Hacking The Future: Weaponizing the Next Generation

James Arlen, Leigh Honeywell, James Costello, Tiffany Rad, Tim Krabec

DEF CON 18 - Las Vegas

Disclaimer

We've got jobs and stuff. This is not our job. Mostly, the lovely people we work for don't talk like this. We do sometimes because it's the right thing to do. Therefore, what we're saying is **all** us and not them.

If you need to find someone to blame, it's just us, except if it's the voices in your own head - that's **all** you.

Also, there are no spiders or clowns in the presentation, in case you were worried.

The Panel

Leigh Honeywell

- jane of many trades
- security consultant
- finishing up a degree at the University of Toronto
- co-founder and director of HackLab.TO hackerspace
- on the board of advisors of the SECtor conference
- Google Summer of Code mentor
- avid cyclist
- book nerd
- traveler

- Honorary Aunt to many

Tiffany Strauchs Rad, MA, MBA, JD

- lawyer
- hacker
- college professor
- presents at Black Hat USA, DEFCON, Hackers on Planet Earth, Hacking at Random, and Pumpcon
- likes cars and hacks them
- building school-integrated hackerspaces

- Mom

James Arlen, CISA

Best summary ever:
- Infosec Geek
- Hacker
- Social Activist
- Author
- Speaker
- Parent

- Dad

James Costello, CISSP

How do you follow the best summary ever:
- Geek - Infosec and otherwise
- Repurposer/Hacker
- Blogger
- Pop Culture Referencer
- Secretary and VP of Affiliate Relations for CCCKC
- Board Member for Cyber-RAID and B-SidesKC
- Occassional Speaker
- British TV junkie
- SciFi Fan and aspiring writer
- Parent
- Dad

Tim Krabec

- Geek. Infosec & General
- Active with ISSA & ASIS chapter 254.
- Husand
- Insane parent:
  - former foster parent (40 children+)
  - Father of 4 children with the 5th on the way.
- Actual Red team member (finally)
- Socratic Blogger & Pod caster
- Hacker

The Topics

From the DEF CON 18 CFP Response

- What if you are not the breeder type
- making your home a micro-hackerspace when there isn't a community
- making smart kids through failure / anti- helicopter parenting
- parent's view of how to encourage school system
- adding logical processes, critical thinking
- education / educators
- new methods to attach to different ways of learning
- STEM + women / gender issues
- practical issues around managing gender inequality
- raising smart kids - emerging school of education theory we're doing it wrong
- ways that kids are being let down by the system
- How To discussion - dealing w/ kids and how to deal w/ miniature versions of yourself
- getting pwnd by your kids
- hacker mystique and kids
- variations on learning styles
- war stories
- open to the floor - audience interaction
- positive conflict communication

This is why we're going to be here for two hours.

Summarized for your protection.

