

**Neighborhood & Long Term Planning, Public Facilities, Art and
Celebrations Committee**

Wednesday, July 15th, 2015
Sullivan Chamber

I. Introduction by Councillor Mazen (10 min) 3:00 - 3:10

II. Biobuilder (20 min) 3:10 - 3:30

Rebekah Ravgiala & Krista Licata

BioBuilder Teacher and Ambassador

Krista Licata

Lab Central

III. Inner City Weightlifting (20 min) 3:30 - 3:50

Jon Feinman

Executive Director & Founder, Inner City Weightlifting

MBA, CSCS, USAW Coach

IV. Linking Children with Out of School Time Programs (20 min) 3:50- 4:10

Jacob Crutchfield

Community Organizer for City Councillor Nadeem Mazen

Substitute Teacher, CPSD

Afterschool Teacher, Elm St. Community school

V. Agenda for Children Out of School Time Initiative (20 min) 4:10 - 4:30

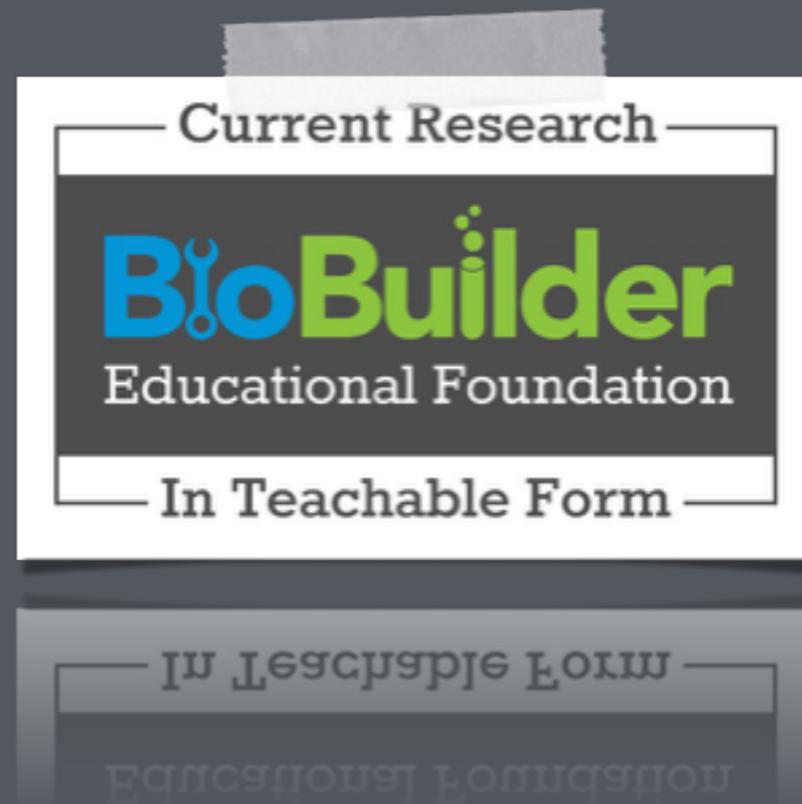
Susan Richards

Cambridge Agenda for Children Out of School Time Coordinator

VI. Public Comment/Q&A (30 min) 4:30-5:00

BioBuilder:

“Putting current research into the hands of teachers”



