DIGITAL HARBOR FOUNDATION

Strategic Plan

2019 to 2021

Background

In 2012, Digital Harbor Foundation (DHF) executive director Andrew Coy brought together a team of people including Shawn and Stephanie Grimes to transform a closed down city recreation center in Baltimore City into a vibrant tech center for youth. As a former teacher at the Digital Harbor High School, he offered students a chance to learn Web design, and quickly realized that opportunities were rare for students to participate in these kinds of digital learning activities for tech jobs of the present and future. The mission of DHF became being dedicated to fostering learning, creativity, productivity, and community through education, and committed to inclusive practices.
All the work at DHF is designed to create opportunities for today’s youth to develop the confidence, skills, and support to become leaders, now and for the future. The efforts with families seek to strengthen and empower the network of family members to help provide a safe space and bright future for each and every child. The focus on community is an understanding that our society is built on the basic social contract that we are better when we are connected. Communities often face complex issues resulting from deep historical wounds. Because the introduction of technology can either exacerbate or alleviate these tensions, it is important for community members to understand how technology can be used to collaborate with a commitment to serving each other.

**Tech Center**

Since its inception in 2013 the [Tech Center](#) has evolved into a place where students across the city are offered the opportunity during out-of-school hours to participate in maker education activities that provide them with the ability to creatively solve problems - a necessary skill in the digital world. In 2017, 1,250 youth participated in programs and events at DHF, and another 2,678 community members participated in DHF’s events.

The programming for youth in grades 1st through 12th include the following:

- **Mini Makers**, year-round programs for 3rd-5th graders; started in 2013
- **Maker Foundations**, a 14 week tech exploration for 6th-10th graders, first cohort fall 2013
- **Members**, advanced courses for mid-high school youth began in fall 2015
- **Summer Maker Camp** for 3rd-12th graders, first program run in summer 2013
- **Youth Employment**:  
  - **3D Print Shop**, youth-employment program working on client-facing, real-world, design and fabrication projects; started as an NSF-funded research project in 2016  
  - **Web Shop**, youth-employment program working on client-facing real-world web design and development projects; established in 2018
- **Field Trips** for Baltimore area public schools launched in 2015
- **Harbor Hacks**, a weekend long hackathon for youth ages 12-18, first hackathon August 2017
- **Homeschool Day Program** for elementary-age homeschooled youth that began in September 2018

In addition, DHF created a [Youth Steering Committee](#) where select youth have a part in the decision-making process for many of the programs and courses, [Makerettes](#) an all-girls maker club founded by a youth member, once-a-month [Family Make Night](#) designed for families to make and learn together, [3D Assistance](#) a youth-run program that offers the community a place where they can get help with their 3D printers, [FabSLAM](#), a multi-week, team-based digital fabrication competition where youth learn and practice 3D printing skills, and [WebSLAM](#) where youth teams work to build a web solution for a non-profit client in under 24 hours.
Center of Excellence

Andrew and staff quickly understood that efforts to expand these opportunities for more kids needed to include not just the Tech Center, but also externally-run initiatives in schools and afterschool programs. By 2014, DHF had launched the Center of Excellence for Innovation in Technology Education to coach educators on how to incorporate technology and making into their own learning environments. In 2018, DHF staff facilitated 17 educator workshops with 241 attendees.

Programming for in and out of school educators include:

Core programs:
- Making for Educators, a 2-day hands-on-experience where educators learn how to start their own makerspace.
- Blueprint, an online resource to help one build their own maker learning environment.
- Expanding Tech Education, a research project that explores different professional development models for expanding informal tech education for underrepresented youth.

Additional workshops:
- 3D Printing for Educators, a multi-day workshop where educators learn how to incorporate 3D printing into existing curriculum.
- Arduino for Educators, where one learns to teach the concepts of computer programming while building interactive and engaging projects that involve lights, buttons, motors, sounds, and sensors.
- Interactive Games for Educators, where one learns how to program basic game mechanics to create a fully interactive gaming experience.
- **IoT for Educators**, where one learns how to connect devices to the Internet through sensors that connect and interact with data.