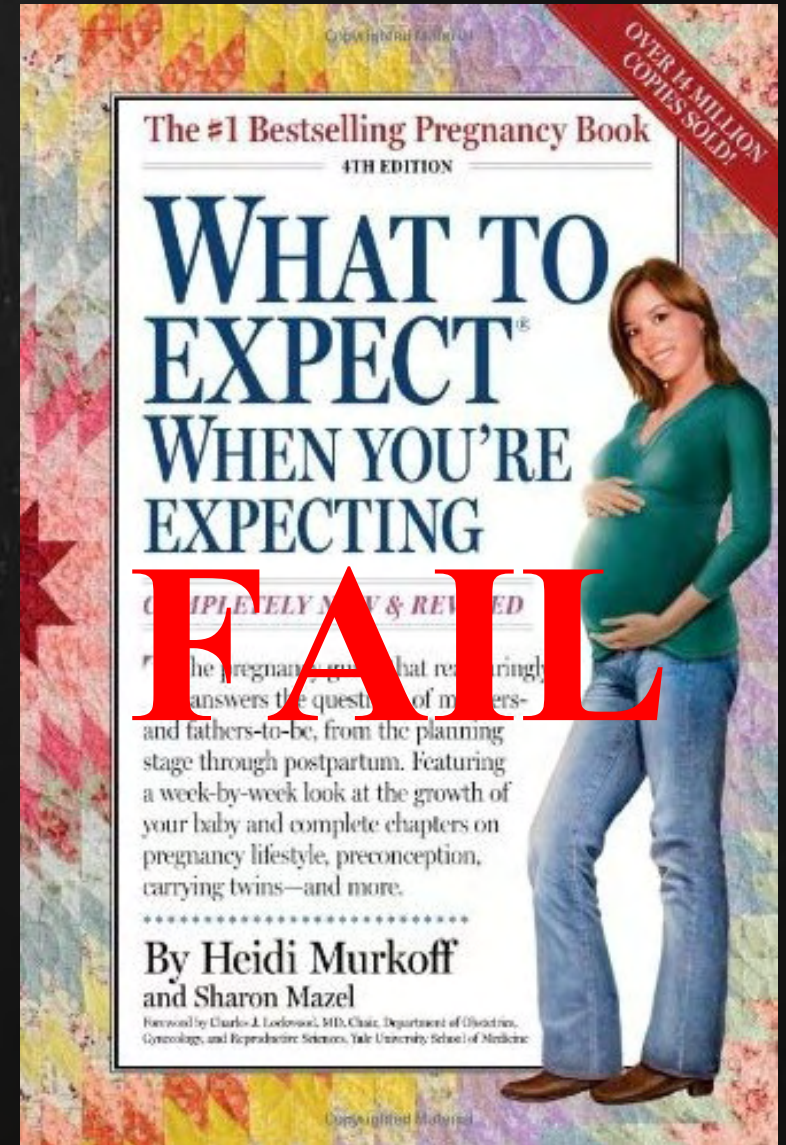What to Expect When You're Expecting

Schools and Learning

Gender Issues

Supporting Young Adult Children

Getting Pwned

What to Expect When You're Expecting

- Making^W Having a kid
- What's going to change
- How to navigate the "advice"
- Building a hacker
- making smart kids through failure
- logical processes, critical thinking
- mini-Me
- getting pwnd by your kid

The #1 Bestselling Pregnancy Book
4TH EDITION

WHAT TO EXPECT® WHEN YOU'RE EXPECTING

COMPLETELY NEW & REVISED

FAIL

The pregnancy guide that reassuringly answers the questions of mothers- and fathers-to-be, from the planning stage through postpartum. Featuring a week-by-week look at the growth of your baby and complete chapters on pregnancy lifestyle, preconception, carrying twins—and more.

By Heidi Murkoff and Sharon Mazel

Foreword by Charles J. Lockwood, MD, Chair, Department of Obstetrics, Gynecology, and Reproductive Sciences, Yale University School of Medicine

OVER 14 MILLION COPIES SOLD!

Having a kid

Changes...

Advice

Building a hacker

The Value of Not Succeeding

What is Failure
and how is Not
Succeeding
different?

Resiliency
Adaptability

Logical Processes / Critical Thinking

mini-Me

mini-Her

Getting pwnd

Schools and Learning

- how to encourage school system
- education / educators
- new methods to attach to different ways of learning
- variations on learning styles
- raising smart kids - emerging school of education theory we're doing it wrong
- ways that kids are being let down by the system

