Georgia Tech | Institute for People and Technology

IPaT Spring Town Hall

January 31, 2019

Georgia Tech
CREATING THE NEXT

IPaT Spring Town Hall

Learn about IPaT activities for Spring 2019

Jump start discussion on major new research initiative “The Future of Work at the Human Technology Frontier”

Talk with your colleagues, discuss new ideas, and swap Atlanta “snow” and Super Bowl stories

email: ipat@gatech.edu

New Faces

Queen Marrero

Financial Administrator

Greg McCormick

Georgia Smart

New Faculty

Matthew Gombolay

Interactive Computing

Leila Aflatoony

Industrial Design

IPaT In Coda


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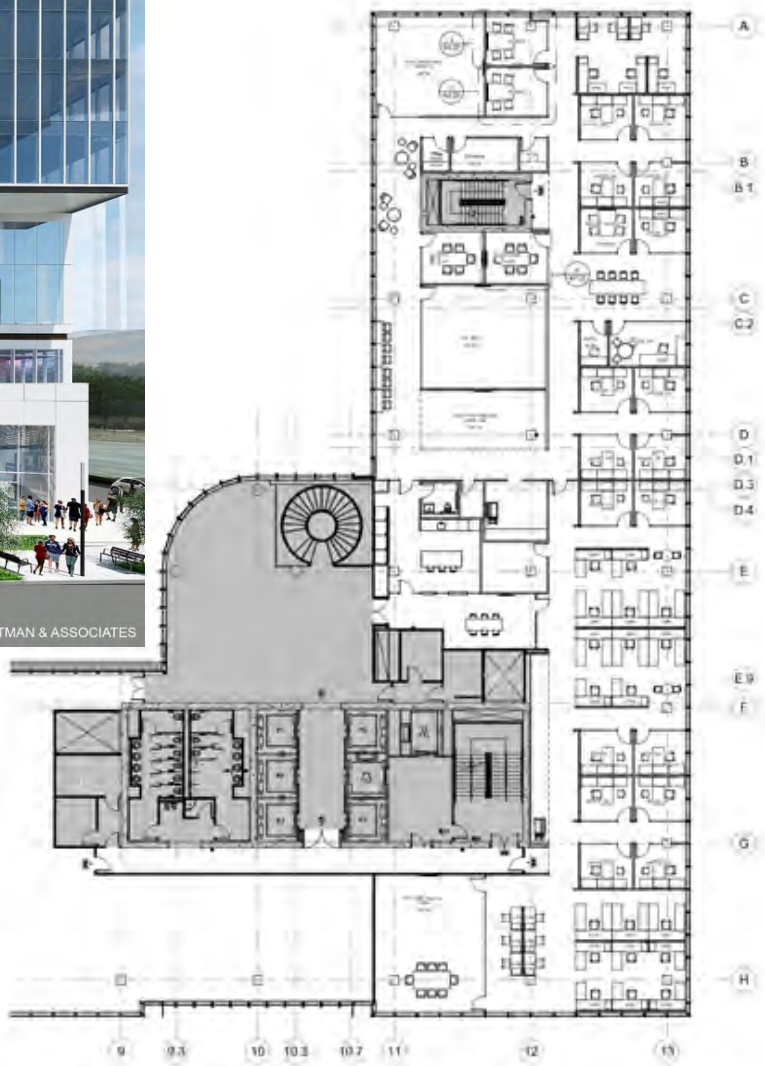
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IPaT Spring Schedule

IPaT Industry Innovation Day: Agile Health	April 18
IPaT Office Hours	Feb 11-13
Thursday Think Tanks	Thursdays, 3:30-5pm Feb 7, 14, 21, 28 Mar 7, 14, 28
Convergence Innovation Competition (CIC)	Apr 10
Games for Change Jam	Feb 16, Mar 16, April TBD
IPaT Research Directors	Jan 24, Feb 12, Mar 7 8:30am-10am
IPaT Research Retreat	May TBD

Thursday Think Tanks

The TTT is a weekly gathering of the IPaT community to brainstorm about research, stay informed about ongoing work and opportunities, and help define IPaT strategy.

Come interact with new and old colleagues and engage on topics of shared interest.

Spring 2019:

- Jan 17 Beth's Trend Report
- Jan 24 Bringing Innovation to Mild Cognitive Impairment in Aging Adults
- Feb 7 Wearable Technology and Society
- Feb 14 Virtual Reality Manufacturing Workplace
- Feb 21 TBD
- Feb 28 IPaT K-12 Engagement
- March 7 Design Thinking Methods for Research and Design
- March 14 Driverless Car Revolution
- March 28 Data Visualization and Visual Analytics

email: ipat@gatech.edu

Convergence Innovation Competition (CIC)
Wednesday, April 10

Bi-Annual competition

- Over 300 students annually
- cic.gatech.edu

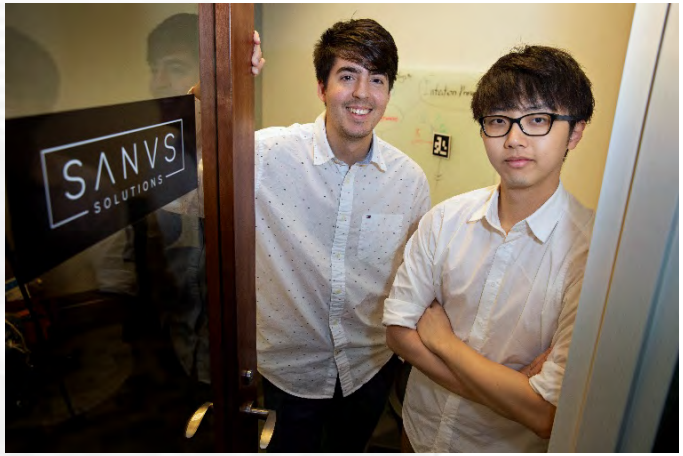
Categories:

- **Climate Solutions**
- **Health on the Move**
- **Players & Fans**

Think your idea doesn't fit?

Ask us—categories are intended to shape, not exclude.

Benefits: Prizes, Exposure, Contacts, IP retained, & Real world feedback



Submission deadline: @Midnight Wednesday 4/3/19

The CIC is held on the Atlanta campus and at Georgia Tech Lorraine

Interested? Questions?

