Welcome to MATEC NetWorks Webinar

Emerging Technologies and Strategies for Jobs, Education, and Communities

NetWorks is an NSF-funded ATE Resource Center supporting faculty in Semiconductor, Automated Manufacturing, and Electronics education

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NETWORKS

MARICOPA COMMUNITY COLLEGES

NetWorks is a part of MATEC,
a member of the
Center for Workforce Development
in the Division of Academic and Student
Affairs, at the Maricopa Community Colleges.

National Science Foundation

Funded, in part, by a grant from the
National Science Foundation.
DUE-0501626

NETWORKS



Poll

Click A-E to take the Poll

This webinar will have a Poll. Please answer:
I heard about this webinar through:

A. @matec
B. Email from ETD list serv
C. Email from NetWorks
D. Friend or colleague
E. Other (please type where in chat box)



NetWorks Webinar Presenter

Jim Brazell: Technology forecaster, public speaker and strategist focusing on innovation and transformative systems. Member of the Radical Platypus group and the Thornburg Center for Professional Development.

Mark Viquesney
Host

NETWORKS

Emerging Technologies & Strategies for Jobs, Education, and Communities

How the future works today.

JIM BRAZELL
jim.brazell@radicalplatypus.com

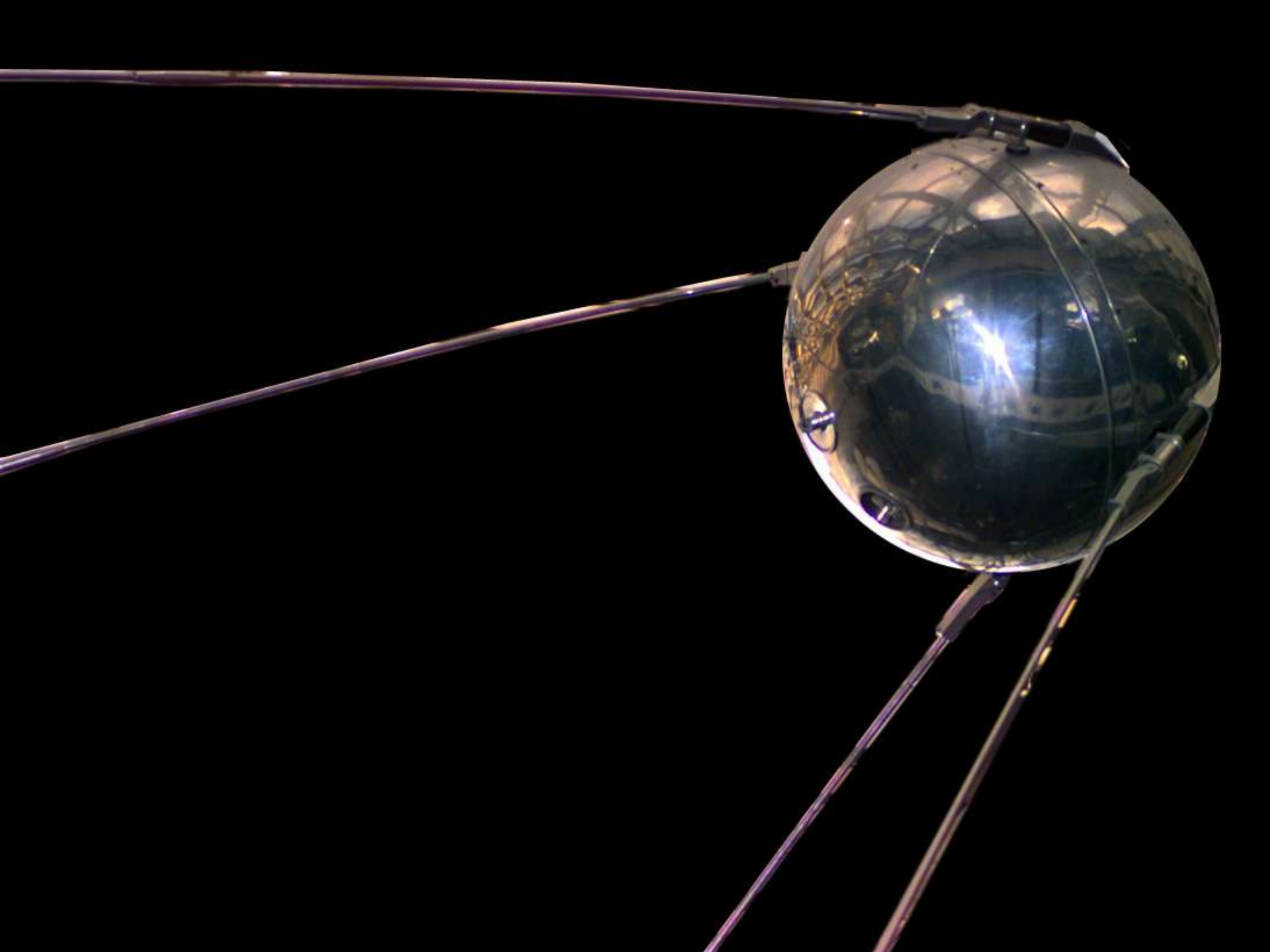
General Bernard Schriever

Feb. 19, 1957

Inaugural Air Force Office of Scientific Research Astronautics Symposium in San Diego.

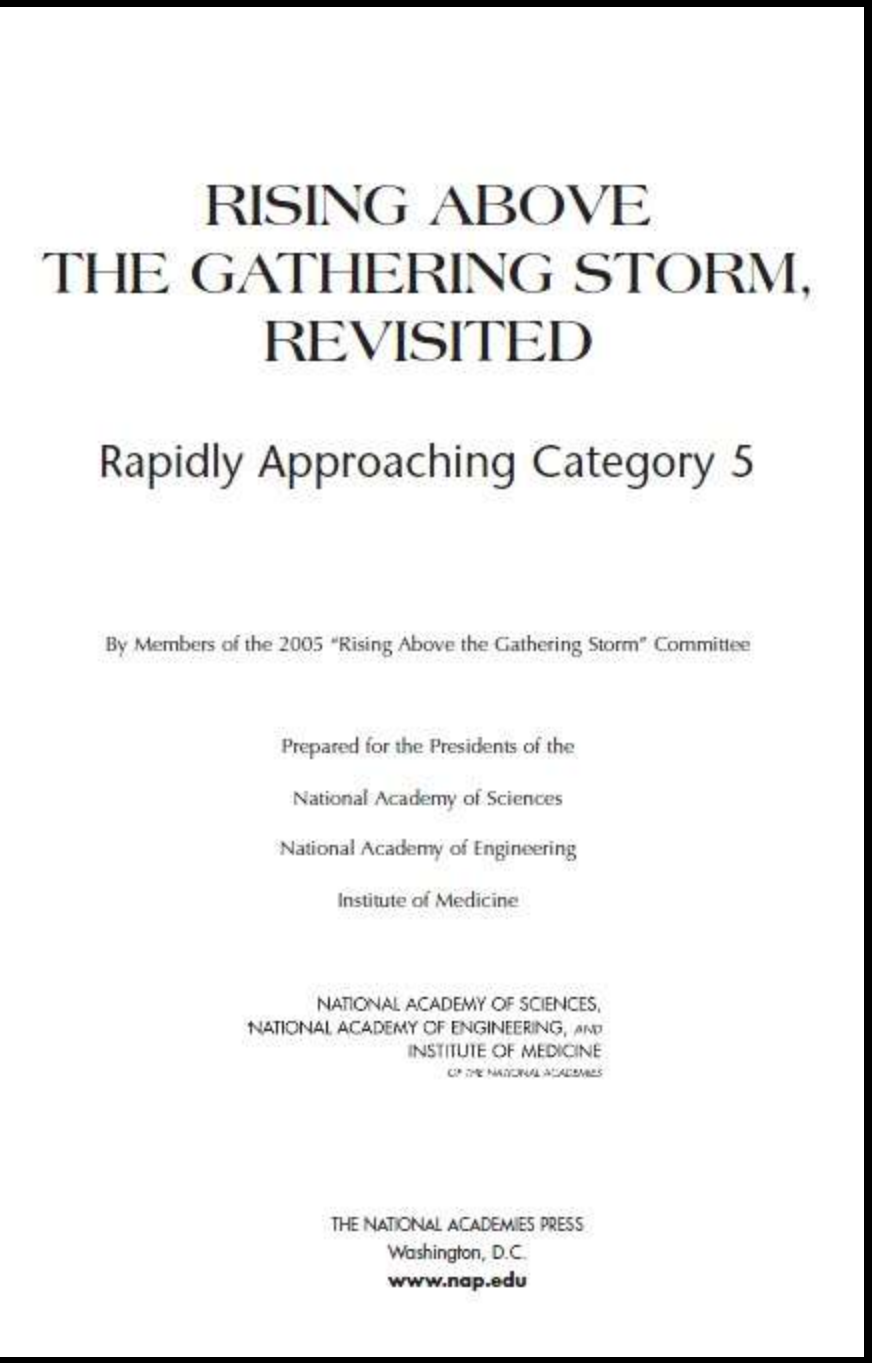
Commander of Western Development Division Headquarters

Charles Wilson



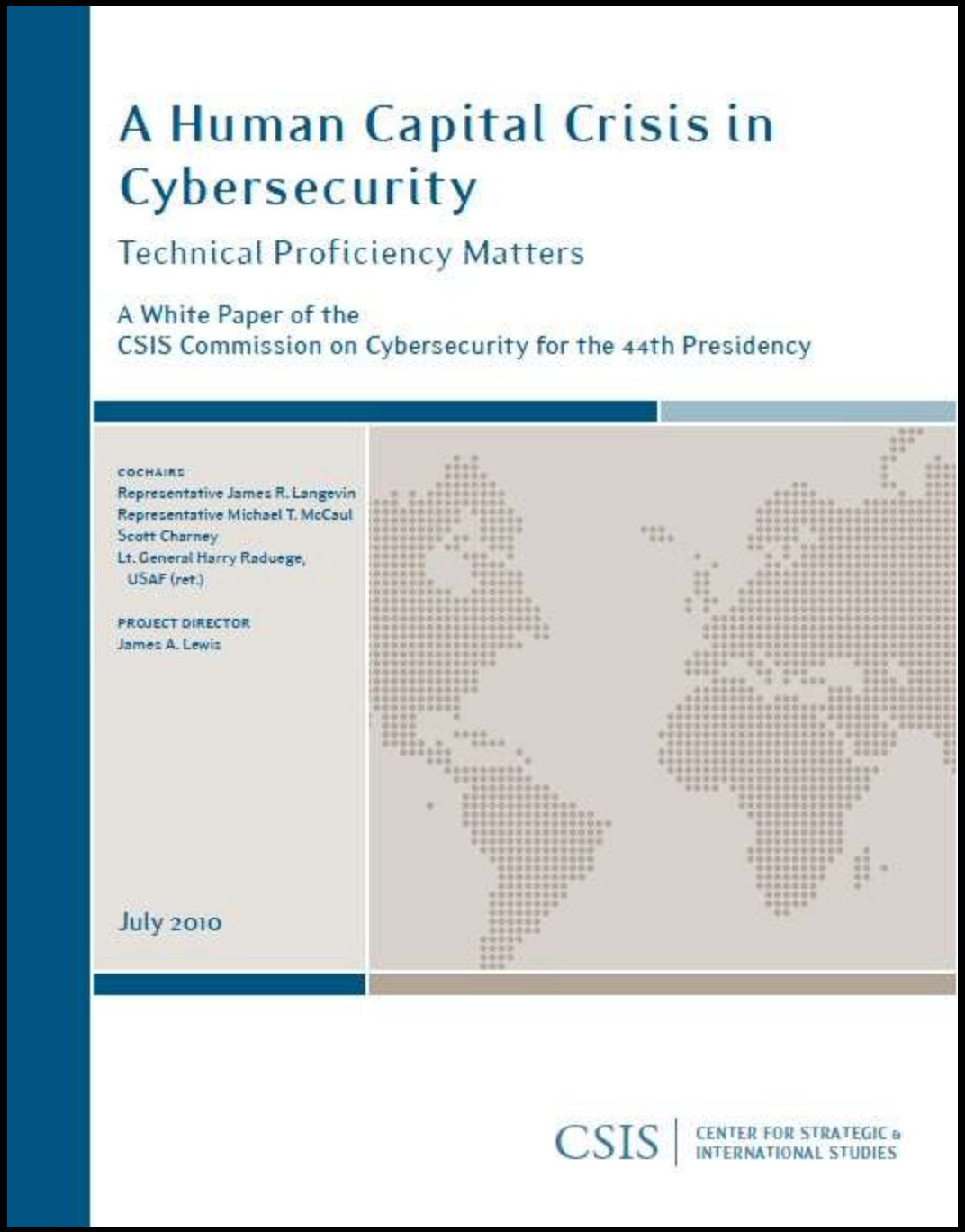

Globalization
Education
Security
Environment

Top 10 Competitive Countries	
Rank	Country
1	Switzerland
2	Sweden
3	Singapore
4	U.S.
5	Germany
6	Japan
7	Finland
8	Netherlands
9	Denmark
10	Canada



Stagnant scientific education imperils U.S. economic leadership:

U.S. mathematics and science K-12 education ranks 48th worldwide.



“For at least the past six years the US Department of Defense, nuclear laboratory sites and other sensitive US civilian government sites have been deeply penetrated, multiple times, by other nation states. The cyber threat to the United States affects all aspects of society, business and government..."

2012 Doomsday

http://www.creativestem.com/artwork/5540

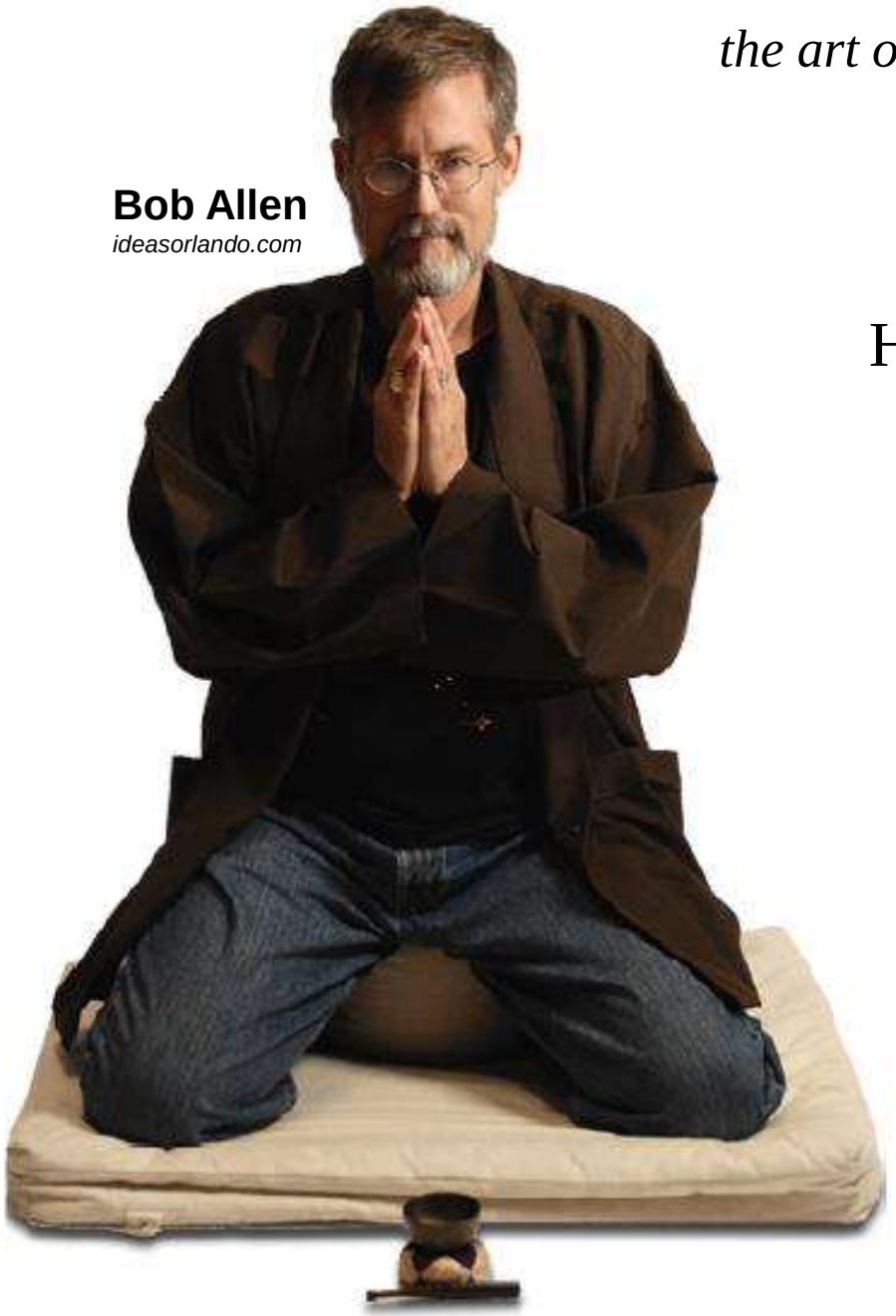
“He was not serious when he talked about the end of the world in 2012 but he is an adamant believer that the world is flat, that Stonehenge was built by aliens…”

Lynne Hale, Lucas Film Rep, Wired, Jan. 20, 2011

Our Sputnik

Haiku

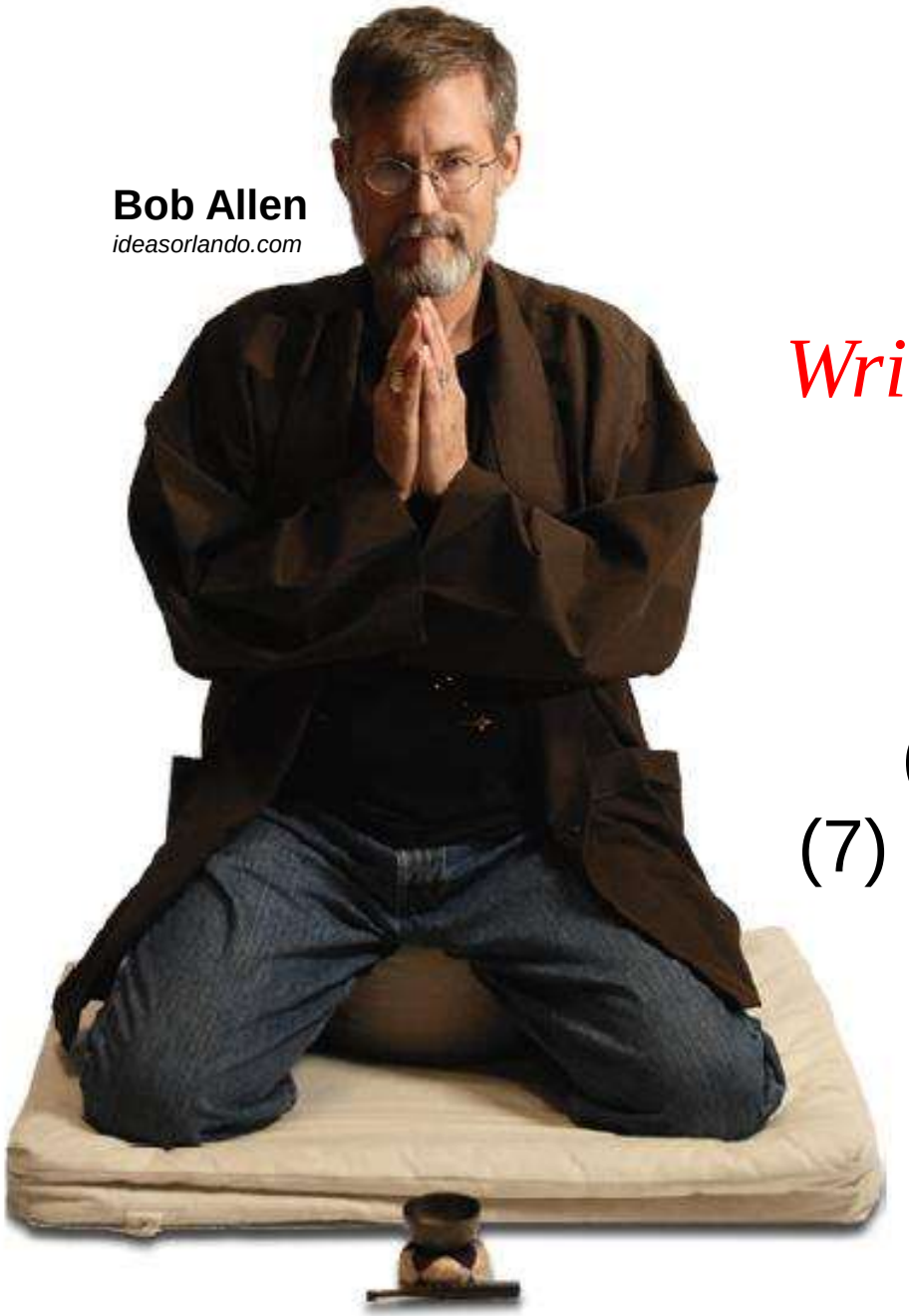
the art of it all



Haiku is a Japanese poem composed of three unrhymed lines of five, seven, and five syllables. Haiku usually emphasizes a season, intense emotion and vivid image designed to lead to an enlightened insight.

(5) The moment two are
(7) united they both vanish
(5) A lotus blooms here.

Murakami, Kijo. (1865-1938), Adapted by Brazell
http://www.toyomasu.com/haiku/#time



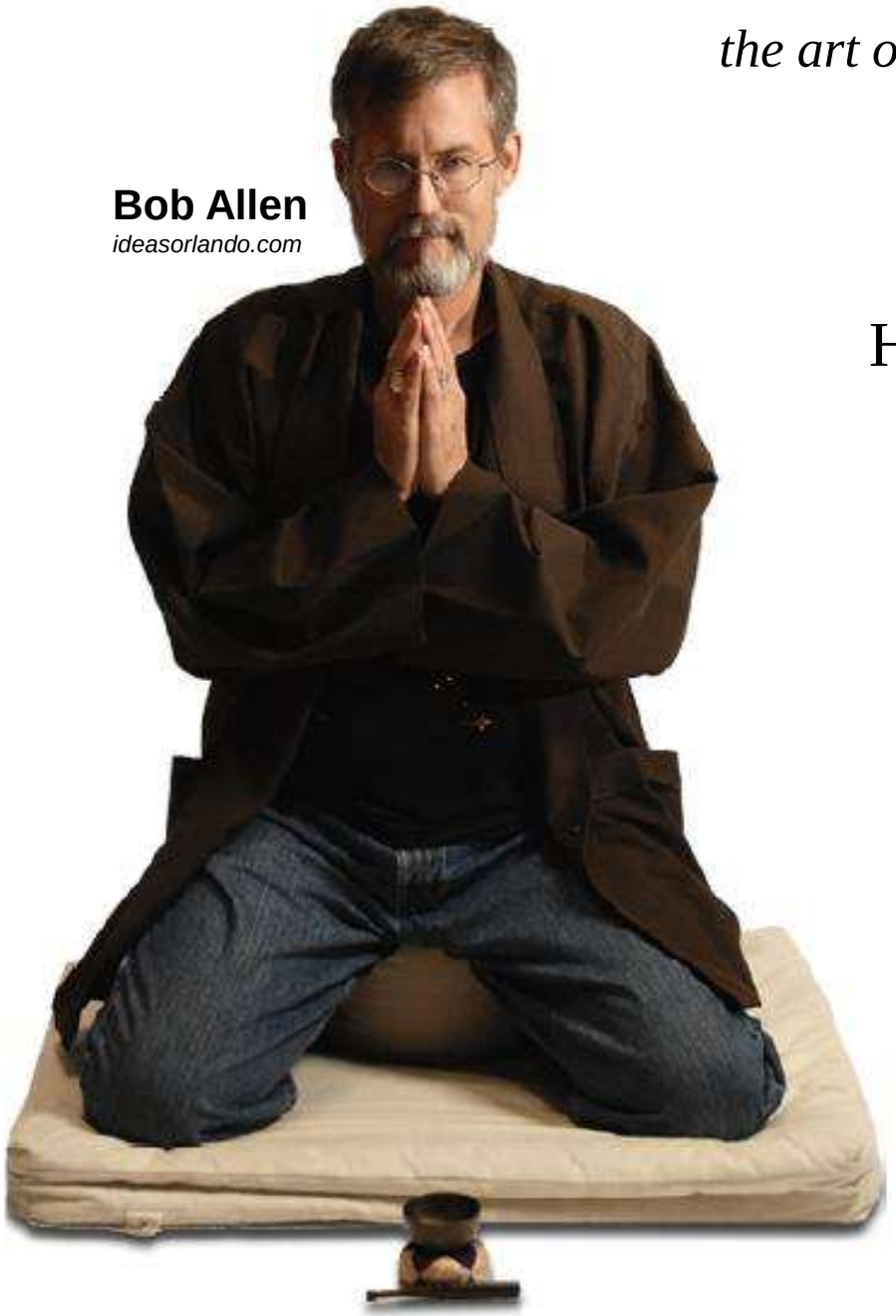
Activity #2

Write a haiku describing your hopes or fears in the 21st century.

(5) While reaching for stars
(7) keep Frankenstein at heart
(5) or worlds fall apart

Haiku

the art of it all



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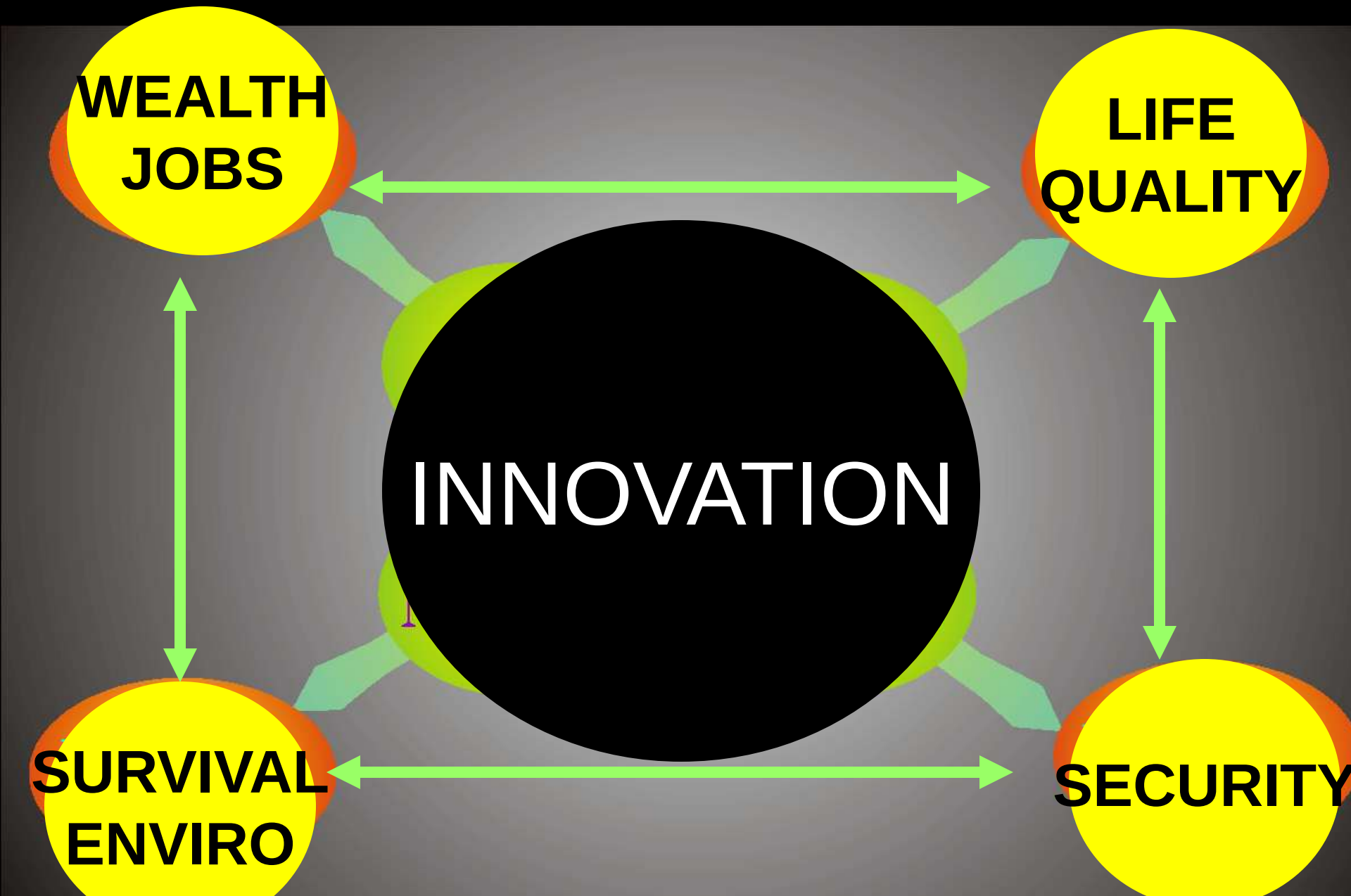
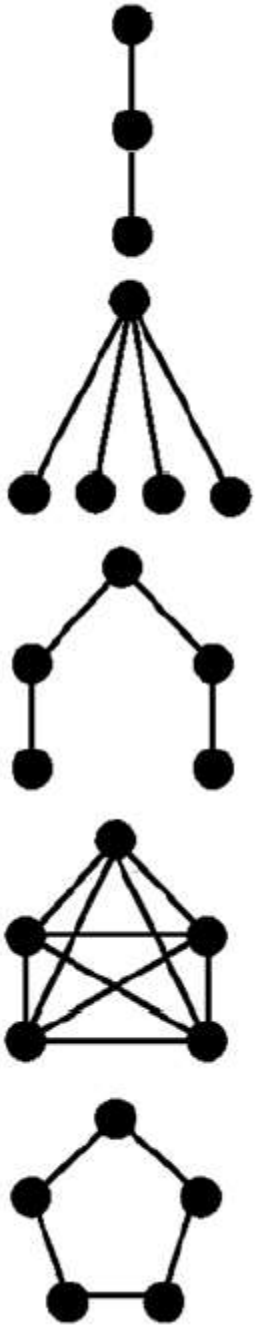
How do we cultivate innovation and innovators?



Knowledge
Organizations
Industries
Markets
Technical Systems
Human Capital

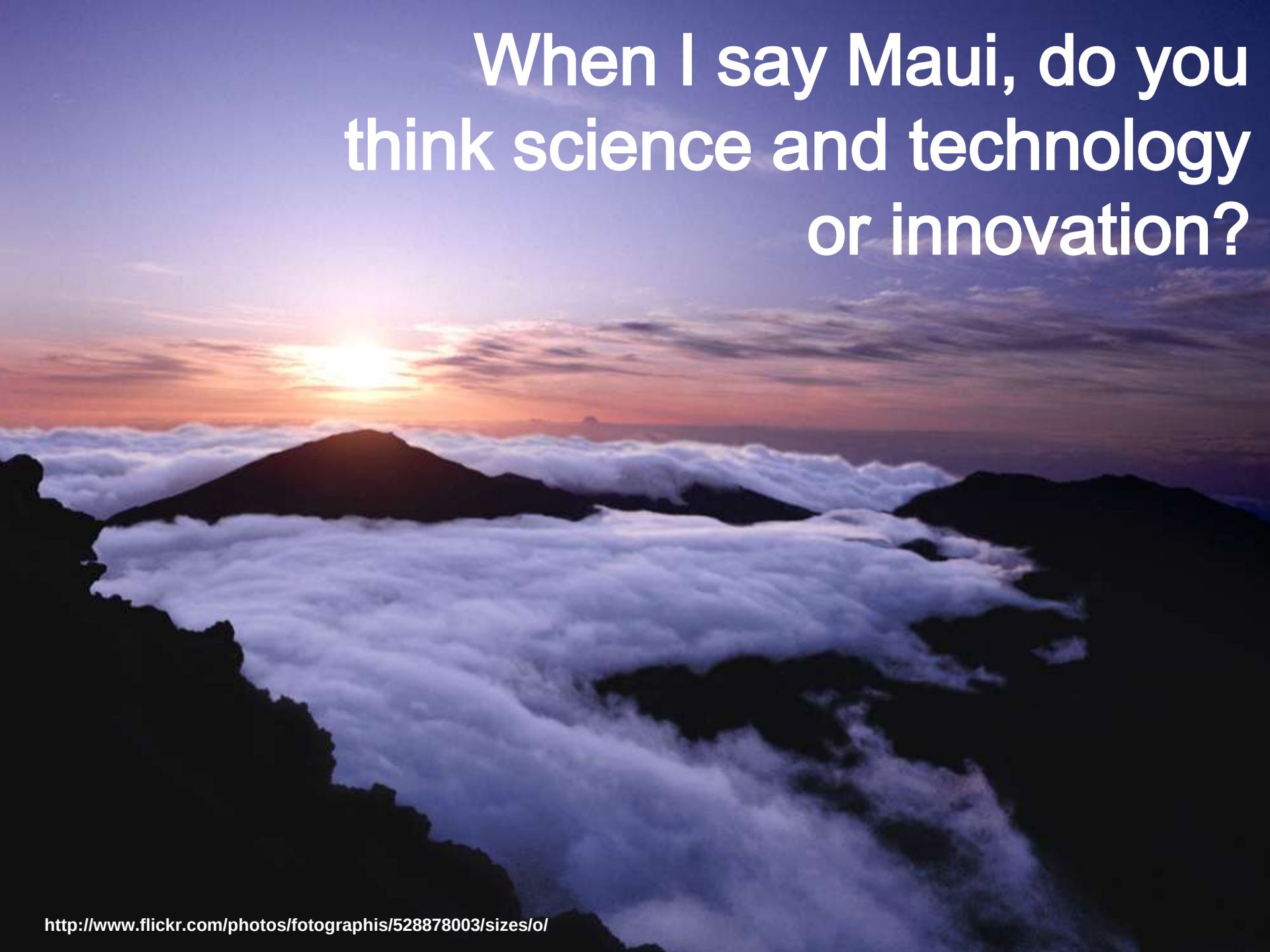


STEM Mainstreaming CTE Practice

Video games for what?

Emergence of the 5th World.