Dr. Natalie Kuldell, Founder BioBuilder

Krista Licata, Lab Central

Rebekah Ravgiala, Tyngsborough High School

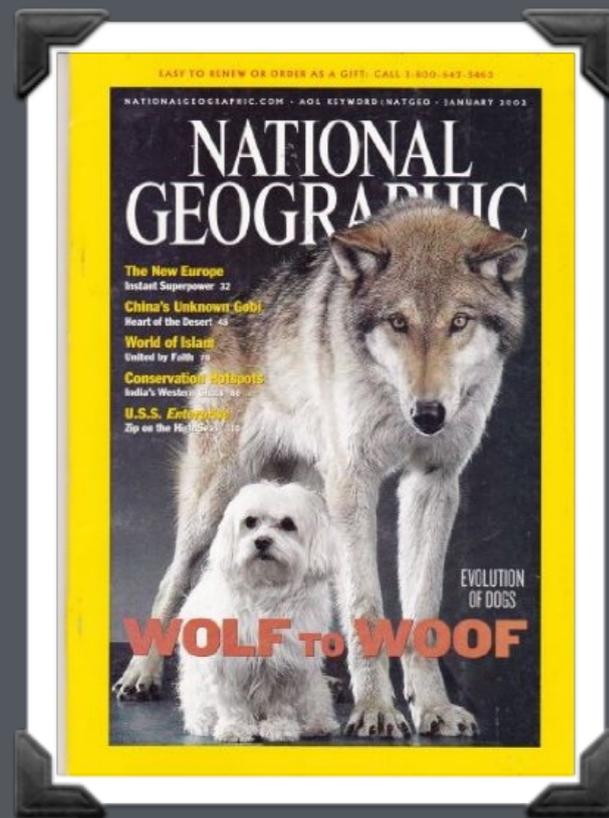
Cambridge City Council Meeting

July 15, 2015

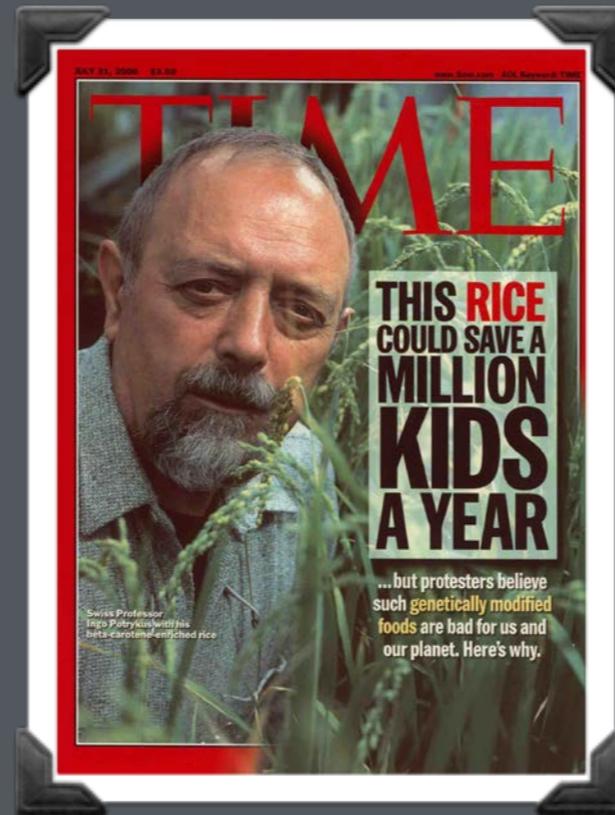
BioBuilder: The Context

- * **Synthetic Biology:** An emerging field that uses the tools of biology and the principles of engineering to fabricate material, provide food, and enhance human health

The Past



The Present



The Possibilities...



*"[Synthetic Biology is] the modern incarnation of genetic engineering"
(Antony Evans, Glowing Plant Founder, CEO)*

BioBuilder: The Concept

c. 2007: Developed at MIT by Dr. Natalie Kuldell in partnership with teachers to address the need for...

MORE...

- * Asking the right question
- * Teaching by inquiry
- * Applying content
- * Emphasizing problem-solving
- * Student-directed learning
- * Student engagement
- * Being okay with the unknown!