Contact GT-RNOC

rnoc-lab-staff@lists.gatech.edu

2019 Industry Innovation Day

IPaT Office Hours – February 11-13

Klemis Kitchen/STAR Program Food Drive

IPaT dedicated the month of October to collect needed items for Klemis Kitchen

Klemis Kitchen is a food pantry on GT's campus that assist students with dietary needs and financial concerns which limits their access to proper nourishment

Coming this Summer Pop-up Market

This summer in conjunction with the Georgia Farmer's Market Association & collaborating with other departments on campus we will bring a Pop-up Market to campus

The goal is to bring fresh vegetables & fruits to assist students/staff who struggle with food insecurities.

Cost per share:
$6 – SNAP
$12 - Low income
$25 - Regular cost
$40 - Donation amount

Stay tuned for more details

IPaT/GVU Engagement Grants

Wearable Technology and Society: Artistic Collaborations
Clint Zeagler and Jay Bolter

Creating Georgia Tech's Center for Computing and Society
Ellen Zegura, Carl DiSalvo, and Michael L. Best

Connecting Georgia Tech with the Future of E-Sports
Laura Levy and Anne Sullivan

The Mild Cognitive Impairment Empowerment Program's Innovation Accelerator: Building a Diverse Coalition of Students, Faculty & Researchers to Address Aging-Related Cognitive Impairment
Craig Zimring, Jennifer DuBose, Gabrielle Campiglia, Brian Jones, Brad Fain, and Herb Valasquez

Building Capacity for Sustainable, Interdisciplinary, Smart Campus Research: A Needs Analysis
Russ Clark and Matt Sanders

Understanding the Impact of VR for Engineering Analysis on Workplace Practice
Chris Le Dantec and Thomas Kurfess

IPaT's Vision, Mission, and Research Pillars

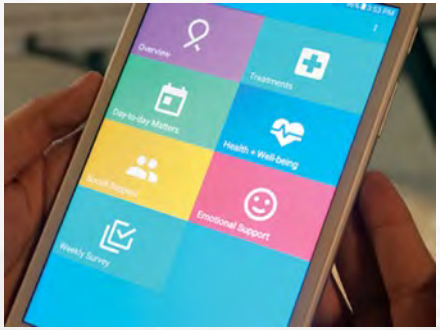
Shaping the future of human-centered systems, environments and technologies to promote satisfying, healthy and productive lives.

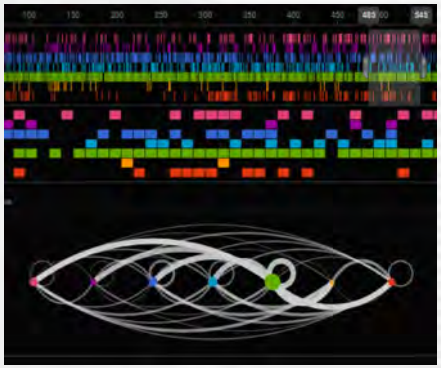
Catalyze *interdisciplinary research between faculty, students, and industry.*

Provide *the continuity and capacity to address societal challenges.*

Advocate *for socio-technical change that improves the human condition.*

Educate *human-centered engineers, scientists, designers, business leaders, and policy makers.*





Research Pillars

Lifelong Health and Wellbeing

Smart Cities and Inclusive Innovation

Platforms and Services for Socio-Technical Systems

Shaping the Human Technology Frontier

Lifelong Health and Wellbeing

Aging

- ERC Preliminary Proposals on Aging

Pediatrics

- GT-CHOA Pediatric Technology Center (PTC) wins Georgia Bio Golden Helix 2018 Community Award
- Imlay funded Passport App for Kids deploying at the Aflac Cancer Center

NIH R21 (collaboration between Emory and GT, PI Kesar) funded "**Innovative Biofeedback Interface for Enhancing Stroke Gait Rehabilitation**"

New call for Diabetes Seed Grants

IPaT Research Infrastructure

- 3rd party HITRUST Certification for HIPAA compliant environment Year 1 is complete - no corrective items or deficiencies to be addressed
- Migration of CMS dataset to the shared Safebox environment, refreshed thin clients and servers, offsite backups; easier integration with campus and cloud services.

From pediatrics to aging, IPaT's continuum of healthcare research is working to promote and enable vibrant and lifelong physical and mental health.

Smart Cities and Inclusive Innovation

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2019 ARC / Georgia Smart Community Challenge

GA Smart Community Corps

Connecting cities, revitalizing regions: the centrality of cities to regional development

Labour, work and regional resilience (Clark et. al)

Through interdisciplinary expertise in technology and policy, IPaT is developing innovative approaches to shaping resilient and sustainable communities.

Georgia Smart Webinar: Heaven or Hell? **The Impact of Autonomous Vehicles on Urban Form**

Smart Cities Digital Twin Summit

Georgia Healthy Cities workshops

Newsweek: **How Driverless Cars Will Change the World**, Dec 12

Hot Cities 2050 Jan 9

Urban and Regional Air Mobility, Jan 23

Shaping the Human Technology Frontier

GT Hosted ACM "**Animal Computer Interaction Conference**", Dec 4-6 2018 (for the first time in the US) led by Melody Moore Jackson. GT researchers had a number of papers

Fashion and Wearable Technology Panel event to be held in Fall 2019. Collaboration between WCC and Fashion Group International Atlanta. Stay tuned for details….

"Nostalgic Futures" exhibition now on display in CULC

Future of Sports Technology VIP section launched (three thrusts are Wearable Tech for Performance, Augmenting the Fan Experience, and E-Sports)

We're exploring new ideas in user experiences that foster creativity, stimulate learning and enable productive collaboration. Through this initiative, we're researching and developing novel wearable computing, assistive, augmented reality, and gaming technologies.

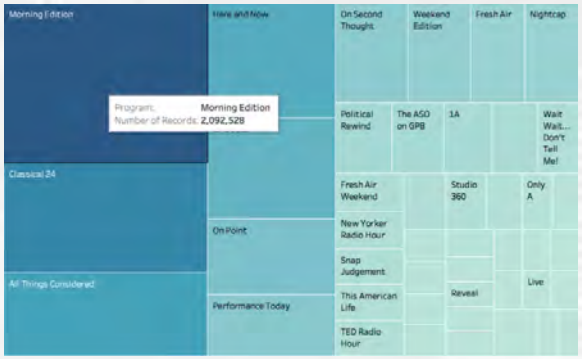
Platforms and Services for Socio-Technical Systems

Sea Level Tools for Emergency Planning & Response

- 12 sensors deployed, 30 in production
- API and dashboard online at sealevelsensors.org
- Partnerships with City of Savannah, Chatham County, GDOT, Jenkins High School, etc

Project storage and API hosting work in progress for Smart Cities & Smart Campus projects (Marta, Coda, LBC, and the SeaLevel sensing).