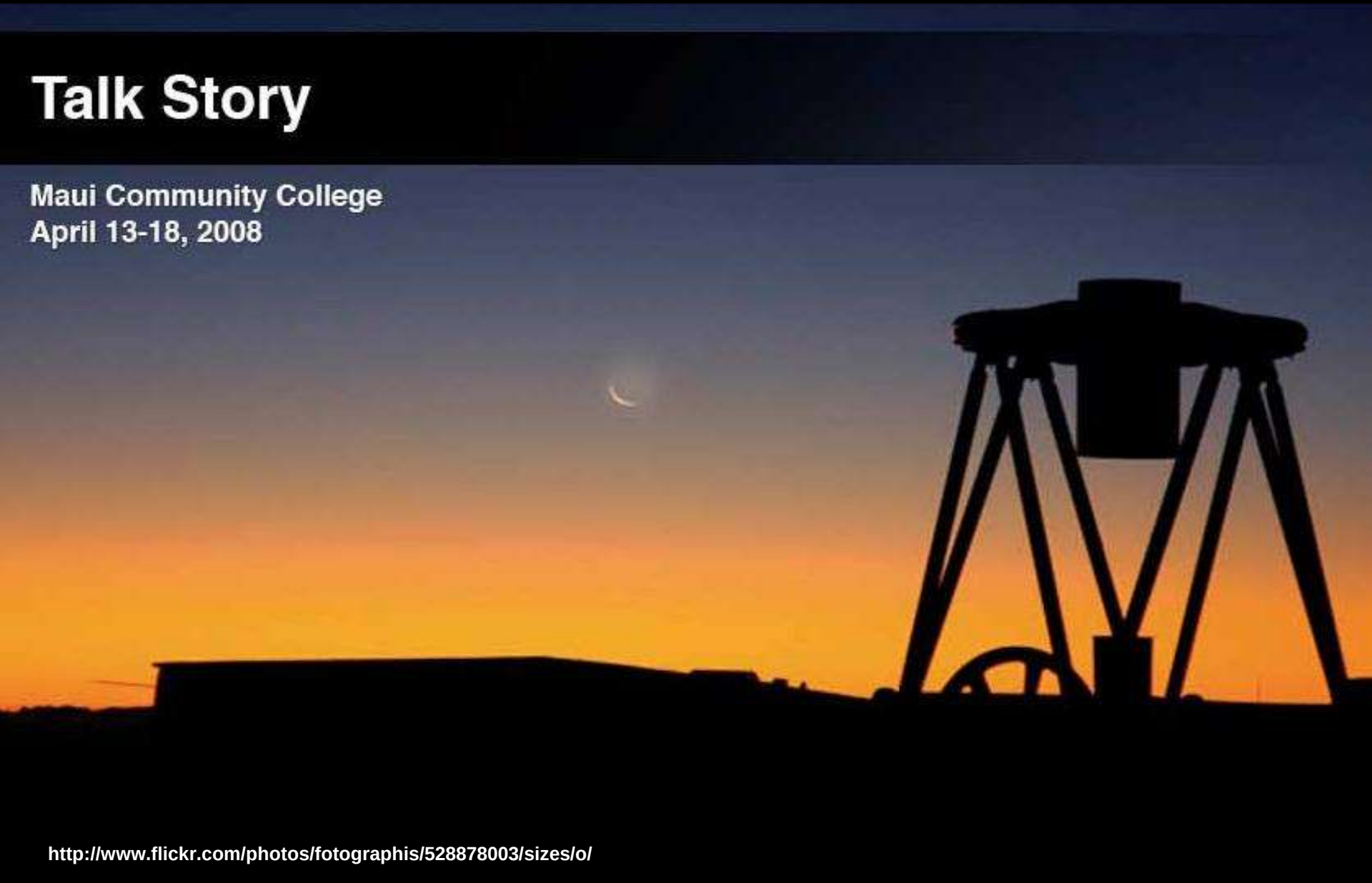
Robots, they're here!



http://www.flickr.com/photos/fotographis/528878003/sizes/o/

Talk Story

Maui Community College
April 13-18, 2008



http://www.flickr.com/photos/fotographis/528878003/sizes/o/

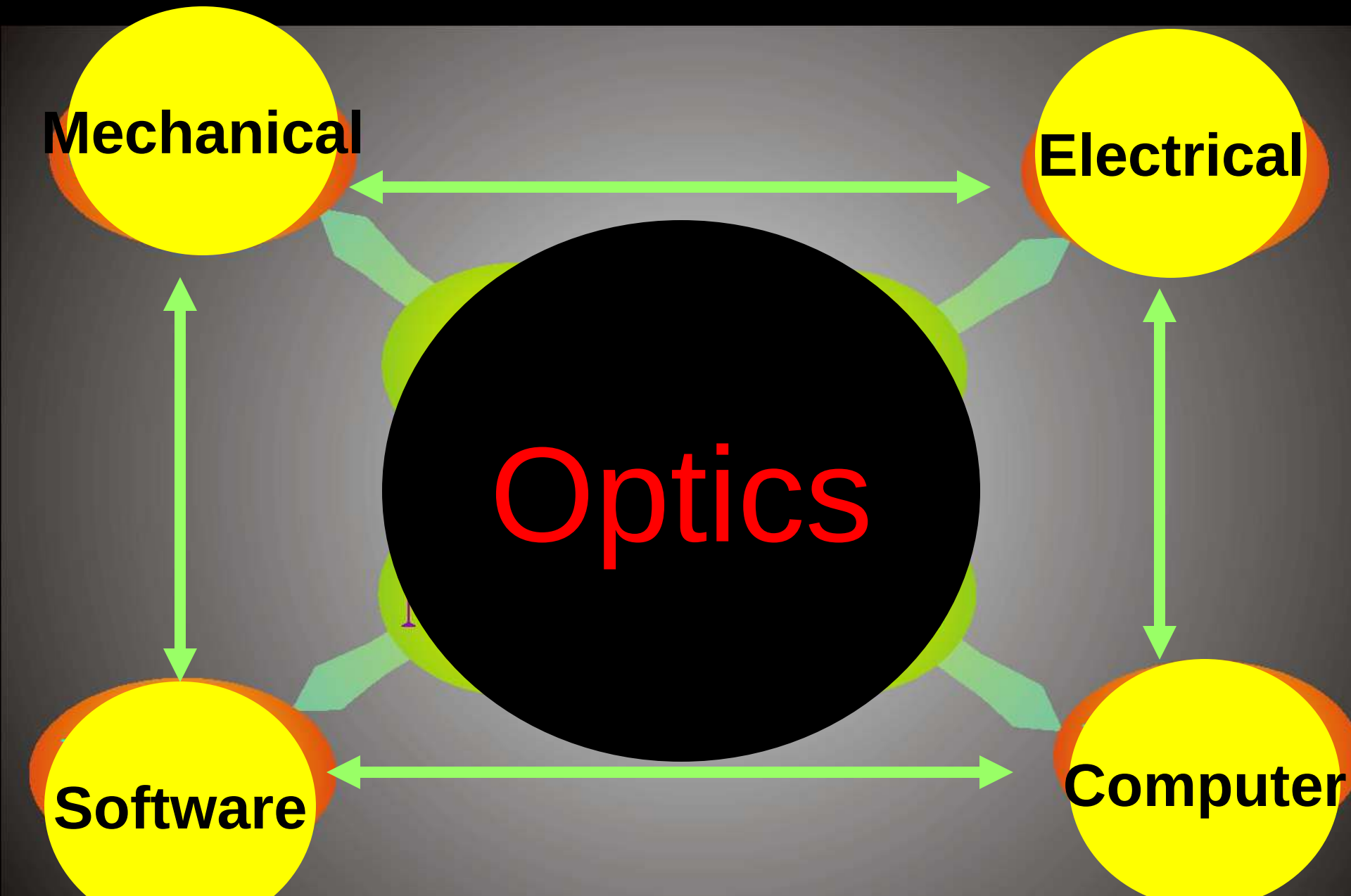
“I do not think Maui is any different than the mainland…post industrialization has placed greater demands on math and education.”

–Rose Yamada, elder

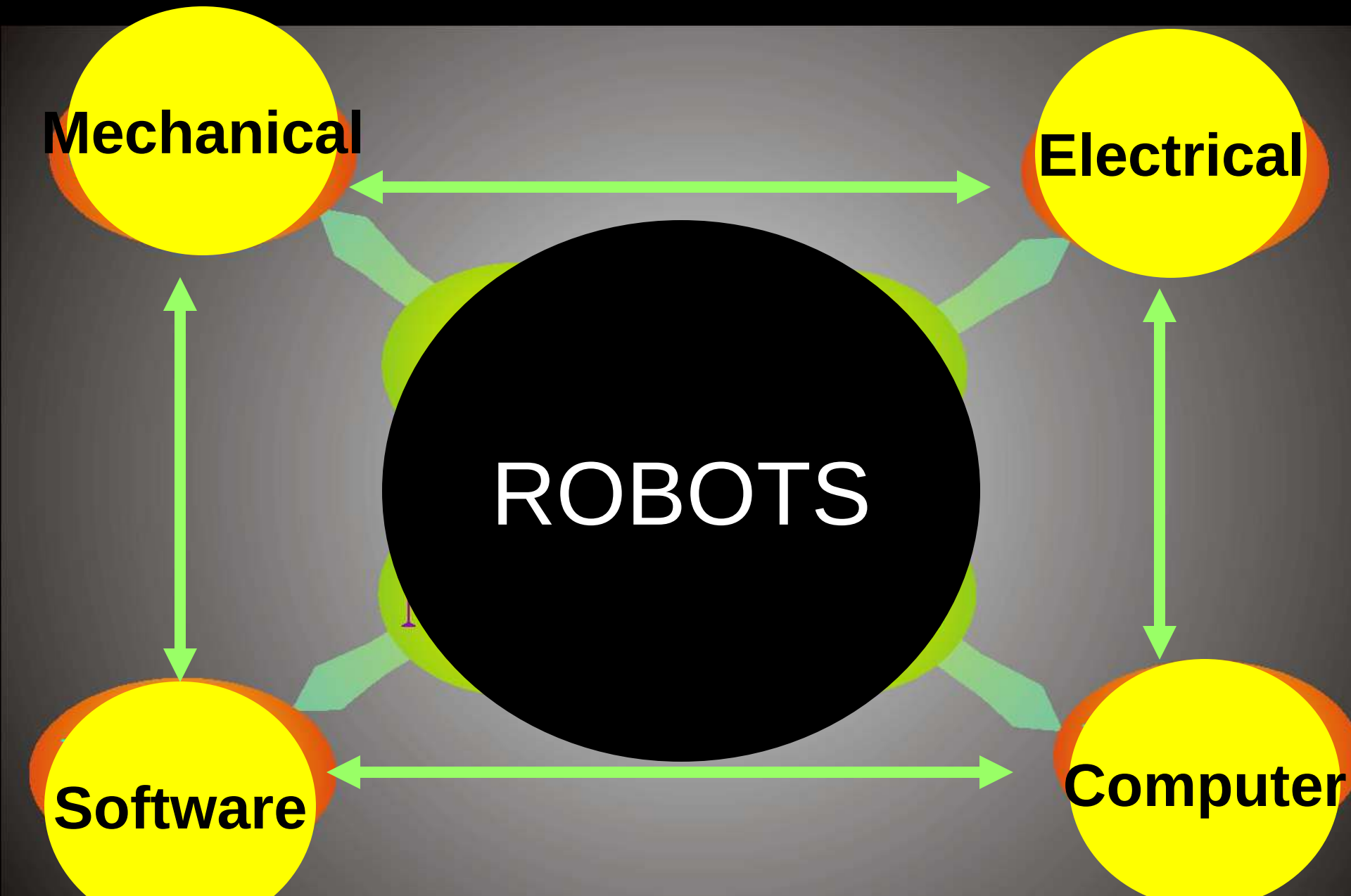
rigor = old knowledge--*the fundamentals.*

“I am looking at the intersection of these technologies—where they overlap.” --Mark Hoffman, ECET Program Coordinator, MCC

How do we cultivate innovation and innovators?



How do we cultivate innovation and innovators?



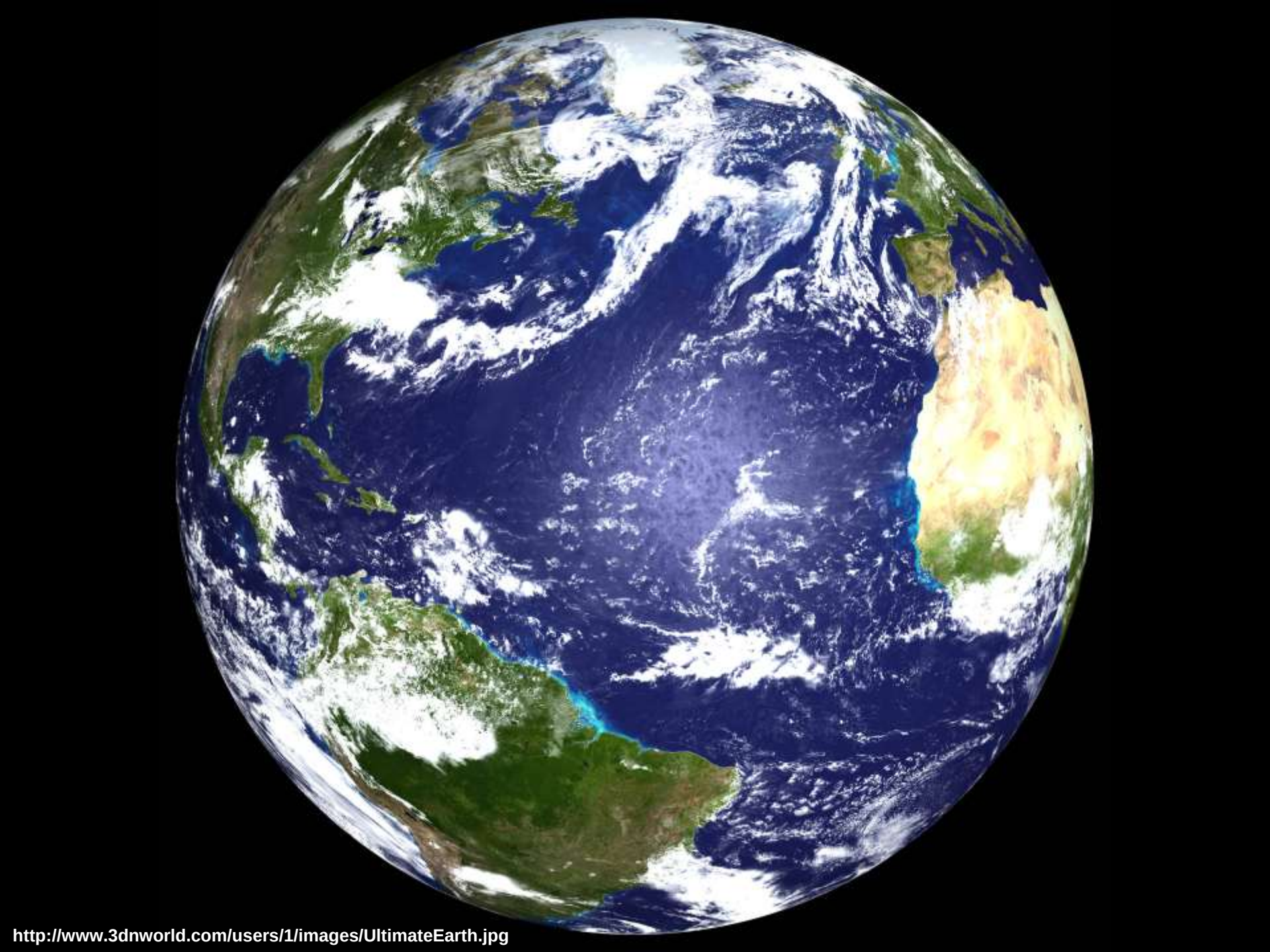
relationships =

systems.

Opto-Mechatronics Technician

Hawiian Translation

“Ahupua’a”



http://www.3dnworld.com/users/1/images/UltimateEarth.jpg

“Ahupua’a”

Integrated, holistic system

PACIFIC DISASTER CENTER

Fostering Disaster-Resilient Communities

NEW! PDC in Print Newsletter Issued to All MyPDC Subscribers!
Registered users of MyPDC have received their copies of PDC in Print. You can read the news and register to receive future issues.

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Weather & Hazards

24h

Default All *

PHFO: HST Apr 18 06:47 | GMT Apr 18 16:47
HIGH SEAS FORECAST

PHFO: HST Apr 18 05:49 | GMT Apr 18 15:49
HAWAII RAINFALL SUMMARY

PHFO: HST Apr 18 05:47 | GMT Apr 18 15:47
OFFSHORE WATERS FORECAST FOR HAWAII

PHFO: HST Apr 18 05:42 | GMT Apr 18 15:42
HAWAII AREA AVIATION FORECAST

PHFO: HST Apr 18 05:17 | GMT Apr 18 15:17
FIRE WEATHER PLANNING FORECAST FOR HAWAII

PGTW: HST Apr 18 04:36 | GMT Apr 18 14:36
TROPICAL CYCLONE WARNING

Partnerships

» View

Hawaii Emergency Contacts

» View

PDC Updates | Disaster News

Auto-refresh in 13:53

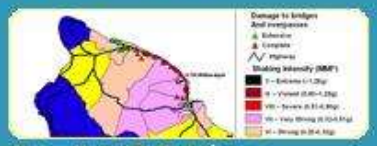
Ongoing

PDC Teams Up with Leo Wrobel of b4Ci to Offer Two-day Seminar
Famed author and PDC present "Disaster Recovery Planning: Communications and Critical Infrastructure" in two cities

08-Apr-2008

April is Tsunami Awareness Month in Hawaii
To be prepared, you must know both your risk and how to react to a warning.

PDC Solutions



Hawaii HAZUS Atlas

Preparing for Earthquakes in the State of Hawaii

more >>

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PDC Accomplishments

» 2005 - 2006
» 2004 - 2005
» 2003 - 2004
» Ten Year Retrospective

relevance = currency to the *world*—past, present and/or future.

“If the end goal is innovation, creativity, problem solving, critical thinking… We can not continue to look at the world through a pin hole.”

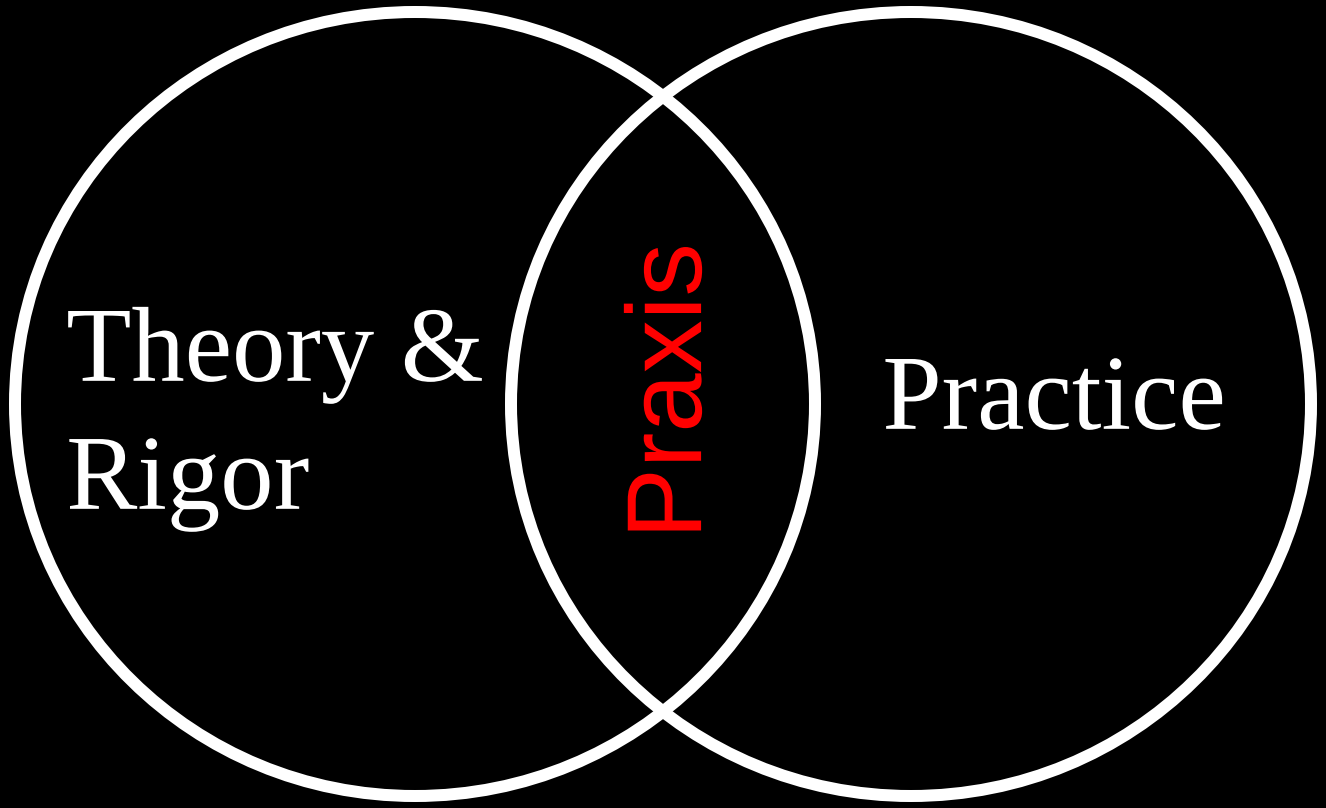
--Dr. Warren Hitz, Kamehameha Schools

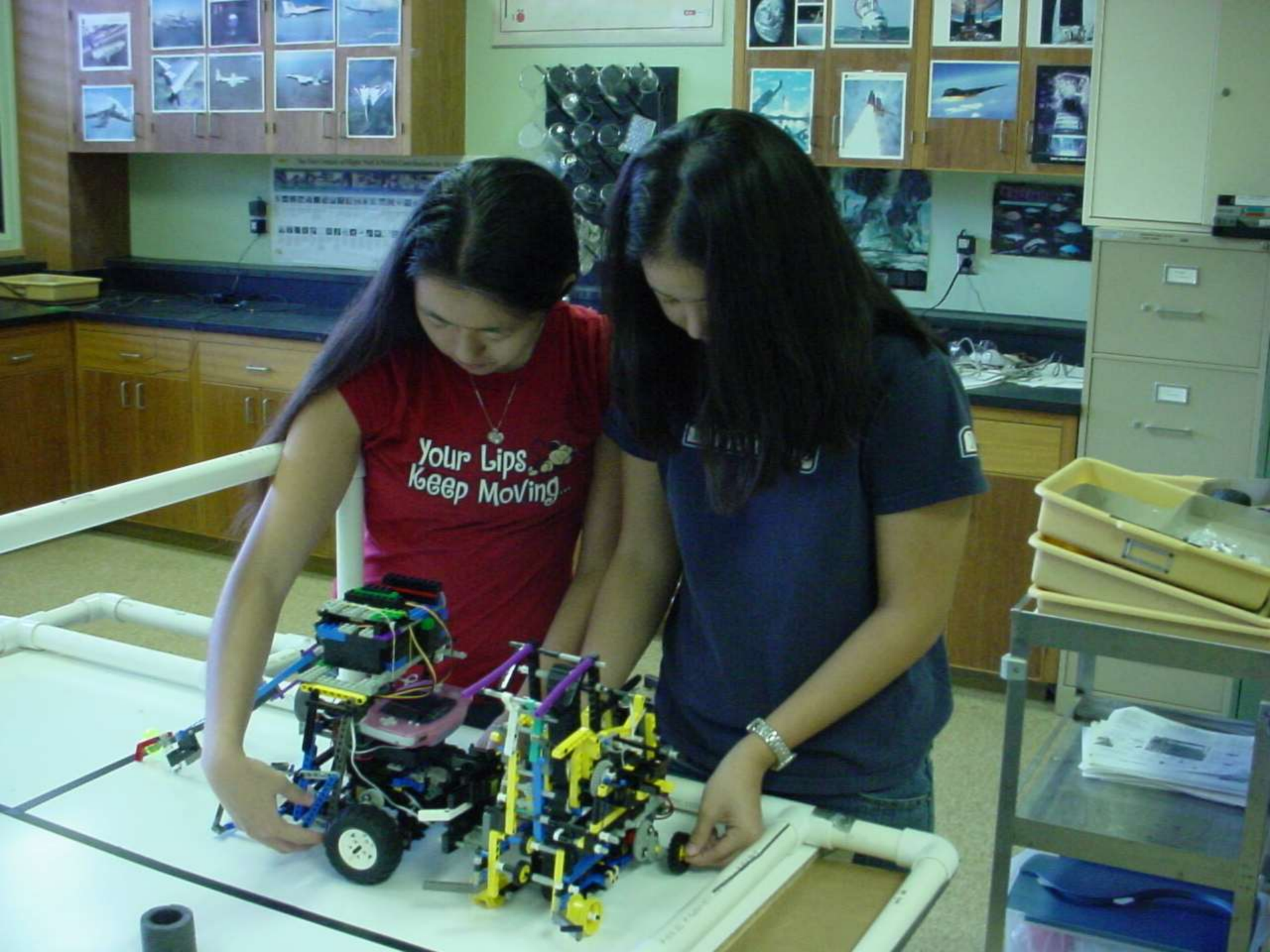
“Hoʻohanalima”

“Ho’ohanalima”

Learning by doing

translating ideas into action



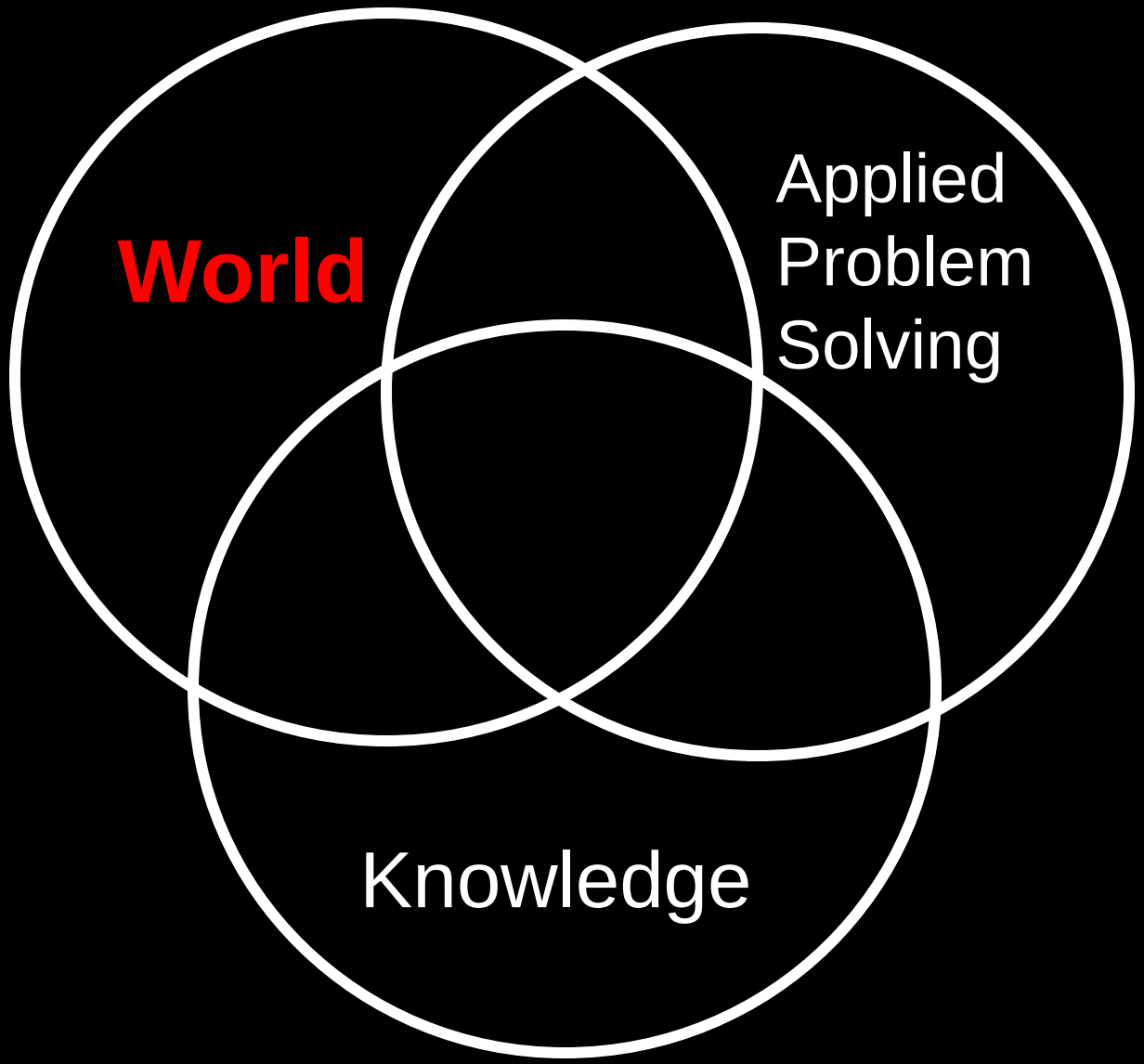

Your Lips
Keep Moving...

Environmental impact study during the reconstruction of Koie'ie Fishpond located in north Kihei– Kihei Charter School

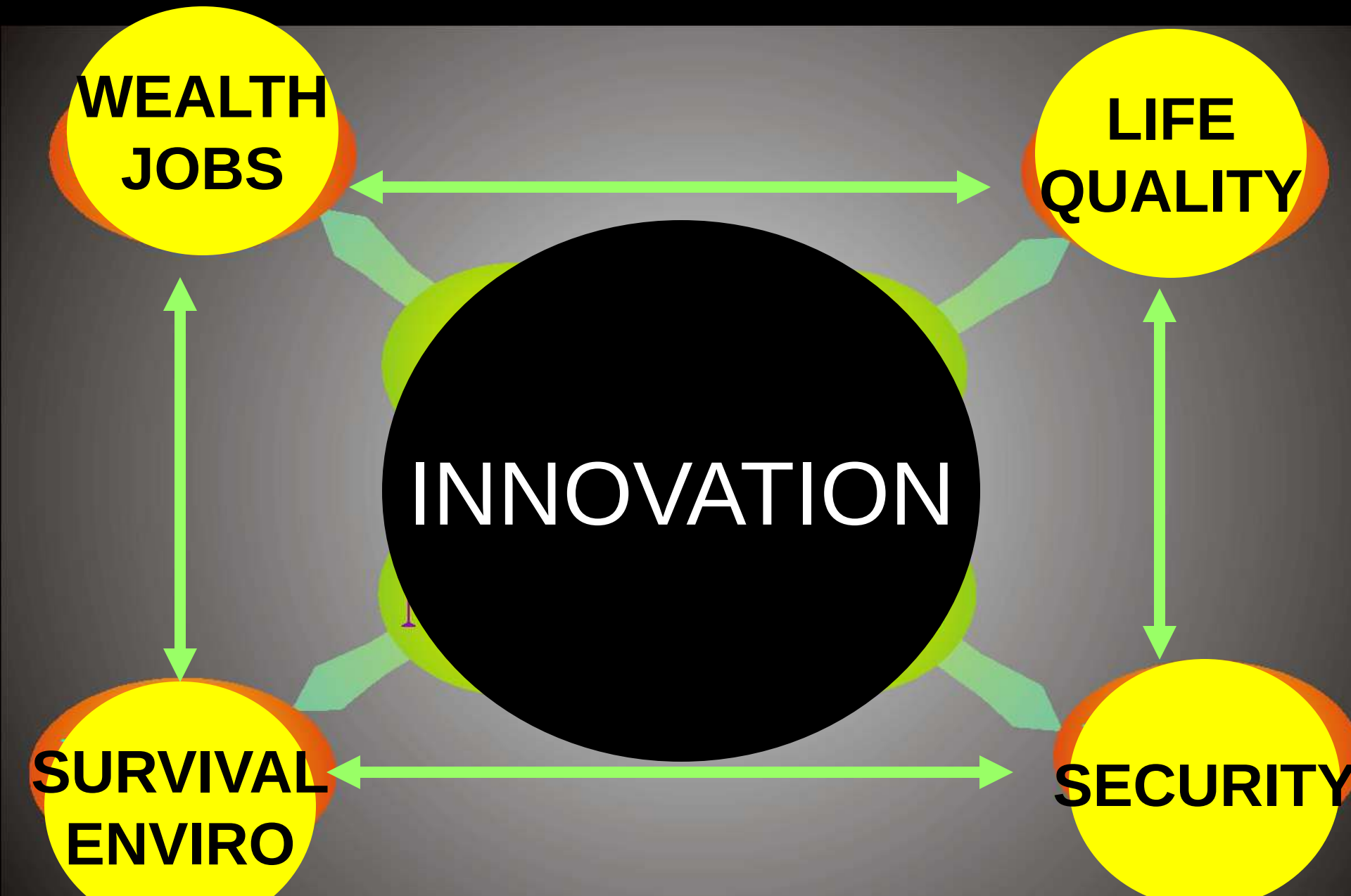
Opihi Population Health Assessment Research Study– Kihei Charter School

Waipulani Longitudinal Algae Research Project – Kihei Charter School

The key missing literacy of the 21st century is transdisciplinarity.



How do we cultivate innovation and innovators?



Innovation is a function of moving beyond the disciplines, solving real world problems and integrating theory and applied techniques to create new knowledge, tools, processes, systems, environments, etc.

In a word *transdisciplinarity*.

ELEMENTS

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TECHNOLOGY,

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BOSTON.

HILLIARD, GRAY, LITTLE, AND WILKINS.

1829.

“Discovery is the process of science; invention is the work of art.”

–Jacob Bigelow, M.D., Elements of Technology 1829

October 30, 2010, Denton High School Automotive Technology Program students set a new world record of a 1/8 mile in 9.93 seconds at the National Electric Drag Racing Association's class DR/H 72 volt Dragsters. The previous record stood at 10.49 seconds in the 1/8 mile since 2002. --Denton Record Chronicle

