that economic constraints may be at the core of these groupings. Marginalized and underrepresented groups may not have access to the kinds of programs and resources that enable civic engagement. Other factors may be conspiring to influence youth participation in civic affairs as well, including the political climate, which has not been studied. However,

economic disparity is a reasonable assumption as to why some youth are more engaged than others.

An article by Parissa Ballard dives deeper into young people’s motivations and barriers to civic engagement, and shows that these are both personal and systemic.

Motivations included issues, beliefs, self-goals, and responses to current events (Ballard, 2014). The study used data from schools that were both well and poorly resourced. Youth from schools that were well resourced described their barriers as mostly personal: lack of interest, opposition to civic involvement in general, while youth from poorly resourced schools had both personal and systemic barriers, such as a lack of opportunities, resources, and knowledge (Ballard, 2014). The latter group also believed their involvement to be unwelcome or futile based on their view of systemic barriers. Many perceived a lack of opportunity as evidence that their voices were not welcome in their communities. Others highlighted the limitations of their power as young people as the reason for their inactivity — for instance, they might reason *“a minor can’t do anything, so why even try?”* (Ballard, 2014). Youth are aware of the systemic barriers that block them from civic engagement but generally seem unmotivated to find outlets without at least some help or resources from their community leaders.

Accessible Research & Resources

CIRCLE is a leader in youth civic engagement. The organization provides an exceptional number of tools and resources for those trying to thoughtfully engage youth in civics programs. CIRCLE conducts research and provides materials that engage young people in the US in political life. Based at Tufts University, CIRCLE targets marginalized or disadvantaged youth. Its work is heavily focused on voting trends and ways to engage youth in the practice of democracy. CIRCLE has done extensive research on volunteer activity; community service trends and statistics across the US; civic education; civic engagement by race, ethnicity, and gender; service learning; and youth attitudes and beliefs.

CIRCLE has also developed surveys to measure civic engagement, conceptualized as political participation, volunteering, and community engagement. The group offers a youth-led resources page that highlights organizations such as Youth In Focus, which specializes in youth-led research, evaluating, and planning; the John W. Gardner Center for Youth and Their Communities, which developed the Handbook for Supporting Community Youth Researchers; What Kids Can Do, a gallery of work produced by young people; and The Innovation Center, which offers resources for involving youth in evaluation, planning, and research.

Recommendations

Based on the eight key terms and concepts defined, accessible resources and research, and best practices present in the literature, we make the following recommendations for the CYCLIST team.

- 1. Actively engage parents and caretakers in programming to help foster youth self-efficacy.** Encouraging parental (caretaker, mentor, community leader, etc.) involvement and contribution to programming can help motivate youth to participate in a continuous learning experience that starts at the ISLC and recurs at home and outside the home.
- 2. Ensure youth's voices are heard and respected as equals during the process of program design or refinement.** It is important that youth's perspectives are valued as legitimate and reliable, alongside other adult perspectives such as those from program staff or youths' caregivers. Actively involving youth in the process of shaping and improving the program can foster increased self-efficacy and a sense of ownership in their work. This approach can further develop youth as ambassadors of the program, with the ability to draw in their peers.
- 3. Use digital platforms and social media as tools to advance tasks and responsibilities.** By intentionally and thoughtfully using technology and new media in program curricula, youth have opportunities to engage in activities that are important for their personal and social lives. We anticipate that making the most of youths' connection with digital media – alongside in-person and hands-on activities – can further empower them to develop civic engagement skills.
- 4. Prepare for and create opportunities that meet the wide range of needs and priorities of youth in your ISLC.** These priorities may relate to different aspects of youths' identity (e.g., socio-economic status) that may be typically associated with a sense of exclusion. For youth civic engagement opportunities to be equally available, a first step in the process is to reduce barriers, including a perceived sense of exclusion.
- 5. Conduct equity audits for the youth programs at your ISLC, keeping in mind existing organizational goals alongside new opportunities for young people.** Equity audits may take the shape of the first step for recommendation #4, which is to identify the gaps that need to be addressed for all youth to benefit from the youth-focused programming at ISLCs.
- 6. Emphasize issues or topics that may be addressed with diverse voices to advance cultural competency.** We recommend that program administrators encourage conversation around issues that can benefit from diverse voices and perspectives. Even if the group or audience of interest comprises people from different cultural backgrounds, it would be prudent not to make assumptions about the group's cultural competence. As noted earlier, cultural competence may be a work in progress even in ethnically pluralistic contexts.
- 7. Acknowledge and embrace the diversity of the community that will be the focus of the youth projects.** This approach aims to ensure that all voices are included so that new projects authentically meet community members' needs. We suggest two ways to put this idea to action:
 - Ensure that underrepresented groups have opportunities to share their perspectives.
 - Where appropriate, seek out participation from both well-resourced and under-resourced neighborhoods to provide an even playing field.