- Hackerspaces & the Future of Education

Educators

Scientific Method

- When to start? S.C.A.M.P.E.R. Volunteers in the classroom

Learning Methods
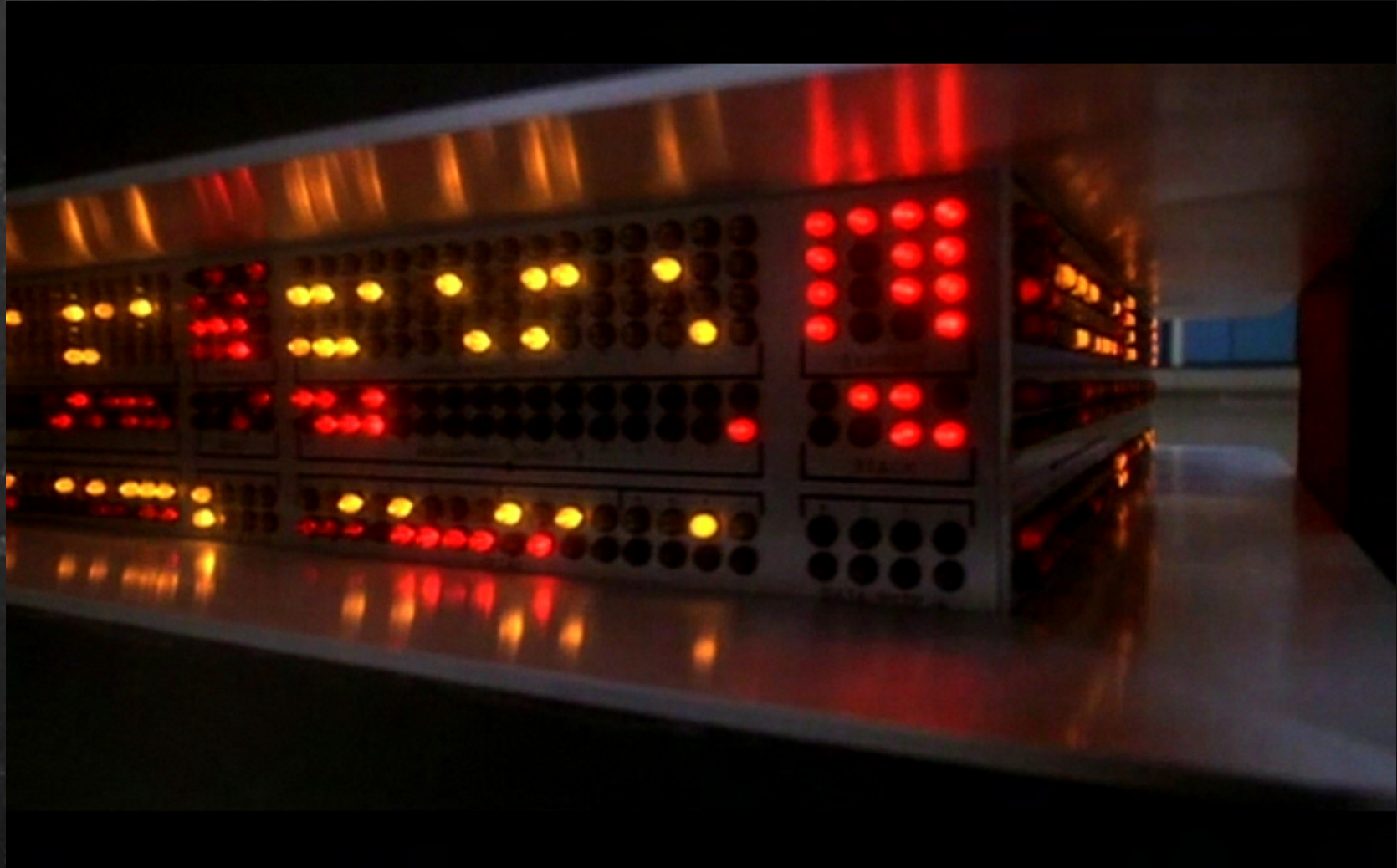
Smart Kids

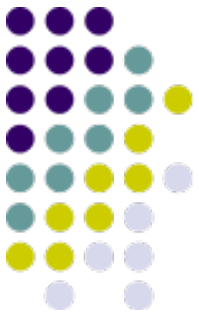# Hackerspaces & the Future of Education
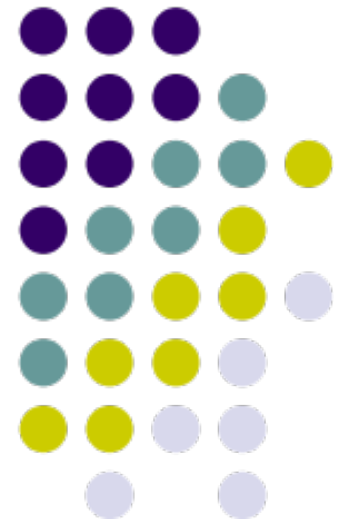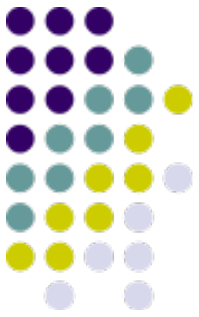
Reverse Space

Herndon, Virginia

- Physically and contractually connected to a private educational facility (6th-12th grade)

- Hackerspaces Collaborating with Secondardy & Post-secondary Educational Institutions

- Director/Co-Founder

Equipment and Projects

- It is 5,500 sq ft of workshop space
- Planned hardware acquisitions:
  - Laser cutter
  - Two 3D Z Corp printers
  - Drill presses, saws, soldering
  - equipment and workstations
  - 1,000 gallon saltwater tank & 1,000 gallon open touch tank
  - Bio/Chem laboratory
  - Green Screen for video production and filmaking
 - Cyberwar center/sandboxed servers