Completed Phase 1 with Georgia Public Broadcasting – Understand current and future viewership patterns



IPaT is merging physical and digital worlds with complex data analytic and communication capabilities. We are building new network infrastructure technologies with the goal of creating connected systems that support communities.

Upcoming Think Tanks on VR and Manufacturing, and Visual Analytics

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The Future of Work at the Human Technology Frontier

Elizabeth Mynatt

Executive Director

Distinguished Professor,
College of Computing

Georgia Tech
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Shaping the Human Technology Frontier

Wearables to Mixed and Augmented Reality to Virtual Reality

Training
Simulation
AI driven characters and plot

Mixed intelligence

Learning
- STEM / minority students
- Aging adults and caregivers

Workforce (health, communities)

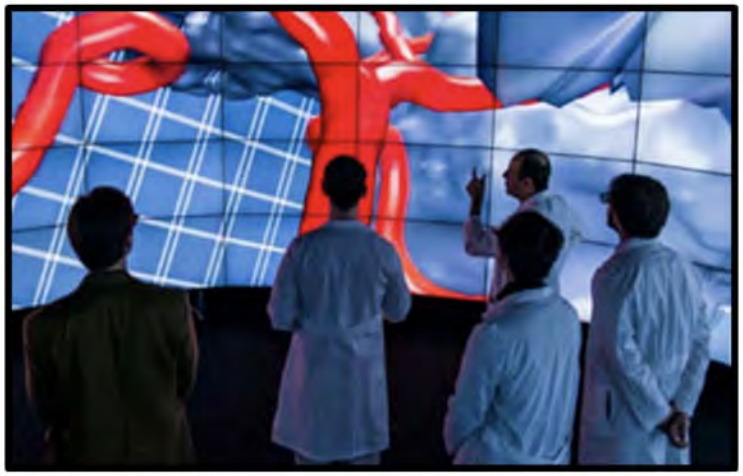
Implications of IoT, networked services and systems

We're exploring new ideas in user experiences that foster creativity, stimulate learning and enable productive collaboration. Through this initiative, we're researching and developing novel wearable computing, assistive, augmented reality, and gaming technologies.

Future of Work at the Human-Technology Frontier

Understanding and building the human-technology partnership

Manufacturing “cobot”

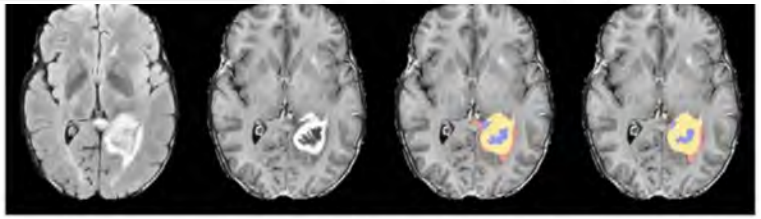


Immersive 3D virtual environment

Future of Work at the Human-Technology Frontier

Augmenting Human Performance

Smart prosthetic arm and hand with sense of touch



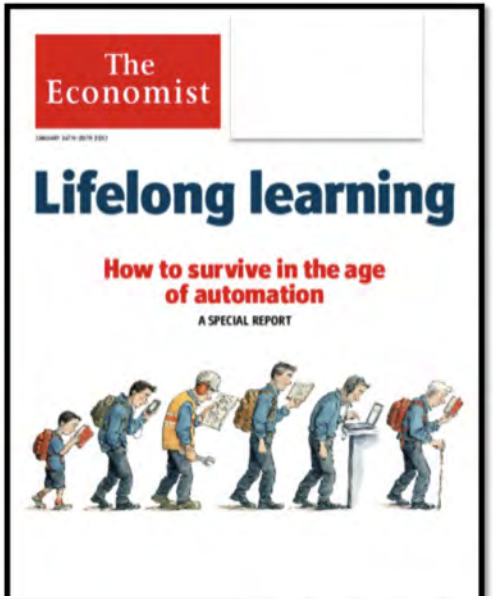
Deep learning applied to brain tumor detection and segmentation

