

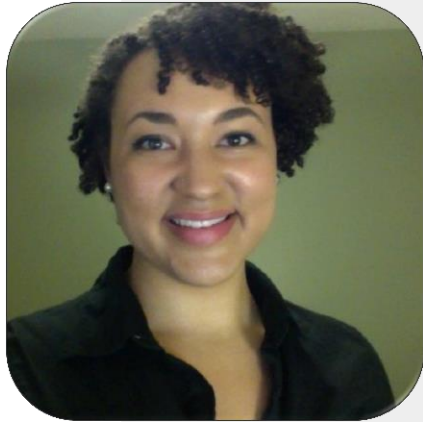


Strengthening Afterschool STEM with Partnerships



Afterschool Alliance
January 30, 2014

Today's Speakers



Melissa Ballard

*Research Associate, STEM
Afterschool Alliance*



Eli Weiss

*Youth Programs Supervisor
Woodland Park Zoo*

Today's Speakers



Dolly Ledin

Program Director

Adult Role Models in Science

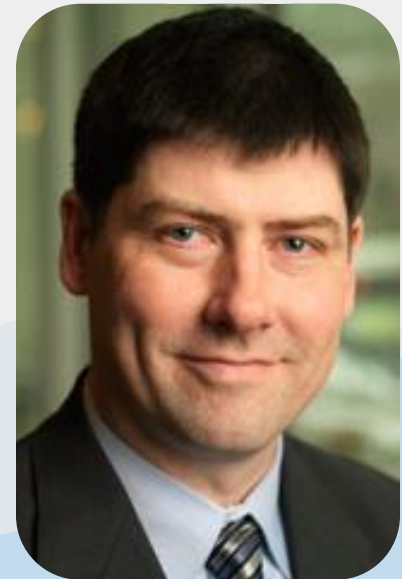
University of Wisconsin-Madison

Michael Kennedy

Co-Founder

Science Club

Northwestern University

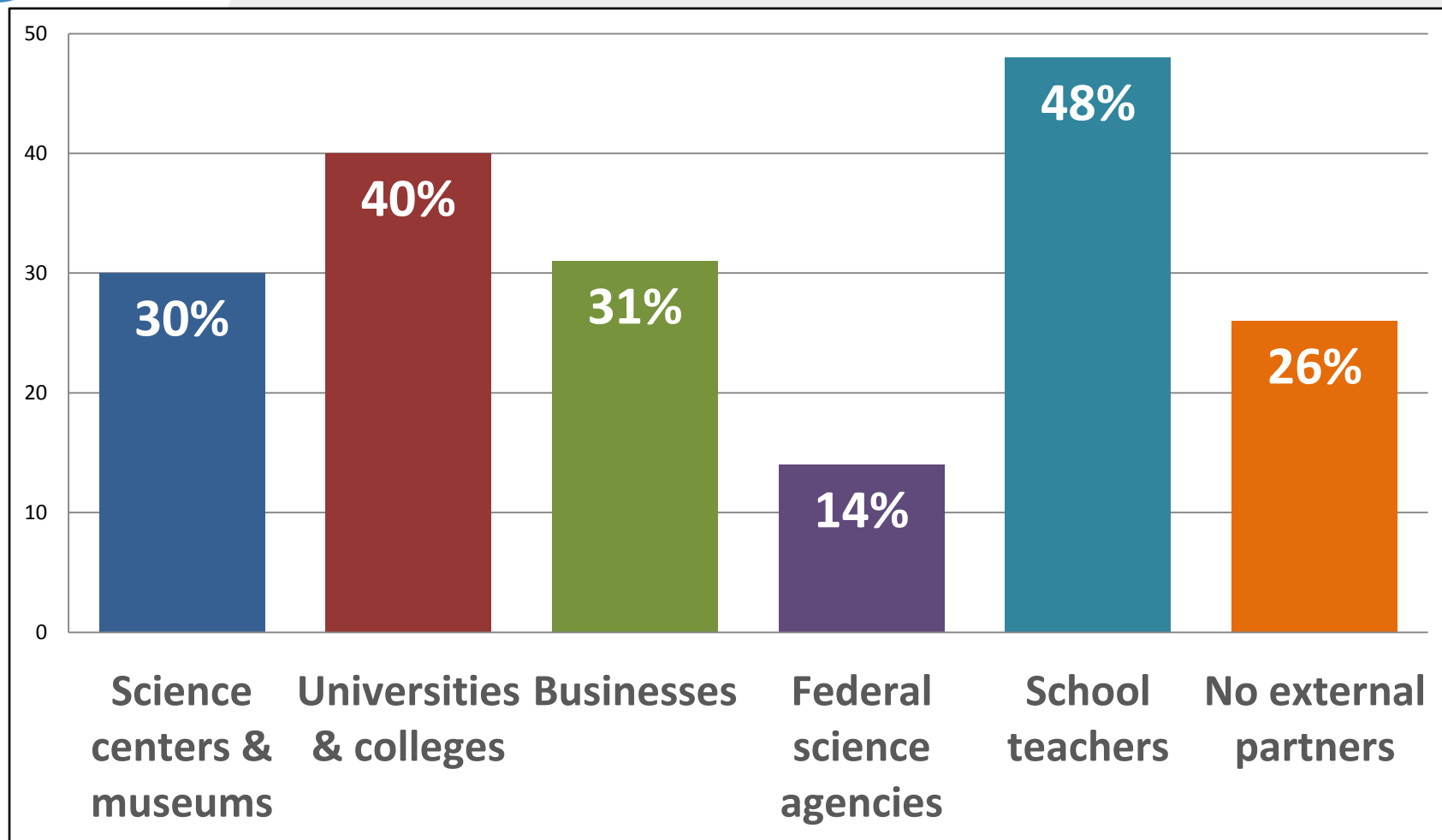


STEM in Afterschool

- The afterschool field is embracing STEM
- Common barriers to offering STEM
 - Qualified staff
 - Professional development
 - Curriculum
 - Access to STEM expertise
 - Finding STEM professionals or mentors
 - Time

See [“Learning from science: Case studies of science offerings in Afterschool Programs”](#) from Lundh, et al. in the most recent issue of the Afterschool Matters journal.

What kinds of partners do afterschool programs engage to offer STEM?



Results from a 2011 Afterschool Alliance survey

Resources provided by STEM-rich institutions

1. Science centers, museums, zoos, aquariums, nature centers
 - Exhibits & collections, informal science expertise, curriculum, PD
2. Universities & colleges
 - Volunteers, content expertise, curriculum, PD
3. Business & industry
 - Mentors, access to equipment, tours
4. Federal agencies & labs (NASA, NOAA, DoD)
 - Curriculum, mentors, tours

Read the Afterschool Alliance issue brief, [Partnerships with STEM-Rich Institutions.](#)

Afterschool STEM Impact Awards

- Looked for programs that demonstrate the potential of the afterschool space and its impact on participants.