http://www.dentonrc.com/sharedcontent/utilities/clickedimage/index.html


Pre Architecture

Pre Med


Pre Law

Pre Engineering


Welding Tech


CISCO Network Tech

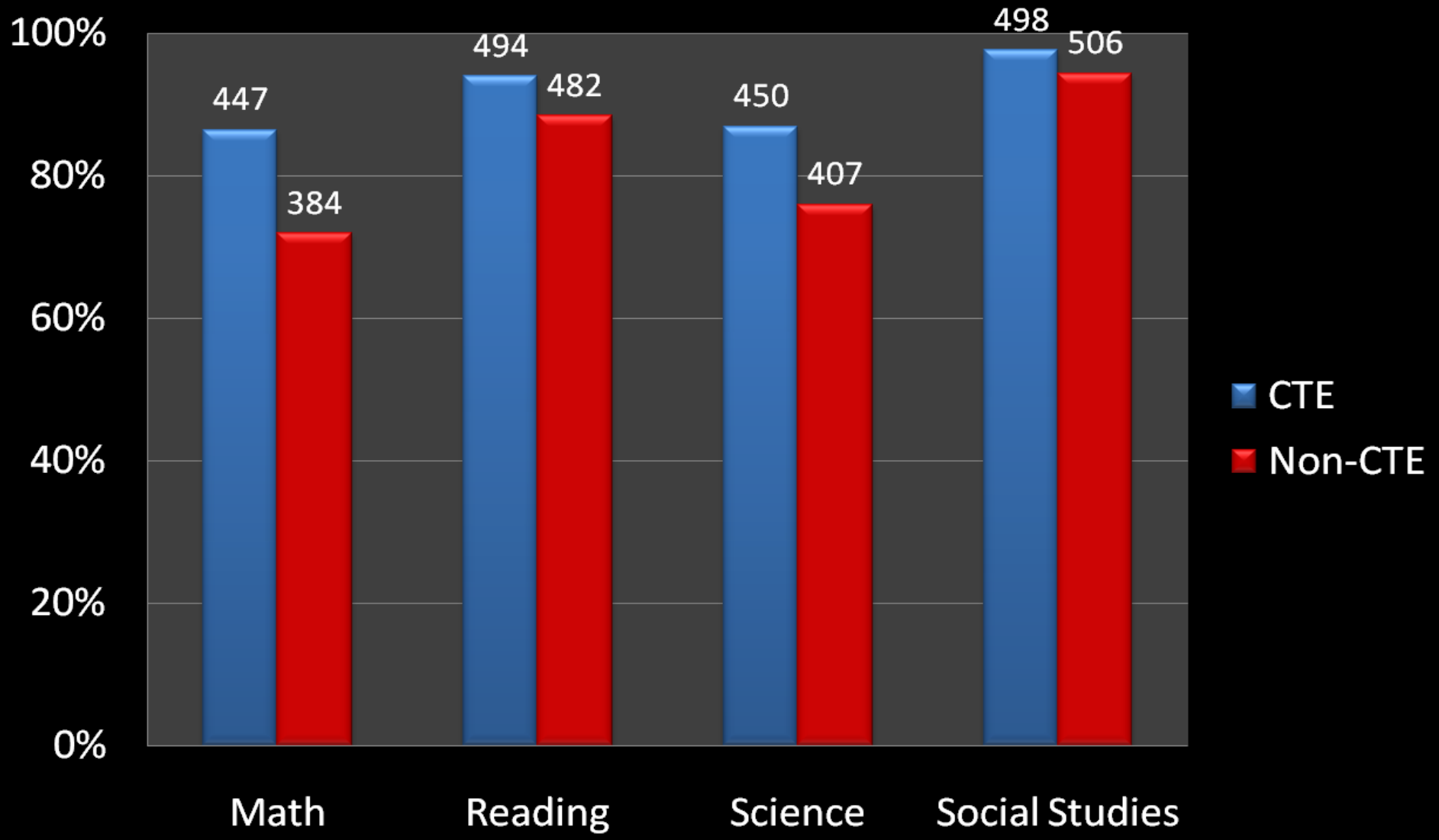

CSI & Crime Scene Tech


911 and Emergency Operations

Arts, A/V Tech & Communications

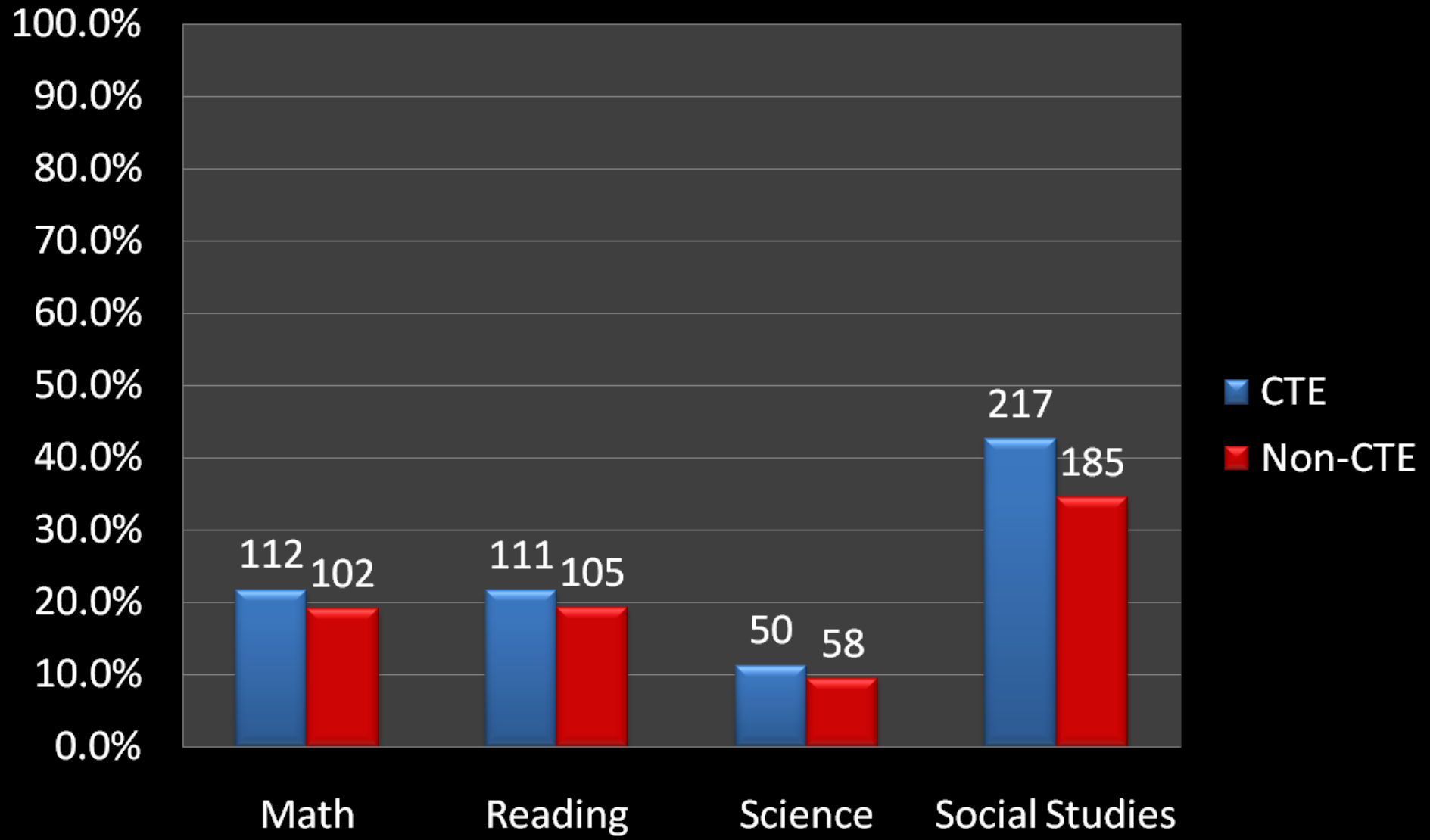

Arts, A/V Tech &
Communications

2007-2008
11 Grade TAKS
Met Standard



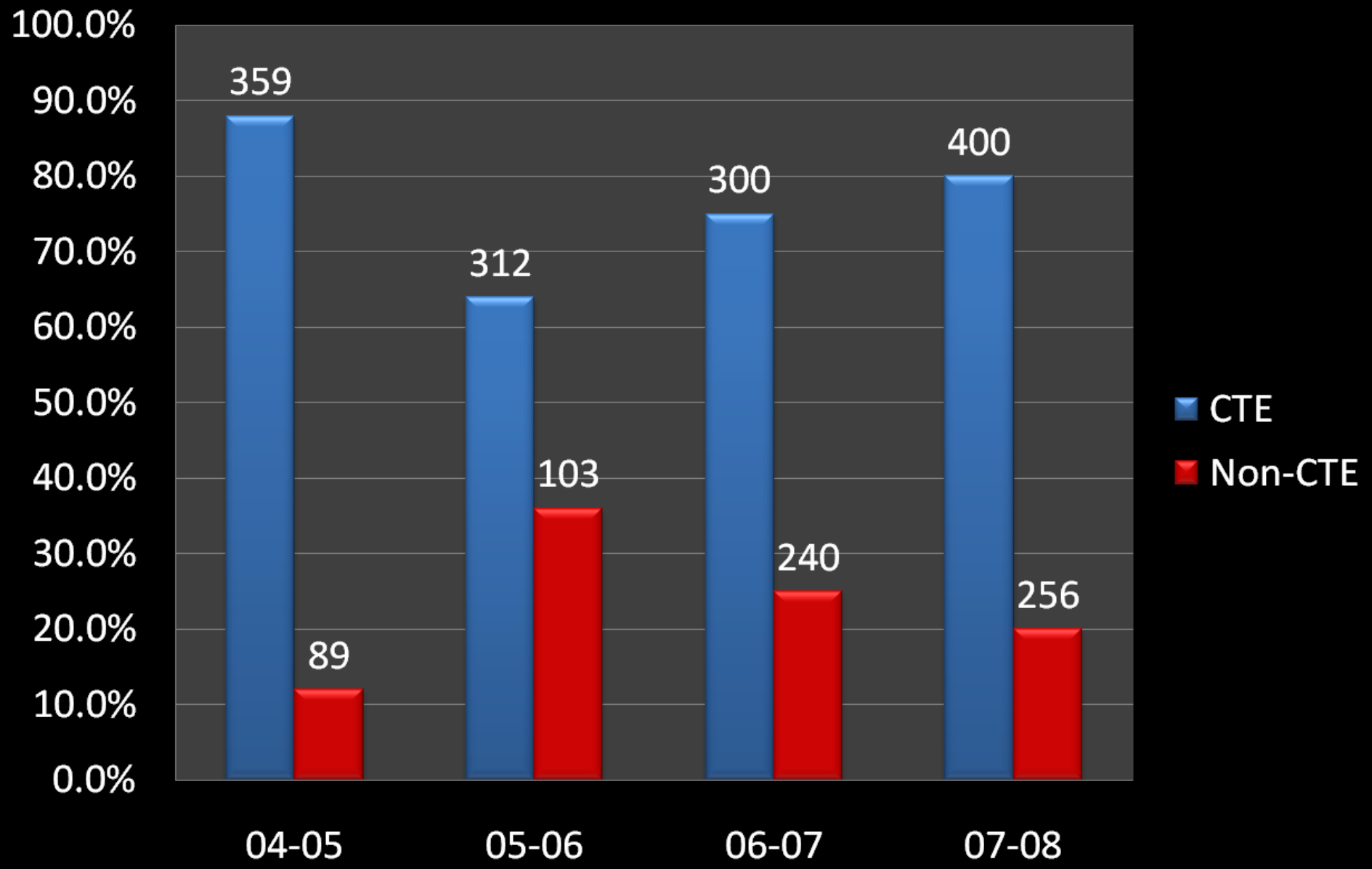
Outcomes* - CTE is defined as Texas CTE 2 and 3. Non-CTE is defined as CTE 0 and 1.

2007-2008
11 Grade TAKS
Commended

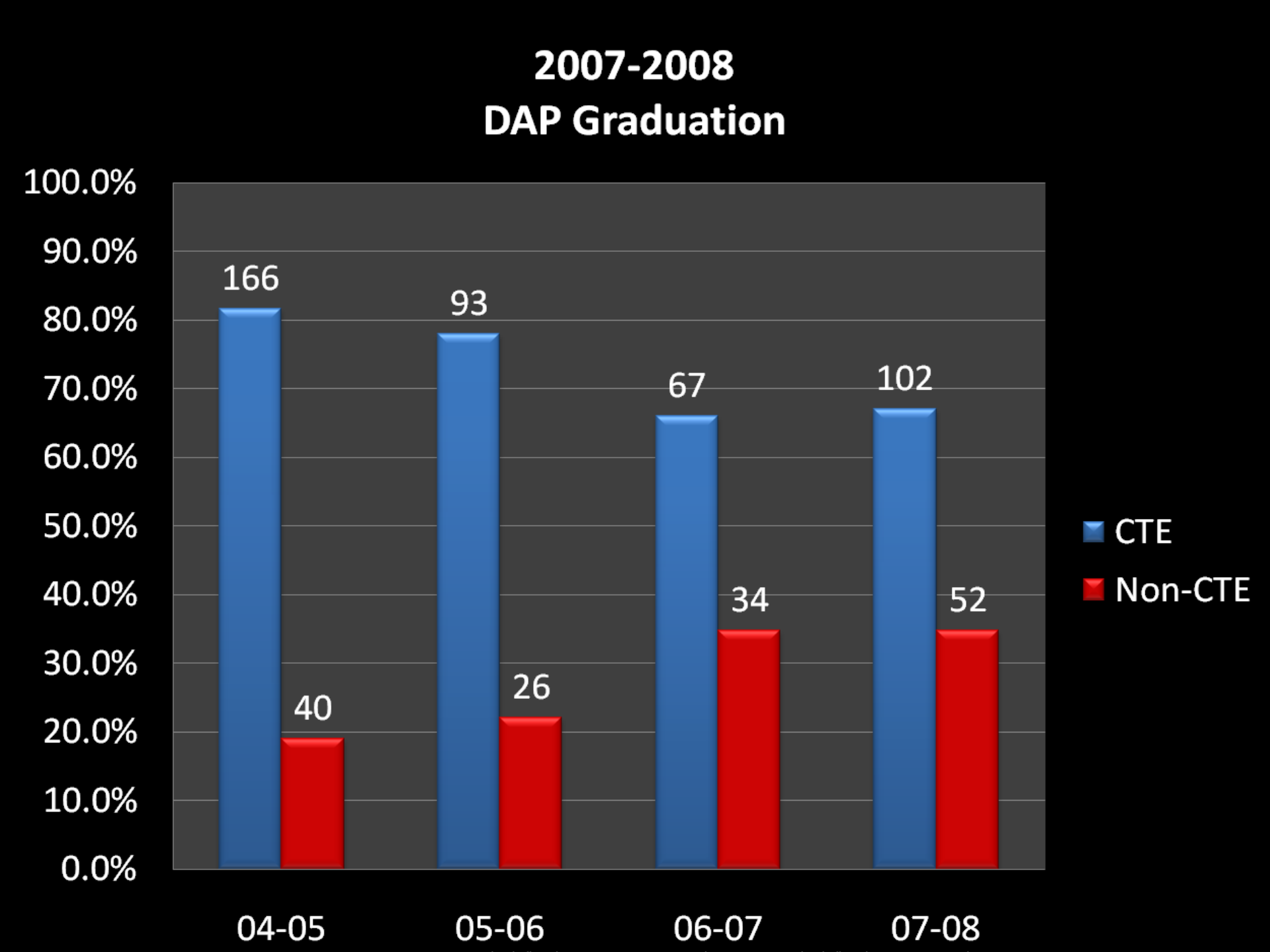


Outcomes* - CTE is defined as Texas CTE 2 and 3. Non-CTE is defined as CTE 0 and 1.

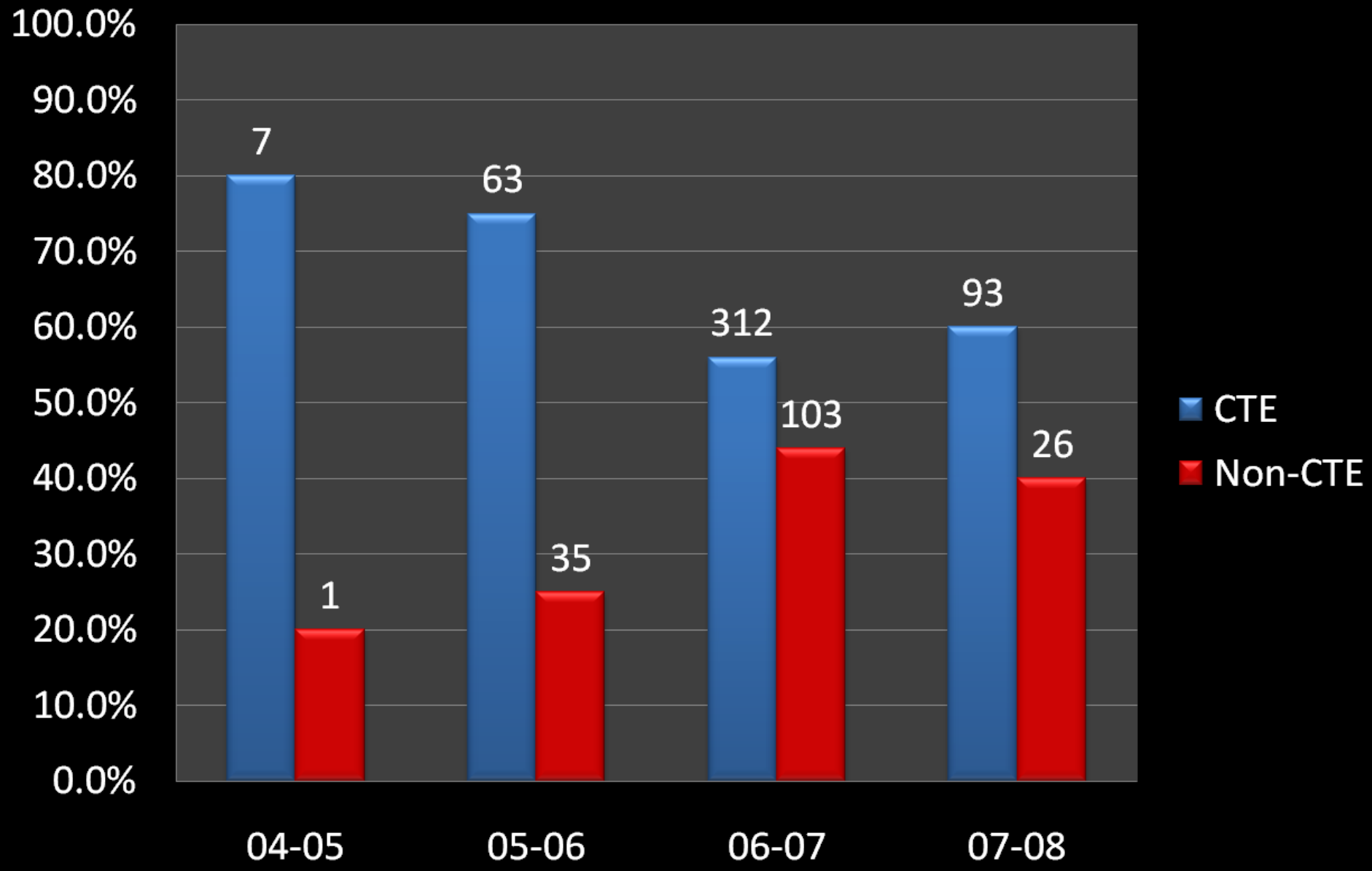
2007-2008
Recommended Graduation



Outcomes* - CTE is defined as Texas CTE 2 and 3. Non-CTE is defined as CTE 0 and 1.


2007-2008
DAP Graduation
100.0%
90.0%
80.0%
70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
166
40
93
26
67
34
102
52
04-05
05-06
06-07
07-08
CTE
Non-CTE

2007-2008
Minimum Graduation



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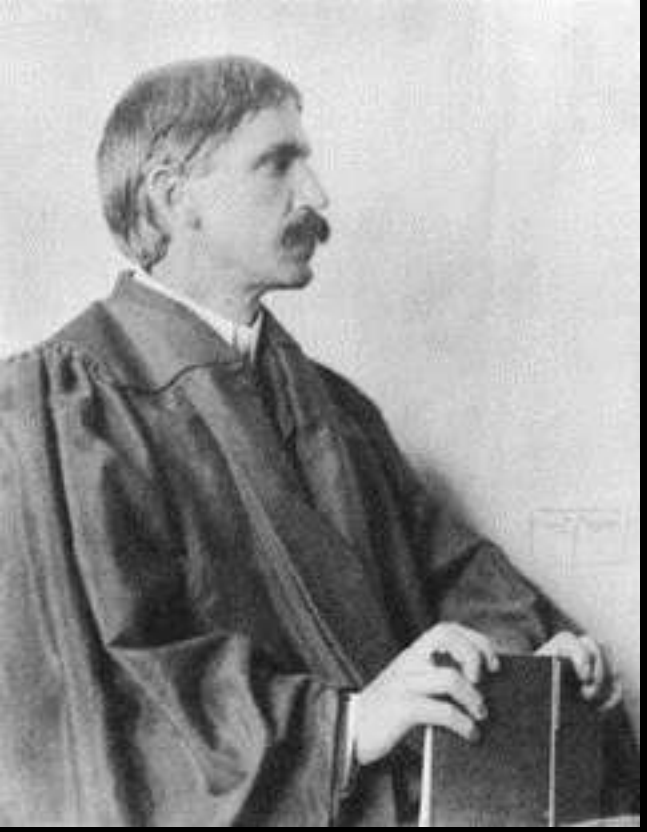


http://www.lib.uchicago.edu/projects/centcat/centcats/fac/facch08_01.html

John Dewey (1858-1952) and the Progressive Education Movement

"Parents were attracted by a curriculum that emphasized the child instead of the subject matter, where the learning process was at least as important as what was learned, and where curiosity was encouraged."

"Education through experience formed the foundation of the Laboratory School curriculum. Students learned practical skills from weaving to woodworking to sculpting. Science was mastered in the garden as well in the classroom, where sandboxes offered opportunities for individual experiments in landforms and erosion."

--University of Chicago, Centennial Catalogues

Courtesy of Miss Elisabeth Irwin, Public School 61, New York

THE NEW AND THE OLD IN EDUCATION

Above: Freedom! Pupil initiative! Activity! A life of happy intimacy — this is the drawing-out environment of the new school. *Below:* Eyes front! Arms folded! Sit still! Pay attention! Question-and-answer situations — this was the listening régime.

THE CHILD-CENTERED SCHOOL

AN APPRAISAL OF THE NEW EDUCATION

BY

HAROLD RUGG AND

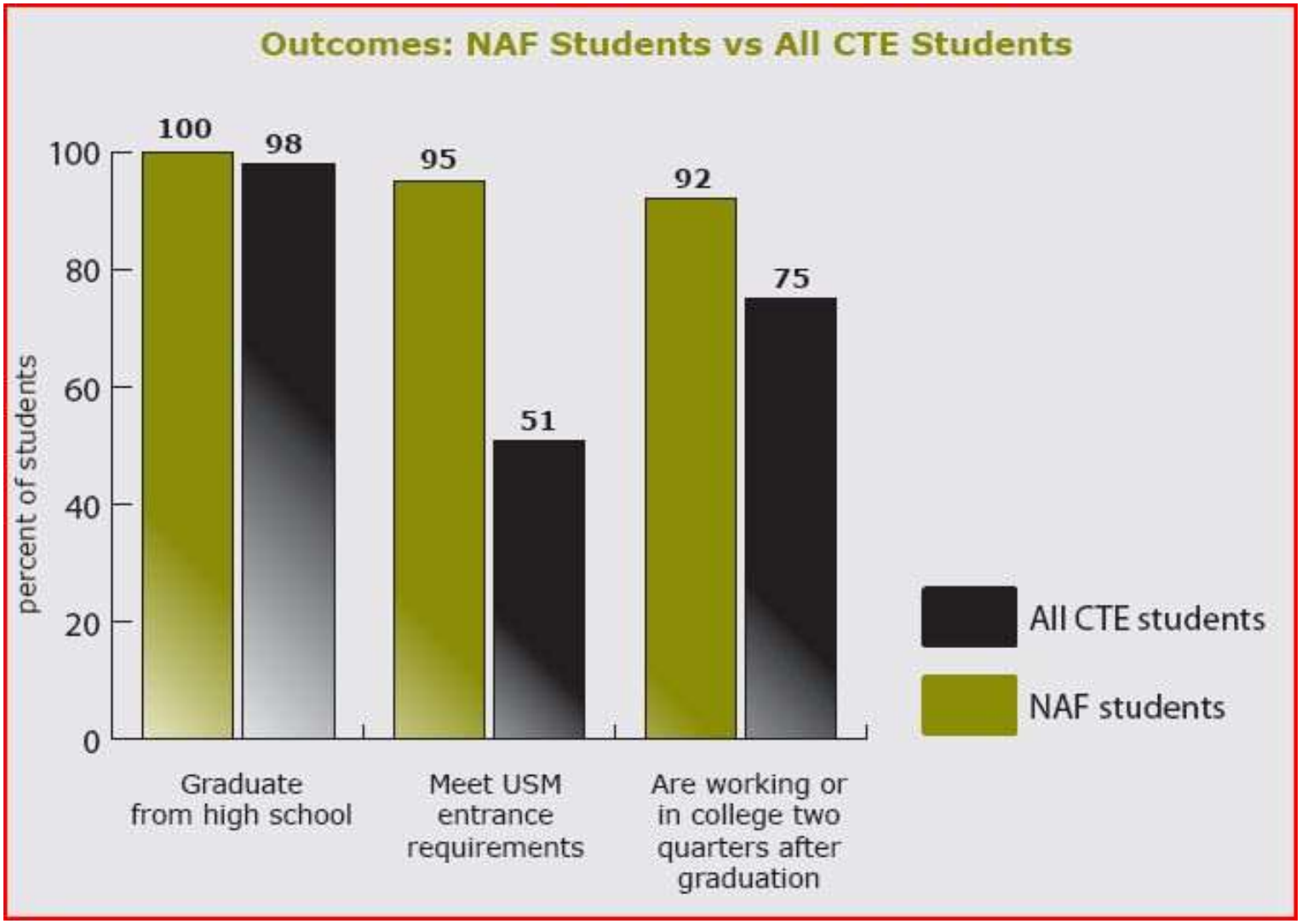
ANN SHUMAKER

The Lincoln School of Teachers College

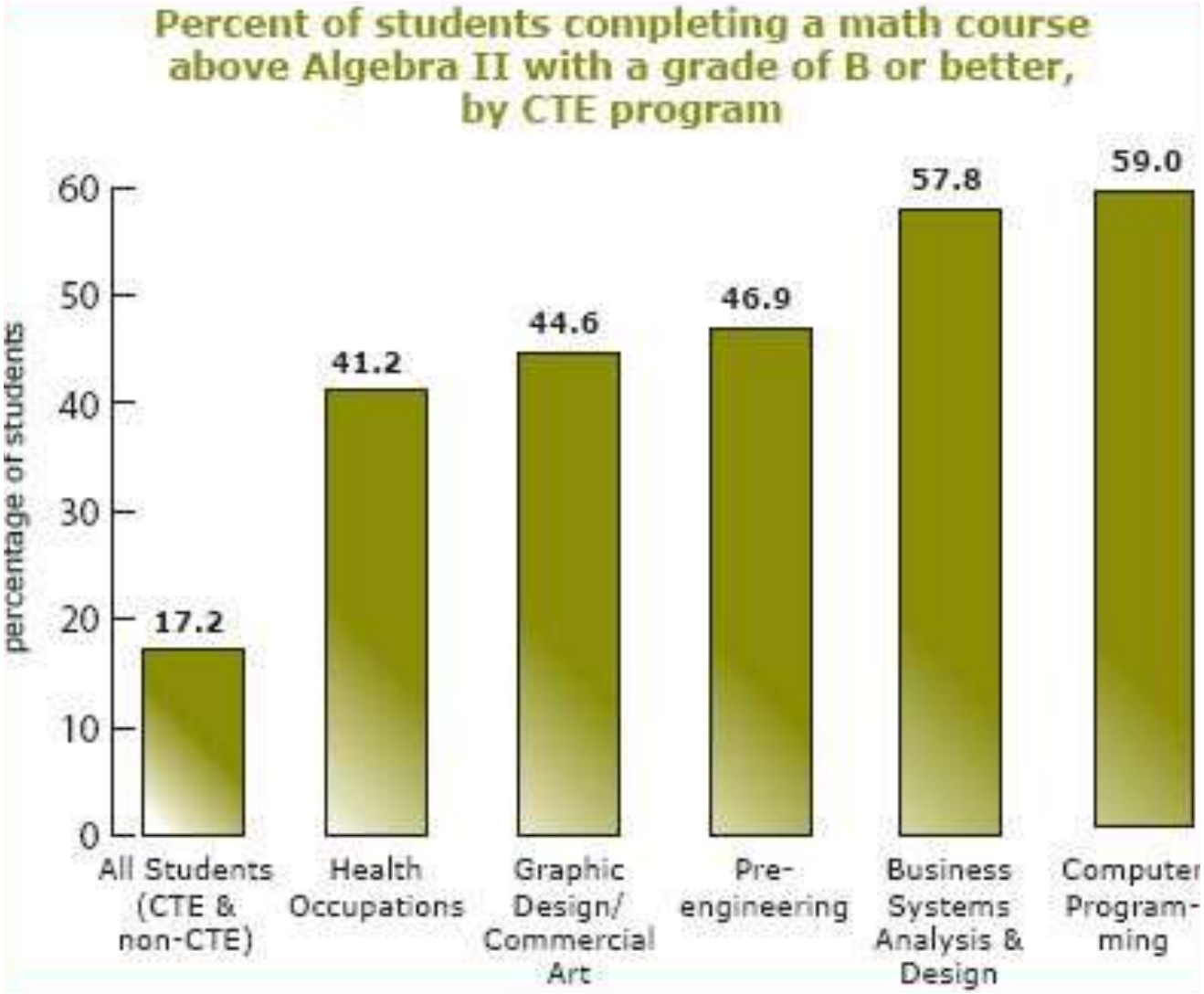
WORLD BOOK COMPANY

Yonkers-on-Hudson, New York and Chicago, Illinois

Maryland



Maryland Classroom: CTE: Educating Tomorrow's Workforce Today, April 2008



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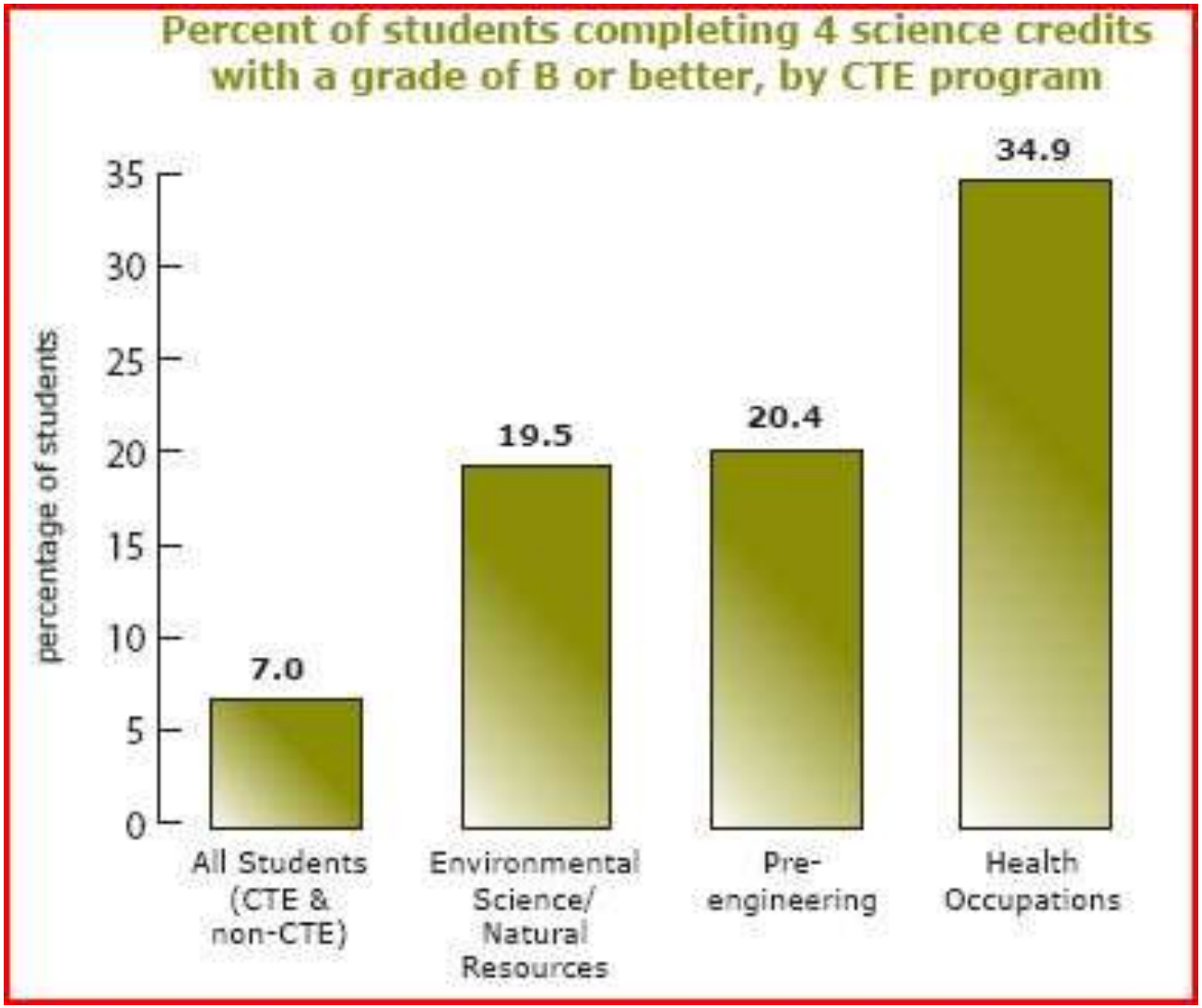


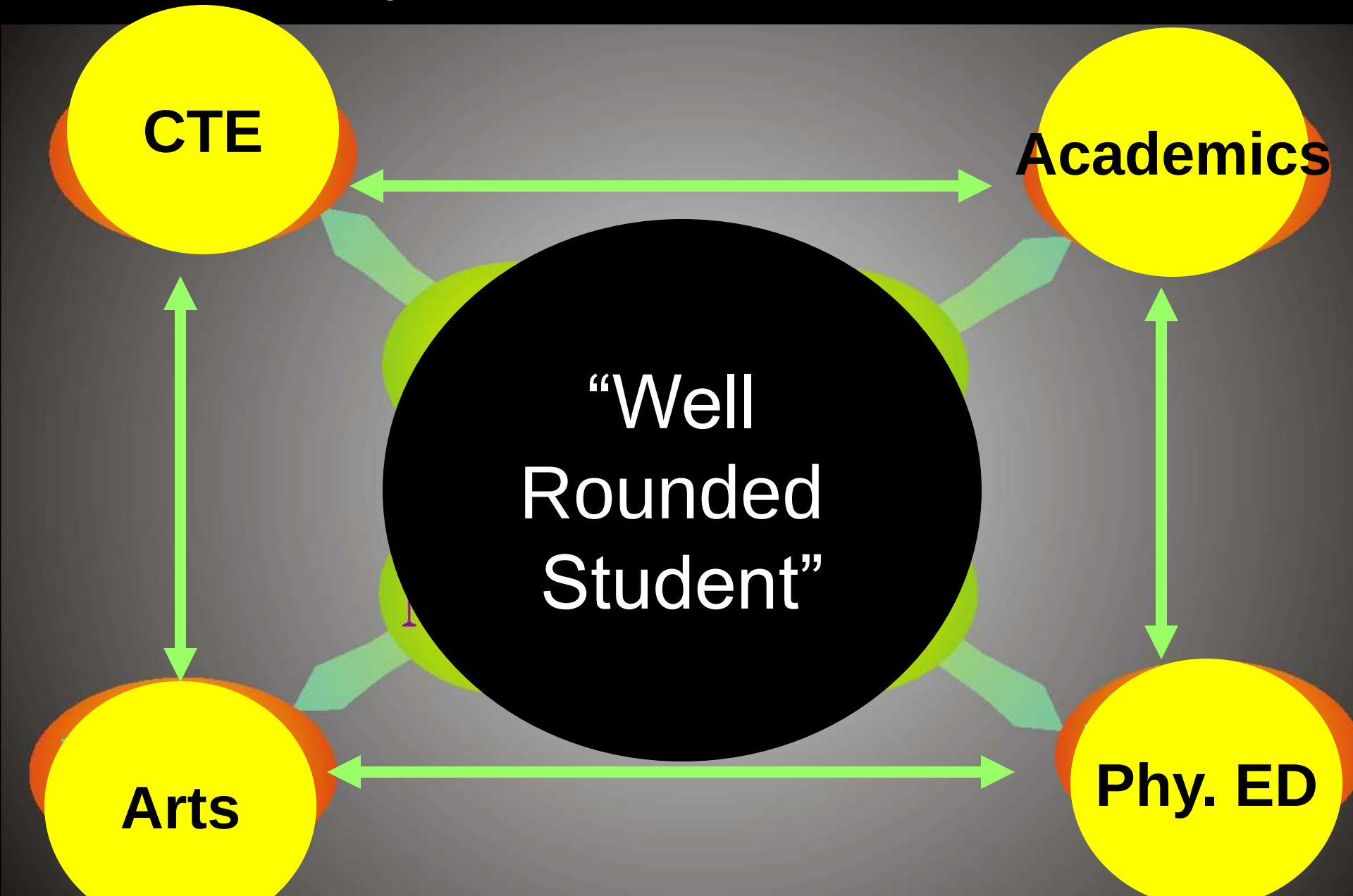
Maryland Classroom: CTE: Educating Tomorrow's Workforce Today, April 2008

TEAMS Model Schools

Systems of Systems

- High degree of faculty interaction across disciplines and grades (systems)
- Integrating CTE, Arts and Academics (systems)
- Learning laboratories and worldly experience with industry-standard tools, processes and problems (systems)
- Emerging P-20 systems (P-20) -- Sequenced, integrated and transferable courses HS to CTC to University (systems)
- Transdisciplinary culture (systems) Context and frame for learning is real world, purpose driven and action oriented.

The fundamental question of the 21st century is how do we organize to produce innovation and innovators?

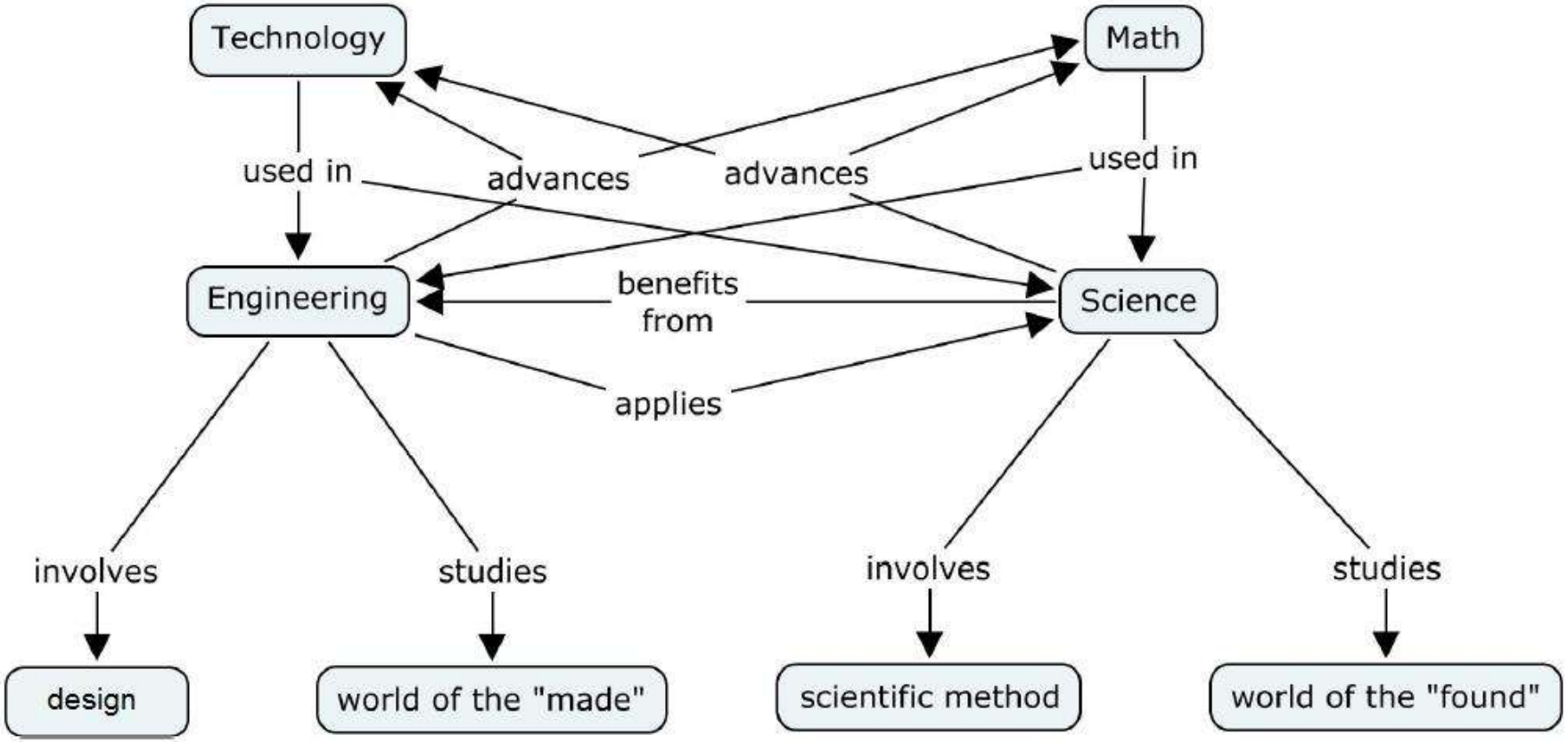


The Hands-On Approach: Building a different breed of engineer at Olin College.