Soft robotic exoskeleton for strength and endurance

Future of Work at the Human-Technology Frontier

Fostering lifelong learning and learning with technology

Dashboard for teachers



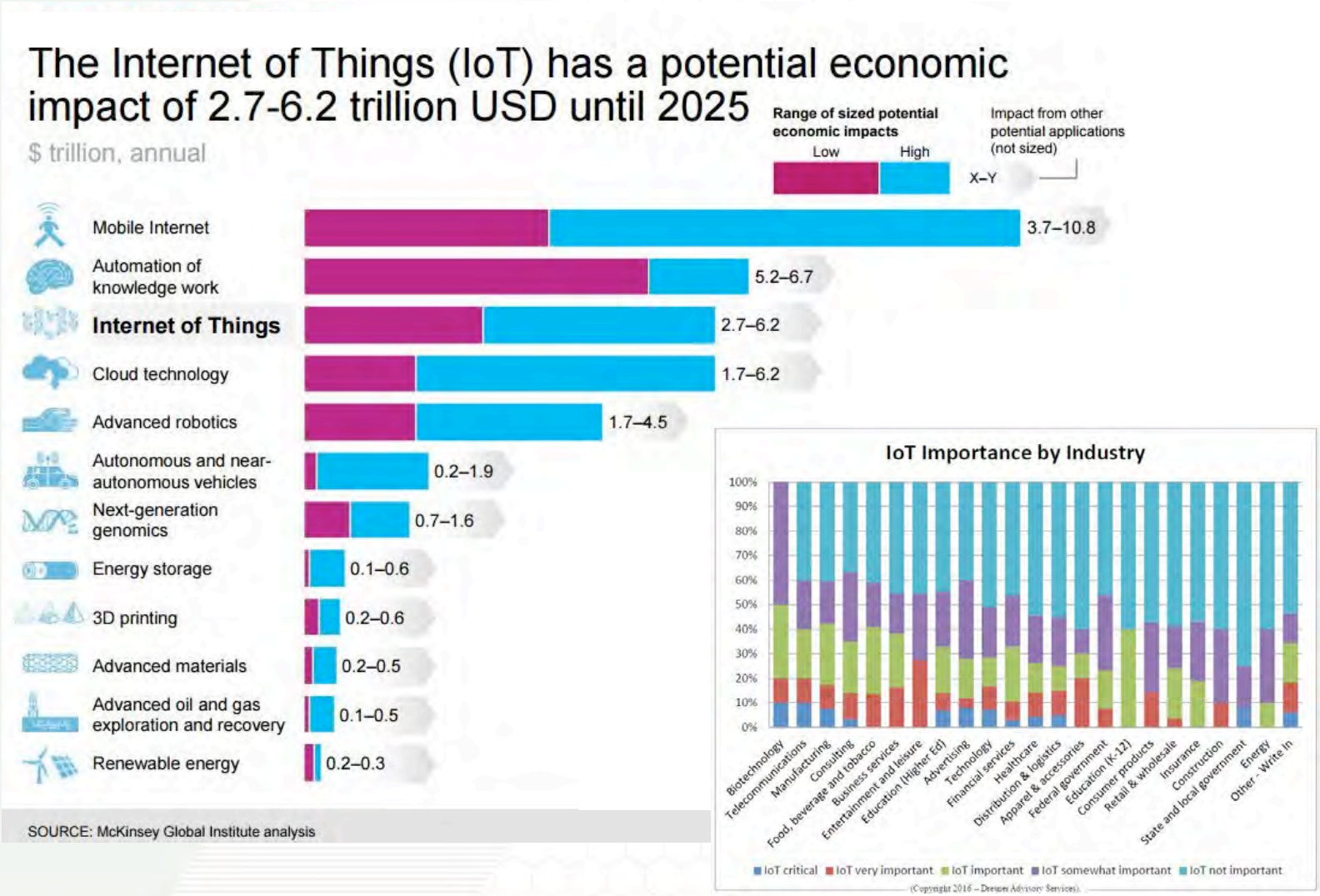
Virtual reality training simulation

Future of Work at the Human-Technology Frontier

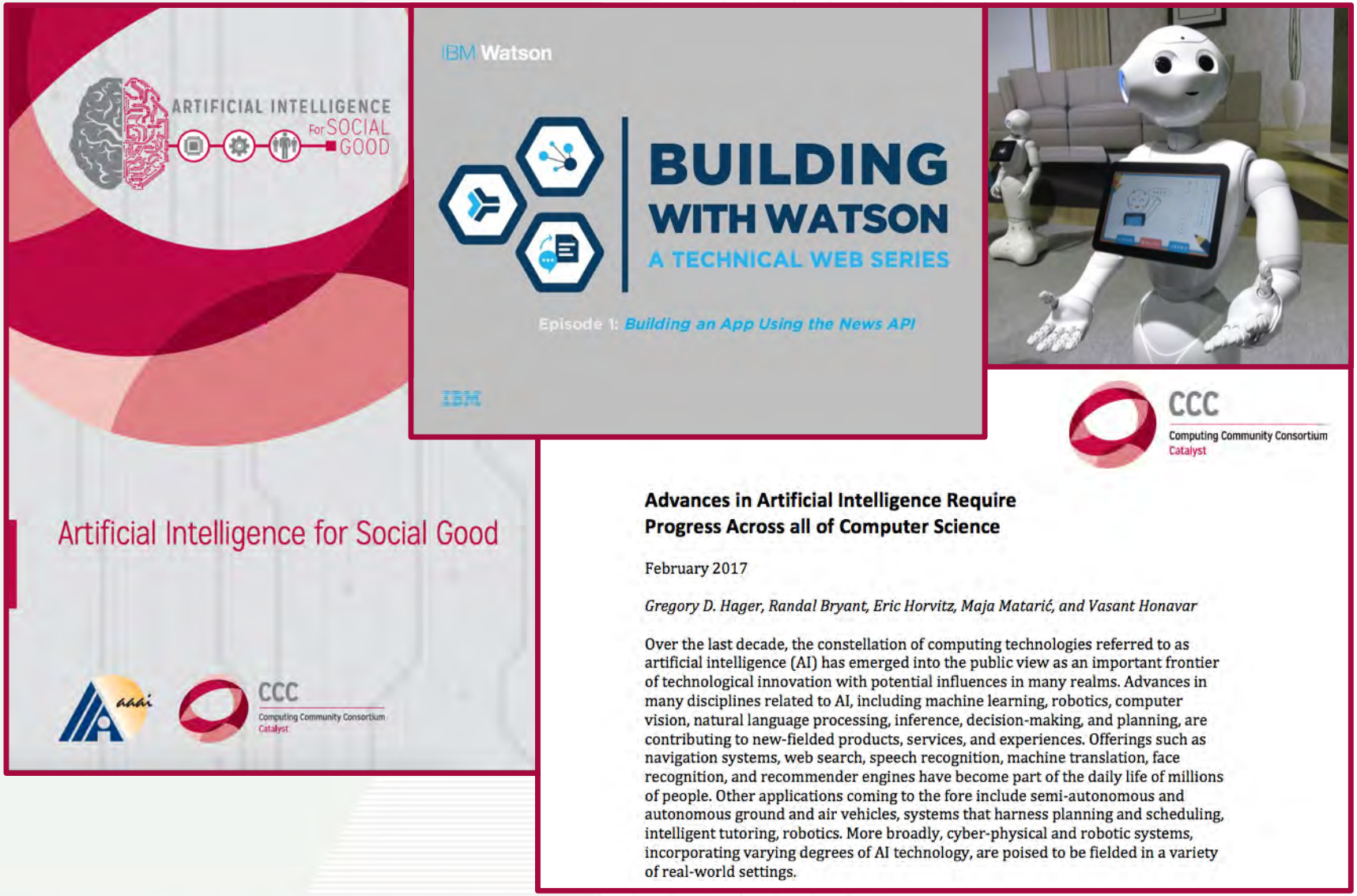
In Situ Support: Blurs the line between training, certification and work