Community building:
- **Maker Educator Meetup**, provides educators the opportunity to meet regularly with others interested in making to explore new technologies, and share practical applications for teaching and learning.

In addition, the [Innovation Access Program](#) is a commitment to provide one educator from every state with a free 3D printer and training, the [Perpetual Innovation Fund](#) fosters innovation and entrepreneurship in schools across the country, and [Making Spaces](#) is a partnership with MakerEd connect schools and local hubs in developing makerspaces and maker education opportunities.

![Image](image_url)

**Thinking Nationally**

In the Fall of 2015, Andrew was asked to serve as a Senior Advisor on the Tech & Innovation Team in the White House Office of Science and Technology Policy where he served through the end of President Obama’s second term. Through this role, Andrew gained valuable experience making federal policy and developed national relationships through community-building initiatives and events. Additionally, he developed valuable insights through his national perspective into both national needs and existing solution sets. Returning to the role of Executive Director in January 2018, Andrew brings a wealth of knowledge and relationships that uniquely position DHF for national growth and expansion opportunities.
Strategic Planning Process

Context

In 2018, DHF celebrated their accomplishments at the 5 year anniversary showcase and began to assess their growth potential. They recognized that the most effective way was to not run 100 tech centers, but to support and build the capacity of other existing spaces. There are principals, schoolteachers and out-of-school providers saying, "We want to do this; we just don't know how."

At the CSforALL October 2018 Summit, DHF announced the National Rec-to-Tech Design Challenge with support from Schmidt Futures and in partnership with the National Recreation and Park Association, the National League of Cities, and the Association of Science – Technology Centers to build a scalable model that creates maker and computer science education programs serving youth in rec centers around the country. The funding from Schmidt and the partners involved represents the first opportunity for DHF to systemically pilot its efforts to build its own capacity to support others in creating their own spaces. This first cohort will include a community of 10-12 sites across the country, and provide the opportunity to create and further refine scalable and revenue-generating resources and processes for future opportunities.

Assets & Challenges

At the same time, DHF embarked on a strategic planning process and engaged An-Me Chung, an independent consultant to help staff develop the plan. She began efforts by conducting and summarizing 25 interviews with past and present board members, staff, funders, and partners of DHF to provide insights into a strategic plan for expansion and growth at DHF. What emerged was a set of assets that defines and embodies the DHF:

Assets:

- People: staff and youth participants
- Passion and commitment
- Commitment to participatory, hands-on learning for youth and adults
- Experience
- Center of Excellence
- The Tech Center

“Walking into DHF is like being in a candy store - fun, friendly, and inviting.”
“They make “making” inviting, accessible, and engaging, even for adults. “

Core to DHF’s success is the staff members who are authentic, committed, passionate, supportive, and continuously focused on quality and using data to inform improvement. Staff have been thoughtful of where the pressure points are, i.e. addressing the need for more girls in the program, and addressing the needs of youth as they advance, i.e. paid work for high school participants. It is also a place where staff find and are encouraged to identify opportunities where they also grow and learn, similar to youth who attend.

The challenges identified for expansion are as follows:

Challenges:
- Developing clear goals and milestones
- Keeping backyard focus while expanding, and maintaining quality
- Growing current and future staff
- Growing board
- Conveying vision and core mission to expansion sites
- Finding resources and funding to support growth
- Growing too fast to succeed
- Creating internal infrastructure with appropriate policies, procedures, and practices
- Name recognition and branding

The challenges and assets have become the basis on which a a strategic plan for DHF from 2019 - 2021 is being developed. An-Me Chung, independent consultant is working collaboratively with primarily senior staff: Andrew Coy, Stephanie Grimes, Shawn Grimes, Jonathan Prozzi, and Darius McCoy to outline the following plan.
Theory of Change

Below is a theory of change that outlines the inputs, activities, outputs, and outcomes for youth and educators.