By JOHN SCHWARTZ

Published: September 30, 2007, New York Times Magazine

http://www.nytimes.com/2007/09/30/magazine/30OLIN-t.html?_r=1



Dr. David Thornburg, Center for Professional Development

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BOSTON.

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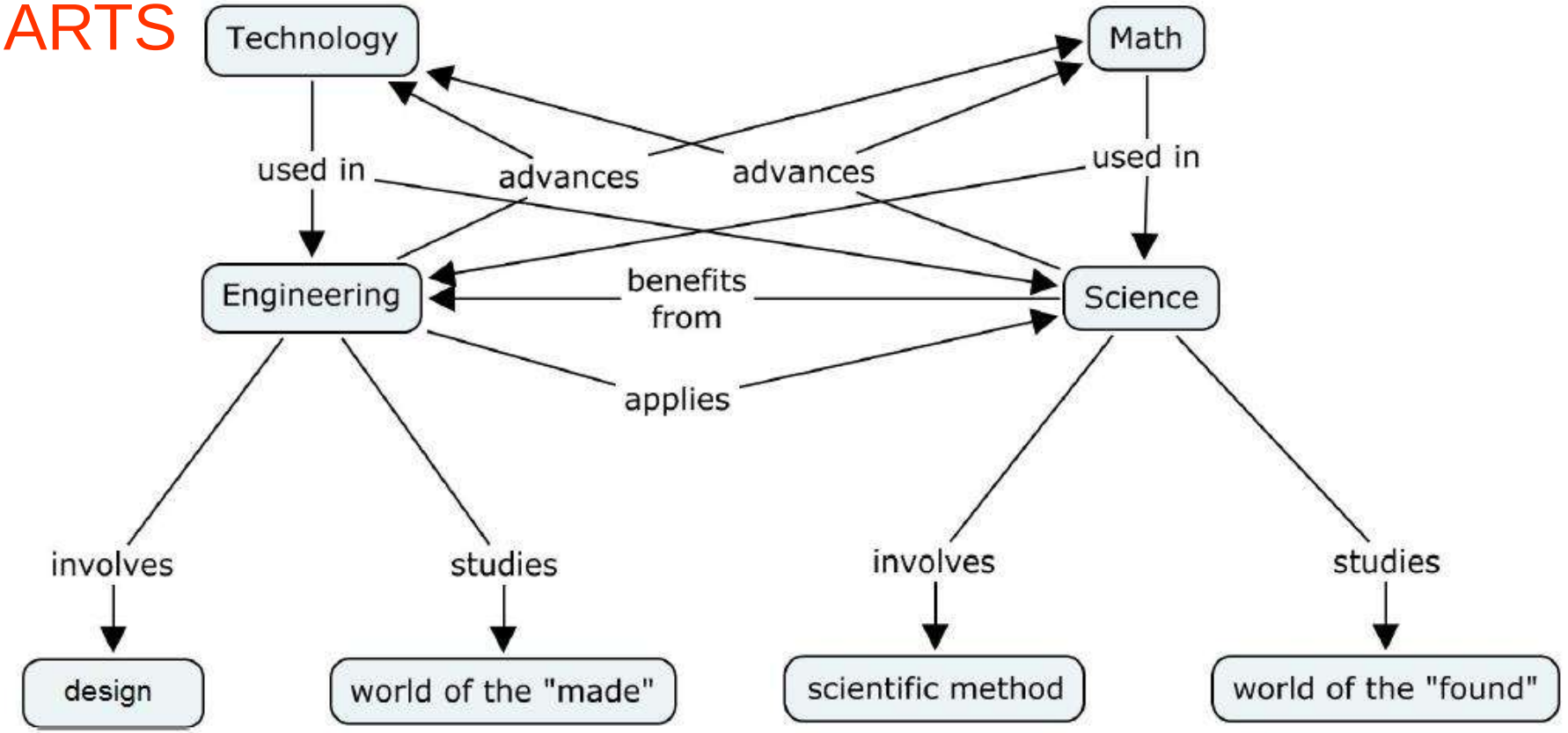
1829.

Dr. David Thornburg, Center for Professional Development.

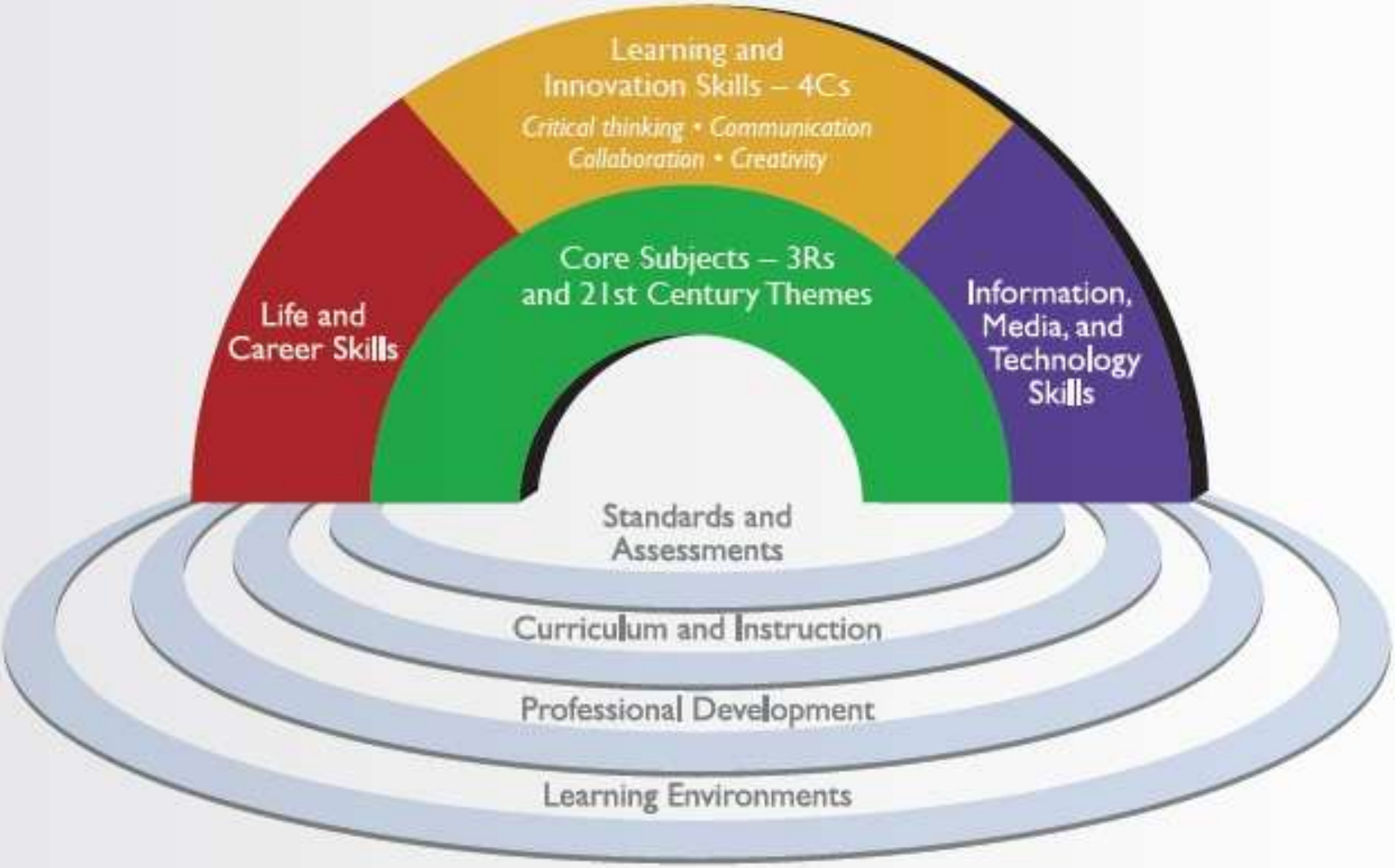
"Design and Arts," adapted by Jim Brazell, 2008.

TEAMS

ARTS



21st Century Student Outcomes and Support Systems



Malcolm Knowles (1913-1997)

Andragogy, not pedagogy (1968)

1. Adults need to know the reason for learning something (Need to Know)
2. Experience (including error) provides the basis for learning activities (Foundation).
3. Adults need to be responsible for their decisions on education; involvement in the planning and evaluation of their instruction (Self-concept).

http://en.wikipedia.org/wiki/Andragogy

Knowles' theory can be stated with six assumptions of adult learning:

1. Students need to know the reason for learning something (Need to Know)
2. For Students experience (including error) provides the basis for learning activities (Foundation).
3. Students are responsible for their decisions on education and involved in the planning and evaluation of their instruction (Self-concept).

http://en.wikipedia.org/wiki/Andragogy

Knowles' theory can be stated with six assumptions of adult learning:

4. Students are most interested in learning subjects having immediate relevance to their work and/or personal lives (Readiness).
5. Students is problem-centered rather than content-oriented (Orientation).
6. Students respond better to internal versus external motivators (Motivation).

http://en.wikipedia.org/wiki/Andragogy

STEM Mainstreaming CTE Practice

Video games for what?

Emergence of the 5th World.

Robots, they're here!

What do you think of when I say video game?

XBOX 360

In 1994 a single super computer with the power of an X-box did not exist.

USC ISI and Tactical Language Training

(ITSEC 2005)

"While we tend to focus on simulators associated with our flying mission such as aircrew training, air traffic control and aircraft maintenance ... the fact is simulators permeate every aspect of qualification training in the United States Air Force, as well as the other military services," General Rice said.

An array of simulation systems supporting all of the military services, first responders, the Department of Homeland Security and the health care industry were on display across some 220,000 square feet of floor space. The environments featured technologies to enhance capabilities ranging from irregular warfare to casualty care and serious games.

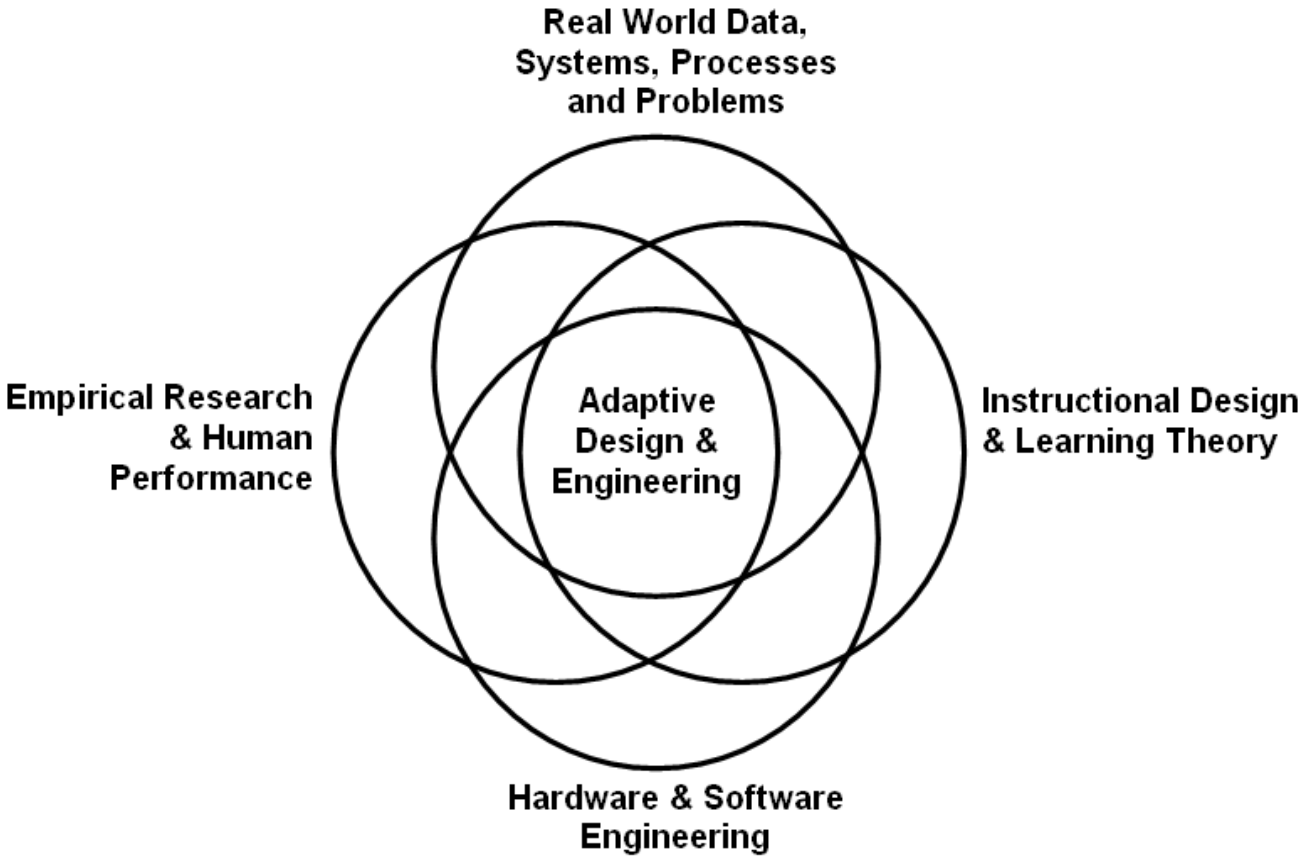
Case study: Emergency Response Training, Pjotr van Schothorst VSTEP BV, Rotterdam, The Netherlands

Pulse!!

$7.5 million project that immerses students in the hectic environment of a hospital's intensive care unit and places them in a first-person role as a health-care professional. Funded by the U.S. Office of Naval Research, Pulse!! is being developed by Texas A&M-Corpus Christi, which in turn hired Hunt Valley (Md.)-based BreakAway to produce and design the platform. –Business Week

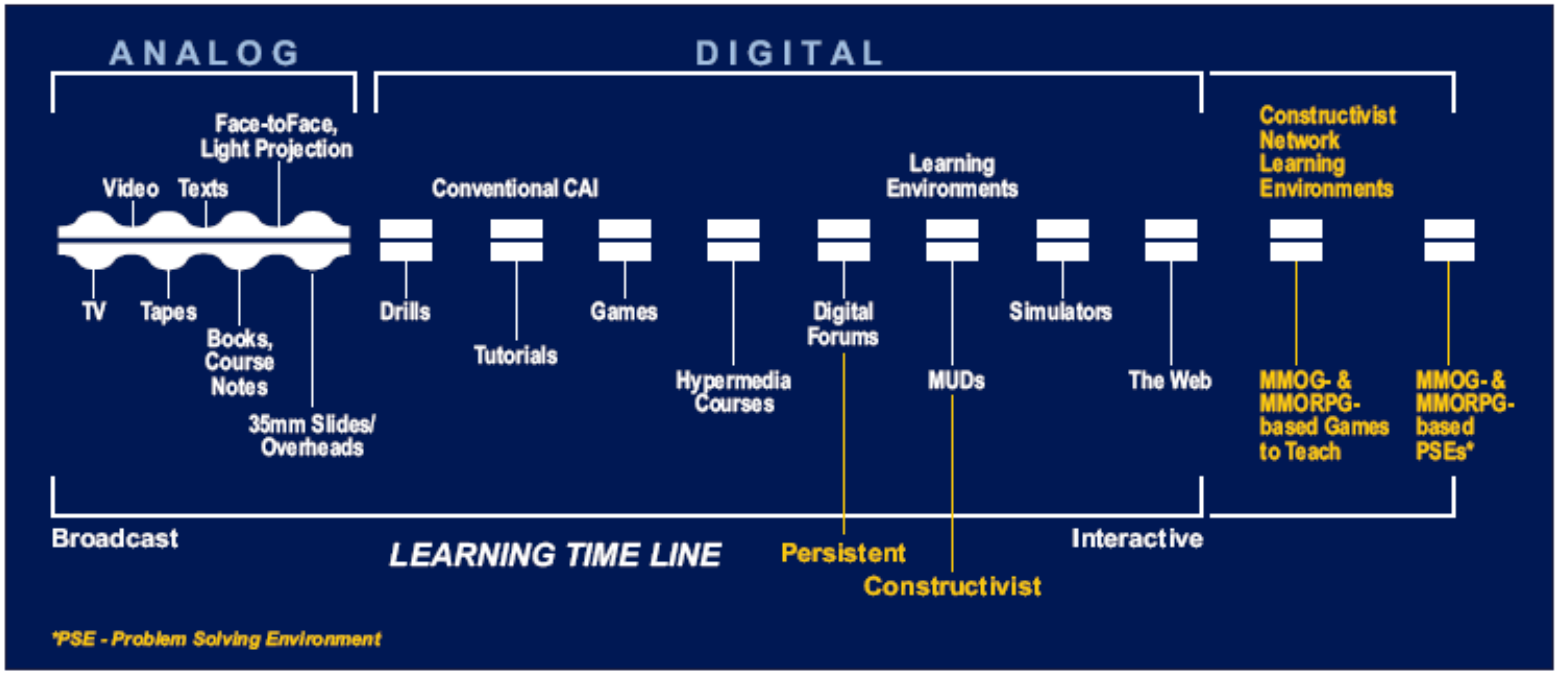
“Joe Medic”

UT Austin DMC and
Fort Sam Houston
AMED NCO Academy



Recommendation #1: Increase emphasis on evaluating the effectiveness of new learning technologies and approaches to designing and implementing such systems. Use an adaptive learning approach that integrates real world problems, data, processes and systems; empirical research and human performance; and instructional design and delivery. The key is to integrate empirical research into the design and implementation of new modes of learning in order to inform future selection and variation of learning systems. **This requirement is also shared by the US Department of Education (DOE) and the National Science Foundation (NSF) in its efforts toward educational reform especially in Science, Technology, Engineering and Mathematics (STEM).**

Figure 38 Evolution of the Technologies of Learning



IC² Institute, adapted from Tapscott, 1998

Video Games: A Route to Large-Scale STEM Education? Merrilea J. Mayo, 1/2/2009, sciencemag.org

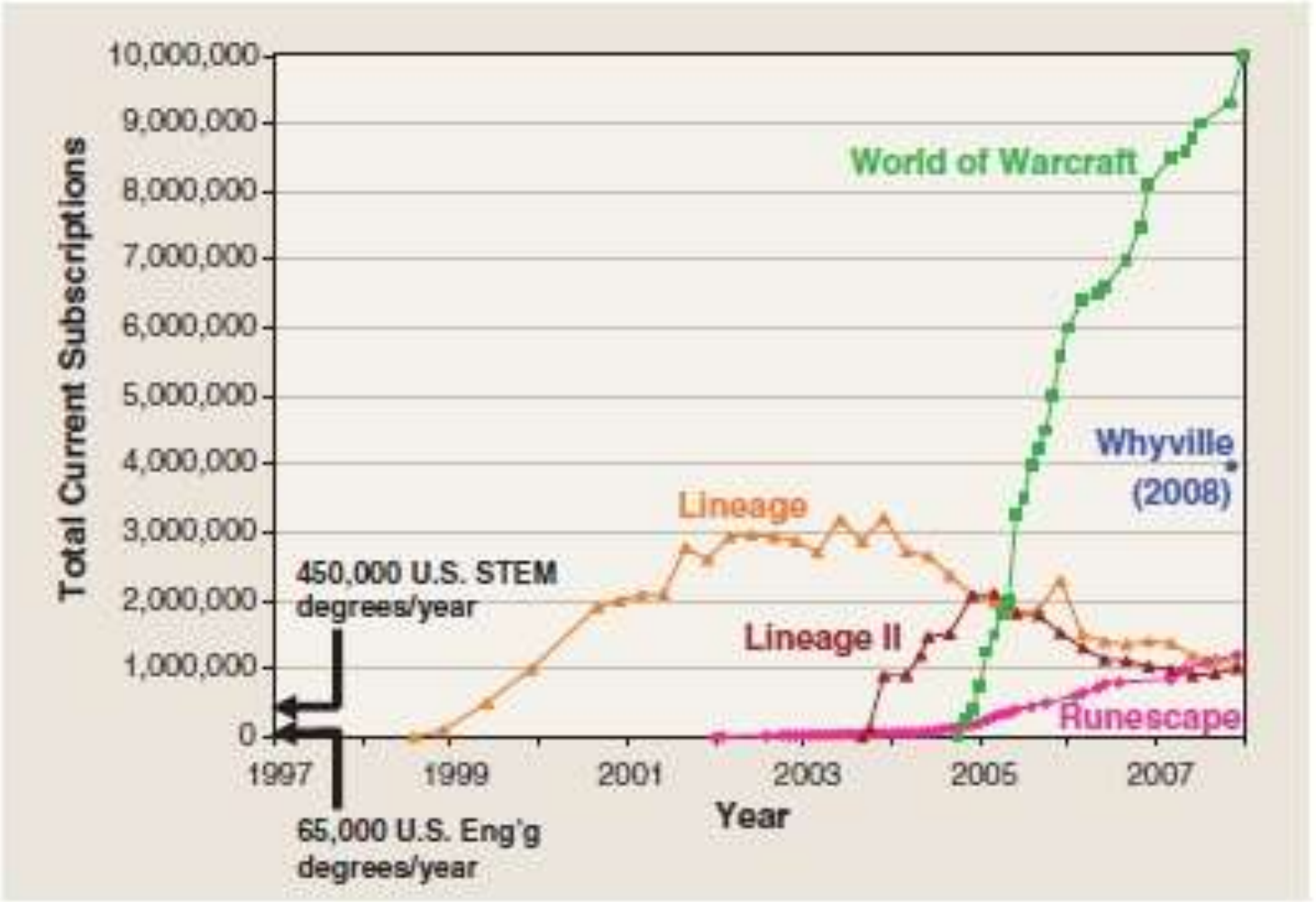


Fig. 1. Comparison of online game subscriptions (*3*, *7*) to U.S. bachelor's degrees awarded across all STEM disciplines (*1*) as well as in just the engineering disciplines (*1*). Games having more than 1 million subscribers are shown.

More children vote in whyville elections per capita than US elections.

www.whyville.net

Whyville Senators

OrEoBaBy

Sooner

Toyota Financial Services: Whyville Branch

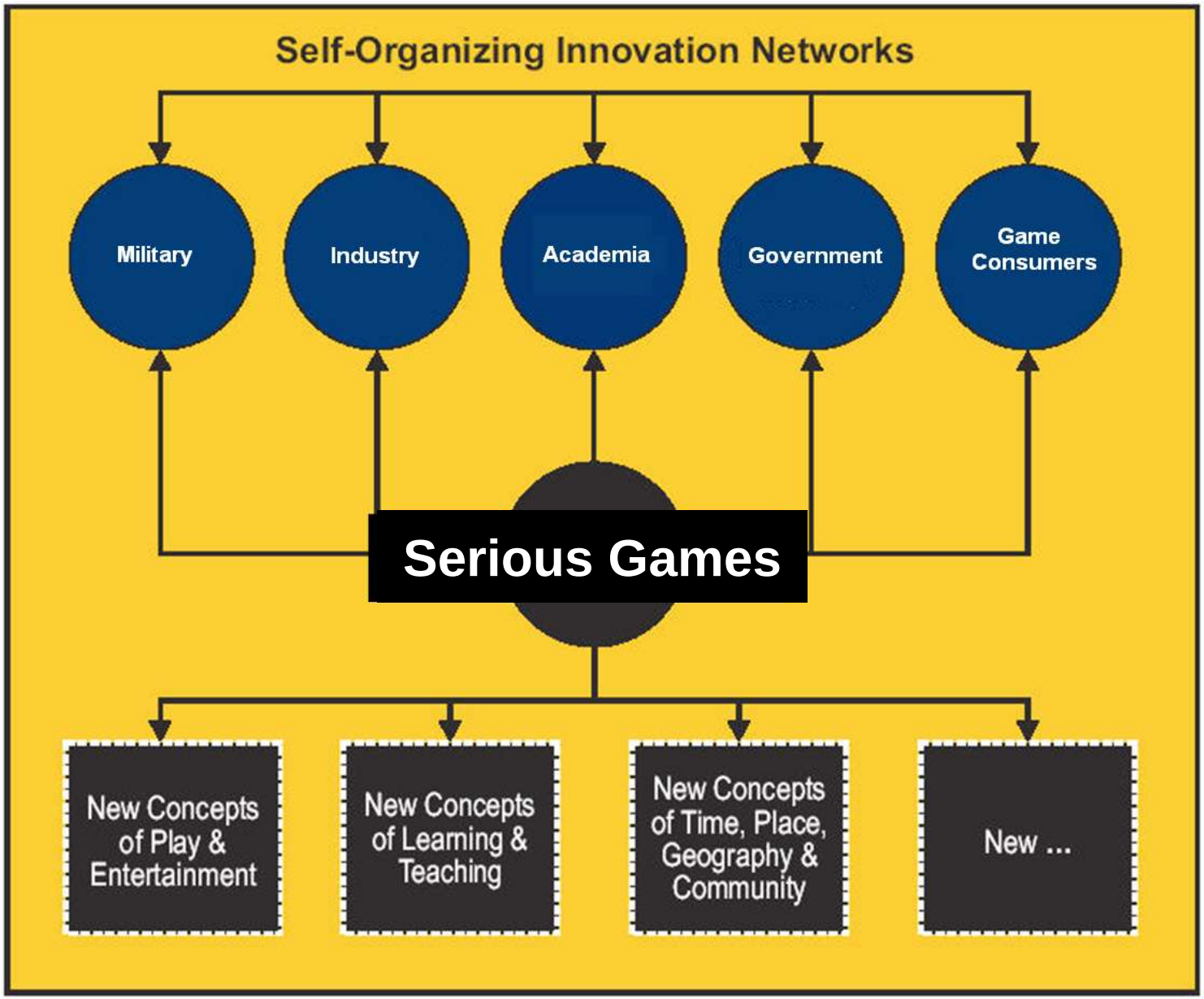
www.whyville.net

"How Can I improve my credit rating??"

SCION SOLUTIONS

powered by Toyota Financial Services

Whyville.net


Self-Organizing Innovation Networks
Military
Industry
Academia
Government
Game Consumers
Serious Games
New Concepts of Play & Entertainment
New Concepts of Learning & Teaching
New Concepts of Time, Place, Geography & Community
New ...

Video games are leading us to new affective, cognitive and psychomotor domains of HSI…

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Receive FREE SHIPPING* this holiday when you give the gift that everyone wants, the gift of wellness.

*Use the coupon codes listed below to receive FREE SHIPPING on these select items from Wild Divine.

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Healing Rhythms
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Use Code: HRSOFS

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The Journey to Wild Divine: The Passage

BUY NOW!

Use Code: TPFS

The Journey to Wild Divine: Wisdom Quest

BUY NOW!

Use Code: WQFS

emotivo

you think, therefore, you can

featured applications

Gaming
A Technology Forecast

Implications for Community & Technical Colleges
In the State of Texas

IC² INSTITUTE
The University of Texas at Austin

Authored by:
Jim Brodie Brazell
Nicholas Kim
Honoria Starbuck, PhD.

Program Manager for Research
IC² Institute
Eliza Evans, Ph.D.

Programs for Emerging Technologies
Program Director
Michael Bettersworth, M.A.

Texas State Technical College

Forecasting.TSTC.edu

Table 2 Relationship between academic study and game industry employment productivity

	Relationships				
	Definite Relationship	Good Relationship	Moderate Relationship	Rare Relationship	No Relationship
English	4	**12**	9	3	6
Theater	3	7	6	**11**	7
Mathematics	**17**	14	2	0	1
Geography	0	5	7	**12**	10
Other Liberal Arts Disciplines	2	9	**14**	5	4
Electronic Arts	9	**11**	8	2	4
Fine Arts	**9**	**9**	**9**	4	3
Radio Television and Film	6	**9**	7	8	4
Other Fine Arts Disciplines	3	9	**10**	6	6
Industrial Design	4	**10**	9	7	4
Architecture	5	9	**10**	5	5
Computer Science	**20**	9	4	0	1
Electrical Engineering	4	**10**	9	4	7
Audio Engineering	6	**11**	**11**	3	3
Other Engineering Disciplines	0	8	**15**	4	7
Scientific Illustration	1	6	**14**	5	8
Physics	7	9	**14**	2	2
Biology	0	2	11	8	**13**
Scientific Visualization	2	9	**11**	5	7
Other Science Disciplines	0	5	**16**	6	7
Finance	2	5	6	**15**	6
Marketing	4	8	8	**10**	4
IT Security	5	4	**11**	7	7
Other Business Disciplines	2	8	6	**12**	6

Source: Brazell, Jim, Nicholaus Kim, Honoria Starbuck, Eliza Evans, and Michael Bettersworth.
Gaming: A Technology Forecast, Implications for Texas Community and Technical Colleges
Austin, Texas: Texas State Technical College System and IC2 Institute, University of Texas Austin,
2004. ISBN 0978677358
Table of Contents: http://www.system.tstc.edu/forecasting/reports/dgames.asp

IC² Institute

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Other Fine Arts Disciplines	3	9	**10**	6	6
Industrial Design	4	**10**	9	7	4
Architecture	5	9	**10**	5	5
Computer Science	**20**	9	4	0	1
Electrical Engineering	4	**10**	9	4	7
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Austin, Texas: Texas State Technical College System and IC2 Institute, University of Texas Austin,
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Table of Contents: http://www.system.tstc.edu/forecasting/reports/dgames.asp

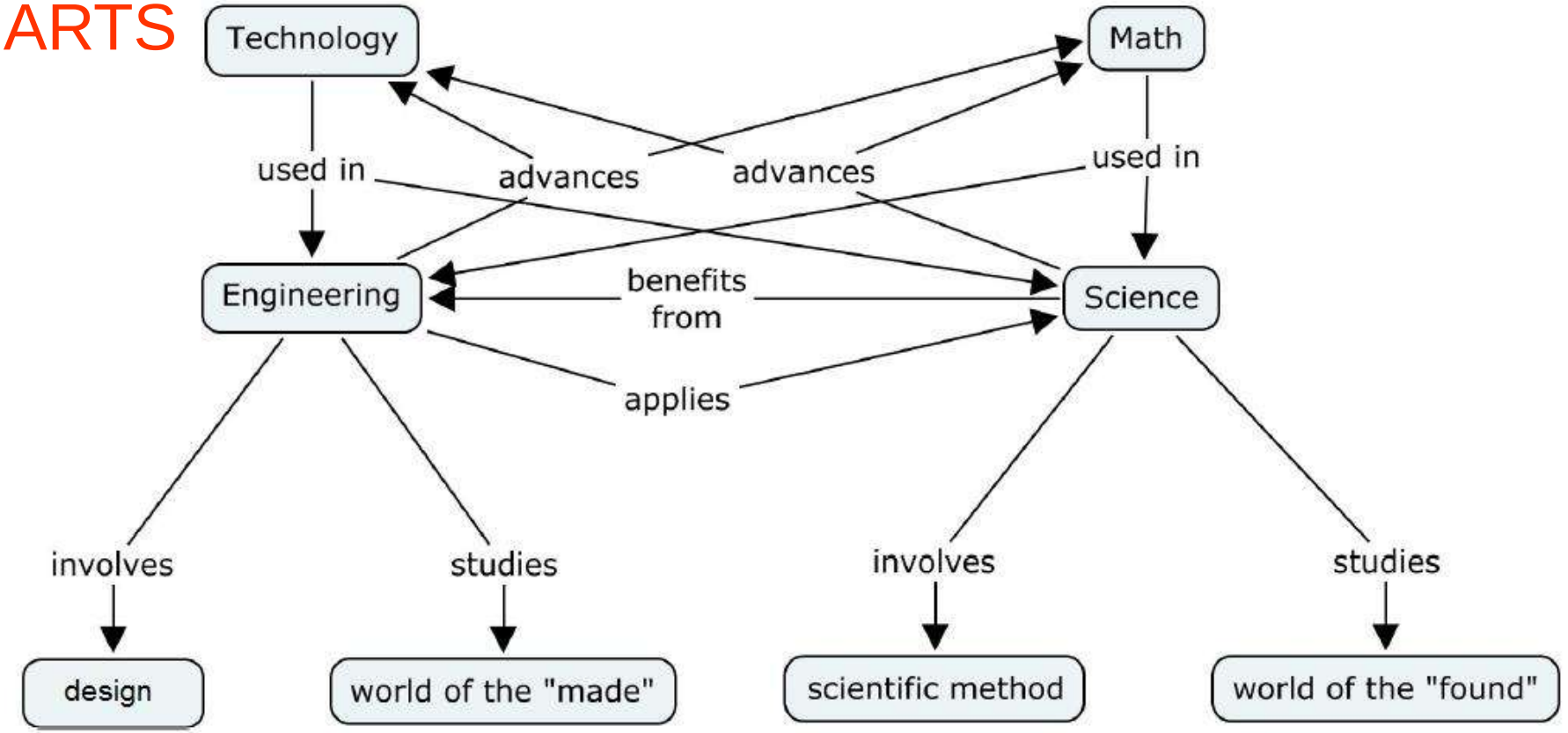
IC² Institute

Dr. David Thornburg, Center for Professional Development.

"Design and Arts," adapted by Jim Brazell, 2008.

TEAMS

ARTS



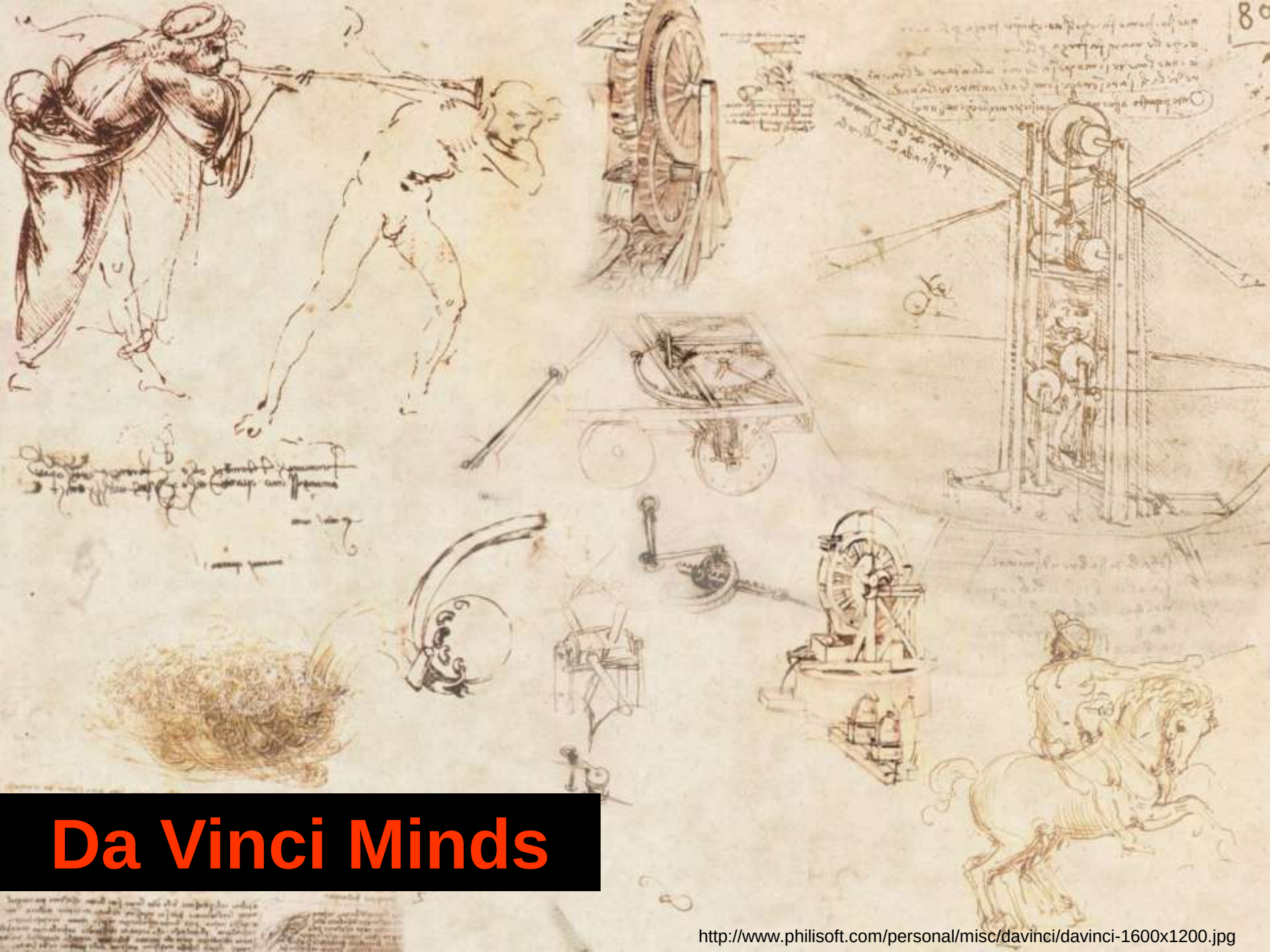
Game Building is Transdisciplinary

Table 1 Selection Criteria for Entry-level Employees

Selection Criteria	Critically Important	Very Important	Important	Somewhat Important	Not Important
Demonstrable industry work products and experience	**12**	9	7	3	4
Demonstrable academic gaming experience	3	5	**12**	8	7
Academic portfolio	4	**11**	6	10	4
Related work from similar industries	4	10	**14**	4	3
Ability to communicate and work in multidisciplinary teams (e.g. production art technology)	**17**	11	4	3	0
Ability to learn quickly and share knowledge effectively	**22**	9	3	1	0
Ability to think conceptually and creatively	**22**	9	2	2	0
Ability to integrate scientific and artisitic work and concepts	11	**12**	8	4	0
Formal development methodologies (e.g. Rational Unified Process eXtreme Programming Adaptive Design Object Oriented Development)	5	5	**10**	9	6
Formal Requirements Analysis (e.g. Use Case Functional Requirements Pattern Languages)	5	7	**8**	7	**8**
Experience managing project requirements time lines and deliverables	6	7	**12**	7	3
Ability to manage high project intensity and pressure	**11**	10	10	3	1
Cultural fit	9	13	6	3	4
Professional appearance and demeanor	5	5	7	**10**	8
Knowledge skills and abilities in multiple disciplines (e.g. Rendering Software Engineer Technical Artist)	5	9	**15**	6	0

IC² Institute

Creation of new knowledge, processes & systems.