Intelligent Infrastructure

https://blogs-images.forbes.com/louiscolumbus/files/2016/11/McKinsey.jpg



AI and Amplifying Human Abilities

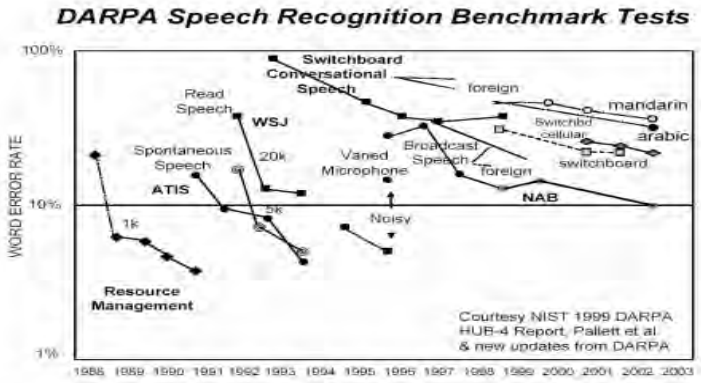


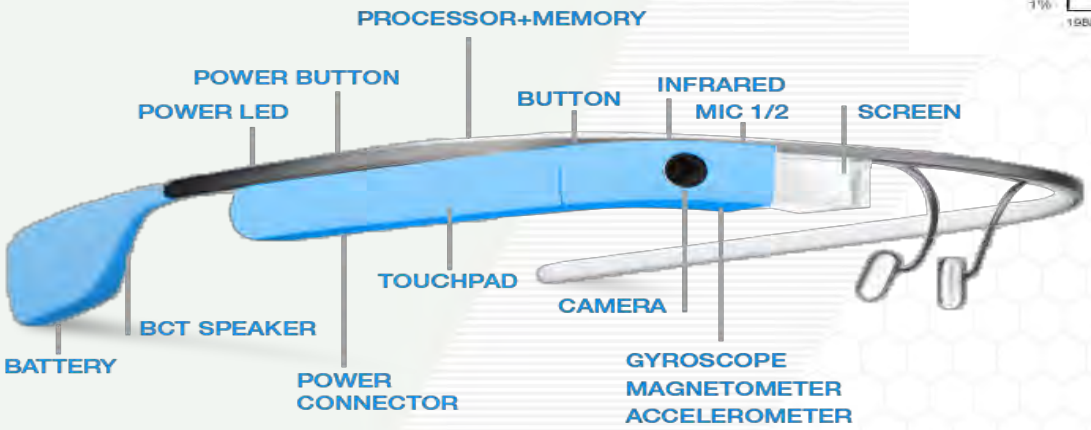
Reaping 70 Years of Investment

A SCIENTIST OF THE FUTURE RECORDS EXPERIMENTS WITH A TINY CAMERA FITTED WITH UNIVERSAL-FOCUS LENS. THE SMALL SQUARE IN THE EYEGLASS AT THE LEFT SIGHTS THE OBJECT

AS WE MAY THINK

A TOP U. S. SCIENTIST FORESEES A POSSIBLE FUTURE WORLD





NSF Future of Work at the Human-Technology Frontier: Core Research (FW-HTF)

NSF Big Ideas (2016--)

"A unique opportunity to actively shape the development and use of technologies to improve the quality of work while also increasing productivity and economic growth"

- Build human-technology partnership
- Augment human performance
- Illuminate the socio-technological landscape
- Understand and influence risks/benefits of tech/AI on workers and work
- Foster lifelong learning

Work: Physical or mental activity to achieve tangible benefit, e.g. income, project or community welfare.

NSF Future of Work at the Human-Technology Frontier: Core Research (FW-HTF)

Convergent Research

Reflected in project leadership

Must address

- Work Context
- Integrative Research
- Methods, Measures, and Metrics

Possible topics:

- Risks and opportunities for the symbiosis of human/machines
- Social and economic structures

Cross boundaries of science and engineering, strong translational potential

Basics

FW-HTF Research Grants

- Medium up to $1.5M up to 3 yrs.
- Large: $1.5-3M up to 4 yrs.
- Letters of collaboration

- Planning Grants: $150K 1 year.

From OSTP AI Briefing, Nov 2018

R&D on Workforce Impacts of AI

- AI technologies offer many potential benefits:
  - creation of new industries and occupations
  - increased opportunities for innovation
  - increased productivity
- However, AI technologies are changing the nature of work, and have caused some concerns:
  - Possibility of lost jobs
  - Mismatch between available occupations and skills of the workforce
- NSF R&D: *The Future of Work at the Human-Technology Frontier*:
  - Increase understanding of human-technology partnership and emerging socio-technological landscape
  - Create new technologies to augment human performance
  - Foster livelong and pervasive learning with technology.

NSF's Big Idea on Future of Work at the Human-Technology Frontier

New NFF "DARPA light" Program

NSF Convergence Accelerators

- New NSF mechanism for translational and applied research
- Cohort and Active Management model
- Will conduct competitions for major grants on specific tracks through phased competition process
  - –Team seeding
  - –Intensive workshops for team participants
  - –Pitch for large grants to conduct accelerated research
  - –Awardees able to compete for additional prizes
- $30 million each for Harnessing the Data Revolution (HDR) and Future of Work at the Human-Technology Frontier (FW-HTF) accelerators
- Potential for smart classroom track under FW-HTF accelerator
- Pilot track competitions expected to start early in FY 2019
  - –Team formation process expected to take 6 months ahead of the pitch

Goals for Today

Unpack our expertise in HTF and its potential and risks for the future of work.

Connect research activities to GT future education plans.

Connect FW-HTF to our deep expertise in healthcare.

Reflect on how to catalyze and support convergent research.

The Future of Work at the Human Technology Frontier

Charting the Future of Work at the Human Technology Frontier
Maribeth Gandy Coleman, IMTC

Creating the Next in Education at Georgia Tech
Rich DeMillo, CoC, C21U

Project Briefs on the Future of Work for Health and Humanitarian Services
Jon A. Sanford, CoD, CATEA
Keaton Fletcher, CoS, Psych
Brad Fain, GTRI, CACP

Panel: Convergent Research
Lizanne DeStefano, CEISMC
Kaye Husbands Fealing, IAC, PP
Leigh McCook, GTRI

email: ipat@gatech.edu

Georgia Tech Institute for People and Technology

Charting the Future of Work at the Human Technology Frontier

Maribeth Gandy Coleman

Principal Research Scientist

Director, IMTC & WCC

Goals

Overview of HTF

Understand and survey current research at GT in context of HTF/FoW

Highlight current convergence research and identify future opportunities

Research at the Human Technology Frontier

"focused on the role of technology to augment human performance, including but not limited to, in the workplace, in the classroom, and to improve health outcomes" **NSF CCC Task Force**

Developing and studying new technologies that are intimately connected to us and our world (literally and figuratively)

Understanding how machines and humans can operate in *harmony*?