Dr. Natalie Kuldell
President, BioBuilder

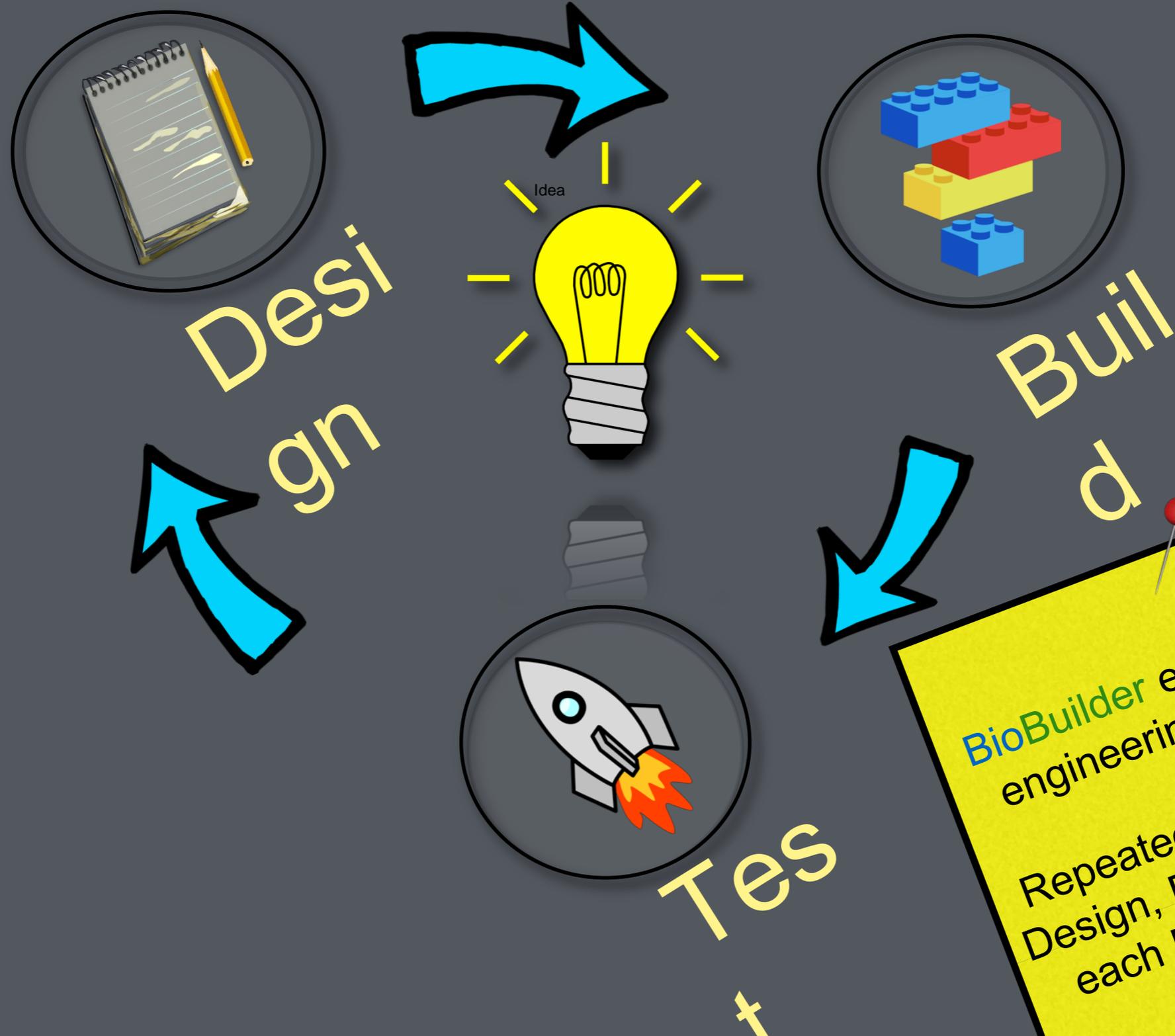
and LESS...

- * Getting the right answers
- * Teaching by recipes
- * Weak connections
- * Memorizing facts
- * Teacher-directed instruction
- * Student apathy
- * Feeling defeated when an experiment doesn't "work"

BioBuilder Objectives

- To **CONVERT** current scientific research questions into teachable modules by bringing what is exciting about science to the teaching of science;
- To **ENGAGE** students in the process of what real scientists do and inspire them to be the problem solvers of the next generation; and
- To **EMPOWER** educators as agents of educational reform by reconnecting them with their love of teaching and their own love of learning.

BioBuilder Curriculum



BioBuilder emphasizes an engineering paradigm...

Repeated iterations of the Design, Build, Test Cycle in each BioBuilder module

BioBuilder Curriculum

Eau That Smell:

Compare competing designs to optimize system performance

What a Colorful World:

Simplify assumptions about the behavior of devices in different chassis



- Point of entry doesn't matter!
- Connected to existing curriculum
- Available in kits
- Accessible material & content
- Well-supported

iTune Device: Evaluate promoter and RBS combinations to optimize output

Picture This!:

Examine and model a two component sensing system that engineered to produce bacterial photographs



That was then...



Photo: Chemistry class ca. 1955, Haverford, O. Winston Link. Courtesy of [Special Collections](#)

**Slide Removed
(contained video)**

BioBuilder Outcomes

For Students

BioDesign Club

Participate in outreach for
Elementary/Middle School

Presentations to parents, peers, and
community

Academic Enrichment

Capstone Projects



For Teachers

Reinvigorating science teaching
Local, State, National presentation
opportunities