Topic II:

Youth Civic Engagement & Environmental Change

Learning Related To The Environment

Social discourse in the environmental field has revealed multiple approaches, practices, and values practitioners bring to the work (Fraser, Gupta & Krasny, 2014). This is apparent in the foci of different ways of tackling an environmental problem (e.g., environmental education, place-based education) that may use different models, but may ultimately be geared towards a shared goal (e.g., youth engagement). Historically, much of environmental education has focused, at least in part, on raising awareness about the threats that human activities pose to the environment, including climate change. However, in the environmental field practitioners' worldviews and experience lead to a broader array of options and approaches, that acknowledge different ways of achieving a common goal (Gupta, Ardan, & Krasny, 2017). Recent trends have highlighted new efforts to shift the focus of the field away from deficit models to hope and action. One institution involved in this reorienting effort is the Public Broadcasting Service (PBS), which has developed Young Voices for the Planet (YVFP), a documentary series that showcases success stories of environmental activism led by children ages 9-17.

These documentaries aim to teach and excite viewers to get involved with climate change and learn about their environment in a positive way. The films have proven effective in developing self-efficacy; sparking questions; defining problems; developing and using models; planning and carrying out investigations; analyzing and interpreting data; using math, science information, and computational thinking; and engaging in argument from evidence (Schusler, 2009). To complement these documentaries, YVFP hosts a series of Civic Engagement and Democracy Educator Workshops. This professional development course and accompanying curriculum brings together formal and informal educators to learn how to empower their students in the face of climate change. According to the literature, environmental education appears to be incorporated more in out-of-school contexts, where issues of climate change are not as highly contested.

In the past few decades, ISLCs have embraced activism and have increased learning experiences to spark behavior change toward action. One example of an informal learning center that is openly striving to be a conduit for youth engagement in environmental change is the Climate Change Museum, which opened recently in New York City. The museum hosts events and exhibitions aspiring to nurture action and engage youth to think critically about the future of the planet. Screenings, panels, and talks, complement exhibits that focus on specific communities, science education, and the arts to motivate action. Although relatively new, this museum is taking steps to create a cultural and environmental revolution.

Other museums, such as the American Museum of Natural History, also in New York City, offer youth programs that use scientific research to teach the fundamentals of life and

physical sciences. Although civic engagement is not a direct curricular component, giving students access to these research experiences could potentially foster more engagement and leadership in civic issues, especially those relevant to the natural sciences.

The National Aquarium in Baltimore offers a plethora of summer volunteering opportunities as well as excursions and educational career opportunities for Baltimore school students. They also encourage students to participate in the Youth Ocean Conservation Summit and provide afterschool activities such as Aquarium on Wheels, which targets high school students.

Since 1951, The Nature Conservancy has worked to protect natural resources, tackle climate change, support food and water sustainability, and build healthy cities. As a part of its work, The Nature Conservancy has developed two major programs for youth environmental engagement: Growing Leaders on Behalf of the Environment (GLOBE), and Leaders in Environmental Action for the Future (LEAF).

GLOBE is an internship program for college students or recent graduates that seeks to bridge the gap between academia and real-world STEM work. Participants are paired with projects around the world, as well as a committed mentor, to develop their professional skills and begin their conservation career paths. LEAF is a nationally-acclaimed program run in multiple states. LEAF interns, typically high school students, dedicate one month of their summer to advancing conservation work. This can look different depending on the region and what the interns and mentors feel are priorities. For example, some interns have visited colleges to promote environmental awareness and completed on-the-ground conservation work such as maintaining trails and removing invasive species. To the program's credit, many LEAF interns have gone on to work in conservation careers as national park rangers, environmental engineers, and environmental science teachers. Many interns return to the program year after year and some even come back as mentors.