Anticipating potential impacts on social, economic, and environmental systems

Increasing access and participation

Mitigating risk
(automation, inadequate educational pathways, privacy, security threats, algorithmic biases, erosion of human knowledge/skills)

Augmenting the Physical Body

Exoskeleton for Waste Collection Workers

Aaron Young (Exoskeleton and Prosthetic Intelligent Controls Lab, ME)

Sponsor:

Rubicon Global

Garbage collection is one of the most hazardous jobs

Workers are subjected to increased muscle and joint injuries because of the laborious nature of the job

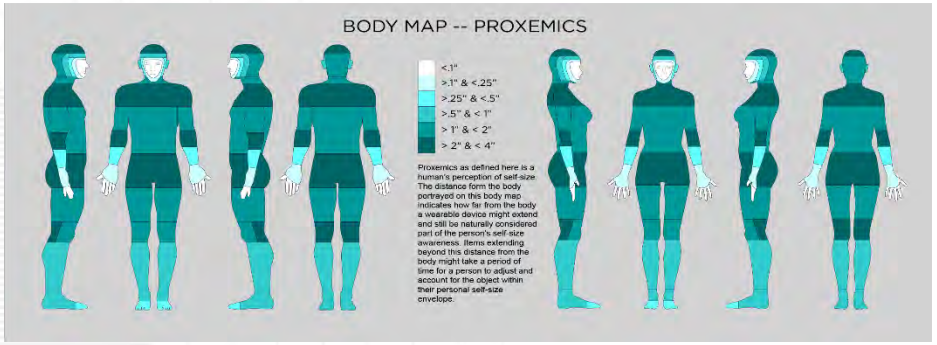
Functional , Technical and Social Considerations of Wearable Technology

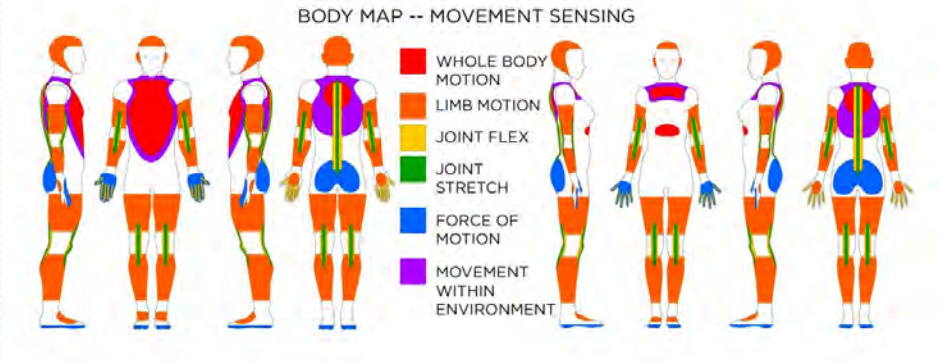
Body Maps

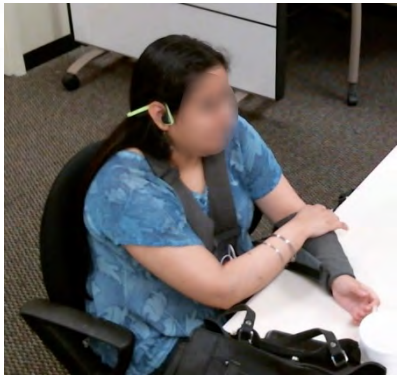
Wearable & Accessible

Sociocultural Design for Wearables

Zeagler, Presti, Lambeth, Gandy, Levy (IMTC)
Baker (CACP)







Imagining Futures: A Collaborative Policy Design for Wearable Computing

Baker (CACP)
Gandy & Zeagler (IMTC)

Enhancing Human Performance via Mixed-Reality

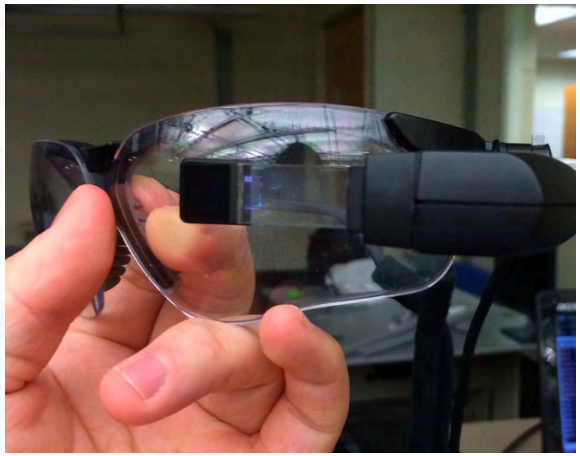
Comparison of Order Picking Methods

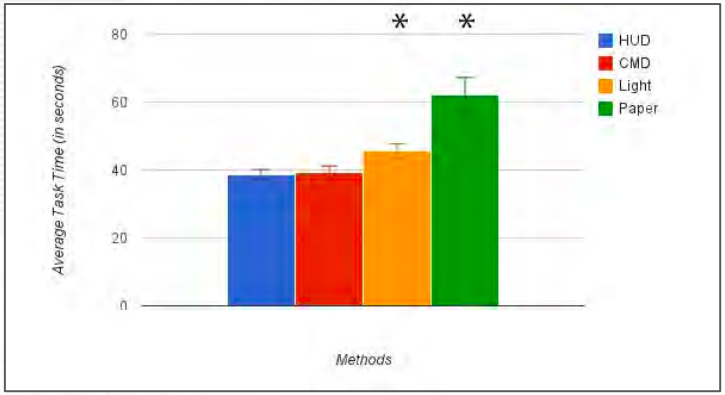
Starner, Southern (IC), Scott Gilliland (IMTC)

Partner:

Ubimax GmbH

Worker assisted by: head-up display (HUD), cart-mounted display (CMD), light, and paper pick list