- Received 200+ applications in two categories:
 1. Partnerships with STEM-rich organizations
 2. Computing and/or engineering

NOYCE
FOUNDATION





ZOOCREW

Woodland Park Zoo
Seattle, WA



Mission

ZooCrew empowers **middle school** aged youth to become conservation **leaders** by providing engaging **experiences** that inspire them to learn, care, and act.



Program Goals



- Engage middle school aged youth from traditionally underserved communities in enriching STEM and conservation activities
- Foster ecological literacy, conservation action, and problem-solving skills in middle school youth through yearlong after school and summer science programming
- Excite youth about STEM subjects in school, prepare them for continued involvement in Woodland Park Zoo's youth programs, and inspire them to consider a broad range of STEM careers

Why do students join?



Making new friends
Doing science **Learning about careers**
Helping animals **Using iPads**
Being with my friends **Learning about animals**
Going to the zoo **Other field trips**
Having fun **Making projects**
Making presentations

View a [video of participants](#) sharing their experiences in ZooCrew.

Program Model

Discover

Youth explore the local environment through engaging experiences.



- Research local & global conservation issues
- Use iPads for research & presentations
- Go on field trips
- Interact with animals
- Connect with Zoo professionals
- Participate in teambuilding activities

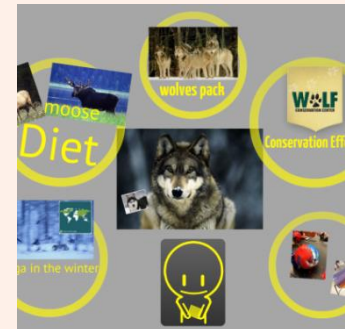


Create

Youth design & make projects and multimedia presentations that address a conservation need.