DIRECT YOUTH SERVICE

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Activities</th>
<th>Outputs</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Youth</td>
<td>Introductory Experiences</td>
<td>Engagement</td>
<td>Identity Attributes</td>
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<tr>
<td>■ Elementary, middle, and high school age</td>
<td>■ Field Trip</td>
<td>■ Enrollment</td>
<td>■ Perception of Self</td>
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<tr>
<td>Digital Harbor Foundation</td>
<td>■ Pop Up</td>
<td>■ Attendance</td>
<td>■ Confidence in Ability to Learn</td>
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<td>■ Staff</td>
<td>■ Maker Camp</td>
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<td>■ Passion for Lifelong Learning</td>
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<td>■ Advisory committees</td>
<td>■ Maker Foundations</td>
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<td>Community Engagement &amp; Recruitment</td>
<td>Pathway Exploration &amp; Skill Development</td>
<td>Reflections</td>
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<td>■ Parents &amp; Guardians</td>
<td>■ Digital Fabrication Core</td>
<td>■ Learning Journal</td>
<td>Family-Sustaining Career Options</td>
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<td>■ Extended Family</td>
<td>■ Computer Science Core</td>
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<td>■ Professional Skills &amp; Capacity</td>
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<td>■ Religious Groups</td>
<td>■ Advanced Courses</td>
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<td>■ Specific Technical Skill Development</td>
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<td>■ Neighborhood Associations</td>
<td>College &amp; Career Preparation</td>
<td>Portfolios</td>
<td>■ Soft Skill Development</td>
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<td>■ Industry Partners</td>
<td>■ Work Prerequisites</td>
<td>■ Project Artifacts</td>
<td>■ Industry-Recognized Certificates</td>
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<td>■ - Mentors</td>
<td>■ College Credit Courses</td>
<td>■ Digital Badges</td>
<td>Demonstrated Capacity for Leadership</td>
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<td>■ - Internships</td>
<td>■ Youth Employment</td>
<td>■ Performance Reviews</td>
<td>■ Resume</td>
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<td>■ Print Shop</td>
<td>■ Learning Journal</td>
<td>■ Reference Letter</td>
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<td>■ Web Shop</td>
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EDUCATOR & FAMILY SERVICE

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<th>Inputs</th>
<th>Activities</th>
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<th>Outcomes</th>
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<tbody>
<tr>
<td>Educators</td>
<td>Workshops &amp; Online Courses</td>
<td>Engagement</td>
<td>Identity Attributes</td>
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<tr>
<td>■ In-school</td>
<td>■ Making for Educators</td>
<td>■ Enrollment</td>
<td>■ Perception of Self</td>
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<tr>
<td>■ Afterschool</td>
<td>■ 3D Printing for Educators</td>
<td>■ Attendance</td>
<td>■ Confidence in Ability to Learn</td>
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<tr>
<td>■ Homeschool</td>
<td>■ Arduino for Educators</td>
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<td>■ Passion for Lifelong Learning</td>
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<td>■ Libraries</td>
<td>■ IoT for Educators</td>
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<td>■ Museums</td>
<td>■ Interactive Games for Educators</td>
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<td>■ Rec Centers</td>
<td>■ Family Make Night for Educators</td>
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<td>Partnerships</td>
<td>■ Make Your Makerspace</td>
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<td>Family*</td>
<td>■ Partners / Guardians</td>
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<td>■ Parents / Guardians</td>
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<td>New Program Creation</td>
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<td>■ Make Your Makerspace</td>
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<td>■ New Skill Sets</td>
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1. MAINTAIN & IMPROVE CORE STRENGTHS