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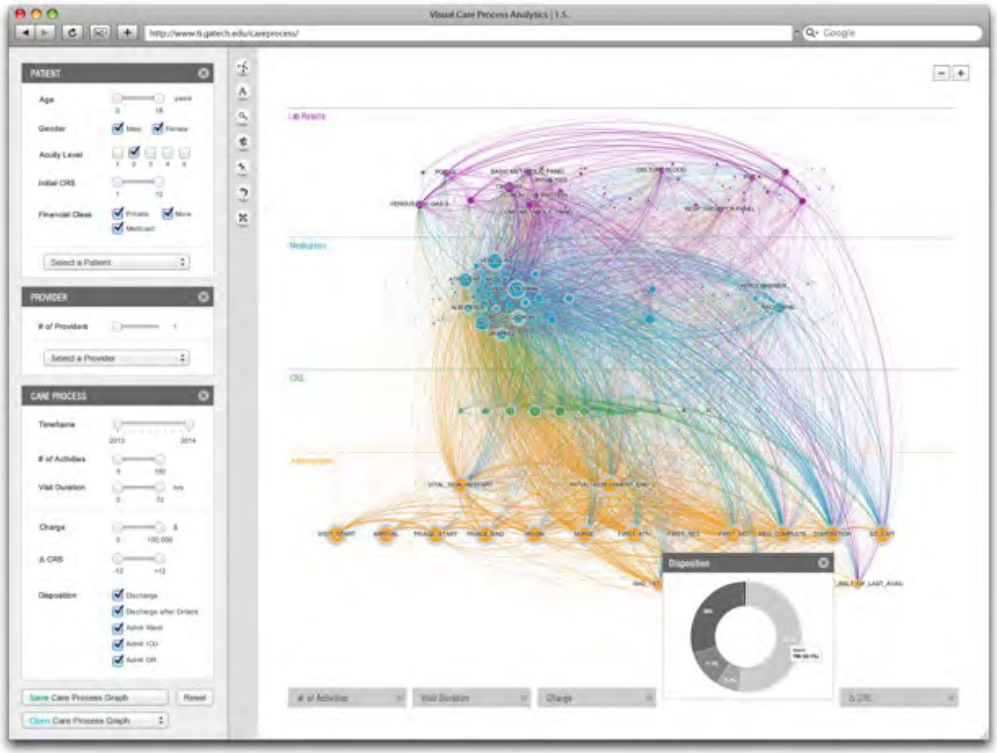
Visual Analytics Supporting Decision Making

Modeling Pediatric Care Flows

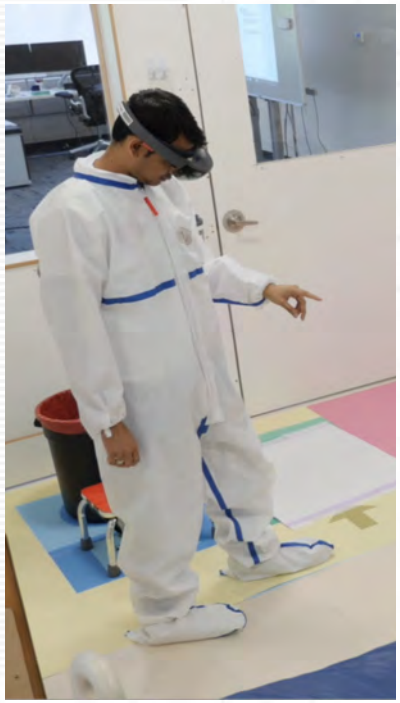


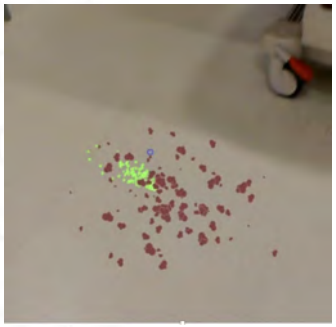
Training for the Physical World

Designing AR systems to explore point-of-view, bias, and trans-cultural conflict

AR Training for Highly Infectious Disease Treatment

Improving Safety of Healthcare Workers





Designing for New Work Model and Environments

Technology Use in Work Tasks

Unusual Working Environments

Human-automation Interaction

Walker, Catraombone, Gorman, (Psych)

Guidance for the Gig Worker

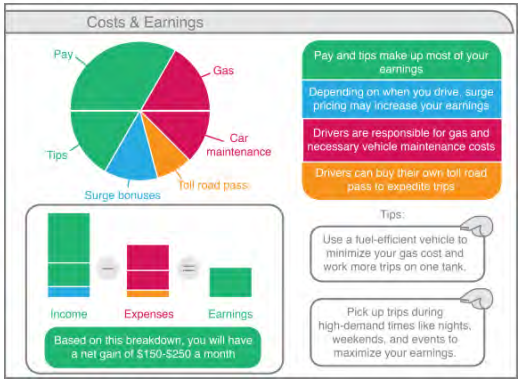
Matching, Training, Empowering, and Motivating Workers in the Gig Economy

Levy, Lambeth, Gandy
Coleman, Zeagler, Byrd (IMTC)

Increasingly people are turning to gig economy jobs to supplement income

How can technology support them?

What data can be used to learn about these users to optimize success?



Increasing Participation in Gig Economy

Contingent Employment of People with Disabilities

Moon (CACP)

Participation of individuals with disabilities in contingent employment arrangements