Da Vinci Minds

http://www.philisoft.com/personal/misc/davinci/davinci-1600x1200.jpg

FOR IMMEDIATE RELEASE MARCH 2, 2009
CONTACT: GOVERNOR'S OFFICE OF FILM & ENTERTAINMENT (850) 410-4765

Study Shows $29.2 Billion Economic Impact for Film and Entertainment Industry in Florida

~ Florida Productions Generate Jobs, Stimulate Local Economies

Table 9 - Florida Industry Cluster Growth Comparison 2008-2018

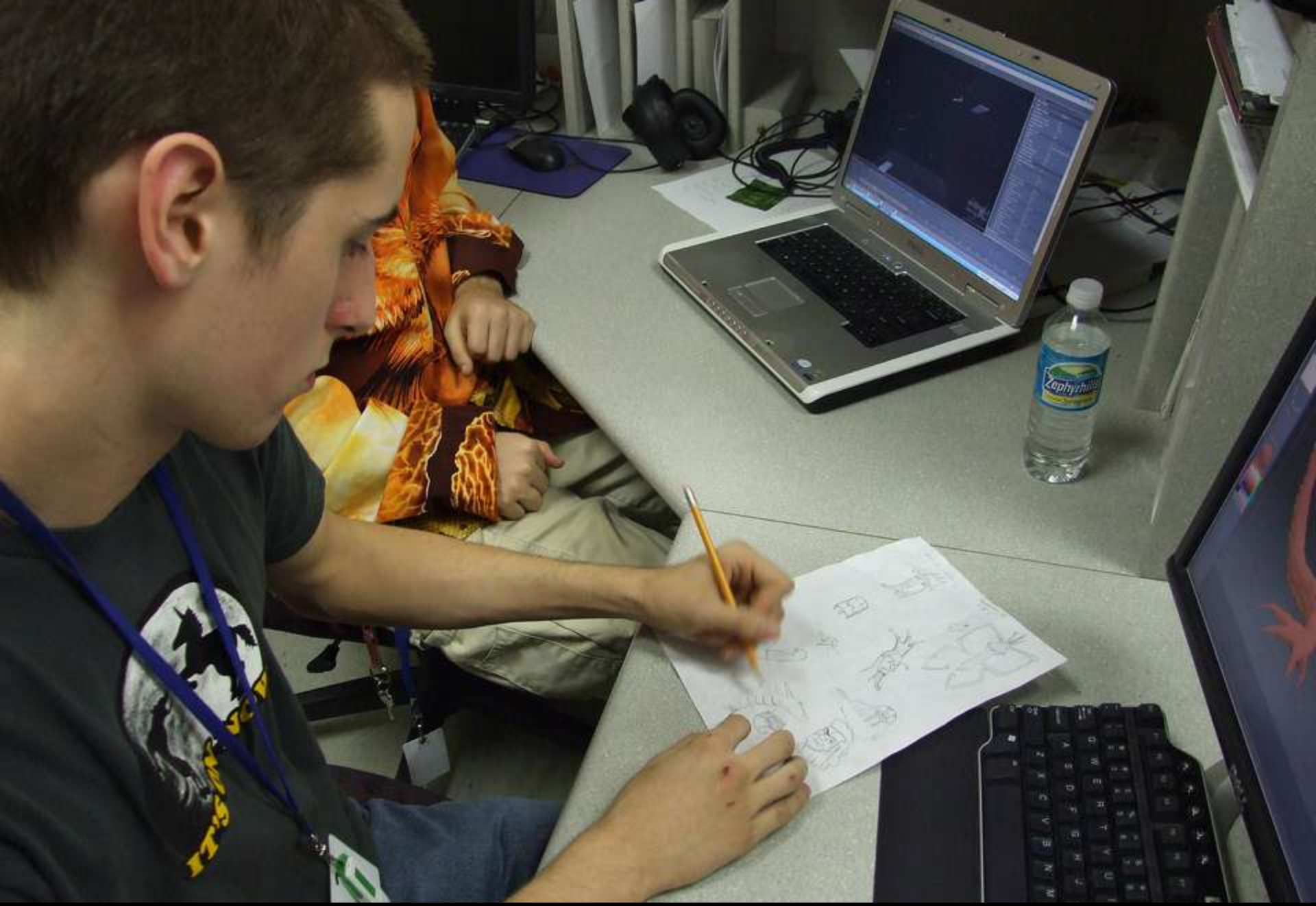
Florida Cluster Name	2008 Jobs	2018 Jobs	Growth	Growth %
Biomedical/Biotechnical (Life Sciences)	733,150	871,143	137,993	19%
Defense & Security	298,008	351,204	53,196	18%
Energy (Fossil & Renewable)	476,058	513,792	37,734	8%
Information Technology & Telecommunications	368,386	390,472	22,086	6%
Film and Entertainment	**101,263**	**121,598**	**20,335**	**20%**
Transportation Equipment Manufacturing	44,514	46,778	2,264	5%
Fabricated Metal Product Manufacturing	41,690	43,730	2,039	5%
Machinery Manufacturing	26,822	27,061	239	1%
Computer & Electronic Product Manufacturing	49,182	45,477	-3,706	-8%

Source: EMSI Complete Employment - Spring 2008 Release v. 2

Table 9 Note: Industry cluster definitions do not match those used by Enterprise Florida in defining targeted clusters; some industries may be included in more than one cluster.

Source: The Film and Entertainment Industry in Florida Part II - Statewide Economic and Fiscal Impact, Sep 29, 2008, Haas Center for Business Research and Economic Development The University of West Florida

Ocoee Demonstration Middle School



Orlando Tech – High School Program

Orlando Tech – High School Program

ARTS & entertainment

EDUCATION. VALENCIA

Departments

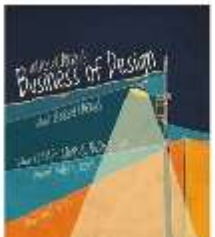
- Home
- Art Studio/Fine Art
- Camps
- Dance
- Digital Media
- Entertainment Design & Technology
- Film Technology
- Graphics Technology
- Music
- Music & Sound Technology
- Theater
- Anita S. Wooten Gallery

GET ON THE RUNWAY TO YOUR FUTURE

EDUCATION LOOKS GOOD ON YOU

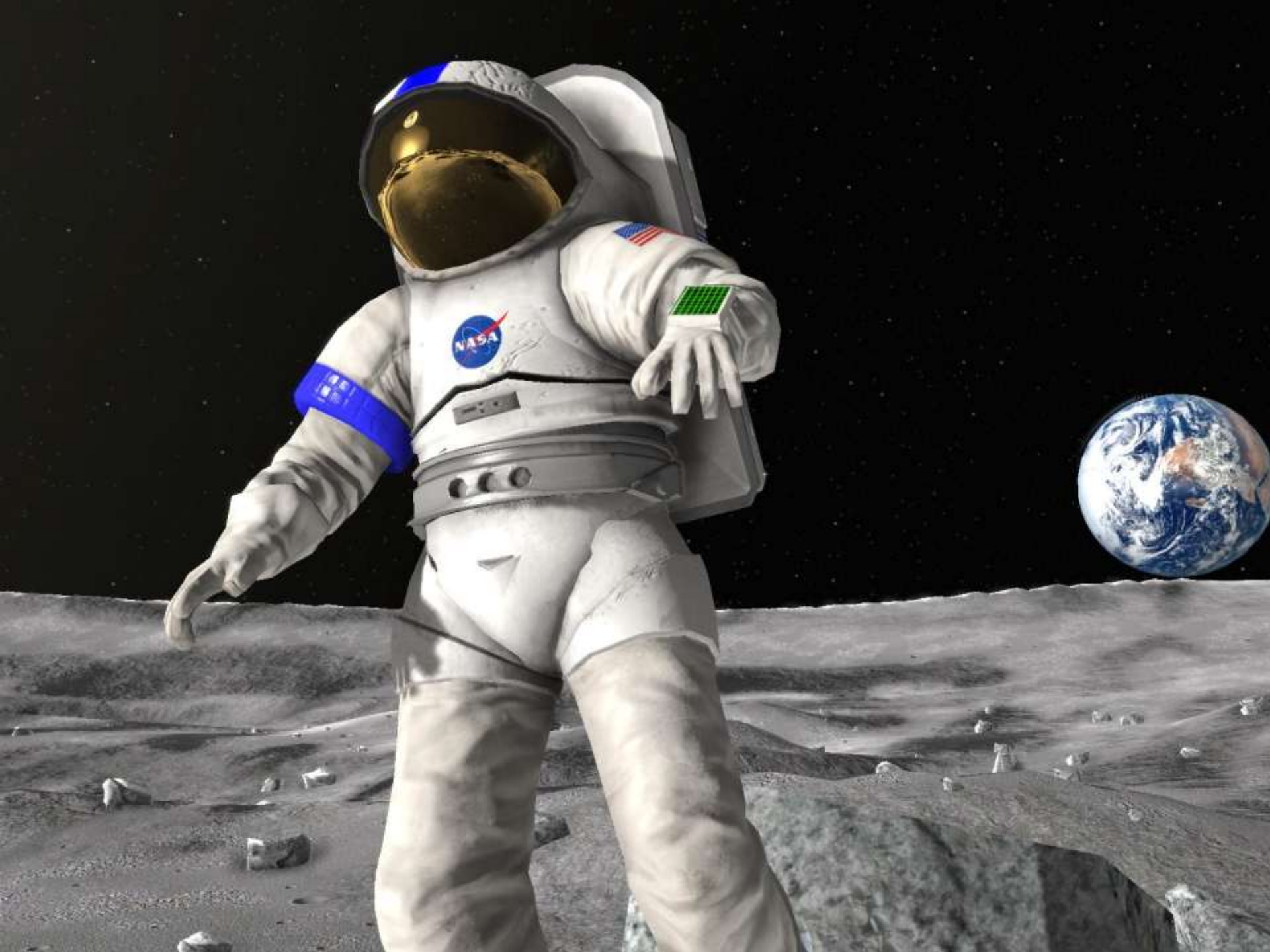
Consider yourself a tech freak? Do you feel a creative connection to the digital world? Are you fascinated with graphic arts, music, movies, theater or film? If so, an arts & entertainment degree can help you turn what you love into what you do for a living. From onstage to behind the scenes, recording studios to multimedia businesses, performers, artists and technicians are finding satisfying careers in the central Florida entertainment scene.

Employers in the arts & entertainment industry are looking for people who are creative and entrepreneurial, enjoy collaboration in team environments, keep up with the hottest trends in technology, good at multitasking, and keep cool in high stress situations.



Orlando FIEA University Program

Tools for Schools


NASA

DIMENSION

WHERE THERE'S POWER IN NUMBERS

INTRO

tabuladigita

- GAMES
  - EVOLVER PRE-ALGEBRA
  - DIMENXIAN ALGEBRA
  - EVOLVER MULTIPLAYER
  - GAME DEMOS
  - BUY NOW
- HOW IT WORKS
  - INTRODUCTION
  - LEARNING OBJECTIVES
  - THE RESEARCH
  - CASE STUDIES
  - TESTIMONIALS
  - RESULTS
  - VIDEO
- MY DIMENSIONM
- SCOREBOARDS
- NEWS
- GAME GUIDE
  - BACKSTORY
- EDUCATORS
  - EDUCATOR PORTAL
  - CURRICULUM ALIGNMENTS
  - PURCHASE OPTIONS
- SUPPORT
- TELL A FRIEND!
- GET MORE INFO!

DimensionM™is an immersive video game world that engages students in the instruction and learning of mathematics. Pre-algebra and algebra objectives are covered through a series of missions that bring math into a world that today's students understand. Students become so captivated in solving problems that they forget they're learning but they don't forget what they've learned.

Research with our programs demonstrates how well they align with the way today's students learn and how naturally immersed students become in their learning. The result: increase in student motivation, increase in time on task, and the ability to apply their learning in real world situations that have meaning for your student.

Flexible implementation models DimensionM is designed to support multiple instruction models. Using the latest 3-D, first-person video game technology, students complete missions by entering reality-based environments where they challenge themselves in single-player format or they can challenge others in a fast-paced multi-player format. Having single-player or multi-player game formats provides schools with flexible ways to meet the needs of various implementations including: lab, classroom, extended-day, home extension, intervention, and special events.

LOG-IN Username GO

PRIVACY | HELP

TOP TEN PLAYERS

Pwner	1,072,950
TienTran	1,003,000
miami14	868,785
The_Keeho	815,749
Dwinkie21	810,493
MalMunir	775,470
zerosk8er62	771,362
JessicaC259	734,040
boeing747	696,225
KILLERPIE	662,985

TOP TEN SCHOOLS

Piney Grove ...	19,096,239
Walker MS	12,596,373
Wolf Lake MS	11,796,276
Ocoee MS	7,303,126
Colonial HS	6,081,062
MS 113 Ronal...	5,847,399
Riverside Ac...	5,071,033
South Forsyt...	3,518,686
IS 30 Mary W...	3,266,977
Vickery Cree...	2,747,440

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SCRATCH

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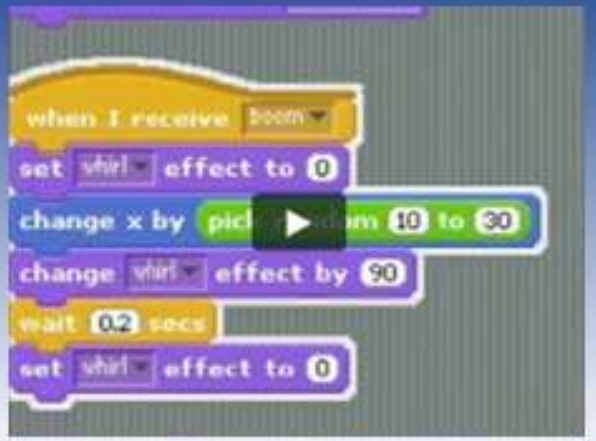
search

Create and share your own interactive stories, games, music, and art



Check out the 1,547,244 projects from around the world!

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by claudedechauny

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by yoshi-fan

drawing station...
by soccerfirst

Scratch Tours

New to Scratch? Take a tour to see what Scratchers are creating and sharing.

Take a tour

scratch.mit.edu

Alice.org - Mozilla Firefox

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http://www.alice.org/

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Getting Started Latest Headlines

Alice

An Educational Software that teaches students computer programming in a 3D environment

FREE!!

About Alice | Downloads | Teaching | Community | Publications | Support

Alice 3.0 News

** 2-18-08: PROGRESS REPORT **

Carnegie Mellon is pleased to announce that Alice will be teaming up with characters from Electronic Arts' hit video game, *The Sims™ 2*.

Read more...

All about Alice

Alice is an innovative 3D programming environment that makes it easy to create an animation for telling a story, playing an interactive game, or a video to share on the web. Alice is a teaching tool for introductory computing. It uses 3D graphics and a drag-and-drop interface to facilitate a more engaging, less frustrating first programming experience.

Read more...

Teaching Materials

Alice is a teaching tool designed as a revolutionary approach to teaching and learning introductory programming concepts. The Alice team has developed instructional materials to support students and teachers in using this new approach. Resources include textbooks, lessons, sample syllabuses, test banks, and more. Other authors have generously joined our efforts, creating additional textbooks.

Read more...

Downloads

Alice 2.0
Designed for High School and College

Storytelling Alice
Designed for Middle School

3D Models Gallery
Additional free 3D models

Media Coverage

Check out the latest media coverage on Alice:

12-10-07: WebWire
11-04-07: SIGCSE 2008 [Blog]
11-01-07: Aimless Wonderings [Blog]

Archive...

Community Forums

Share and gather knowledge about Alice through our community forums. Students, teachers and enthusiasts are all welcome! If you have a question or comment about Alice, post it here!

View forums...

A FREE Gift to YOU from Carnegie Mellon UNIVERSITY

We gratefully acknowledge the financial support of Electronic Arts, DARPA, Intel, Microsoft, NSF, and ONR.

Java

Read www.alice.org

start | ftp://ftp.ventureram... | Alice.org - Mozilla Fire... | Microsoft PowerPoint ... | U3 Launchpad update | 7:32 AM

Alice v2.0

Learn to Program Interactive 3D Graphics

Alice v2.0 is the next major version of the Alice 3D Authoring system, from the Stage3 Research Group at Carnegie Mellon University. It has been completely rewritten from scratch over the past few years.

The focus of the Alice project is now to provide the best possible first exposure to programming for students ranging from middle schoolers to college students.

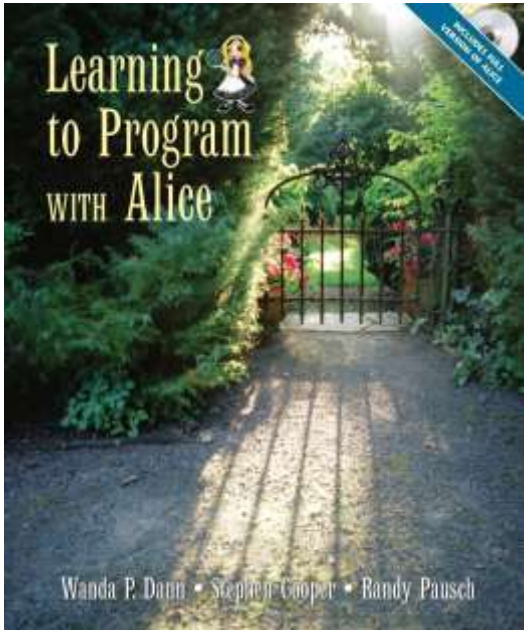
FREE STUFF

- *Get Alice v2.0* ⇦ ***new release!***
  Version 2.0 04/05/2005
- Alice Gallery

COMMUNITY

- Alice community
- Report a Bug
- Known bugs
- Feedback
- Building Virtual Worlds

Help



INFO

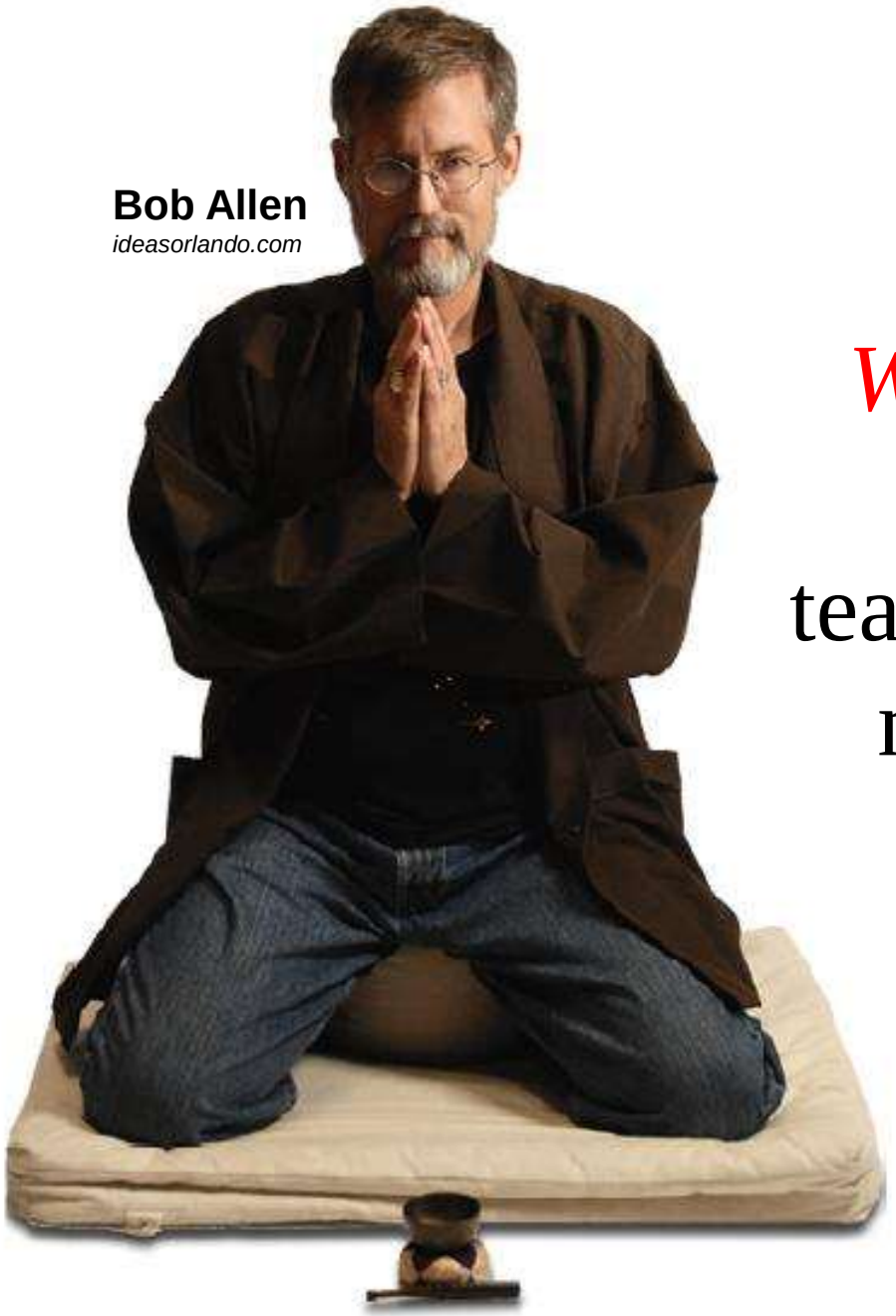
- What is Alice?
- Alice FAQ
- Documentation
- Alice License
- Where is Alice99?
- Publications
- Testimonies from Alice Users
- Sneak peek at textbook
- SIGCSE 2005 Tea Party Presentation

CREDITS

- Sponsors
- Stage3
- Acknowledgements

Alice.org

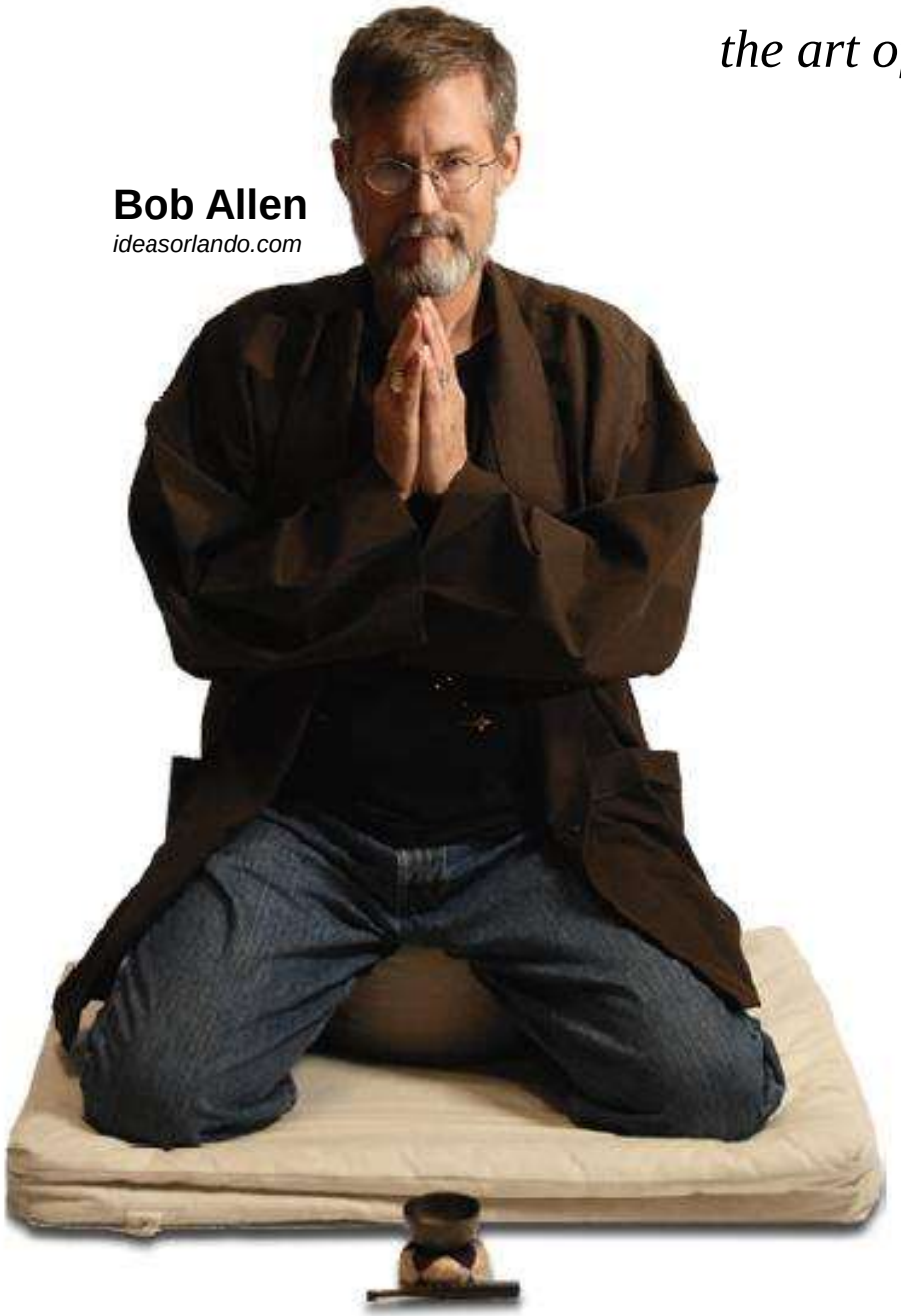
Activity #2



Write a haiku expressing the shifts that students, teachers or schools should make in the 21st century (turning point).

Haiku

the art of it all



Bob Allen
ideasorlando.com

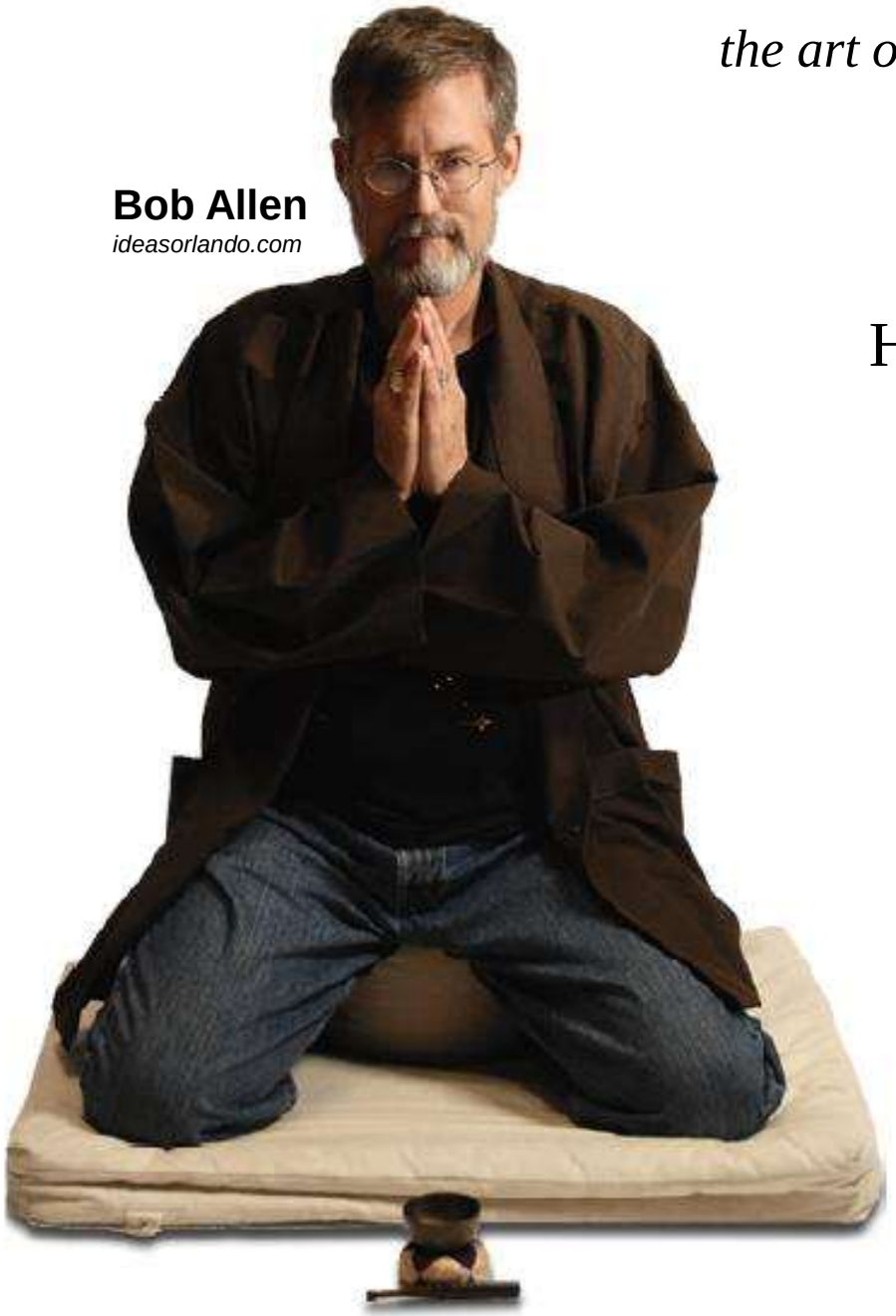
Example

(5) Be compassionate
(7) Add more diversity now
(5) Look inside your self

(5) Self determined child
(7) iPhone in hand all day long
(5) Educators scream

Haiku

the art of it all



Haiku is a Japanese poem composed of three unrhymed lines of five, seven, and five syllables. Haiku usually emphasizes a season, intense emotion and vivid image designed to lead to an enlightened insight.

(5) The moment two are
(7) united they both vanish
(5) A lotus blooms here.

Murakami, Kijo. (1865-1938), Adapted by Brazell
http://www.toyomasu.com/haiku/#time

STEM Mainstreaming CTE Practice

Video games for what?

Emergence of the 5th World.

Robots, they're here!

What do you think of when I say computer?

How many of you have a cell phone in your pocket?

Nokia Research Center, Helsinki Finland in MIT Technology Review

http://geeklit.blogspot.com/2007_03_01_archive.html

http://www.nasa.gov/multimedia/

In historic shift, smartphones, tablets to overtake PCs

Perils ahead for vendors who can't adapt to market shift, IDC says
Computer World, Dec. 6, 2010

"IDC said worldwide shipments this year of app-enabled devices, which include smartphones and media tablets such as the iPad, will reach 284 million. In 2011, makers will ship 377 million of these devices, and in 2012, the number will reach 462 million shipments, exceeding PC shipments. One shipment equals one device.

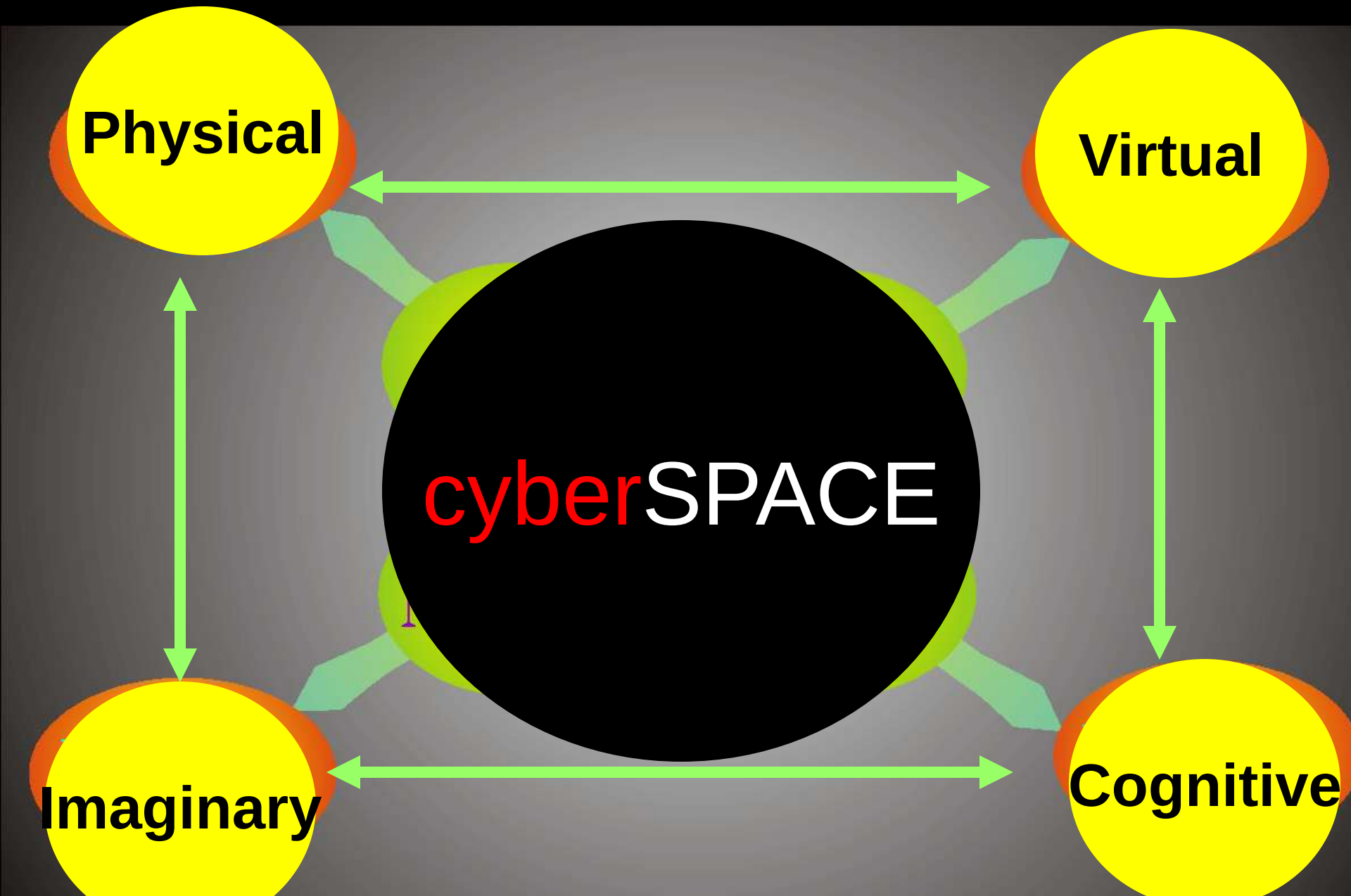
For PCs, IDC is forecasting 356 million PC shipments this year and 402 million in 2011. In 2012, there will be 448MM shipments."

http://www.computerworld.com/s/article/9199918/In_historic_shift_smartphones_tablets_to_overtake_PCs


Tourist
Special
£25!
Temperature 10°
Pollen Level: Low
3 messages
1 priority message

Mixed Reality

How do we cultivate innovation and innovators?



Imagine the games we can play…

GUNMAN

by Shadowforce

Urban warfare meets augmented reality in an epic battle with your friends on your iPhone.