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<tr>
<th>Priority</th>
<th>Actions</th>
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</table>
| 1.a - Quality Youth Programs at Tech Center | 1. Continue designing and offering programs that support youth voice, self-expression, and ownership over learning  
2. Improve effectiveness and productivity of Youth Steering Committee  
3. Increase opportunities for leadership skill development for youth that may include reverse mentoring, off-site event facilitation or creating a leadership cohort  
4. Increase number of pathways for advancement and deeper skill development for youth |
5. Refine training and facilitation methods for program staff that includes skill training for facilitators in youth management, communication and mentoring
6. Develop more regular and systematic opportunities for feedback for program improvements from youth and staff
7. Identify and organize or support social activities for youth of different age groups
8. Improve communication with youth participants about the possible pathways through experiences and how to navigate them
9. Establish and communicate the reasons for youth to earn badges -> Connect with the pathways and make sure to integrate and communicate concrete outcomes from participation

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<tr>
<th>1.b - Quality Content at Tech Center</th>
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<tbody>
<tr>
<td>1. Continue to create and refine accessible and applicable curriculum that supports DHF’s goals with a focus on career skills and technical skills for youth</td>
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<td>2. Develop a more defined process for iteration and refining course content</td>
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<td>3. Develop and refine the process for evaluating youth projects/artifacts</td>
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<td>4. Integrate more passive feedback on content quality, such as micro surveys</td>
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<td>5. Develop a more refined system for staff to provide continuous improvement feedback of courses, and integrate back into improvement of courses</td>
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<tr>
<th>1.c - Quality Educator Programs at Center of Excellence</th>
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<tr>
<td>1. Continue designing and offering programs that support educator confidence, developing new skill sets, and ownership over tech content</td>
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<tr>
<td>2. Improve effectiveness and productivity of the Slack Educator Community</td>
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<tr>
<td>3. Develop more regular and systematic opportunities and processes for resource improvement based on user feedback</td>
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<td>4. Build processes to engage and support a wider network of educators</td>
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<th>1.d - Quality Educator Content at Center of Excellence</th>
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<tr>
<td>1. Continue to create and refine resources that support DHF’s goals with a focus on building educator capacity</td>
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<tr>
<td>2. Develop a process for iteration and refining educator resources (workshops, online courses, tools)</td>
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<td>3. Develop a system and resources for educators to contribute activities and content back into Blueprint</td>
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<tr>
<td>4. Integrate more passive feedback on content quality, such as micro surveys and user interviews</td>
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5. Build out system for featuring educator created content (portfolio or featured project/lesson submissions)

1.e - Organizational Infrastructure

1. Build and implement organizational infrastructure that provides staff opportunities for safely sharing and receiving feedback, and improving performance  
2. Hire and train new staff for expansion and sustainability: (See Appendix B for phased organization chart) Note: The organization chart was developed before interviews with staff, past and former board members, and key partners to inform strategic plan. Several suggested hiring a deputy director for the day to day management, as a thought partner, and building a bench for longer-term sustainability.  
3. Develop practices and tools for more effective accountability and management  
   a. Staff Work Plans  
   b. Performance Reviews  
   c. Making Key Performance Indicators more visible to more people  
   d. Institutionalizing policies, procedures, and practices  
4. Build board and its infrastructure to support growing organization  
   a. Establish and formalize committees and a charter - i.e. audit, executive, financial and management, program, governance  
5. Assess and enhance educator, parent/guardian, industry Advisory Groups to better meet the needs of organization in its growth

1.f - Team Culture

1. Continue to support opportunities for staff bonding  
2. Integrate revised culture deck into staff development and team meetings  
3. Provide opportunities for staff to learn new skills including PD opportunities outside of DHF and staff “skillshare” days  
4. Continue to enhance and improve staff training and opportunities for input on culture deck  
5. Continue to conduct and prioritize 1:1 check-Ins between Directors and staff

The Tech Center and Center of Excellence (CoE) were created to be mutually beneficial and symbiotic. The Tech Center is the place where Baltimore youth come to explore opportunities, learn skills, and develop relationships. The CoE supports the Tech Center by developing and refining curriculum and program designs that are tested at the Tech Center, and training educators who can reach youth
beyond the Baltimore site. The CoE also serves as a revenue source (mostly fees for services in the form of workshops and consulting) to help subsidize our pay-what-you-can youth programs at the DHF Tech Center.