Improved Collegiality

Peer and Community Recognition



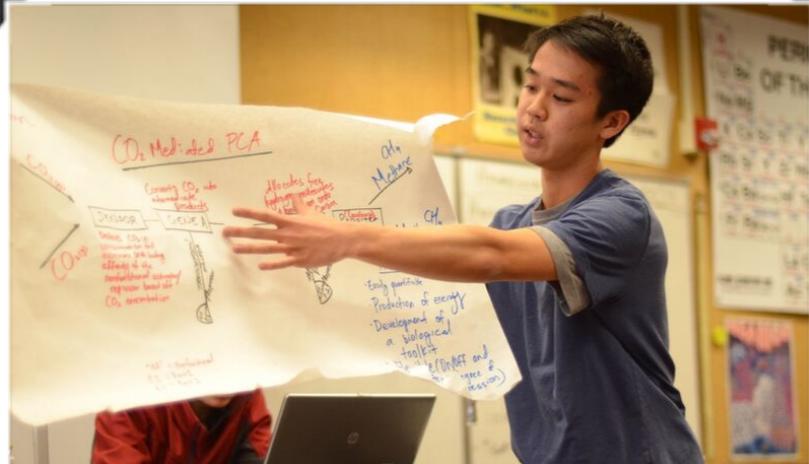


COMMUNITY

ENGAGING STUDENTS



PROFESSIONAL DEVELOPMENT



CELEBRATING STUDENT WORK



OUTREACH

What will **BioBuilder** look like in Cambridge?



LabCentral is the hub of Biotechnology Innovation in Cambridge.

Home to 30 high impact early-stage companies

...Companies that raised over \$200 million in 2014, much of which being spent right here in Cambridge for research and staffing.



Lab | Central



LabCentral is being used as an international model, changing the way bio-technologies and companies are being built around the world.

Founded with a secondary mission to inspire and educate future innovators.



Lab | Central



BioBuilder
Educational Foundation

Lab | Central

BioBuilder @ LabCentral is a partnership that offers students and teachers:

- Access to the latest life-science technologies.
- A unique opportunity to interact with the world's most promising scientists and entrepreneurs.



The BioBuilder @ LabCentral Laboratory will be home to various programs.

LabCentral has already built and hosted STEAM programming with:

- YouthCities
- Whitehead Institute
- Independent and public schools
- International and domestic university innovation tours
- Cambridge Community Art Center

BioBuilder
Educational Foundation

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BioBuilder

Educational Foundation



Lab | Central



Thank you to the supporters of both these non-profit organizations

THE
Agenda
for Children
The Out-of-School-Time Initiative

Mission and Beliefs

The mission of the Agenda for Children is to convene, catalyze and support the youth serving community in Cambridge for the shared purpose of increasing equity, access and innovation and sustaining the highest quality out of school time opportunities and experiences for all children, youth and families.

Beliefs

1. All young people have the desire and capacity to succeed and contribute to their communities if provided with access to appropriate resources and supports.
2. Young people and families are better served when the systems and institutions that support them are aligned and connected.
3. For all young people to succeed barriers to equity and access need to be directly addressed.
4. Opportunities and experiences for youth are enhanced when people across different levels of power and perspectives learn together, design together, and build mutually beneficial partnerships.
5. All people have the capacity for change and growth. When adults who work with youth are provided with opportunities for continuous learning, clear expectations and accountability there is a positive impact on opportunities and experiences for youth.
6. Cultural competence and respect for diversity are essential to our work and success.
7. Our work is guided by data, research and best practices, all of which are necessary to raise awareness about how success is possible for all young people and to advance the growth of the OST field.
8. Lasting change requires attention to systems while grounding our work in the developmental needs and experiences of youth and children.

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The Cambridge Middle School Network (MSN)



The Cambridge Middle School Network promotes access to, participation in, and coordination among middle school serving out-of-school time (OST) programs with the goal of ensuring broad participation of Cambridge's middle school youth in quality OST experiences that foster both their present and future learning and life success. MSN is part of the Agenda for Children's OST Initiative, which is an intermediary that sits within and between the Cambridge Public School District, the Department of Human Service Programs, and the larger community of Cambridge OST providers.

MSN focuses on collaboration, capacity, and service delivery among Cambridge's community of OST providers and schools serving 6th – 8th graders. MSN's work targets the City's middle school youth, their families, and school- and OST-based educators. In addition to school staff and leadership, more than 25 entities that serve a diverse array of families across the city are regularly engaged in our efforts.

In order to better serve our city's youth, MSN coordinates data and information sharing, fosters relationship-building across programs and schools, reaches out to youth and families about the importance of OST and opportunities available in and around Cambridge, and builds commitment to our common mission and goals. MSN publishes a resource guide of middle school OST opportunities three seasons each year, facilitates a school-based summer opportunities planning and placement initiative, hosts regular convenings, and actively promotes communication and collaboration. School-based OST point people work in each of the CPS Upper Schools to be a resource to middle school youth, families, school faculty, and OST providers.