- Design and implement service learning and conservation projects
- Create multimedia presentations
- Work with high school mentors



Share

Youth promote sustained involvement & action for themselves and the community.



- Present their project to the community by engaging Zoo visitors, writing blog posts, creating a PSA, or presenting to peers at school and at community science events.



Partnerships



We take a personalized approach to working with individual sites and value the existing trust and relationships that our partners have developed within their communities.

	Partner	Zoo
Recruitment	Handles registration, talks to families	Site visit(s) to garner excitement among youth
Staff	1 support staff (at some sites)	1 dedicated Youth Programs Specialist, teen volunteers at some sites
Curriculum	Gives input for outline	Designs, prepares & delivers curriculum
Supplies	School & art supplies (pencils, notebooks, paint, etc.), internet, computers/laptops	Specialized equipment, 10 iPads
Evaluation	Can add site specific measures	Full evaluation guided by our Evaluation Team; results shared with partner
Transportation	To and from field trips (can coordinate with other sites)	Coordinates transportation logistics

“Best Zoo Trip Ever!”

Each quarter culminates with a trip to the zoo in which student's meet peers from around the city, connect with zoo staff and teen volunteers, and share their conservation projects with each other and the zoo community.



Conservation Project Examples: Silver Spot Butterfly

- Violet Growing Project
- Butterfly Art Project
- Outreach and Education Project – posters, pamphlets



Bat Projects

Students design and build bat houses!



For more information:

Eli Weiss
Youth Programs Supervisor
eli.weiss@zoo.org

www.zoo.org/zoocrew

Adult Role Models in Science (ARMS)

University of Wisconsin–Madison's
Institute for Biology Education

Dolly Ledin, Program Director





SCIENCE FOR K-8 KIDS

Middle School Science Symposium After-School Science Clubs Family Science Nights/Days Classroom Volunteers

Kiwanis volunteers Retired Teachers Museum educators Community volunteers Afterschool teachers UW-Madison students

Science business volunteers K-8 classroom teachers Parents Learning Communities UW-Madison educators

TRAINED ADULT SCIENTIFIC ROLE MODELS

ARMS ROLE MODEL SUPPORT/TRAINING

Volunteer Trainings Professional Development for K-8 Teachers & Afterschool Educators Service Learning Courses

FUNDING COORDINATION STAFF/VOLUNTEERS EXISTING PROGRAMS

Kiwanis Club Madison Children's Museum Afterschool Programs City of Madison School District Institute for Biology Education UW-Madison Community

Local Businesses

PARTNERS

**We all want to help kids get excited about science,
but it seems like there are a few things in the way...**

We have
afterschool
clubs but
nobody to lead
one in science...

I didn't take
much science
in college....

I'd love to work
with a scientist, but
where do I go?

I don't know
enough about
how kids learn

I want to take a
service learning
course—is there
something in
science?

I'd love to visit a
classroom, but I
don't know
where to start....

K-8 Teachers & Afterschool

I don't have time
or money to
figure this out...

I'm only one
person—what
can I do?

Scientists & Science Students

How am I going
to incorporate
the new science
standards?

How do you do
something
hands-on and
not end up with
chaos?

I don't think I can fit
anything more in....

It seems
complicated to
connect with K-8
programs

This NSF grant
says I need to
do some
outreach, but I
haven't done
that before....

How do I teach kids
who are different
from me?

Opportunities to Learn & Support:

(trainings, workshops, courses, learning communities)

- How children learn science best
- Science activities you can do easily
- How to engage diverse groups of children
- What's age-appropriate
- What's working well for others



Build capacity.

Provide something that makes someone's job easier, don't just ask them to do more.

Programming Frameworks for *Anyone* to Hook Into:

- Provide models and resources that programs & schools can use easily
 - Afterschool science clubs
 - Family science events
- Collaborate to create & coordinate programming
- Provide easy ways to get involved for:
 - STEM volunteers from UW
 - Community volunteers
 - Individual educators
 - Service learning students
 - Parents & families



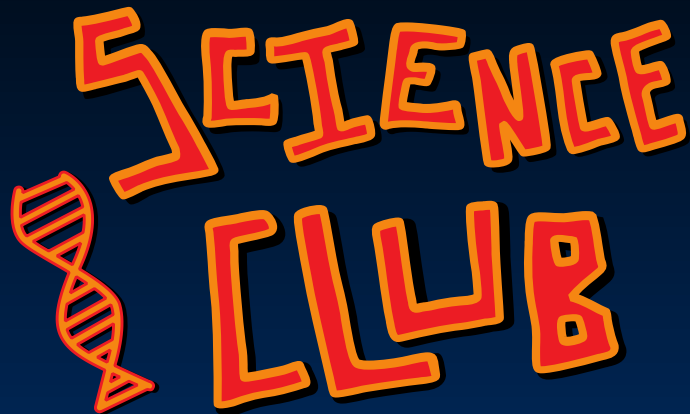
Long-Term Role Modeling

To transform children's view of their lives and set them on a path they never considered before...