With expansion comes the possibility of conflicts arising around priority areas. Should this occur, guidance for making strategic decisions should point to underlying principle of DHF’s mission - improving the lives of Baltimore’s youth through the use of technology education. This serves as reminder of all things that DHF takes on.

### 2. INCREASE DIVERSITY & ACCESSIBILITY

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<th><strong>Priority</strong></th>
<th><strong>Actions</strong></th>
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| **2.a - Participant Demographics** | 1. Increase active recruitment of diverse and underrepresented populations in Baltimore  
    a. Identify and solve barriers for attendance  
    b. Partner with others to engage underrepresented populations  
    c. Expanding reach through pop-up events in target neighborhoods  
    d. Develop a map of target areas for recruitment and transportation routes to Tech Center and other makerspaces  
  2. Develop tools for other spaces based on Baltimore experience to aid their commitment of increasing diversity and accessibility |
| **2.b - Staff**                | 1. Provide staff with opportunities for participating in diversity and inclusive practices training  
  2. Adapt recruiting, hiring, and orientation practices for increasing and honoring diversity among staff  
  3. Develop own in-house training on Inclusive Programs and Practices that can be adapted by other communities |
| **2.c - (In)visible Disabilities** | 1. Identify and support policies and practices for overcoming disability barriers that addresses physical and mental health, and fulfills ADA standards |
3. BUILD EXPANSION ARCHITECTURE

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<th>Priority</th>
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| 3.a - Program Design | 1. Develop a scalable and sustainable program model by leveraging the Rec-to-Tech Design Challenge  
|                  |   a. Identify 10-12 rec to tech sites and test different pathways of how DHF will work with each site including a revenue structure (note: already working with Pittsburgh, Standing Rock, and Cambridge)  
|                  |   b. DHF will engage in a 9 month initial engagement on feasibility that includes city agencies and partnership building with the goal of creating a long-term fee-based relationship to provide technical assistance.  
|                  |   c. Develop and refine resources including market value and establishing revenue potential include:  
|                  |      i. Services:  
|                  |         1. 1:1 technical assistance to facilitate new and potential sites growth and sustainability  
|                  |         2. Convene cohort virtually and in-person for learning and innovation  
|                  |         3. Workshops  
|                  |         4. Train-the-Trainer  
|                  |         5. Curriculum and materials adaptation  
|                  |      ii. Handbooks:  
|                  |         1. Rec2Tech Process Handbook  
|                  |         2. Curriculum Facilitator Handbooks, including Style Guide  
|                  |      iii. Platforms  
|                  |         1. Blueprint - Educator / Facilitator facing platform (external)  
|                  | 2. Develop assessment and “slow down” indicators  
|                  |   a. Assessment  
|                  |      i. Understand cost-benefit of partnership challenges  
|                  |      ii. Develop indicators for when it’s time to leave  
|                  |   b. “Slow-down” indicators  
|                  |      i. Collect data on recruitment, retention, attendance, and diversity  
|                  |      ii. Utilize staff work plan to understand workload, progress on goals, and overall physical and mental health (i.e. missed work) |
| 3.b - Organizational Infrastructure | deadlines, rescheduled events, exceeding goals etc.) iii. Over-staffed, too high of staff to youth ratio 3. The Tech Center remains a bedrock in the Baltimore community and continues to serve youth in the Baltimore area and where new program design and curriculum is tested. a. Develop healthy benchmarks and additional resources for Tech Center as needed, including determining the role of program quality committee in the context of the Tech Center and the expansion |
| 3.c - Clear goals and milestones, and evaluation for expansion | 1. See above under Maintain and Improve Core Strengths 1. Goals, milestones, and forms of evaluation will vary by the type of engagement, length of engagement, source and extent of funding, and presence or absence of research partners. a. DHF will continue partnering with research institutions (UMBC, Indiana University and others) to develop these measures, collect data, and analyze results 2. Educator satisfaction and self-efficacy (confidence) applying new skills a. Measured through pre/post surveys 3. Establish clear timeline/sequence of events and track adherence to it a. Events included in full Rec–to-Tech process (will be modified/abridged as necessary on case-by-case basis): i. Site selection and inspection ii. Identify and rent/purchase equipment iii. Staff training in course content iv. Youth recruitment v. Staff deliver course vi. Evaluation, reflection, and documentation of outcomes vii. Distribution of final results (feasibility studies, conference presentations, research papers etc) b. Similar timelines established and tracked for other engagement types i. Train-the-trainer ii. Licensing iii. Consulting 4. Educator competency and effectiveness |
5. Youth outcomes
   a. Most intensive evaluation procedure, requires significant time, expertise, and funding, but also necessary part of tracking outcomes, particularly when trying to secure large-scale government funding
   b. Measured outcomes include:
      i. Attendance and retention
      ii. Divergent thinking (Alt Use)
      iii. Youth
      iv. STEM career awareness
      v. Self-efficacy