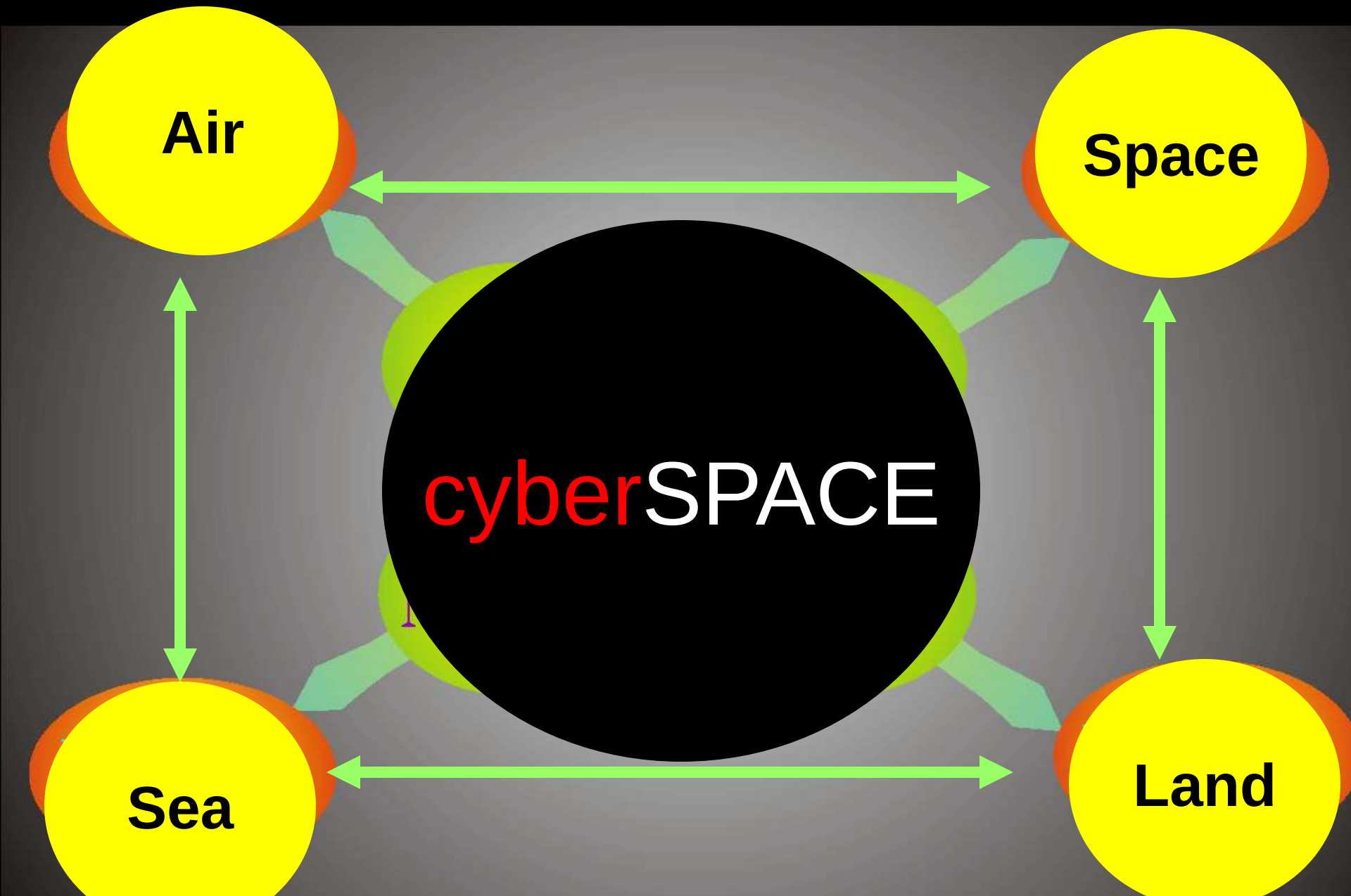

IMM


adidas


DEM DEUTSCHEN VOLKE


WALK-IN TALKING
COLLECTOR'S EDITION!
£1.95
GRAZIA
KATE 'devastated' by Sam's shock confession
PICTURE EXCLUSIVE
IT'S OUR AMAZING 3D ISSUE!
REVEALED! Sex And The City's hot new men
Florence sings for YOU
Watch this cover come to life!
Plus!
DOs AND DON'Ts FOR DOUBLE DENIM, CLOGS, HAREMS & COWGIRL CHIC

How do we cultivate innovation and innovators?



“Every 15 seconds a new life form is released on the Internet.” --Dr. Fred Chang, University of Texas San Antonio

Stuxnet – Cyber War?

A Human Capital Crisis in Cybersecurity

Technical Proficiency Matters

A White Paper of the
CSIS Commission on Cybersecurity for the 44th Presidency

COCHAIRS
Representative James R. Langevin
Representative Michael T. McCaul
Scott Charney
Lt. General Harry Raduege, USAF (ret.)

PROJECT DIRECTOR
James A. Lewis

July 2010

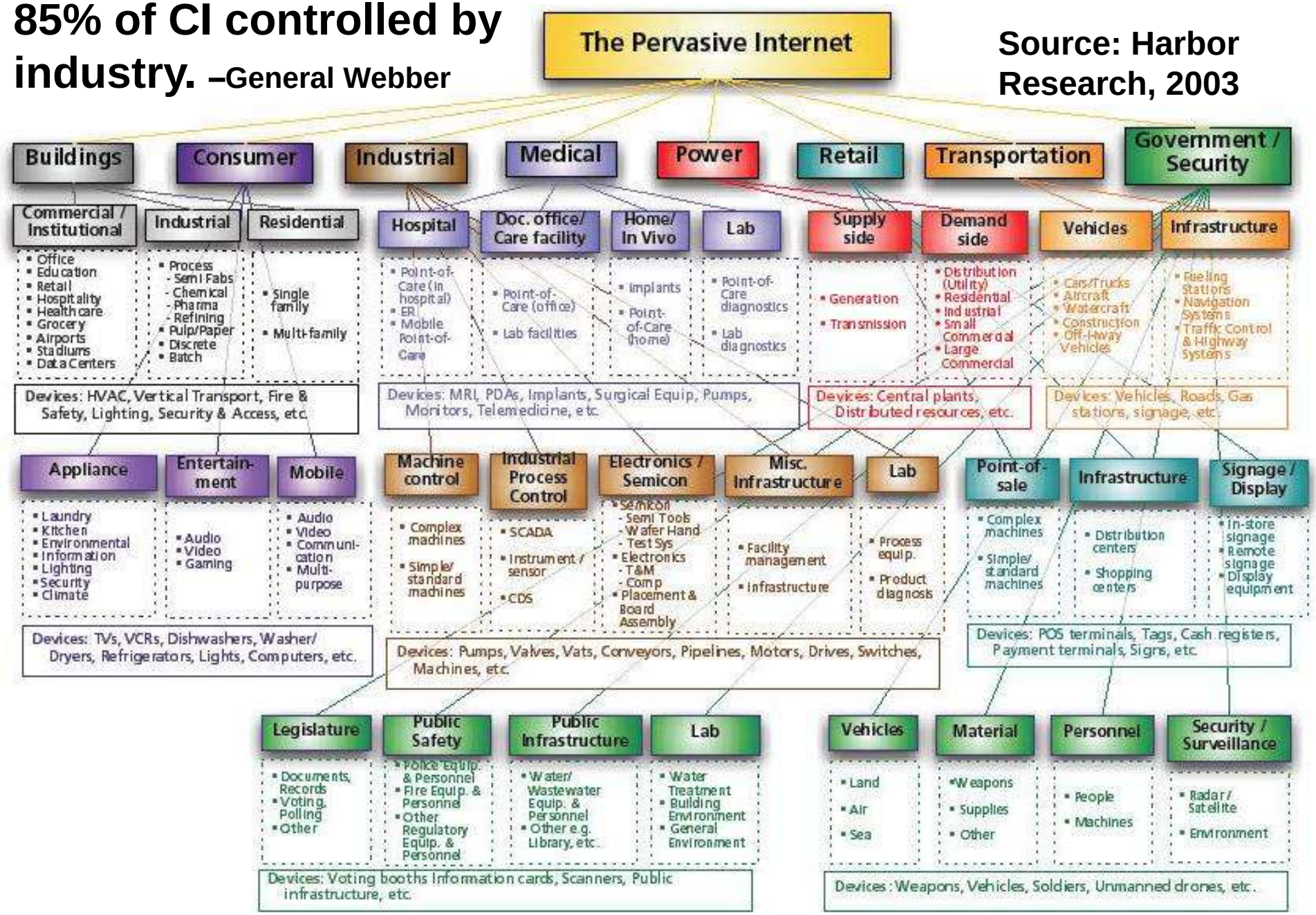
CSIS | CENTER FOR STRATEGIC & INTERNATIONAL STUDIES

"The cyber threat to the United States affects all aspects of society, business, and government, but there is neither a broad cadre of cyber experts nor an established cyber career field to build upon, particularly within the Federal Government. [Using an] airplane analogy, we have a shortage of 'pilots' (and 'ground crews' to support them) for cyberspace." ***(Center for Strategic and International Studies, Report of the Commission on Cybersecurity for the 44th Presidency, December 2008)***

"I cannot get the technical security people I need." ***(Gen. Charles Croome, Commander, Joint Task Force - Global Network Operations, in response to a question from a CSIS Commissioner asking what is the most critical problem he faces in meeting the growing cyber challenge. May 28, 2008)***

"There are about 1,000 security people in the US who have the specialized security skills to operate effectively in cyberspace. We need 10,000 to 30,000." ***(Jim Gosler, Sandia Fellow, NSA Visiting Scientist, and the founding Director of the CIA's Clandestine Information Technology Office, October 3, 2008.)***

85% of CI controlled by industry. –General Webber



Source: Harbor Research, 2003

Frontier El Dorado Refining

Butler Community College
April 7 to 11, 2008


Frontier El Dorado
Refining Company
AMETEK
AMETEK
Butler Community College
April 7 to 11, 2008

“In this plant, in the next three years we will need nine Instrumentation and Numerical Control (INC) technicians.”

Edward C. Trump
Plant Manager
Entergy

4/2007, TSTC Marshall

Wyoming ACTE, June 2009

Job Mergers - Wind Turbine

Lineman

Oil Field

Farm Mechanic

11.1.2006, TSTC West TX, Sweetwater

technical security - deploying and managing appliances

software security - designing and coding secure applications

security testing - trying to sneak into your client's systems

operational security management - monitoring and managing security incidents

information risk management - creating and managing business-level policies

audit - at any number of levels from technical to standards compliance

vulnerabilities research - looking for bugs in software and reverse engineering viruses

Kansas Air National Guard,
Butler Community College
April 7 to 11, 2008


Holmes High School

“TSTC grads’ entry-level pay is $32K-to-$44K per year. They make a lot more because they get double-time after 9 hours of OT. My lowest paid tech made ~$69K, the average was ~$85K and the highest paid was ~$120K.”

–Nat Lopez, AT&T Network Services

CompTIA A+
CompTIA Network+
CompTIA Security+
Cisco – CCNA


Cyber Patriot
highschoolcdc.com

NORTHROP GRUMMAN

CyberPatriot III

- Virtual competitions start Nov 2010
- Service Championship in Orlando Feb, 2011
- National Championship in DC April, 2011
- Competitors must be at least 13 years old and in grades 9-12 (or equivalent if home schooled/in a school that does not make this distinction) as of September 2011
- Teams must have between 2 and 5 members
- Only 1 team per school per division
- Registration deadline Oct 8, 2010 (or 500 teams)
- $350 team fee for Open division
- 2009 participation: 170+ schools, over 1,000

www.highschoolcdc.com

NATIONAL
COLLEGIATE
CYBER
DEFENSE
COMPETITION

nationalccdc.org

Tools for Schools

Home | About | Preparation | Downloads | Winner's Circle | Sponsors | Contact Us

Main Menu

- Home
- About
- Preparation
- Downloads
- Winner's Circle
- Sponsors
- Contact Us

Preparation

External Resources:

Training Videos - The CyberNEXS Team from SAIC have produced a 17-minute video on UNIX Security Tips and a 23-minute video on Windows Security Tips. These videos are hosted by SAIC - just follow the link and scroll down the page to view them.

Game Instructions - The CyberNEXS Team from SAIC have produced a series of PDFs that walk teams through the tasks associated with gameplay such as validating your local system configuration, downloading and unzipping competition images, and so on. These videos are hosted by SAIC - just follow the link and scroll down the page to view them.

Learning about VMWare:

The CyberPatriot events, and the training materials on this page, use VMWare - a virtualization technology that allows you to run other operating systems on your PC in a virtual environment.

Introduction to VMWare - This introduces teams and coaches to VMWare's VMWare Player software - the virtualization platform used in both training materials and competition events.

Fedora Core Virtual Image (MD5: A204524A33A5B7D2DD33D58417F0069F) - This is a Fedora Core 12 virtual machine. This Linux-based virtual system should be downloaded and used for the "Using MD5 to Verify Downloads" and "Introduction to VMWare" activities. This

http://www.highschoolcdc.com/index.php?option=com_content&view=article&id=3&Itemid=3

sophos DATA PROTECTION
threat beaters

Data security toolkit

- FREE tools to help secure your data
- Resources to explain data security threats
- Security tips to share and help others

Download Toolkit

Great tools to explain how to protect your data

Protecting sensitive data is a top priority – hackers want it and the costs of data loss can be huge.

As users are one of the biggest security weak spots it's vital they understand the risks.

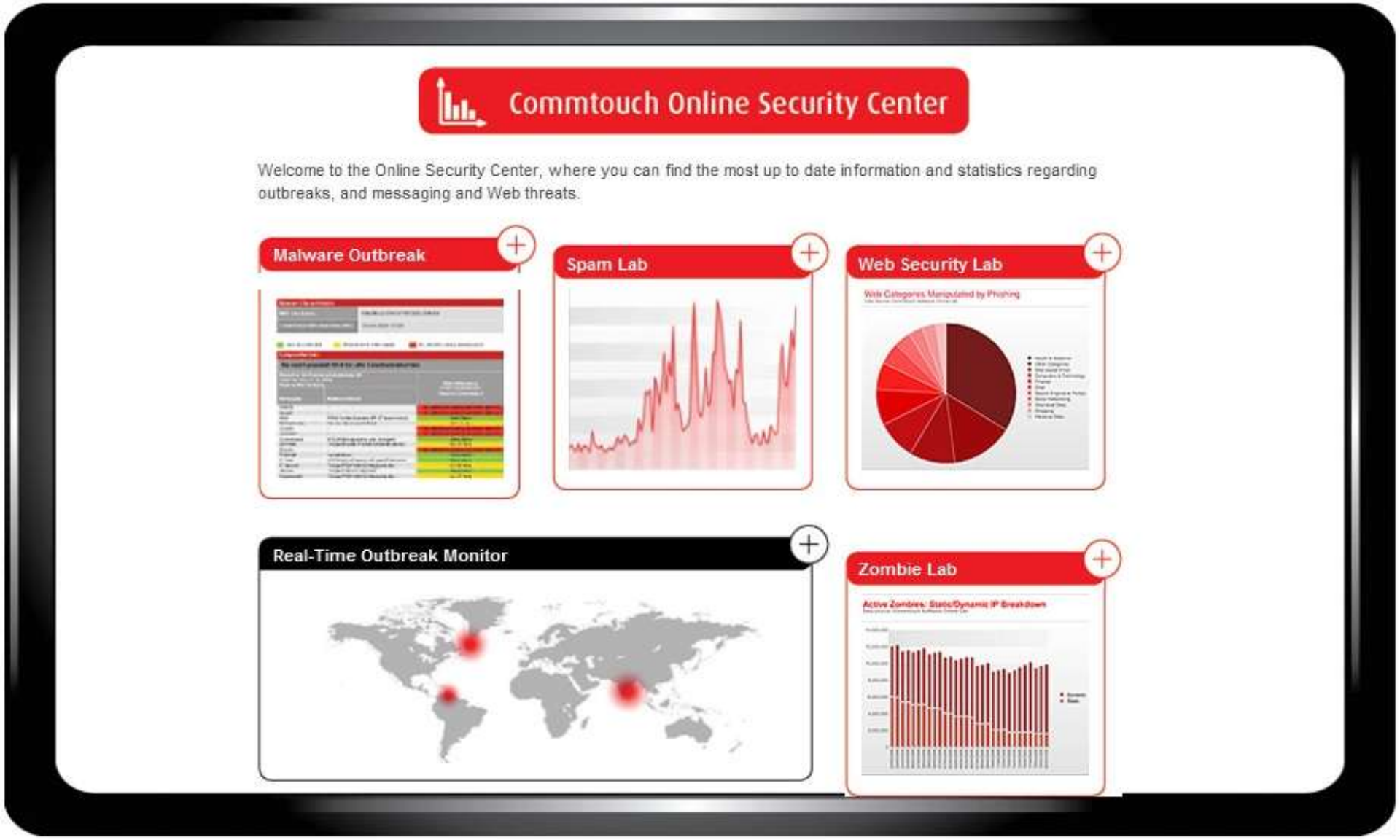
Get your free Data Security Toolkit!

It's packed with great tools to help you explain the threats to your data and give practical advice on how to keep it secure, including:

Related links

- Data protection products
- Sophos SecurityHub
- Social media security toolkit

http://www.sophos.com/lp/threatbeaters-dp/



http://www.commtouch.com/security-center

WatchGuard Video Tutorials

Improve Your Security IQ

iPhone Hacks Windows XP Computer

This video shows how Corey wirelessly takes control of a Windows PC from his iPhone. How? Watch and see. (Big hint: An unlocked iPhone can run Metasploit.) Watch now...

http://www.watchguard.com/tips-resources/video-tutorials.asp

STEM Mainstreaming CTE Practice

Video games for what?

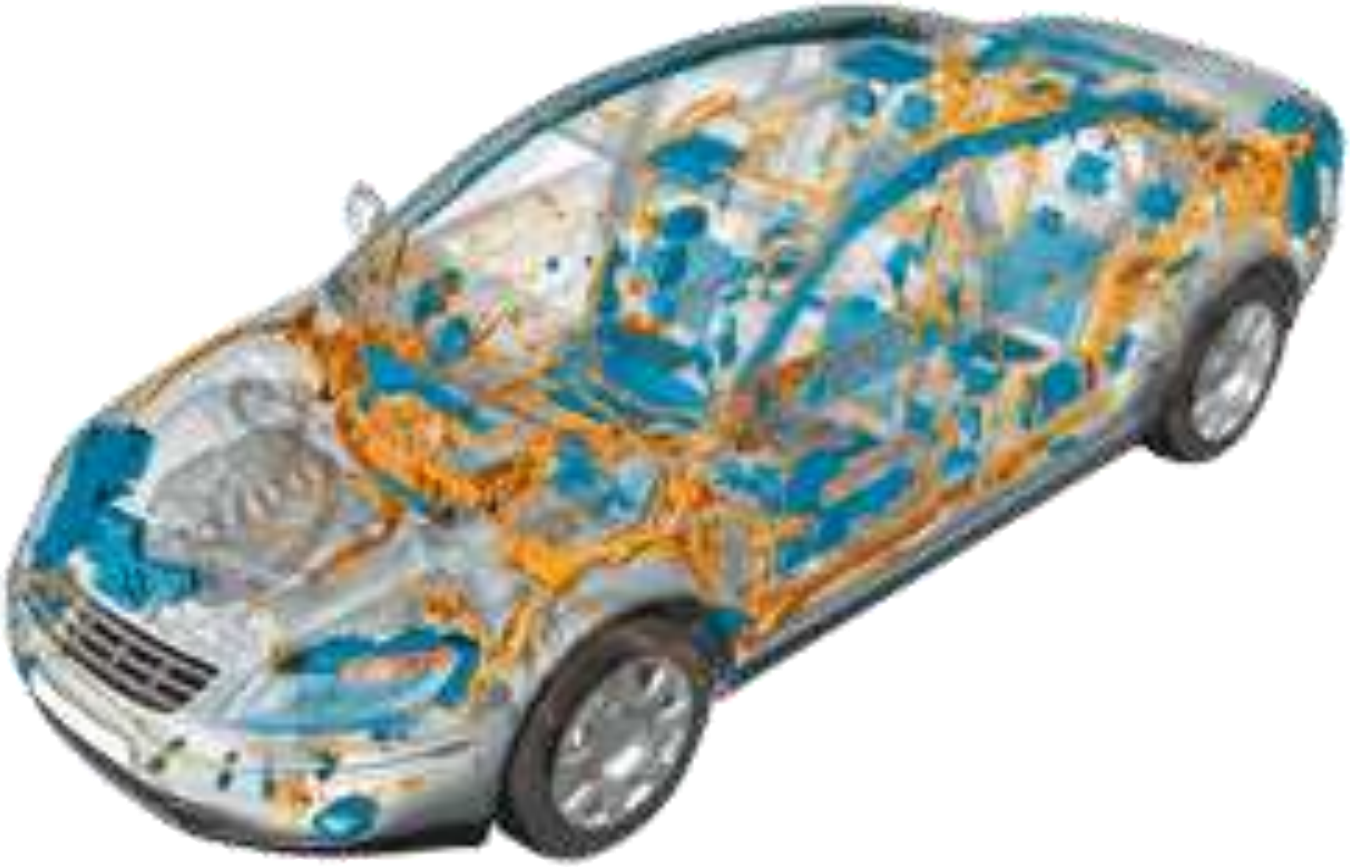
Emergence of the 5th World.

Robots, they're here!

What do you think of when I say robot?

We need to think beyond these.

Your car is a robot.



TSTC West TX, Sweetwater, 10.31.2006

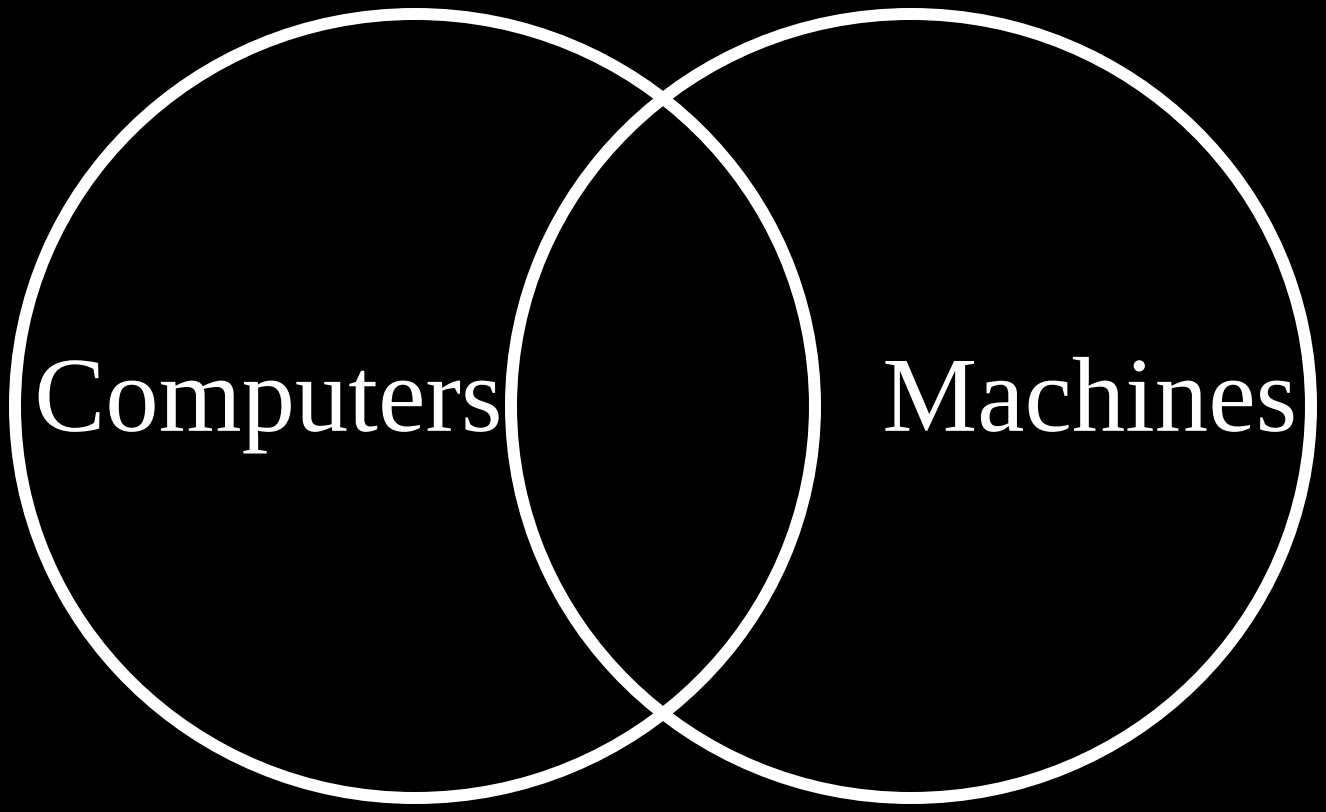
Chevy Volt

http://ces.cnet.com/2300-31045_1-10002192-9.html?s=0&o=10002192

http://www.rearviewsafety.com/blog/

PARALLEL PARKING

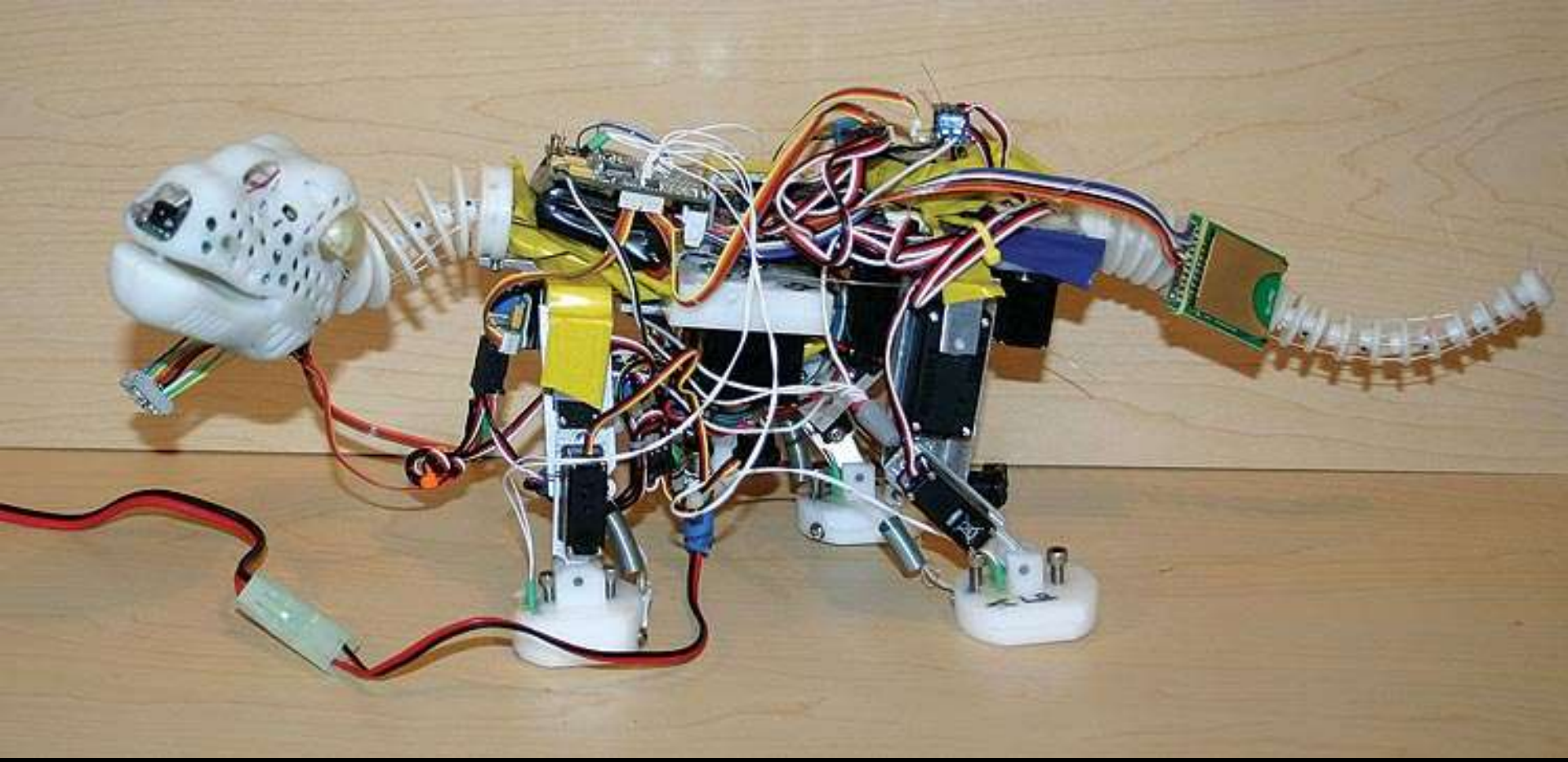
No: you have to turn your wheel all the way to the right.


Computers
Machines

Robots are now part of the fabric of 21st century life, work and play.

PLEO

http://www.camarasaur.us/alloria/gallery/view_image.one?photo_id=13532351



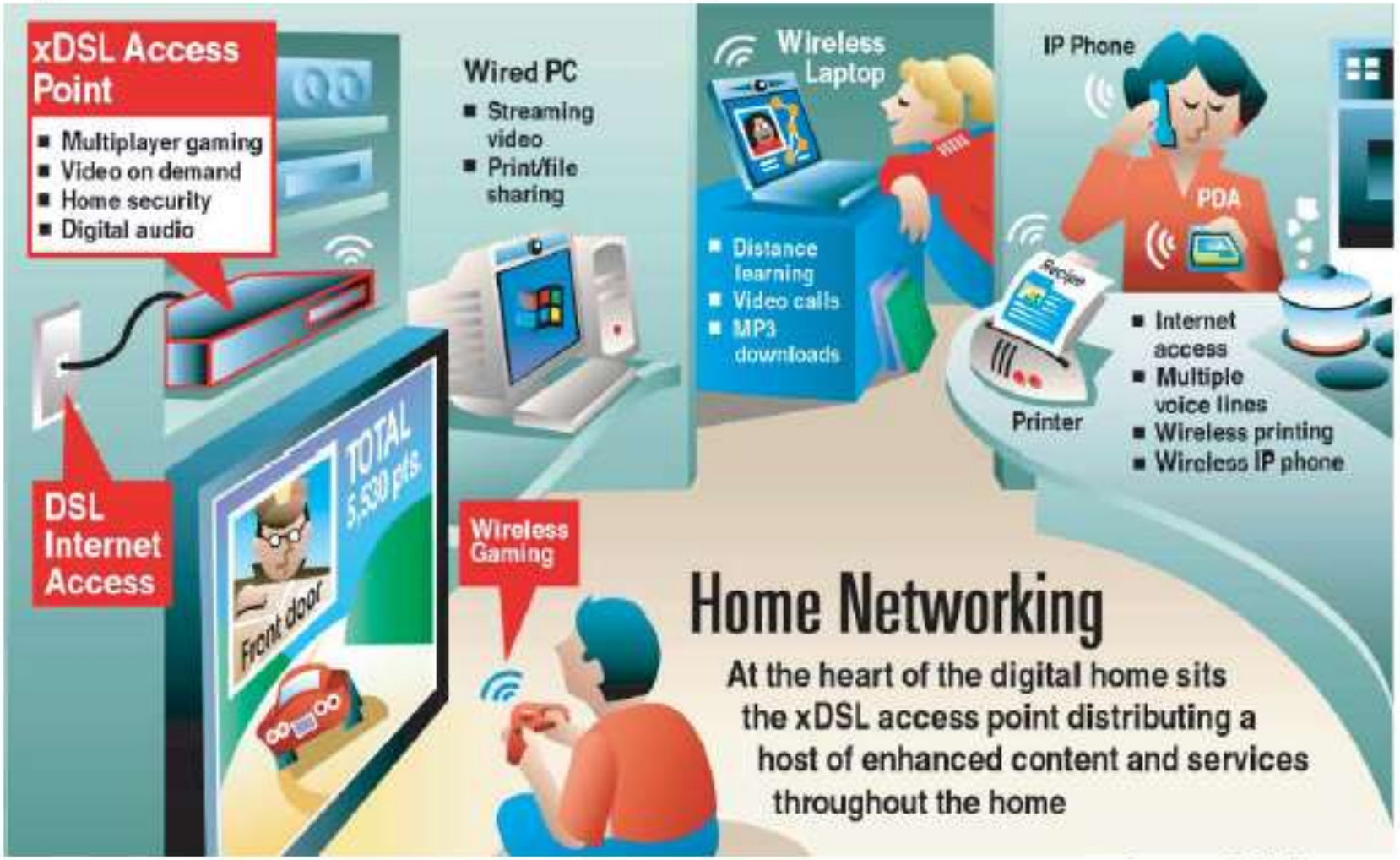
“A robotic life form with an evolving Personality.”

--Ugobe PLEO by Tom Atwood, ROBOT Spring 2008

http://www.camarasaur.us/alloria/gallery/view_image.one?photo_id=13532351

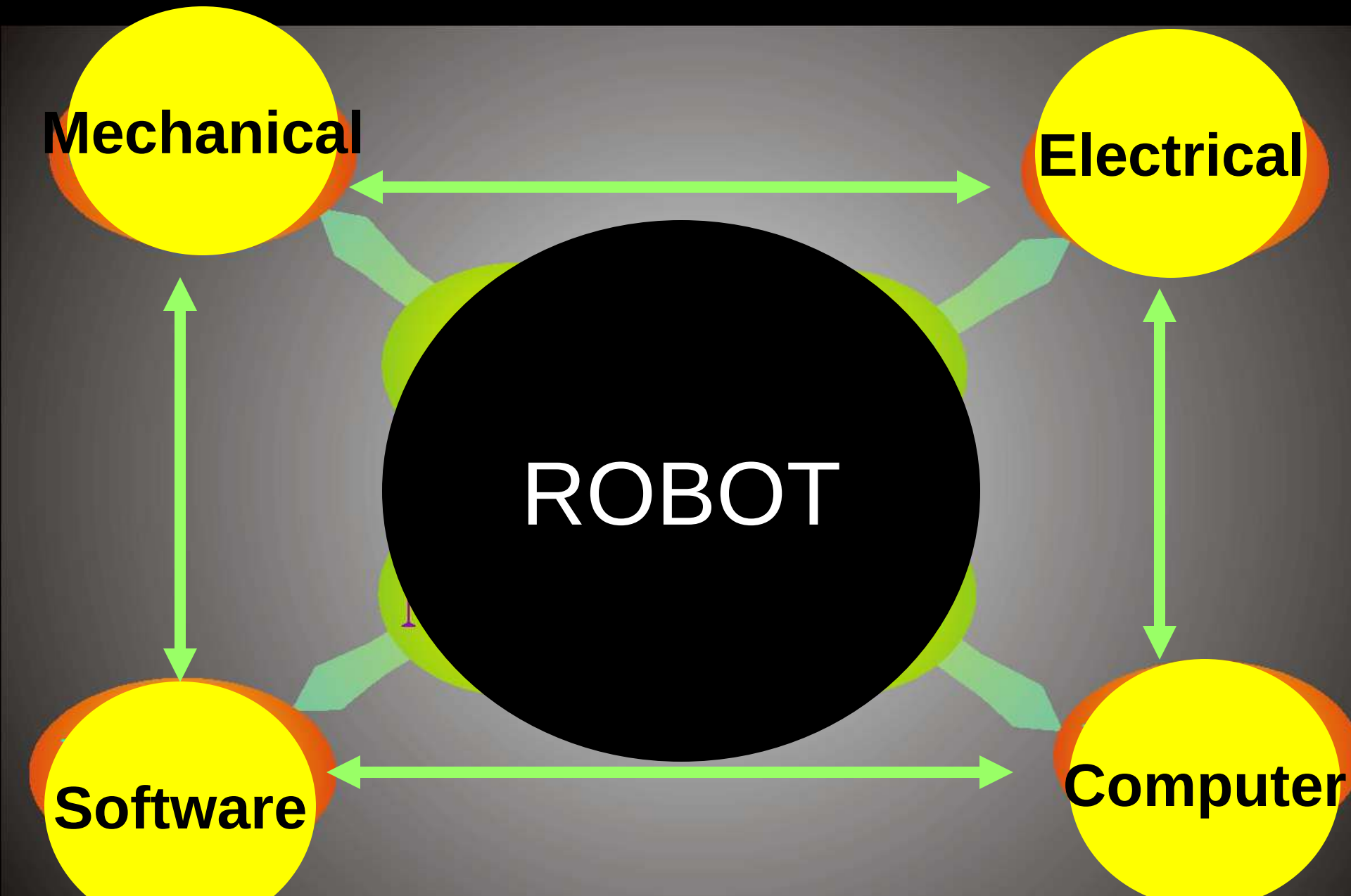
Home Technology

Figure 13 Wireless home networking



Source: DSL Forum

How do we cultivate innovation and innovators?