Children need:

- More than just science content
- Someone they can look up to
- Someone who cares about them
- Someone who can nurture their desire to learn science and their belief that they can





The Power of Partnerships in Afterschool STEM Education

Afterschool Alliance Webinar
Michael Kennedy, PhD
31 January 2014



NORTHWESTERN
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SEPA SCIENCE EDUCATION
PARTNERSHIP AWARD
Supported by the National Institutes of Health

Partners, Goals & Design



**BOYS & GIRLS CLUBS
OF CHICAGO**



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CHICAGO
PUBLIC
SCHOOLS

CPS

- Youth: science skills, data analysis, critical thinking, career exploration
- Mentors: science communication, program development, evaluation
- Program takes place at Boys & Girls Club
- Challenge-based curricula, changes quarterly

Leadership &
Support



Curriculum &
activities



Training &
capacity

Noam (2008) A New Day for Youth
Wallace Foundation Report



Noam (2008) A New Day for Youth
Wallace Foundation Report

Partnership Keys

1. Truly collaborative relationship: shared goals, expertise, resources
2. Deep commitment to long-term youth development
3. Partnership has grown/strengthened to meet emerging needs and opportunities

1. Collaborative Relationship

Training & Curriculum	NU: Youth mentoring, curriculum ideas BGCC: Evaluation, staff development CPS: Teacher PD, supplies, expertise
Programming	SC complimentary and synergistic to in-school and BGCC programs
Space	BGCC committed space to build science lab; used for other activities, too
Fundraising	SC & BGCC work together to engage prospective donors, write support letters
Lobbying	Partners worked together to reverse NIH's decision to end K-12 Ed funding

2. Deep Commitment to Long-Term Youth Development

- Program runs for entire academic year; mentor-youth pairings persist quarter to quarter
- Consistent, strong leadership presence
- Broader support than just science: Behavior/life skills, academic support, rec letters for selective enrollment schools/awards, identifying summer internships/courses
- Support for CPS teachers: science fair judging, supplies, professional meetings, field trips, curricula

3. Partnership Growth

2008	Pilot program: 12 kids + 4 mentors
2009	NIH Grant received, BGCC position funded, 40 kids + 20 mentors
2010	Jr Science Club program added (grades 2-5), science fair judging
2012	SC grew to 60 kids + 30 mentors, built lab at partner CPS school, high school program added at club (w/NU medical school)
2013	Jr Science Club at second club site, driven by senior SC mentors, joint STEM lobbying efforts

Lessons Learned

- Partnerships take time to develop, often years
- Communication must be honest, frequent, and in person
- Commitment is key
- All problems can be fixed

Committed Partners



**BOYS & GIRLS CLUBS
OF CHICAGO**



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CHICAGO
PUBLIC
SCHOOLS

CPS

Mike Anderson

Rebecca Daugherty

Hallie Askuvich

George Colone

Suzanne Olds

Lori Bobak

Mitch Day

Jennifer Koerner

Anita Douglas

Gerard Kovach

Jennifer Lewin

Patrick Rodrigues

Michael Kennedy, PhD
m-kennedy@northwestern.edu
847-467-3297

scienceinsociety.northwestern.edu

scienceclub.northwestern.edu





Questions

Thanks for attending!

Melissa Ballard

Afterschool Alliance
mjballard@afterschoolalliance.org

Eli Weiss

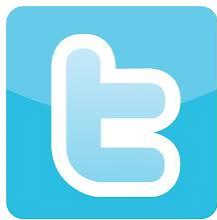
ZooCrew, Woodland Park Zoo
eli.weiss@zoo.org

Dolly Ledin

ARMS, University of Wisconsin-Madison
daledin@wisc.edu

Michael Kennedy

Science Club, Northwestern University
m-kennedy@northwestern.edu



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