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<tr>
<th>3.d - Geographic Infrastructure</th>
<th>1. TBD after year 1 of Rec-to-Tech Challenge</th>
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### 4. STABILIZE FUNDING

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| 3.a - Increase Revenues | Establish working budget for 2019 - 2021, and estimate potential resources from below revenue source, and assess most efficient and effective course of action in securing funding given the following:
   - grants are often relationship based, and the timeline for establishing a relationship may be up to 2 years.
   - RFPs particularly from government are dependent on merit and outside reviewers
   - Earned revenue for products and services is unrestricted and more immediate

1. Grants
   a. Corporate
      i. Program support, and occasional general operating
   b. Foundation
      i. General operating and program support
      ii. Increase number of large and multi-year grants (over $25,000)
      iii. Successfully secure funding from national foundations |
c. Government
   i. Emphasis on research (NSF, National Dept of Ed, Maryland Dept of Ed)
   ii. Major growth potential, building on current NSF research

2. Earned Revenue
   a. Types of revenue
      i. Workshops
      ii. Products
      iii. Licensing
      iv. Consulting/Technical Assistance
   b. Sources of revenue
      i. Individuals
      ii. Schools (public and private)
      iii. Districts
      iv. State governments
      v. Federal governments
      vi. Other nonprofits

3. Individual Giving
   a. Small-dollar ($1,000> annually)
   b. Mid-level ($1,001<$10,000 annually)
   c. Large donations ($10,000+ annually)

### 3.b - Build Reserves

1. Organizational budget with unrestricted funds in a reserve
   a. Expenditure tracking practices
2. Formalized savings plan
   a. Capital replacement reserves, pending receiving France-Merrick funding

### 3.c - Build Staff to be Part of Development

1. Establish clear roles, responsibilities, and communication structure for each staff member and role in development

### 3.d - Stabilization Benchmarks

1. Revenue forms “Pyramid”
   a. Create multi-year projections of revenue sources, desired revenue sources, and metrics to track path from current to desire breakdown
      i. Currently have on annual basis, but not multiyear
      ii. Earned revenue, corporate, foundation, and government grant revenue, individual donation revenue
2. Identify and monitor concrete measures of financial health
   a. Amount in checking and savings accounts
   b. Programs that are partially or totally funded
   c. Benchmarks for success for earned revenue
### 5. DEEPEN COMMUNICATION & BRANDING