KINECT™

for XBOX 360

Your body controls the computer

This is a robot

Or, is the computer controlling us?

Who is controlling whom?

THE SMARTER CAR

Odour sensor in driver's seat detects alcohol. When alcohol is detected the car is immobilised

Camera monitors driver's facial movements such as blink rate – and checks for yawns

A computerised 'black box' monitors the driver's behaviour. It can identify signs of inattentiveness – such as if the car drifts out of its lane

If drowsiness is detected, voice and message alert is triggered. Seat-belt mechanism jolts the driver

Sensor in gear-stick detects alcohol in the sweat of driver's palm

http://www.dailymail.co.uk/news/article-473040/The-car-stops-drink-driving.html

Silent Revolution

Mechatronics
A Technology Forecast

Authored by:

John H. Vanston, Ph.D. • Henry Elliott, M.S.M.E. • Jim Brazell, Eliza Evans • James A. Irwin and Michael A. Bettersworth, M.A.

Programs for Emerging Technologies, Program Director
Michael Bettersworth

Texas State Technical College

Forecasting.TSTC.edu

Heavy Equipment, Automotive, Aerospace, Marine

GM Train

Butler Community College
April 7 to 11, 2008

Spirit AeroSystems

"1,000 workers a year needed for the aerospace cluster… 2,000 plus when we are on the up side."

--Jeff Turner, CEO

Spirit AeroSystems

Butler Community College
April 7 to 11, 2008

D-J Engineering

Engineering Design

$50K - $180K

Machinists & Sheet Metal

$22K - $42K

--Razaul A. Chowdhury, President

Butler Community College
April 7 to 11, 2008

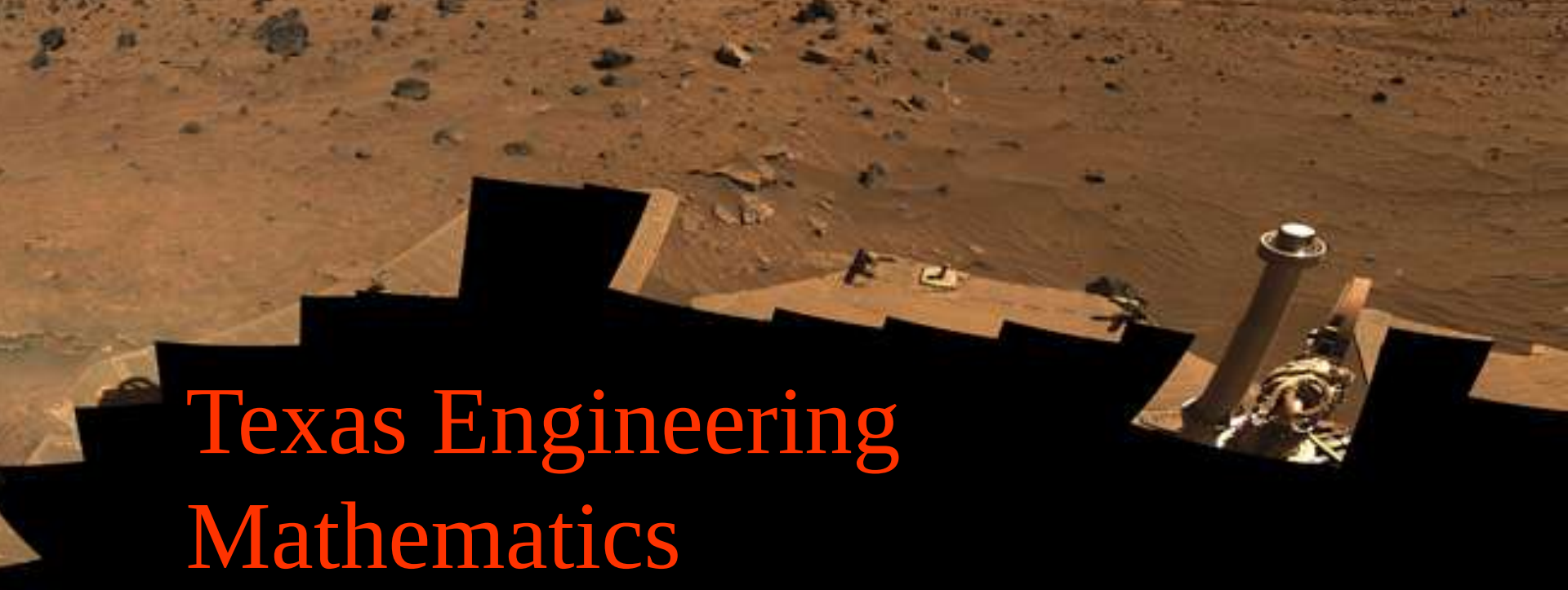
http://www.calcars.org/photos.html

Butler Community College
April 7 to 11, 2008


Now in Production
Tesla
256
MPGe

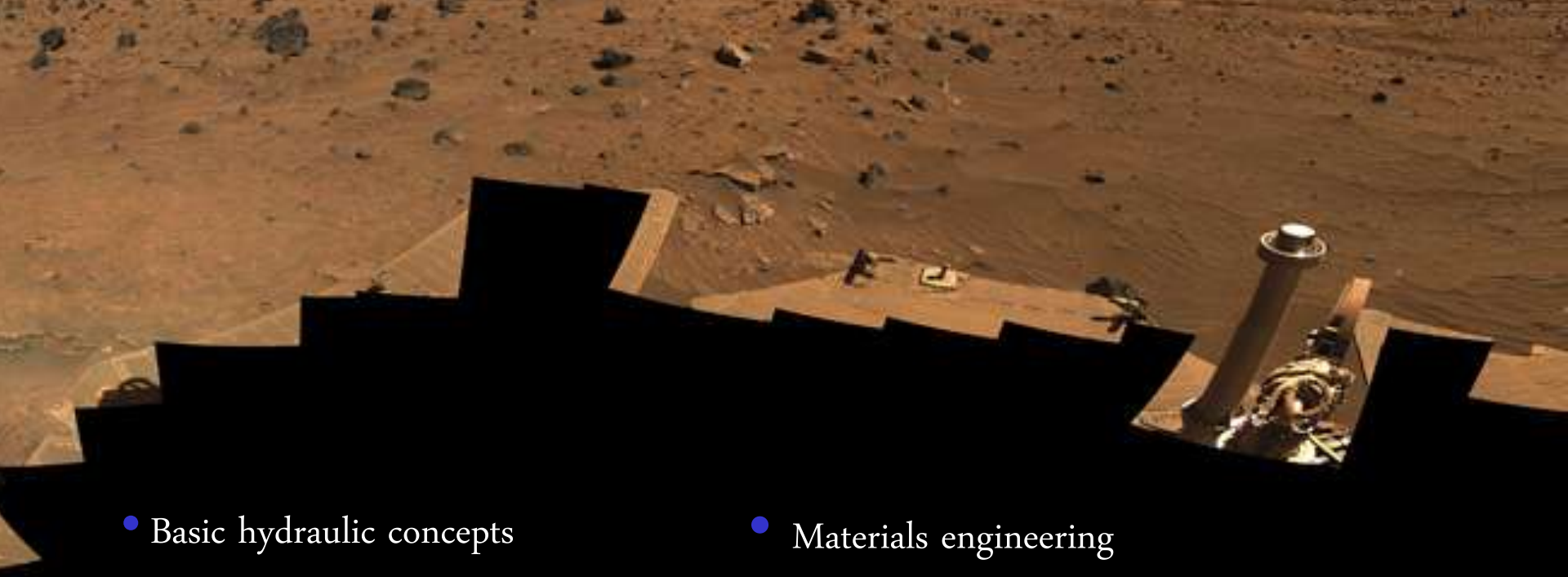
Shell Test Track

1,000 MPG eq. Fuel Cell Car

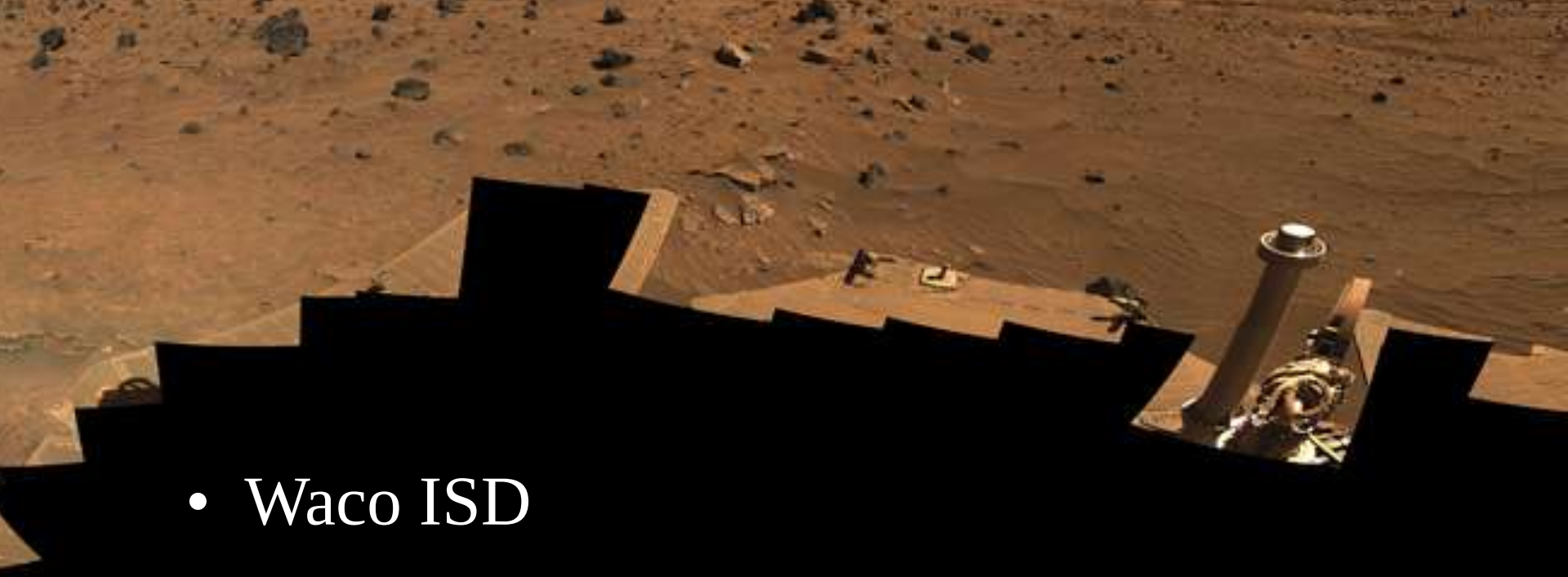


Texas Engineering Mathematics

Target Texas 4x4 – 4th Year of Math
Unify General Academics and CTE
Connect rigor and relevance
High motivation-TEAMS-Competition
Base for industry support in schools
Moving robotics from 10% penetration to 80% in 5 years



- Basic hydraulic concepts
- Design of structures
- Surveying applications
- Design processes
- Electrical measurements
- Principles of pneumatic pressure and flow
- Manufacturing processes
- Materials engineering
- Mechanical drives
- Plastics technology
- Process control systems
- Quality assurance
- Robotics and computer programming
- Thermal systems



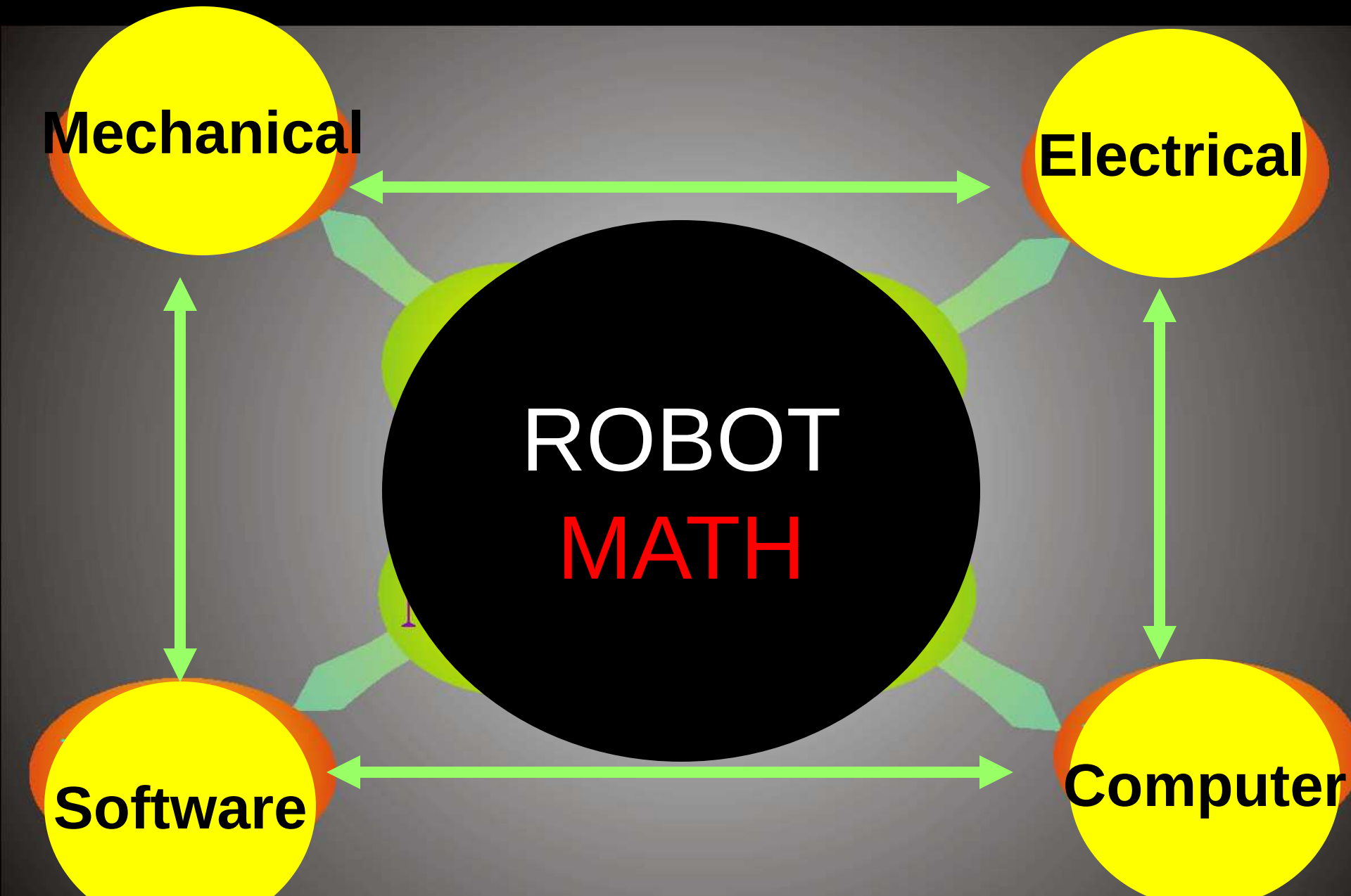
- Waco ISD
- TSTC Waco
- Baylor University
- Gear-Up Waco
- Center for Astrophysics Space Physics and Engineering Research (CASPER)

Eng. Math

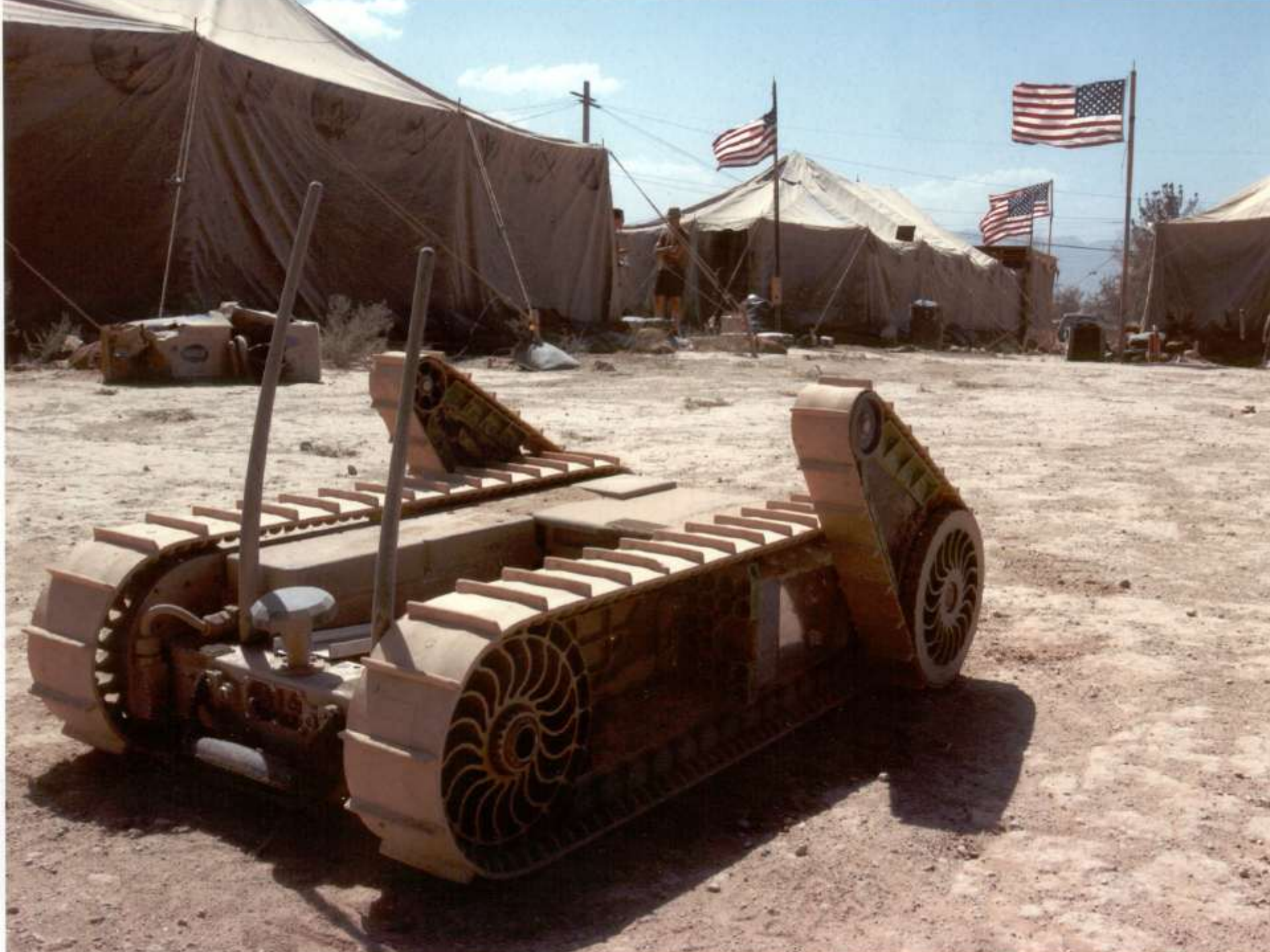
Taught through exploratory learning, using robots, CAD, and process design software.

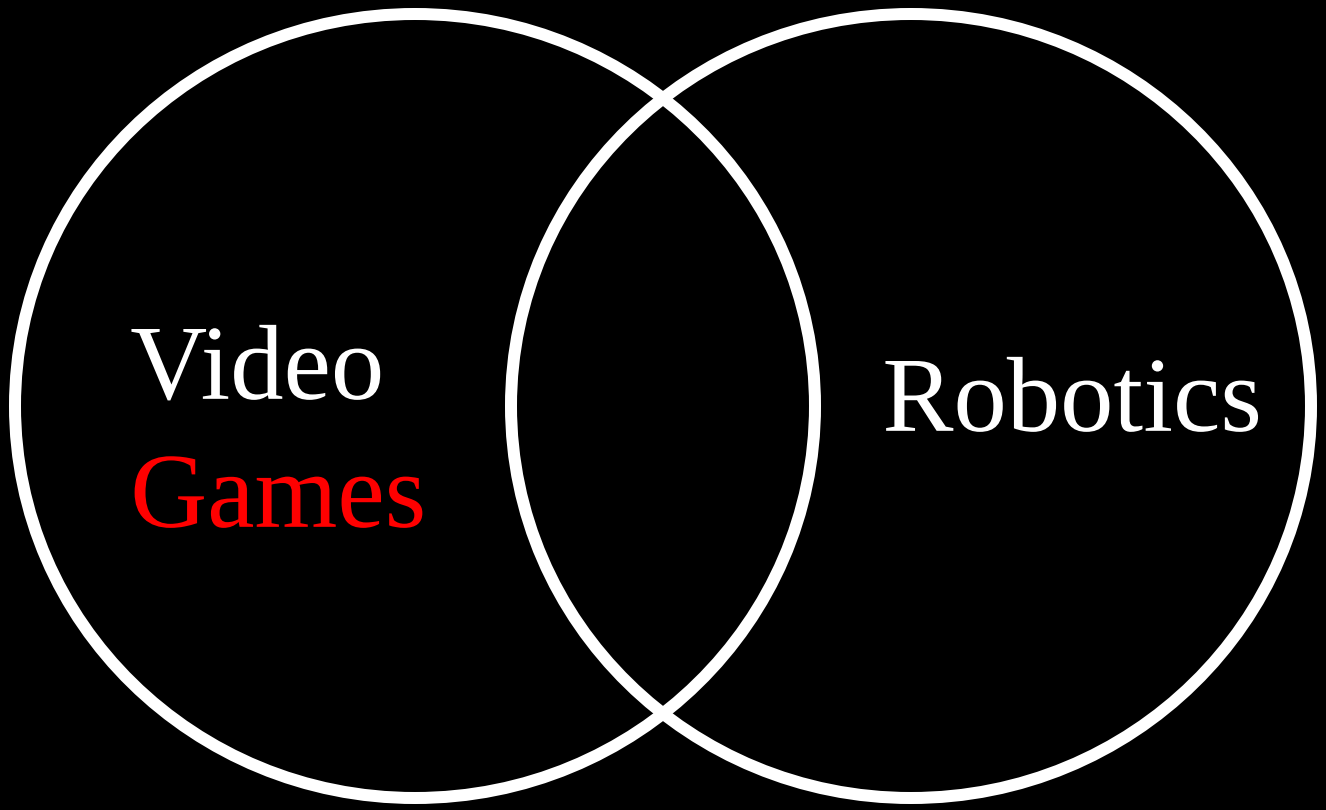
Donna McKethan
Director of CTE and Counseling
Waco ISD
dmckethan@wacoisd.org
254 755 9674

How do we cultivate innovation and innovators?



Defense




Video
Games
Robotics

Improved Target Acquisition System Trainer

Action-Reaction-Feedback

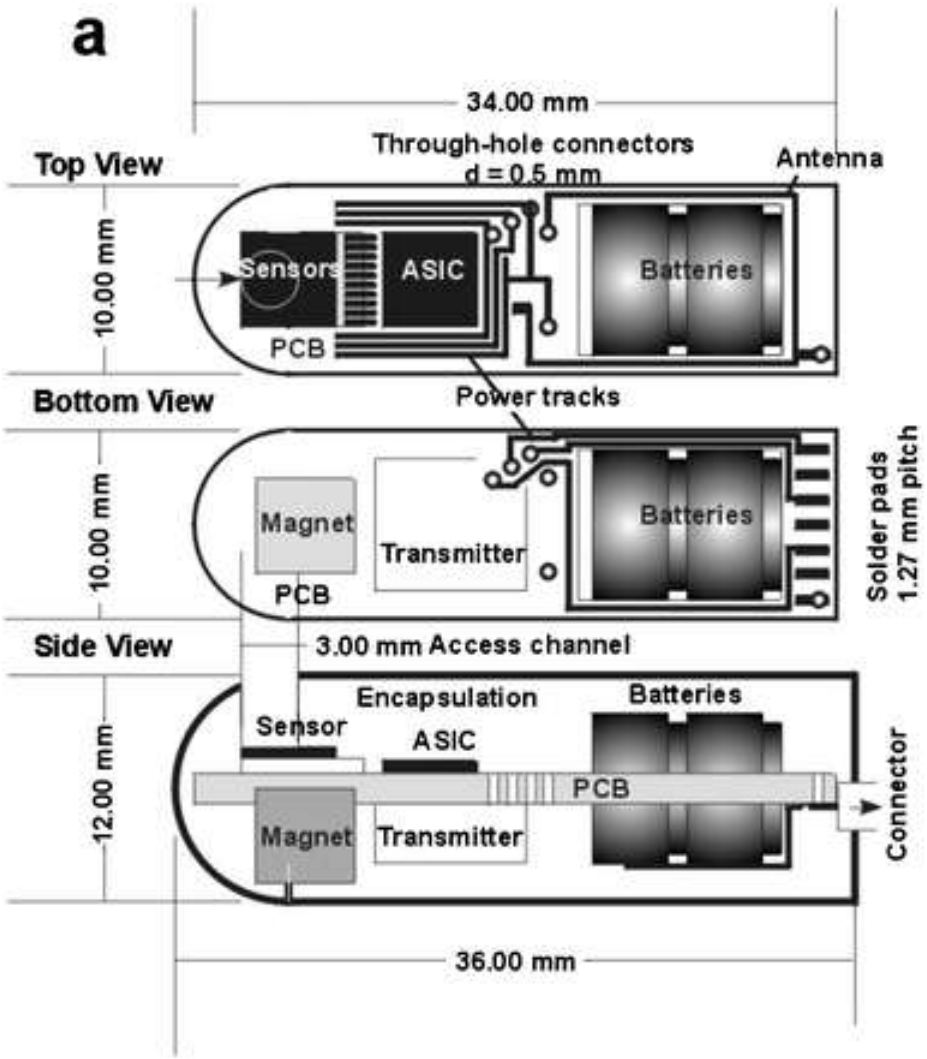

AMERICA'S ARMY
TALON EXPLOSIVE ORDNANCE
DISPOSAL TRAINER

Medicine & Healthcare

Wesley Medical Center,
Butler Community College
April 7 to 11, 2008

Wesley Medical Center

Butler Community College
April 7 to 11, 2008



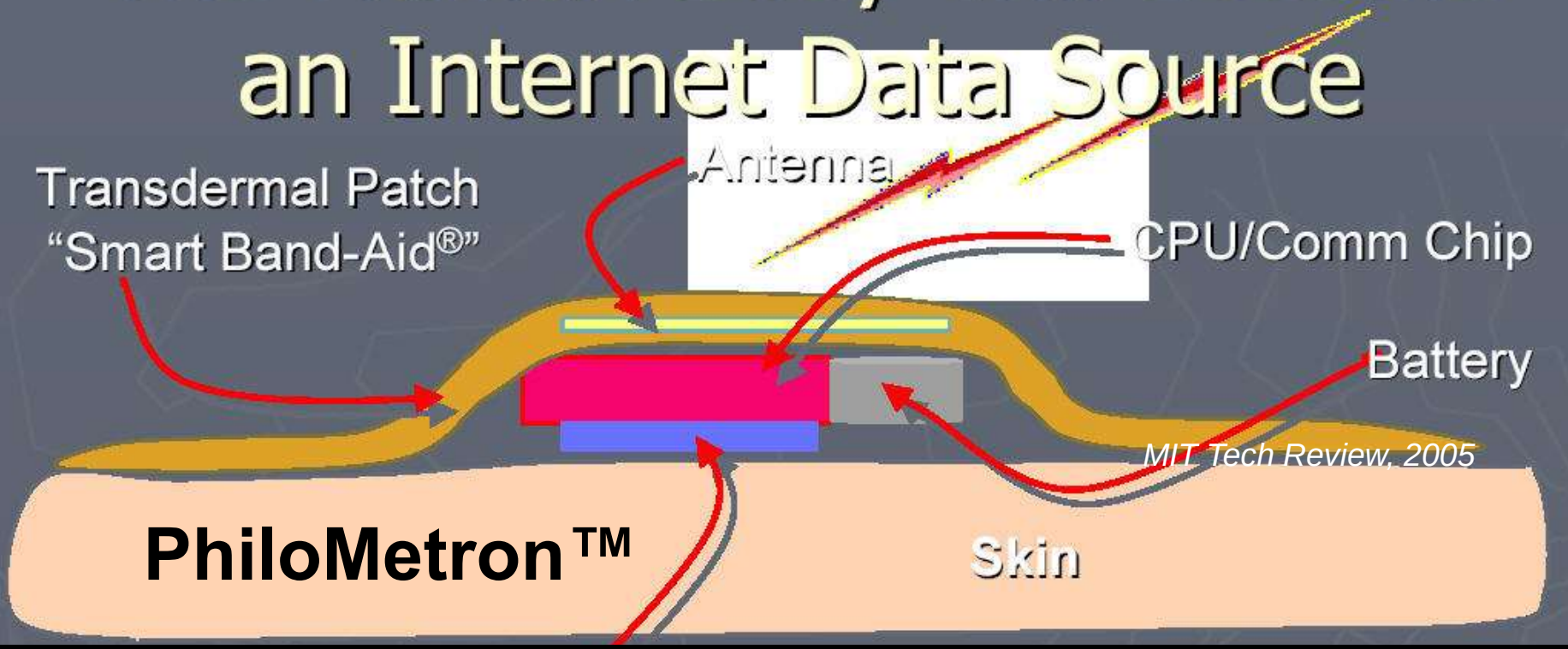
b

Lab-in-a-Pill

http://www.rsc.org/ej/LC/2006/b507312j/b507312j-f2.gif

http://www.rsc.org/ejga/LC/2006/b507312j-ga.gif

The Human Body Will Become an Internet Data Source



Sensors	Actuators
Physical	Physical
Chemical	Chemical
Biological	Biological

monitors heart rate, respiratory rate, bodily fluids, and overall activity

http://medgadget.com/archives/2010/01/corventis_gets_us_ok_for_wireless_cardiac_arrhythmia_monitoring_system.html

MedApps HealthPAL

http://www.flickr.com/photos/timgee/3533875453/sizes/o/in/photostream/

1 Sound Processor

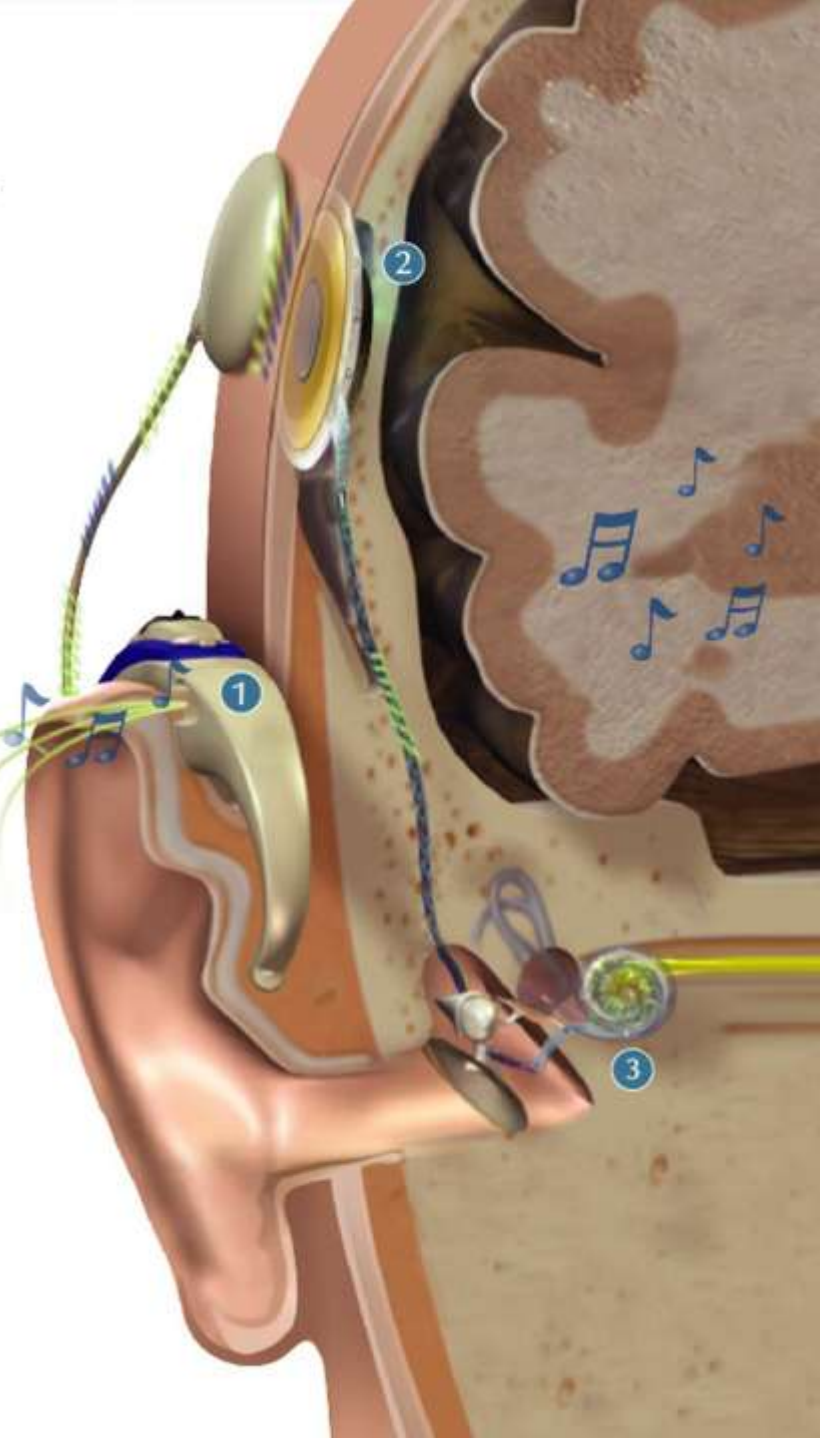
- captures sound from the environment
- processes sound into digital information
- transmits to the implant over a transmitting antenna or headpiece
- held in place by magnets in both the headpiece and implant

2 Implant

- converts transmitted information into electrical signals
- sends signals down tiny wires to the electrode array in the inner ear

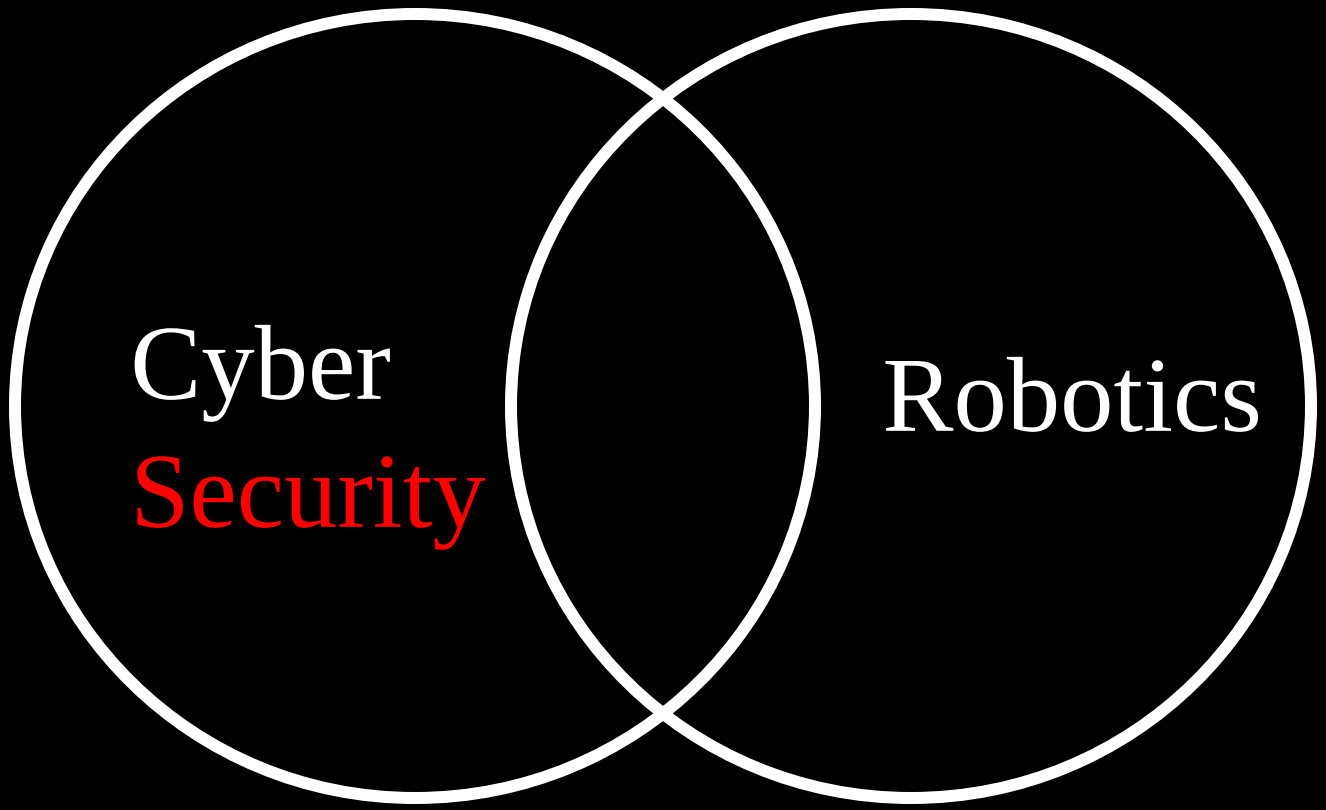
3 Electrode Array

- delivers electrical signals across an array of tiny contacts, or electrodes, to the hearing nerve
- the hearing nerve carries the sound information to the brain, where it is heard



Cochlear Ear Implant

https://www.carle.com/Hospital/about/images/Ear%20Diagram3.jpg


Cyber
Security
Robotics

Pacemakers and Implantable Cardiac Defibrillators: Software Radio Attacks and Zero-Power Defenses

Daniel Halperin[†]
University of Washington

Thomas S. Heydt-Benjamin[†]
University of Massachusetts Amherst

Benjamin Ransford[†]
University of Massachusetts Amherst

Shane S. Clark
University of Massachusetts Amherst

Benessa Defend
University of Massachusetts Amherst

Will Morgan
University of Massachusetts Amherst

Kevin Fu, PhD[*]
University of Massachusetts Amherst

Tadayoshi Kohno, PhD[*]
University of Washington

William H. Maisel, MD, MPH[*]
BIDMC and Harvard Medical School

Abstract—**Our study analyzes the security and privacy properties of an implantable cardioverter defibrillator (ICD). Introduced to the U.S. market in 2003, this model of ICD includes pacemaker technology and is designed to communicate wirelessly with a nearby external programmer in the 175 kHz frequency range. After partially reverse-engineering the ICD's communications protocol with an oscilloscope and a software radio, we implemented several software radio-based attacks that could compromise patient safety and patient privacy. Motivated by our desire to improve patient safety, and mindful of conventional trade-offs between security and power consumption for resource-constrained devices, we introduce three new zero-power defenses based on RF power harvesting. Two of these defenses are human-centric, bringing patients into the loop with respect to the security and privacy of their implantable medical devices (IMDs). Our contributions provide a scientific baseline for understanding the potential security and privacy risks of current and future IMDs, and introduce human-perceptible and zero-power mitigation techniques that address those risks. To the best of our knowledge, this paper is the first in our community to use general-purpose software radios to analyze and attack previously unknown radio communications protocols.**

1. Introduction

Wirelessly reprogrammable *implantable medical devices* (*IMDs*) such as *pacemakers*, *implantable cardioverter defibrillators* (*ICDs*), *neurostimulators*, and implantable *drug pumps* use embedded computers and radios to monitor chronic disorders and treat patients with automatic therapies. For instance, an ICD that senses a rapid heartbeat can administer an electrical shock to restore a normal heart rhythm, then later report this event to a health care practitioner who uses a *commercial device programmer*[1] with wireless capabilities to extract data from the ICD or modify its settings without surgery. Between 1990 and 2002, over 2.6 million pacemakers and ICDs were implanted in patients in the United States [19]; clinical trials have shown that these devices significantly improve survival rates in certain populations [18]. Other research has discussed potential security and privacy risks of IMDs [1], [10], but we are unaware of any rigorous public investigation into the observable characteristics of a real commercial device. Without such a study, it is impossible for the research community to assess or address the security and privacy properties of past, current, and future devices. We address that gap in this paper and, based on our findings, propose and implement several prototype attack-mitigation techniques.