MSN OST Members & Affiliates

- | | |
|---|--|
| ▪ Agassiz Baldwin Community/ Maud Morgan Arts | ▪ Gately Youth Center |
| ▪ Area IV Youth Center | ▪ Margaret Fuller Neighborhood House |
| ▪ Beyond the 4 th Wall | ▪ MIT-Wellesley Upward Bound |
| ▪ Boys & Girls Club | ▪ Office of Workforce Development/
Youth Employment Program |
| ▪ Breakthrough Greater Boston | ▪ Phillips Brooks House |
| ▪ Cambridge Camping Association | ▪ Pop Warner |
| ▪ Cambridge Community Center | ▪ Rise Up |
| ▪ Cambridge Public Library | ▪ Russell Youth Center |
| ▪ CitySprouts | ▪ Science Club For Girls |
| ▪ City Step | ▪ The Work Force |
| ▪ Community Art Center/Teen Media Program | ▪ Title IX Girls Running Club |
| ▪ CPS Physical Education Department | ▪ Tutoring Plus |
| ▪ East End House/YO! | ▪ Youth Council |
| ▪ Frisoli Youth Center | |

Online: <http://www.agendaforchildrenost.org/middle-school-network.html>

Contact Information:

- Khari Milner, Co-Director, Agenda for Children OST Initiative: kmilner@cpsd.us
- Susan Richards, Co-Director, Agenda for Children OST Initiative: srichards@cambridgema.gov
- Daniel Michaud Weinstock, Agenda for Children MSN Coordinator: dweinstock@cpsd.us
- Upper School OST Point People: msn@cpsd.us

The Cambridge Middle School Network (MSN)



What Does This Mean for OST Providers?