Both GLOBE and LEAF are perfect examples of how youth civic engagement in environmental sciences can be cultivated and fostered. Independent evaluations with different cohorts of GLOBE and LEAF interns have consistently found that they boost self-efficacy and encourage environmental action and interest in conservation careers (e.g., Gupta, Rank, Field, Ardalán, Lombardo, LaMarca, & Flinner, 2018; Gupta, Rank, Ardalán, & Flinner, 2016) Although there is not an explicit focus on promoting civic engagement, many of the activities in both GLOBE and LEAF pertain to civics by actively engaging with the community and working directly with decision makers, such as local politicians, to seek positive environmental change.

The Climate Change Museum, Museum of Natural History, The National Aquarium in Baltimore, and The Nature Conservancy are just four examples of informal learning contexts where programs have helped poise young people for civic action. However, the majority of these programs do not specifically focus on building civic engagement skills and have not been fully evaluated by third-party sources. Though they seem to have crafted effective and promising programs, it's difficult to objectively address the benefits of and barriers to their programming.

Service Learning

Moving away from the teacher-student dynamic of curricular-focused environmental education, other initiatives focus on building a bridge between environmental education and service learning. *“Service learning connects interaction and shared purpose [with the aim of] improving student learning and creating better schools and stronger communities”* (Kielsmeier, 2010, Schulser, Krasny, & Decker, 2007). Service learning takes education out of the classroom and engages the community through partner programs that advance shared goals. Combining environmental education and service learning engages the community in environmental issues while allowing members to spearhead initiatives that use school resources and include the school’s faculty, staff, and associated members, including students. By linking these two concepts, environmental education reaches a much larger audience. These strategies may also be relevant to informal learning contexts such as ISLCs as they develop youth civic engagement programs.

Barriers to service learning are usually inconsistent research-based practice standards, weak professional development, low-quality evaluation, and inconsistent funding bases. Service learning received its strongest backing in 1994 when the federal government passed the National and Community Service Act providing federal funds to every state developing service learning projects. Currently, AmeriCorps is the largest service learning-focused federally funded program. However, some legislators, educators, and institutions are trying to pump new life into the movement (Kielsmeier, 2010).

The United Nations University: Institute for the Advanced Study of Sustainability supports action competence through project-based learning programs similar to service learning. This institute emphasizes that disseminating knowledge is not enough. Instead, curriculums and learning outcomes must be designed to foster action competence related to climate change literacy and create environments that allow students to practice action competence without being restricted by operational policies and practices. Acting must be a component of environmental education, which in turn can foster youth civic engagement in response to environmental concerns.

Recommendations

Based on the best practices described in the literature, we make the following recommendations to inform the work of the CYCLIST team.

- 1. Be mindful of the nuanced ways that communities relate to and experience the natural and built environment where they live.** This is the first step to understanding the issues that community members care about and acknowledging the intersections between human and environmental goals. This important work may be done by engaging youth in assessing the needs of the community and initiating projects with residents.
- 2. Incorporate off-site opportunities for youth to hone and implement their civic engagement skills.** Opportunities to be out in their communities and other 'real world' settings help youth apply the skills and knowledge they gain through youth-centric programming, and experience the value of engaging with service learning and civics outside the classroom.
- 3. Leverage young people's existing social groups, including close friends and relatives, to facilitate team work.** Encouraging youth to work in familiar groups, will make them more likely to engage in community-focused projects outside the classroom. This approach serves youths' need for socializing and reinforces in-group norms about issues they care about.

Topic III:

Youth Civic Engagement & Informal Learning Centers

Informal learning centers include community-based organizations, libraries, think tanks, museums, aquariums, institutions of high education, government agencies, private companies, and philanthropic foundations (National Research Council, 2009). Beyond centers, informal learning environments range from discussions around the dinner table to recreational activities like gardening and fishing.