American Education Statistics
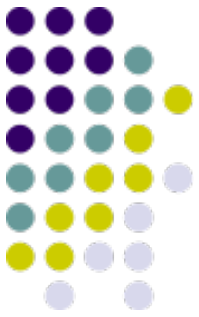
- 85% attain a high school degree
- 27% attain a post-secondary (2-4 year college degree)
- Budget of $972 billion (public and private)
- Literacy rate is 98% of students > 15 yrs old
- Science/Math education rank At THE BOTTOM as compared to other developed countries

- Bureau, U. C. (2009). The 2009 Statistical Abstract. Retrieved from National Data Book
- Program for International Student Assessment (PISA), OECD, reading literacy, science literacy &

mathematics literacy all rank near the bottom of OECD-countries.

Women in Computer and Information Science
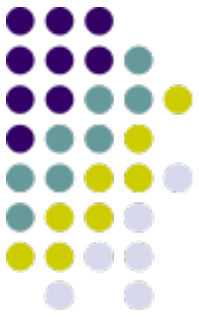
- By 2016, U.S. universities will produce only 53% of the computer science bachelors degrees needed to fill the 1.5 million computer specialist jobs projected to be available.

- Down from 37% in 1985, only 18% of computer and information science degrees were awarded to women in 2008.

National Center for Women in Information Technology, 2008 report.

Combing the Hackerspace with the School
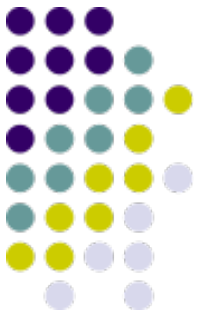
- From 8am-5pm, the school students use the facility
- From 5pm-11pm week days and 9am-11pm weekends, the space is for hackerspace members
- Requesting that the hackerspace members share their projects with the students
 - Establishing a mentorship program where a students pairs with a professional in the

Combing the Hackerspace & School

- Combining hands-on projects with a traditional accredited high school curriculum
  - For example, the aquarium/biology laboratory area will be used for the high school laboratory component for the courses
- Accepting volunteers from the D.C. area to teach short courses/lectures/workshops for the students

# Why Hackerspaces Can Do This Better than Traditional Schools
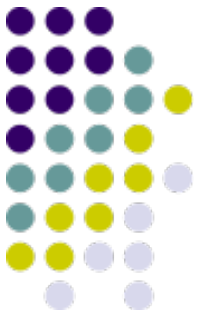
- Students learn differently than the 1960s educational model upon which current science & math curriculums are still based

- Students have different learning patterns & methods now; educational models have not kept pace

- In 2004, 3 in 1000 preschoolers were taking antidepressant drugs to enhance ability to focus in school programs,

  - Perhaps changing education to a more dynamic, rather than static, model is necessary to attain attention of the "now" generation.

Wired News, 5 February 2004, http://biopsychiatry.com/antidepressants/toddlers.html

Distance Learning Program
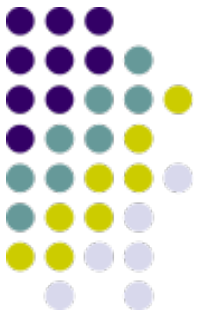
- Weekend & Special Lecture Programs
  - For homeschoolers
  - Students whose schools don't have laboratories or hardware & engineering workshops
  - Students who live long distances from schools
  - Mentorship programs
 - Brings special lecturers to a larger group of students
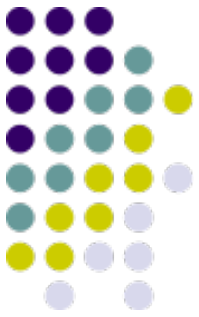
For more information

- Reverse Space's Google Groups Page: http://groups.google.com/group/ReverseSpace

- Tiffany@elcnetworks.com
- http://www.elcnetworks.com
- Twitter: @tiffanyrad

And if you forget all of that, simply

http://www.tiffanyrad.com

Gender Issues

- STEM + women / gender issues
- practical issues around managing gender inequality
- experiences - the engineering program