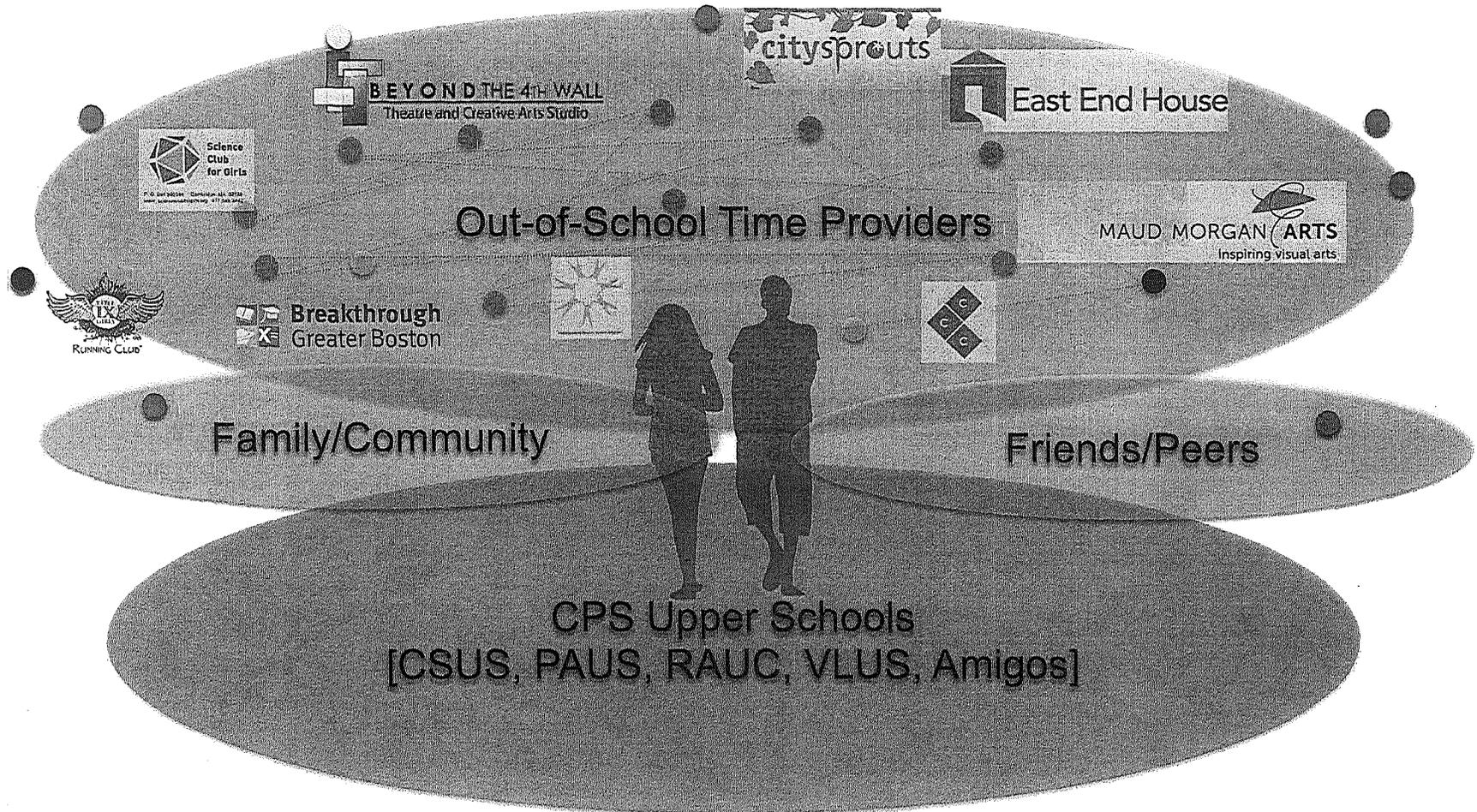
GET

- Ongoing networking and knowledge sharing opportunities with peers throughout the city through convenings, workshops, and other events
- Advice, assistance and training on: MSN, providing quality OST experiences to Middle School youth, school partnerships, understanding and using data, etc.
- Professional development opportunities
- Featured inclusion in the MSN Resource Guides and related awareness-building materials and events
- Access to and support with citywide youth participation data and program-level demographic data of participating youth
- Support around developing and administering youth surveys, focus groups and other vehicles for youth voice
- Acknowledgement and promotion of involvement and accomplishments, through use of MSN branding materials and other methods

GIVE

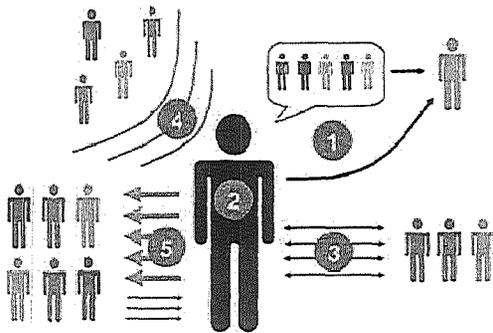
- Actively engage in the MSN community, including:
 - o Sending a consistent director-level staff to MSN meetings
 - o Participating in Agenda for Children/MSN work groups or subcommittees
 - o Reading and responding to emails from cambridgmsn@gmail.com and other MSN members
 - o Sharing programmatic opportunities, updates and calendar events by email
 - o Hosting other sites
 - o Sharing practices, and, as appropriate, resources
- Share and use data, including:
 - o Collecting, sharing, submitting general program and individual student enrollment data through Google Docs, surveymonkey, or some similar electronic platform
 - o Analyzing data to build our collective understanding the MS OST landscape and youth experiences therein
- Coordinate services and promote MSN to address and support the needs and interests of youth, including:
 - o Updating and sharing accurate information about programming (including submitting/updating data per provided format for MSN Resource Guides)
- Hold program/organization as an entry point into the Network as a whole, minimally by:
 - o Promoting participation in MSN and actively supporting each other's work and collaborative efforts in order to successfully support the needs of Middle School youth across the city
 - o Orienting staff to MSN – both those that work directly with youth, as well as supervisors and administrators
 - o Sharing the Resource Guide with youth, staff and families
 - o Tracking what youth do during OST beyond your program/organization
- Actively support young people's ability to navigate and access MSN OST opportunities:
 - o Creating and updating an MSN visibility space at your site
 - o Sharing and posting flyers passed along from other MSN entities
- Commit to ongoing professional development and quality improvement by:
 - o Participate in professional development opportunities that address and support Middle School-specific development and programming – and sharing information about upcoming opportunities

How the Middle School Network?



Advancing Our Network

5 Ways to Cultivate an Active Social Network



Source: Cultivate an Active Network (Chris Brogan)

- 1 **BE HELPFUL** - offer your network advice or suggest people that can help
- 2 **BE PRESENT** - participate and contribute
- 3 **BE SOCIAL** - engage with as many people as possible...not to be confused with just pushing out messages to a list.
- 4 **SHARE THE LOVE** - make it about them...talk about your network
- 5 **PAY IT FORWARD** - build equity by contributing to your network before asking for anything in return...and never take out more than you put in.

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Identify 3 things your group has done to:

1. **BE HELPFUL** – offer your advice and/or suggest people that can help
2. **BE PRESENT** – participate and contribute
3. **BE SOCIAL** – engage with as many people as possible
4. **SHARE THE LOVE** – make it about them... talk about your network
5. **PAY IT FORWARD** – build equity by contributing to your network before asking for anything in return... and never take out more than you put in

What's Alive...