Informal learning centers can promote learning through everyday experiences in their spaces, and through programs and digital platforms. ISLCs are one subset of informal learning contexts that seek to provide opportunities for science education to target audiences. In fact, a recent national study found that the US public encounters learning about STEM disciplines in a range of informal contexts such as zoos, aquariums, and science centers, as well as in more everyday settings, for example, in and around their homes (Gupta, Voiklis, Rank, Dwyer, Fraser, & Flinner, 2019).

Evaluating the informal learning programs offered in these spaces is vital to understanding how people engage with science information. Furthermore, using these programs to encourage youth civic engagement is something that researchers have actively promoted in the past decade and continue to do today.

Research by the National Academy of Science suggests that by taking science learning outside of the classroom and into informal environments, programs can better engage participants with more focused agendas as well as carefully monitor and promote diversity and equity within their policies, procedures, and curricula. This study also reveals that most informal learning center science programs focus on similar outcomes for learners. This includes helping learners cultivate their interest in science, understand scientific knowledge, engage in scientific reasoning, reflect on science, and engage in scientific practices (National Research Council, 2009).

Furthermore, some programs help participants identify with the scientific enterprise as a whole and develop a *“scientific identity that encompasses their cultural backgrounds and communities”* (National Research Council, 2009). This focus on the scientific process broadens learners’ understanding of science to include what the sciences mean to their communities and can spark youth civic engagement (National Research Council, 2009). When the National Academy of Science assessed science-focused youth programs that have adopted this broader approach to science learning using pre- and post-surveys, they found that most of the students who participated in these programs increased their understanding of and passion about civic issues. They also performed better on indicators of improved teamwork and leadership skills (National Research Council, 2009).

Research conducted by CIRCLE can be relevant in the ISLC context as well. This research includes a five-year study to increase democratic deliberation (McIntosh & Youniss, 2010). By

clustering young people into groups of 100-150 students that met and deliberated under adult supervision, CIRCLE found that community service increased by 23% over the five years. These results indicate that their cluster approach was highly effective and resulted in more active youth participation in their communities. Youth programs at ISLCs may be able to adopt a similar strategy to advance youths' civic engagement with their communities.

Two other studies by CIRCLE focused on increasing youth interest in civic engagement may offer useful insights for ISLCs looking to craft similar programs. The first looked at using extracurricular activities to increase youth voting. The second explored efforts to use the classroom-kitchen table connection to engage youth in political discussions to increase knowledge and self-efficacy. In the first study, researchers found that extracurricular activities such as performing arts, academic clubs, and drama clubs resulted in notably higher rates of voting in early adulthood (Thomas & McFarland, 2010). This finding suggests that the ways that educational settings prioritize creation of informal learning opportunities can indeed influence student civic engagement. The classroom-kitchen connection study showed that students who were assigned to talk about specific political articles at home had the highest scores on political knowledge and efficacy surveys. This pattern suggests that engaging with parents at home will likely increase student civic engagement (Vercellotti, & Matto, 2010).

Recommendations

Based on research we described on youth civic engagement and informal learning centers, we make the following recommendations for the CYCLIST team.

- 1. Define and implement youth civic engagement programs relevant to your institutional context.** While there are several ways in which civic engagement has been conceptualized and studied in the literature, we suggest that adopting a contextually applicable approach to program development will help highlight important nuances and potential strategies to strengthen your work. Even though an appealing program model has worked well in another setting, it may be need to be adapted to be meaningful in your organization.
- 2. Focus on civic engagement, as is relevant in your institution as an explicit goal.** We anticipate that this focus will help prioritize civic engagement for its inherent value and its particular relevance to environmental issues. When civic engagement is a core part of program design, it can be help guide strategies and resources that will best support the program for youth.
- 3. Leverage the CYCLIST CoP to help shift the informal learning sector's emphasis on evaluative thinking in the context of youth programming.** We see potential opportunities within the CoP to impact ISLCs' capacity around environmental work in dual ways: first by supporting individual institutions build into their program design efficient and practical ways to track youth development around civic engagement; and second, by championing the cause in the informal learning world, to help institutions field-wide reduce the barriers to learn how programs are helping youth develop as change agents. We anticipate that this focus can lead to shared best practices among ISLCs as a way to complement research on civic engagement in formal learning environments.

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