STEM - women/gender issues
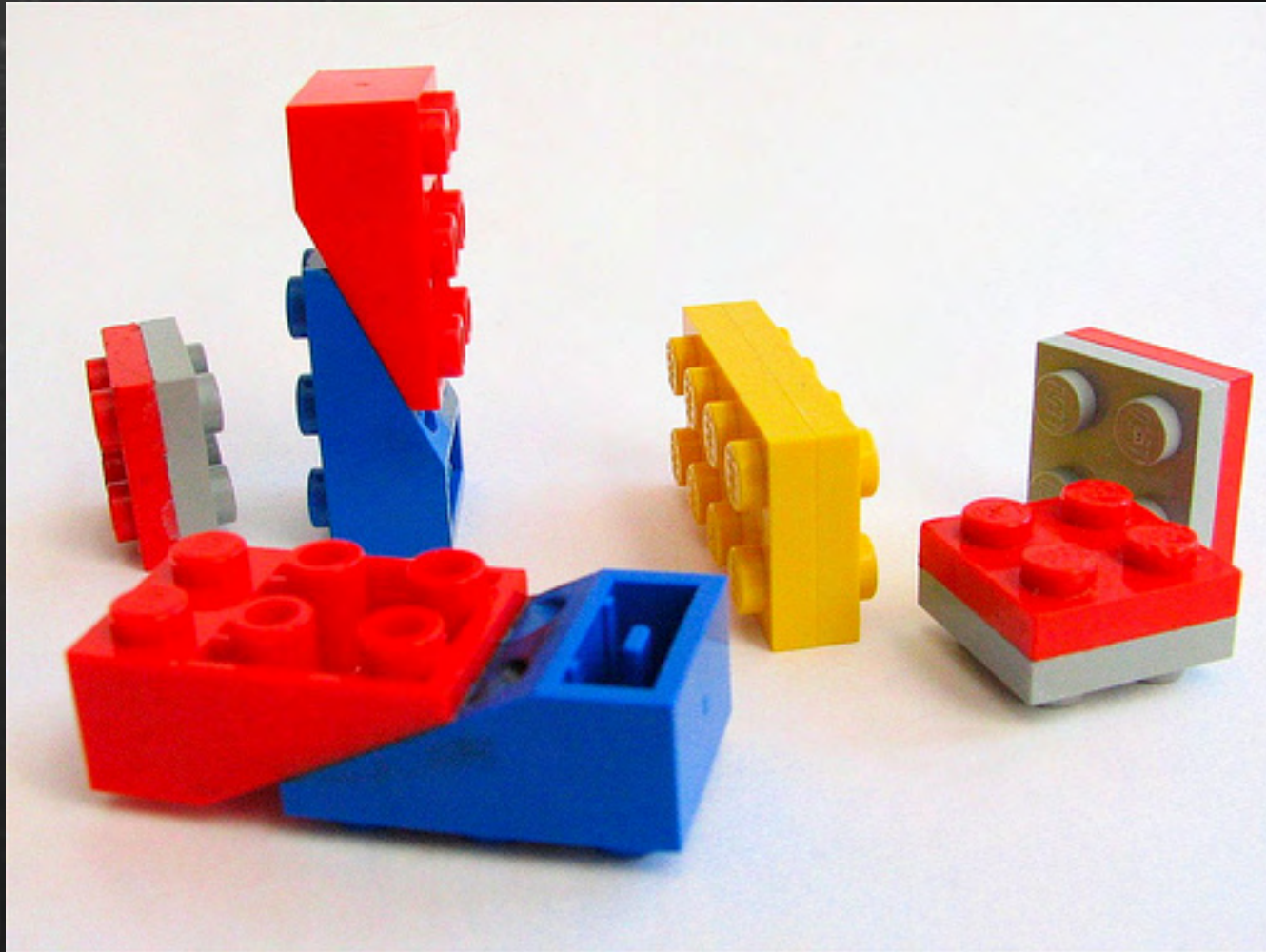
Practical issues around gender !=

Experiences

Supporting Young Adult Children

- continuing cerebral stimulation
- the safety of "home"
- oops.

- The next next generation...

Cerebral Stimulation

Home

oops.

You might be Grandparents.

War Story - Gnome Repo (wink wink)

How James C was nearly banned from a big box store

THE GNOME REPO

P is for Parody

War Story - Shoulder Surfer

Yes, I know that my computer is nicer than yours.

Q&A

download updated slides from http://defcon.org or http://myrcurial.com

Q&A

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