- Wrapping up Summer Opportunities Initiative – still trying to get youth connected!
- Please make sure you:
 - Continue to check in with and support youth/families you know
 - Notify youth/families that you have registered/accepted
 - Make sure summer participants know logistics
 - Check in about full summer plans
 - Let us know about no-shows, youth that may need additional or alternate opportunities
 - Take and share summer video (with releases)

Summer Opportunities Initiative Data

	CSUS Total	Priority	Met With	PAUS Total	Priority	Met With
6th	87	24	23	83	22	20
7th	96	29	29	80	34	22
8th	80	50	50	65	40	40
	263	103	102	228	96	82

Met With = Students that Julia gave a summer planning packet to:

- Packets were given to students mostly during Advisory times in envelopes labeled, "To the parents/guardians of..."
- Packets contained flyers and/or applications to programs tailored to the student's interests based on interests they checked off on their summer planning sheet
- Julia explained the contents of the packet to the student and then asked if it was okay to call home to let their families/caregivers know to expect their child to give them the packet

Advancing a Culture of OST

Successful practices/structures we have helped establish over the past 3 years that we will continue to develop:

- Integration of OST in Health Class (all)
- Integration of OST in Transition to Middle School (CSUS)
- Lunch time OST tables/OST provider visits (all)
- Afterschool OST Fair (Amigos)
- Youth Leadership Team (CSUS, RAUC)
- OST Student of the Month (RAUC)
- OST as part of school newspaper (CSUS, RAUC)
- OST as part of assemblies, town hall, community meetings (CSUS, PAUS, RAUC)
- OST providers as part of Arts/STEM Nights (CSUS, PAUS)
- OST (inc. providers) at Welcome Back/Orientation events (all)
- OST marketing – “Golden Opportunities” (PAUS)
- OST as part of homeroom/Advisory, announcements, family communications (all)
- Summer Opportunities Initiative (all)

Looking Forward...

All US Campuses Have...	To...
School Leadership Point Person	Name and support OST as school priority and be go-to person with questions, etc.
<i>Guidance Counselor</i>	<i>Meet with all students periodically to support student wellness, including OST awareness and participation, liaise with school teams, etc.</i>
<i>Part-time MSN Liaison</i>	Coordinate OST team, be living representation of OST Resource Guide, establish/update visibility site, be conduit for non-CPS OST providers, coordinate Summer Opportunities Initiative and process, compile OST resources, + support priority youth and families
Faculty OST Placement Liaison	Advance school-based OST presence and integration – team meetings, school teams, faculty outreach around priority students, plan of events and coordinate Summer Opportunities Initiative and process, + support priority youth and families, attend MSN meetings
Upper School Health Teacher	Include OST as part of Health curricula, facilitate seasonal sharings of opportunities, survey students, etc.
Safety Net Youth Resource Officer	Be a resource to faculty, youth and families, hold OST awareness, + support priority youth and families
<i>Upper School Club Manager</i>	<i>To ensure timely establishment of, communication about, registration for, and administration of clubs</i>
Upper School Intramurals Manager	To ensure timely establishment of, communication about, registration for, and administration of IMs



Commonwealth Corps – Middle School Network Liaison Case Study

Working Together to Connect a Student

On October 14, I received an email from an eighth grade teacher at Vassal Lane Upper School (VLUS). She had noticed that one of her students, “K,” was a talented artist and wanted to know about possible art classes and the potential of K receiving a scholarship, as family resources were limited. After responding to the teacher, and communicating with Kyrk Morris, the VLUS OST Placement Coordinator, I met with K, let her know that a teacher had noticed her talent, and asked her if she would be interested in attending art classes if I was able to help arrange the logistics, particularly the money. K was extremely interested and excited about this possibility.

I sent an email to Maud Morgan Arts, inquiring about the possibility of a scholarship for K. They provided us with a form for her to fill out documenting financial necessity and a registration form. I gave K the form and during the next few weeks I made a point of following up with K during lunch and recess times. However, she seemed to be uncomfortable by the inquiries from Kyrk and me. Kyrk and I talked and thought that the financial form, which required proof of income, might be uncomfortable for her. At this point, at the end of November, I explained the situation to the staff at Maud Morgan Arts and asked if anything else could be done to make participation a reality for this passionate and committed student. Maud Morgan Arts indicated that going forward they would provide a 100% scholarship for students that have free or reduced lunch status and are being recommended by school staff. Thus, K would receive a scholarship to attend an art class, and the door was opened for other students to more readily attend as well. Kyrk and I told K and she was thrilled and very appreciative. We sent a new form (for personal and emergency contact information) home with her at that time, in early December, anticipating a quick turn-around time. When K did not bring in the form immediately, Kyrk spoke with some of the eighth grade teachers. They identified a number of difficult family circumstances, including language barriers, family members still living in another country, and her father’s very long work hours, which left K at home alone more often. One of the eighth grade staff had a scheduled meeting with K’s father on December 22. As she already has a good relationship with K’s father, she asked us to reprint the information and forms to share with him in her meeting. This staff member was able to explain the art class more fully to K’s father, and he gladly signed the forms. We delivered the completed forms to Maud Morgan Arts, and K started her winter session art class, which incorporated both drawing and painting, on January 21.