Our investigation was motivated by an interdisciplinary study of medical device safety and security, and relied on a diverse team of area specialists. Team members from the security and privacy community have formal training in computer science, computer engineering, and electrical engineering. One team member from the medical community is a practicing cardiologist with hundreds of pacemaker and implantable defibrillator patients and was past chairperson of the FDA's Circulatory System Medical Device Advisory Panel. Our technical contributions toward understanding and improving the security, privacy, and safety of these devices include: analyses; software radio-based methodologies; and human-perceptible and zero-power (battery-free) defenses.

Overview of contributions. We assess the security and privacy properties of a common ICD and present attacks on privacy, integrity, and availability. We show that the ICD discloses sensitive information in the clear (unencrypted); we demonstrate a *reprogramming* attack that changes the operation of (and the information contained in) the ICD; and

[*]Corresponding faculty authors:

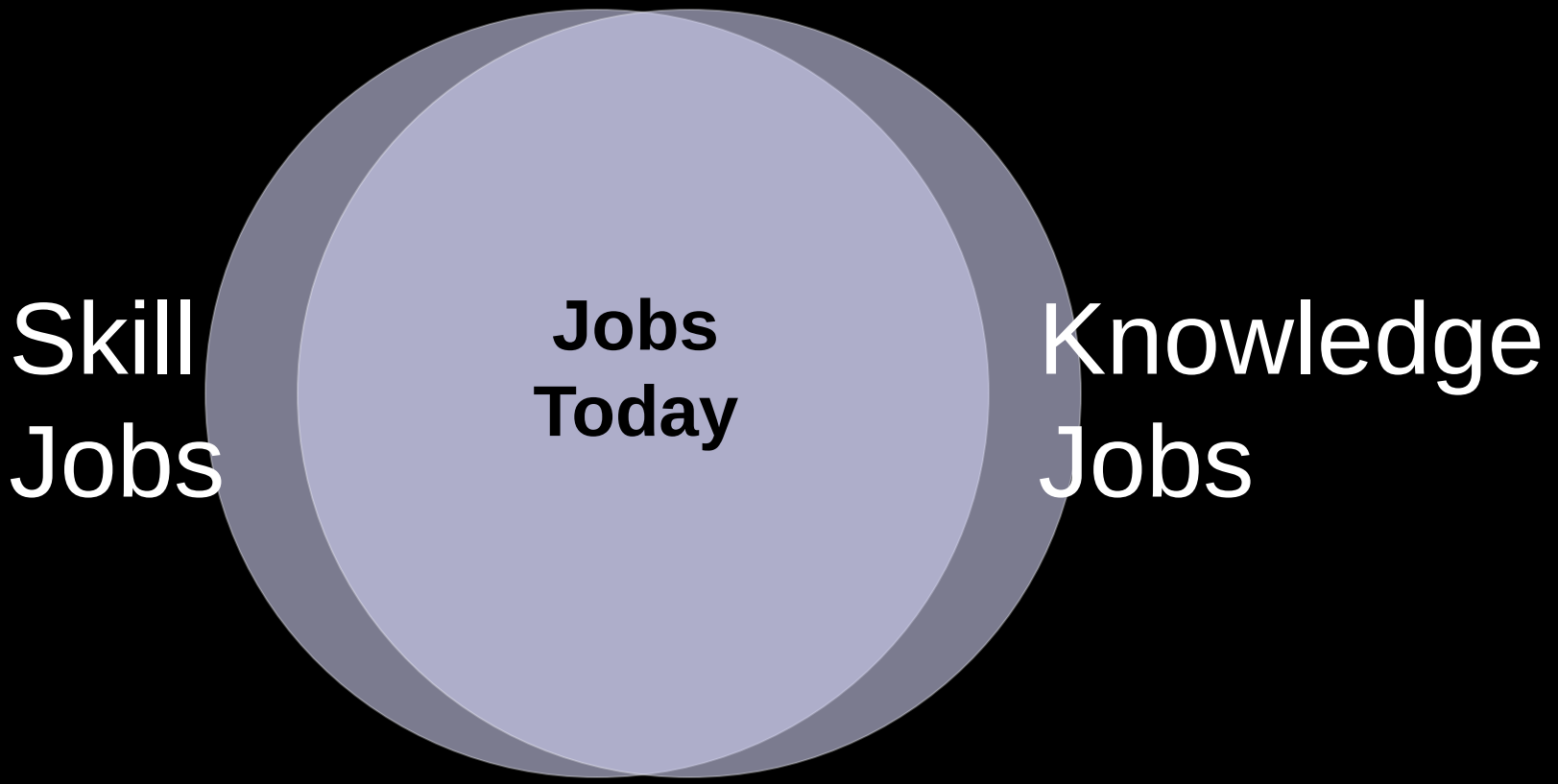
- Kevin Fu, Medical Device Security Center, Department of Computer Science, University of Massachusetts Amherst, 140 Governors Drive, Amherst, Massachusetts 01003 (kevinfu@cs.umass.edu);
- Tadayoshi Kohno, Medical Device Security Center, Department of Computer Science and Engineering, University of Washington, Box 352350, Seattle, Washington 98195 (yoshi@cs.washington.edu);
- William H. Maisel, Medical Device Safety Institute, Beth Israel Deaconess Medical Center, Harvard Medical School, 185 Pilgrim Road, Baker 4, Boston, MA 02215 (wmaisel@bidmc.harvard.edu).

Additional information online at http://www.secure-medicine.org.

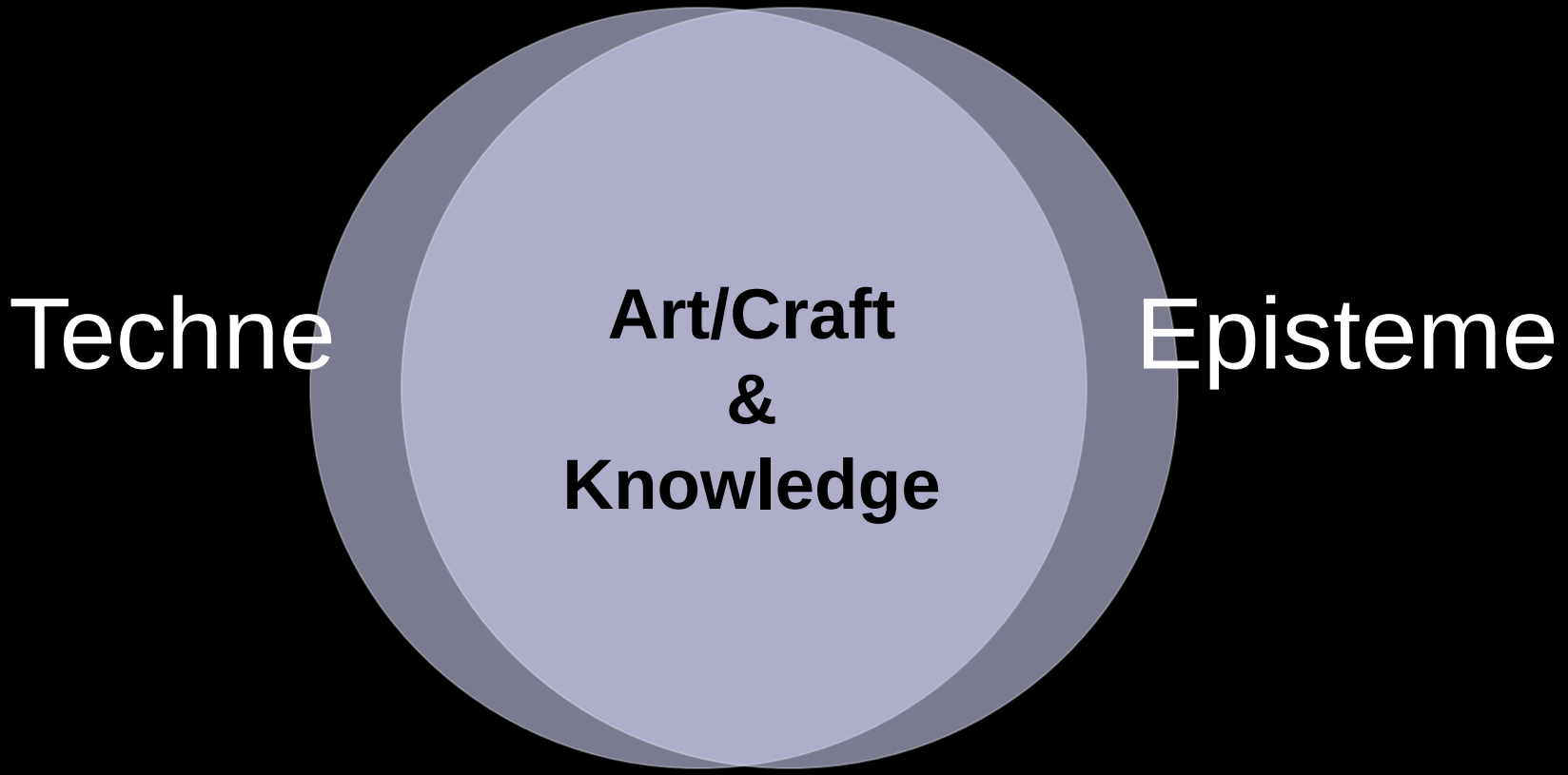
[†]Co-student leads listed in alphabetical order; each participated equally.

[1]The reader should not confuse the term "device programmer" with a person who programs computers. The former is an external device that communicates with and adjusts the settings on an IMD.

Post Industrial Workforce Transformation



Mind Body Unification

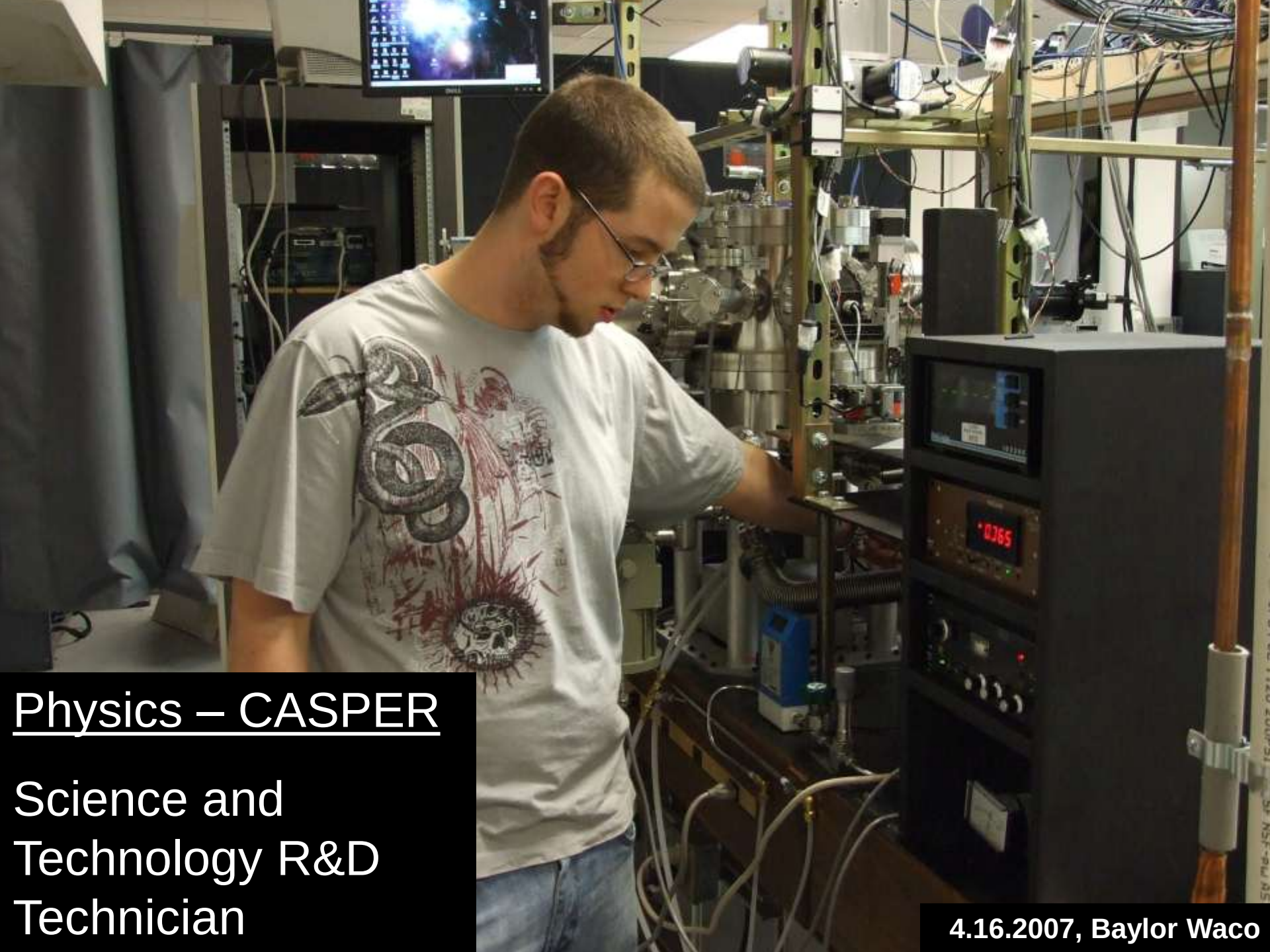


Science &
Technology
R&D

John Blangero, Ph.D.
Computational Genetics

Agricultural Genomics

National Center for Agricultural Utilization Research, Peoria, IL



Physics – CASPER

Science and Technology R&D Technician

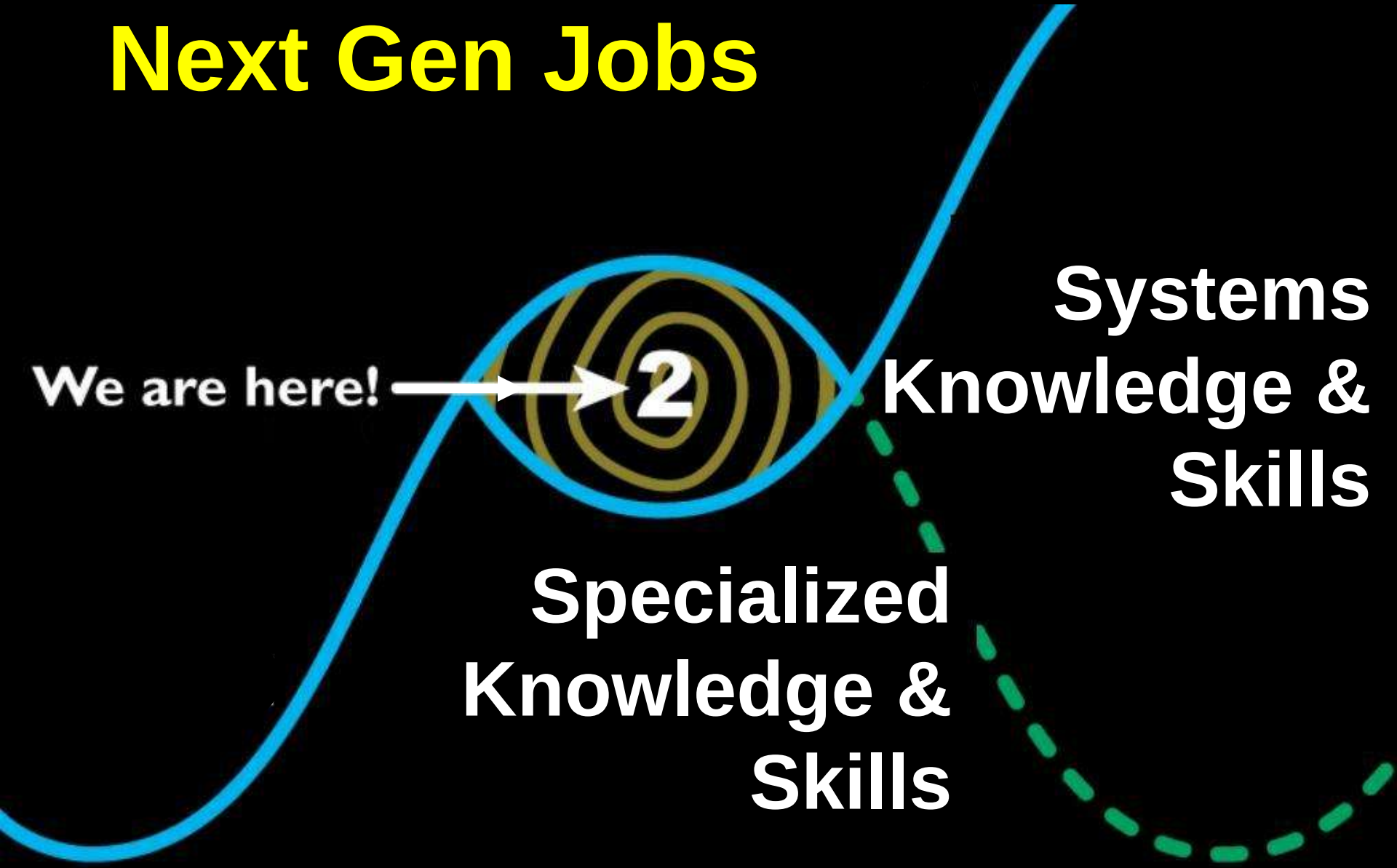
4.16.2007, Baylor Waco

Chemistry

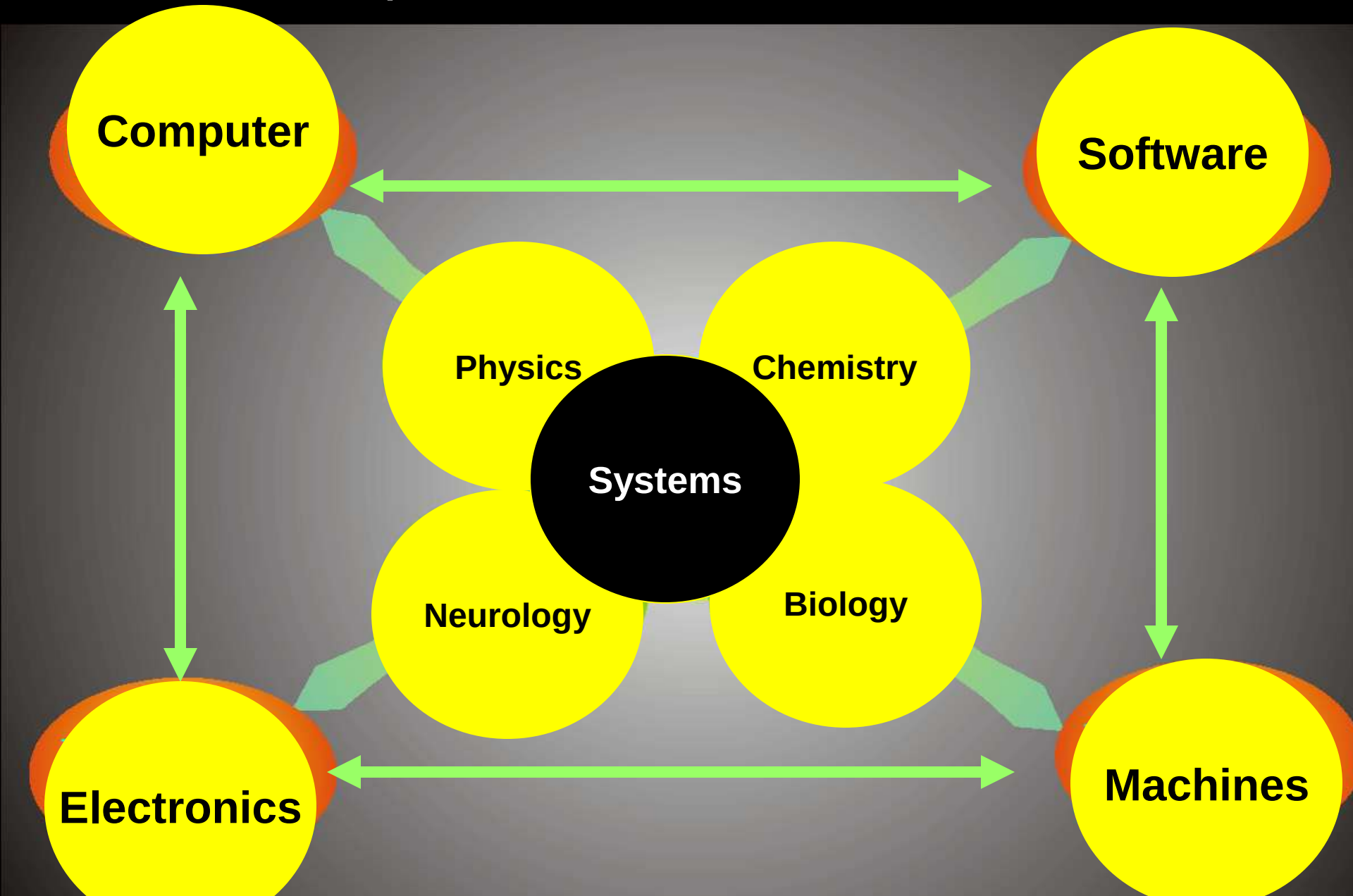
Science and Technology R&D Technician

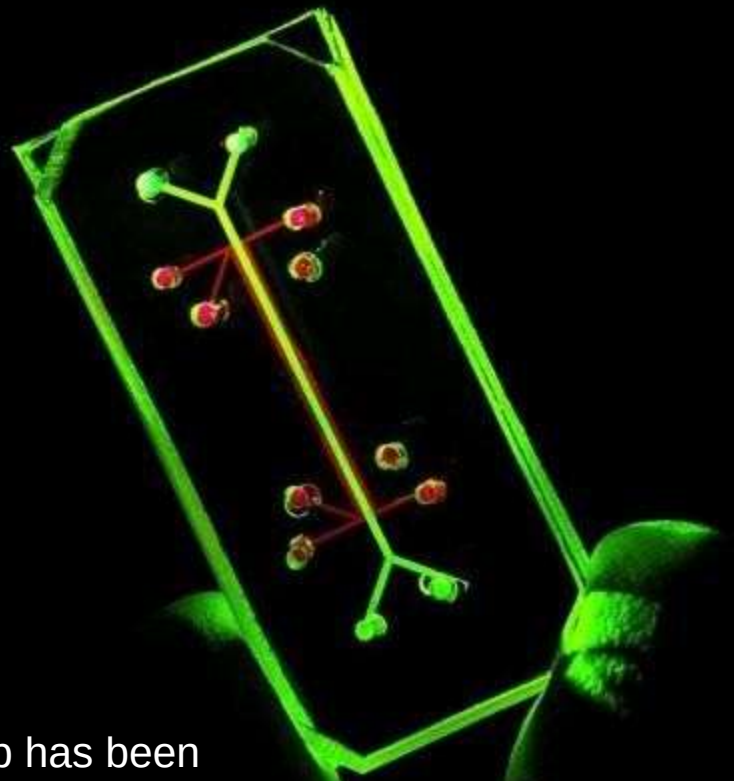
2007, TSTC Harlingen

Next Gen Jobs



The fundamental question of the 21st century is how do we organize to produce innovation and innovators?



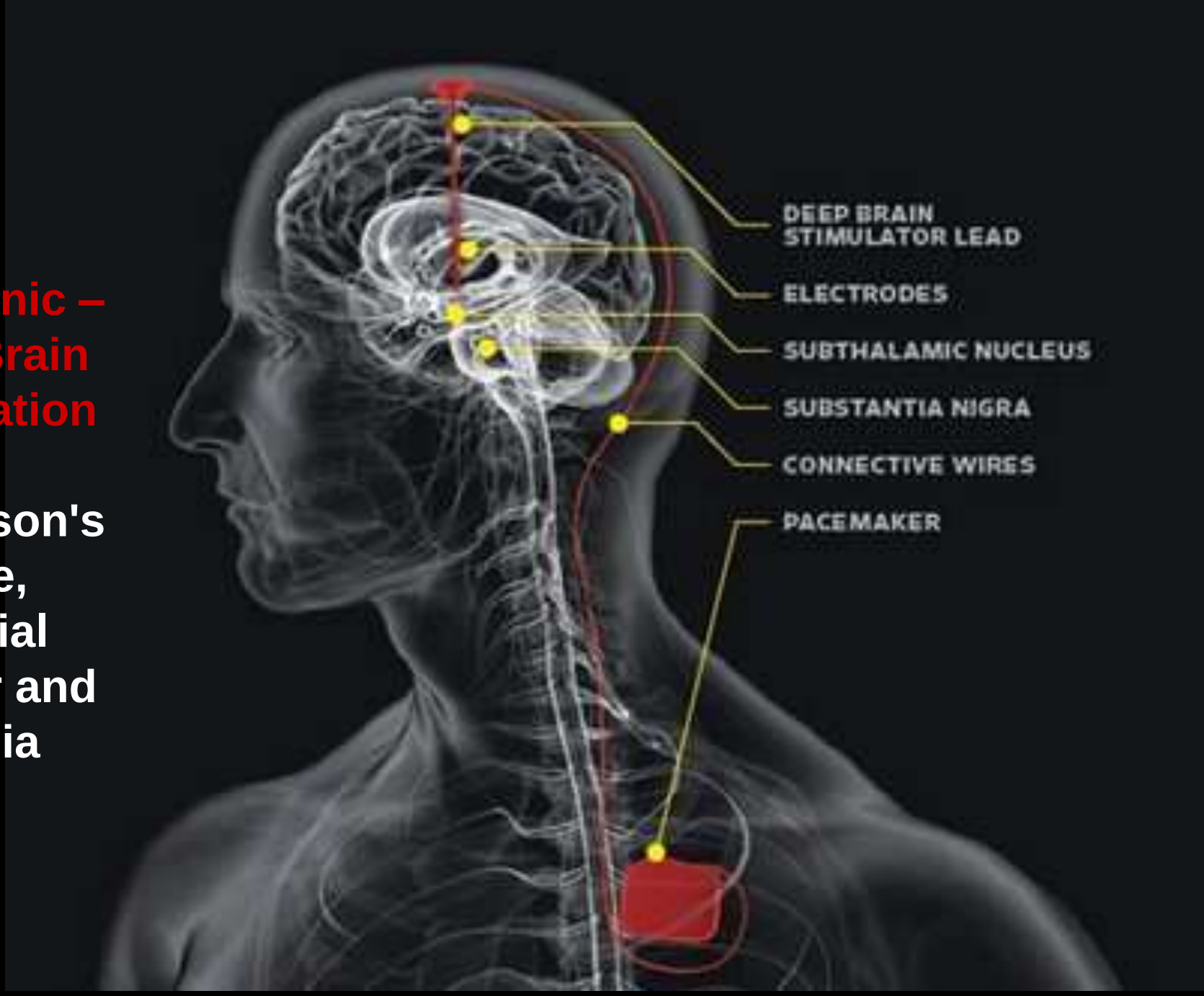


A living, breathing lung-on-a-chip has been developed. As well as mimicking the cellular structure of the lung, the chip copies its behavior too: it can "breathe.“ About the size of a rubber eraser, the device was developed by a team from the Wyss Institute for Biologically Inspired Engineering at Harvard University, Harvard Medical School and Children's Hospital Boston.

http://www.newscientist.com/article/dn19085-lungonachip-points-to-alternative-to-animal-tests.html

Medtronic – Deep Brain Stimulation

Parkinson's disease, Essential Tremor and Dystopia

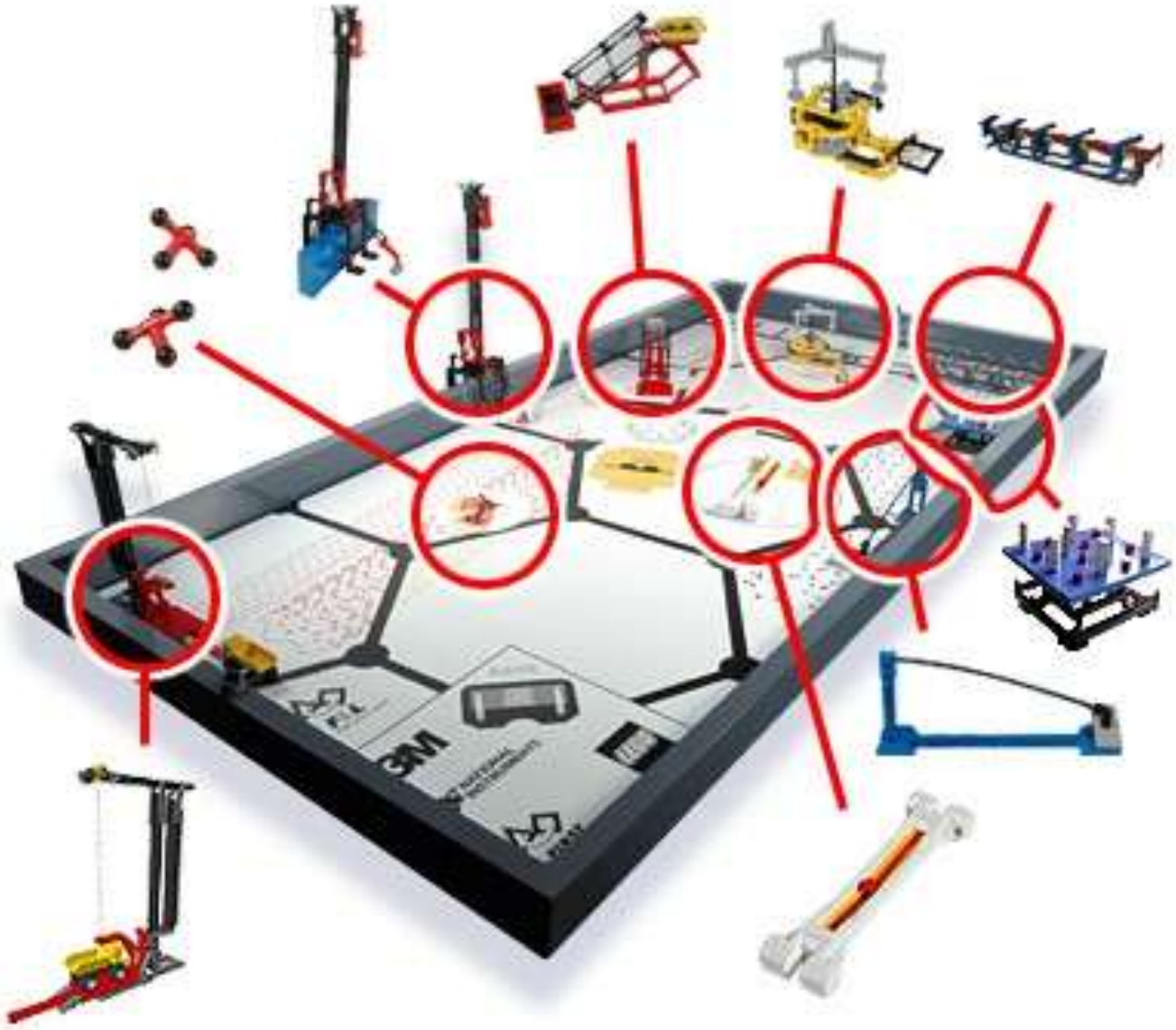


http://www.neurotexasinstitute.com/our-procedures/deep-brain-stimulation.aspx

2006 NANO QUEST CHALLENGE

FIRST LEGO®
LEAGUE

Over 80,000 middle-school students in 34 countries participate in the Nano Quest Challenge.



The appropriate mathematics to analyze computing seems to be systems approach with information theory, which will provide **a unifying principle for physics, chemistry, biology, and neuro science.** Brazell and Tanik, October 17, 2010

Learn more about the transdisciplinary scientific and engineering society – SDPS. SDPS is seeking community college partners for collaboration on STEM grants. Contact Jim Brazell.

http://www.sdpsnet.org/sdps/

STEM Mainstreaming CTE Practice

Video games for what?

Emergence of the 5th World.

Robots, they're here!


Globalization
Education
Security
Environment

1,000 MPG eq. Fuel Cell Car

The New Face of CTE

Los Altos Academy of Engineering

lasv.org

STEM Mainstreaming CTE Practice

Video games for what?

Emergence of the 5th World.

Robots, they're here!

How Can We Better Serve You?

Whether you are joining us live or watching the recorded version of this webinar, please take 1 minute to provide your feedback and suggestions.

http://www.questionpro.com/t/ABkVkZIwJl



Thank you for attending

MATEC NetWorks Webinar

Emerging Technologies and Strategies for Jobs, Education, and Communities

Classroom Ready Resources in the Digital Library

TechSpectives Blog

Webinars

All this and more at ***www.matecnetworks.org***

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www.matecnetworks.org,
Keyword Search:
"**webinars**"



NetWorks Upcoming Webinars

February 11: Minority Males – The Invisible Men

March 11: Energy Utilization Technologies

Visit ***www.matecnetworks.org*** for more details about these and other upcoming webinars.

NETWORKS



Certificate of Participation

If you attended the live version of this 1.5 hour webinar and would like a certificate of participation, please email

debra.annon@domail.maricopa.edu



Thank you for attending

MATEC NetWorks Webinar

Emerging Technologies and Strategies for Jobs, Education, and Communities

Classroom Ready Resources in the Digital Library

TechSpectives Blog

Webinars

All this and more at ***www.matecnetworks.org***

NETWORKS