Scientizing *Daily Life with New Social, Mobile, & Wearable Technologies*

Tamara L. Clegg * University of Maryland
Foundation
Fundamentals & Findings

Seamless Scientizing

Mobile, social, ubiquitous

Scientizing the Body
Wearables
My Inspiration

Levi Barnes Sr.
“Grandaddy”
The importance of academics and hard work

My Inspiration

Levi Barnes Sr. “Grandaddy”
My Coach

Ted Clegg
“SuperDad”
My biggest supporter, encourager, & cheerleader

My Coach

Ted Clegg
“SuperDad”
My Support

Aunts and Uncles
My Teachers

Larger community of teachers, tutors, and mentors
For we are His workmanship, created in Christ Jesus, born from above—spiritually transformed. Renewed, ready to be used for good works, which God prepared beforehand, so that we would walk in them… living the good life which He prearranged and made ready for us.

Ephesians 2:10
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Future Foundations
Seeing the **World** through Scientific **Lenses**

Finding **practical** applications

Using Science to Achieve **goals**

Scientizing **daily life activities**
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Future Foundations
June Ahn

Jason Yip

Science Everywhere

Daniel Pauw * Kelly Mills * Judith Uchidiuno * Beth Bonsignore * Austin Beck * Caroline Pitt
Technology alone… is not enough

Information Flow
Social media can make resources visible
How do we design new technologies to connect entire neighborhoods to science?
Tangible, community displays

Mobile social media
EVERYONE, can you please lend me your help on a good science project idea. I need one for my science (stem) fair

Hi Michael, you could do a project on airplane designs!!!

What a great question, Michael! I have a couple of ideas - wanna talk about it on Thursday? Or, if you like, go to the website, sciencebuddies.org and it has lots of ideas!!

Sciencebuddies.org is a really good website that is were I got all my science projects from😊

Thanks Maya! That's awesome!!😊😊
Solid Rock Church Outreach Pastor

Church Volunteers
Kitchen Chemistry * Engineering * Fun

Science Everywhere Meetings
Semi-structured experiments
Choice Days: designing new experiments
Small Group Planning

Choice Day

At home

Shopping!!!
Choice Day
Showcase
Documenting the experience at home
Documenting the results

So excited!! 🍰🍰🍰anford

Perfect balance of flavor with the salt. Not too much salt, not too little. This is omelette 1 with the corn syrup. It added a good kick of flavor to the omelette and not too much sugar. The results turned out good! 😊
Summer Jam 2016: Water Testing
Choice Day Investigations
Tangible, community displays

Mobile social media
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Future Foundations
What if our clothes revealed how our body’s functioned?

How could this change the way children learn about and understand their bodies?

Could a t-shirt be a platform for experimentation and inquiry?

Live Physiological Sensing & Visualization
LPSV
Collaborative Inquiry

Collective Inquiry
Participatory Design with Children

Druin, A. CHI’99
LPSV Tools

BodyVis

SharedVis

Jack
Jill
Lily
Tim

Projector
Semi-Structured Activities

- Small groups or pairs brainstorm activities
- Make predictions
- Test with BodyVis or SharedVis
- Discuss results
The Macarena

“I kind of felt embarrassed because all these people were staring at me. So it kind of went up.”
“Watching the NBA summer league [second] game brought my heart rate down after running because less blood must be pumped when I am just sitting down and not stressing my muscles and lungs by breathing hard and also the fact that the game was just summer league and not NBA didn't stress me for my team to win.”

Scientizing Later
Immediate Action

Wearers and Non-wearers
Games & Competitions

Engaging Non-Wearers
Wearer & Non-wearer Collaboration

Physical Activity

Wearer & Non-wearer Collaboration
Connecting everyday physical activity to organ function

Connecting social & emotional factors

Real-time visualizations

Personal Relevance
Collective noticing experimentation & predictions
Collective discussion
Collective physical activity
Multiple Session Deployment | Integrated use of tools

Current Work
Effects of “the Carlton”
Burpees vs. jumping jacks

Testable questions

Which exercises “start your heart up the fastest?”
Take Away

Children need opportunities to connect and share everyday learning experiences with science
Take Away

Mentors have an important role to play
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Future Foundations
We Need You!!!
Science Everywhere

June Ahn * Jason Yip * Jeff Rick * Beth Bonsignore * Daniel Pauw * Austin Beck * Kelly Mills * Rachael Marr
NSF #1441523
My Foundation Team
Questions
Designing with the Community
Mentors and parents bring different contextual knowledge that influences our recognition of learning.