The teacher who initially referred K told me “It was so helpful to have Kathie and Kyrk as contact people to connect K to an afterschool arts program. As a classroom teacher, I get to know my students, their strengths, interests, and challenges yet I don’t always have access to resources or time to connect students to quality programs. In the case of this student, she is an excellent artist, who could really benefit from structured enrichment activities after school. Kathie and Kyrk were crucial in following up with Maud Morgan and securing the scholarship



Commonwealth Corps – Middle School Network Liaison Case Study

and spot for this student to be able to participate in the art programming. I think it will have a significant impact on this student's quality of life.”

Additionally, because of the relationship that I made with the staff at Maud Morgan Arts throughout this process, I was also able to quickly connect a sixth grade student from Rindge Ave Upper Campus, “J”, with Maud Morgan Arts. J is a terrific artist that brings a positive attitude to everything she does. She also is one sibling of a large family without many financial resources, and, when I first suggested an art class to her, she immediately told me that finances were an issue. I was able to quickly reach out to the staff at Maud Morgan Arts knowing that it was likely we could make this work for J, given my existing relationship and work with staff at Maud Morgan Arts, and their scholarship offering for K at Vassal Lane Upper School. J began a winter session drawing course, with a full financial scholarship, on January 26. The Maud Morgan Arts staff have also spoke with J and her mother about scholarships so she can attend a summer art camp there.

Haley Mackeil from Maud Morgan Arts emailed me the day after J began her art class explaining how the final logistics for each student were all set, and wrote “Both are great kids. [We are] happy to have them here!”

Middle School Network **SUMMER OPPORTUNITIES** Planning & Placement Initiative

WHY DOES SUMMER MATTER FOR OUR UPPER SCHOOL YOUTH?

- Summer learning loss contributes significantly to the achievement gap
- Participation in quality summer opportunities can support learning and academic engagement
- The middle school/early adolescent years are an important time in youth development to try new things, develop new interests and skills, and get better at existing interests and skills

OVERALL GOALS OF THE SUMMER OPPORTUNITIES INITIATIVE

- Increase understanding, awareness and ownership of available summer opportunities and placement among youth, school faculty, OST personnel, and families
- Increase participation by middle school youth in summer OST opportunities, with a particular emphasis on high priority youth
- Continue to assess and develop school and OST capacity to support placement efforts

PLANNING & PLACEMENT PROCESS

- OST staff help conduct school-based workshops with all 6th, 7th and 8th grade classes across the 4 Upper Schools and Amigos
 - Students learn about the importance of summer participation and the range of opportunities available to them
 - Students complete Summer Opportunities planning sheets; the original planning sheet is sent home to the family and a copy lives with the OST Placement Coordinator and Middle School Network Liaison to support awareness and follow-up
- Middle School Network Liaisons and partnering OST Placement Coordinators review planning sheets and elicit input from school faculty and OST providers to identify high priority students and then provide follow-up “case management” with these students and families to ensure they have a plan for their summer and have any needed support to connect with opportunities of interest. These efforts include:
 - Providing families with information about and applications for opportunities that meet their interests and needs
 - Connecting with OST providers to address issues of accessibility, including space, cost, transportation, language
 - Facilitating a direct connection between families and providers to support student participation and engagement
- OST providers connected to the Middle School Network submit summer enrollment data so we can track student participation

2014 SUMMER OPPORTUNITIES BY THE NUMBERS

- The 2014 Summer Opportunities Resource Guide contained **60** distinct summer opportunities throughout and beyond Cambridge
- **93%** of all Upper School students completed a planning sheet
- Based on enrollment data received from 20 summer programs (run by CPS, the city, nonprofits, and universities), **46%** of 2013-14 6th-8th graders participated in at least one summer opportunity
- **238** students were identified as high priority by school and OST personnel and **50%** of these high priority students participated in at least one summer opportunity for multiple weeks



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