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<th>Priority</th>
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| **3.a - Thought Leadership** | 1. Generate opportunities for becoming a known thought leader  
   a. Producing and responding to research and best practices in informal technology education for underrepresented populations  
   b. Writing and sharing best practices from Tech Center and Center of Excellence  
   2. Actively sharing DHF’s ideas/philosophies/approaches/etc with different communities and networks by participating at conferences, webinars, panels, etc. |
| **3.b - Internal** | 1. Establish and maintain effective and timely communication among staff that includes staff 1:1, work plans, and weekly summaries on Slack from leadership  
   2. Establish processes for creating consistent external experiences, such as templates, code snippets, and other items |
| **3.c - External** | 1. Identify and prioritize audiences and content for regular communication with parents, educators, businesses, non-profit youth-serving organizations, policymakers, government, and news & media  
   a. Consider engaging a communication/media consultant to develop plan and execute  
   2. Optimize user experience and user interactions across various communications platforms and portals.  
   3. Ensure that DHF’s external resources are in accord with modern best practices and standards.  
   4. Create web tools and resources that align with DHF’s mission and goals.  
   5. Create accessible and optimized web experiences for our core audiences. |
APPENDIX A

Continuous Improvement Research

DHF is committed to evidence-based evaluations that drive our program priorities, objectives, and decision-making. Evaluation of Tech Center youth programs for their impact on youth includes 1) exposure, interest, and confidence in technology, 2) soft skill development, 3) equal access to underrepresented demographics in tech fields, and 4) overall satisfaction. These measures are tracked through:

- Pre/post tests measuring exposure to new technologies, confidence in technology skills and abilities, and tech career awareness
- Collecting voluntary demographic surveys
- Tracking youth attendance and retention in our programs
- Seeking regular qualitative feedback from youth, parents, and staff
- Conducting qualitative research into youth soft skill development in partnership with University of Maryland Baltimore County (UMBC).

The following highlights typify youth and educator outcomes in our priority areas. They also demonstrate our commitment to continually refining our evaluation measures to ensure the highest quality data.

Tech Exposure, Interest, and Confidence: In Spring 2017, we began working with researchers from UMBC to evaluate, revise, and improve our assessment tools and evaluation methods. We are currently working with UMBC to analyze the impact of these new metrics. Preliminary findings include:

- Exposure to new technology tools, software, and equipment increased by 59% overall across all DHF summer camps in Summer 2018 with a vast majority of youth who indicated exposure to new technologies had participated in one of DHF’s previous afterschool and/or summer programs.
- 94% of youth participants that semester completed a culminating project, which demonstrated application of their newly acquired tech skills. All who completed projects were able to identify the primary skill from the camp their project demonstrated, describe at least 3 different steps of their process, and identity and describe one challenge or problem and how they worked through it.

Soft Skill Development: Research conducted in partnership with UMBC demonstrates participation in DHF’s programs significantly improves youth’s divergent thinking, a key aspect of creativity. After completing one 14-week semester, youth’s divergent thinking scores increased by 29% on average, with 66% of youth’s scores increasing by 54%. The scores of African American youth particularly improved, with an average increase of 55%. Researchers are
also measuring the development of other soft skills, including determination, empathy, and problem-solving.

*Equal Access:* DHF tracks demographic data on its youth and prioritizes equality of access for all interested youth. Our most recent demographic statistics indicate that 66% of youth come from low-income backgrounds, 71% are minorities, and 38% female.

**Overall Satisfaction** based on 2018 results
- 85% of youth had a good or very good experience at DHF
- 83% of youth believe or strongly believe their opinions and ideas are important at DHF
- 80% of youth are sure or very sure they will graduate college.

In an effort to receive consistent feedback from our parents in addition to our youth, we have begun issuing a parent satisfaction survey during our end-of-semester showcases. Results from 2018 include:
- 96% of parents/guardians agree that DHF is a safe place for their children.
- 98% of parents/guardians would recommend or strongly recommend DHF
- 94% of parents/guardians agree DHF has improved their child’s creativity
- 100% of parents/guardian believe that DHF has improved or greatly improved their child’s “preparation for future success in school, higher education, careers, and life”
APPENDIX B

Organizational Phase 1

Organizational Phase 2