Entry into workforce, Opportunities to counter unemployment, flexibility

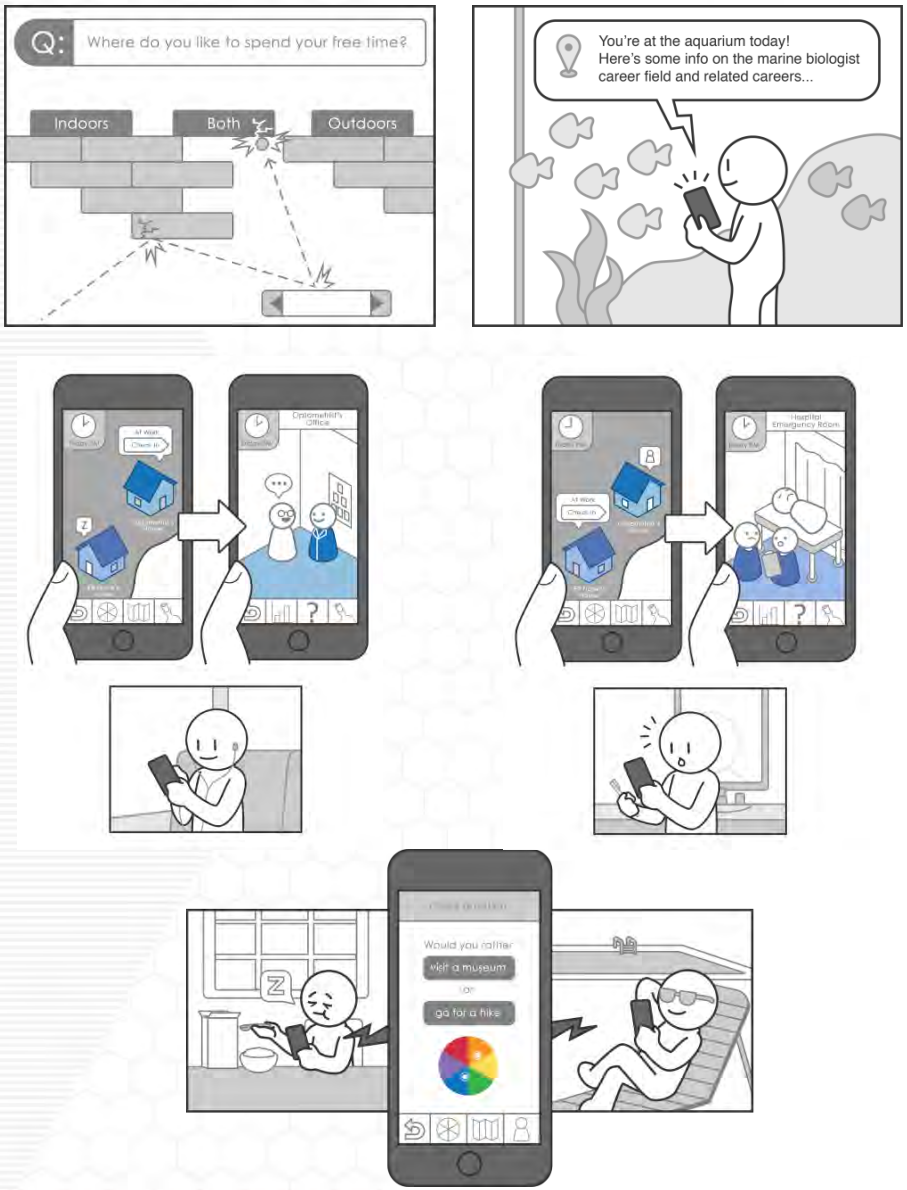
Potential for lower pay and few benefits, no provisions for workplace accommodations, undermine goals of full employment

Career Support

Game Environments for Assessment & Feedback

Riedl, Edwards (IC), Gandy, Levy, Lambeth, Thompson (IMTC)

Sponsor: ACT Inc.



Just-in-Time Coaching

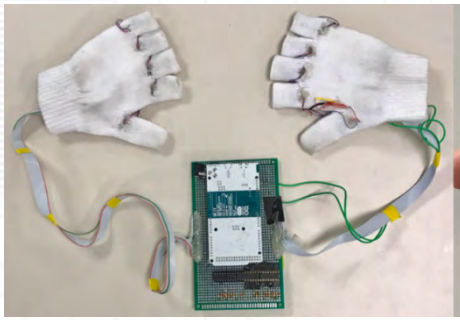
Job Coaching, Rapid Skills Development, and Worker Acceptance

Milchus (CATEA), Presti (IMTC), Starner (IC)

Wearable systems to help employees rapidly acquire the skills

Just-in-time job coaching for people with disabilities

Passive Tactile Learning



Understanding Social, Economic and Policy Factors For Localized Innovation Networks

Applications, Context, and Networks of innovation: Implications for the Future of Work

(Baker, CACP)

Understanding Changing Labor Markets

Labor, Work, and Regional Resilience

Clark (Policy)

Robotics, automation, and artificial intelligence have reduced the number of workers required

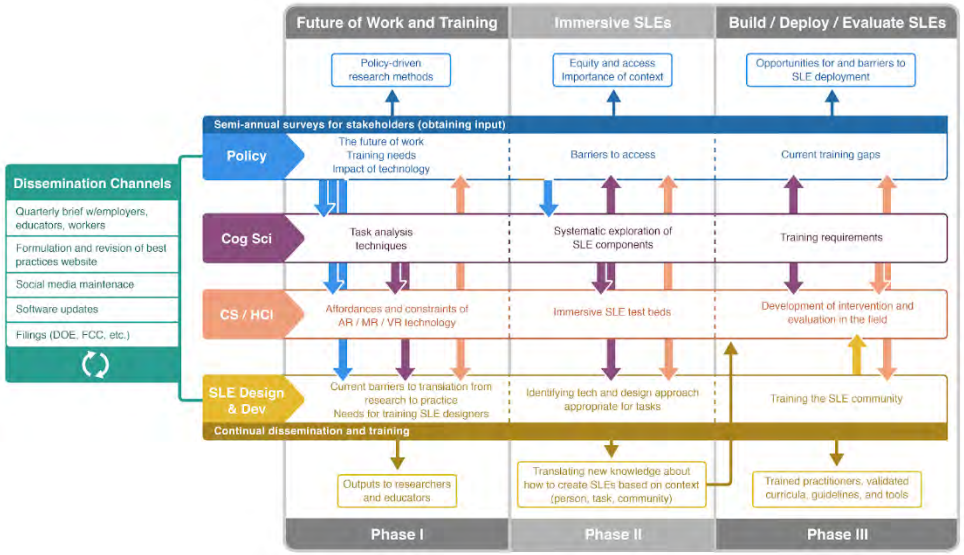
What types of jobs will be most affected?

What new skillsets will be needed for the jobs of tomorrow?

How governments can ease the transition?

Understanding When Advanced User Experience Pays Off

Developing Principles to Guide the Construction of Synthetic Learning Environments using Multimodal Augmented Reality Content



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email: ipat@gatech.edu

CNE-INSPIRED RESEARCH PROJECTS

AND THE FUTURE OF WORK

RICHARD DEMILLO
EXEC. DIR. C21U AND CNE PROGRAM OFFICE
CHARLOTTE B. AND ROGER C. WARREN CHAIR OF COMPUTING

JANUARY 31 2019

CREATING THE NEXT®

DELIBERATE INNOVATION, LIFETIME EDUCATION

The Georgia Tech Commitment to a Lifetime Education

Prepare students for 2040 when demographics, multiple career paths, churn of knowledge require episodic, agile, intense lifetime investment

The Initiatives

Whole Person Education
New Products and Services
Advising for a New Era
AI and Personalization
Distributed Worldwide Presence

The Culture – Becoming Deliberately Innovative

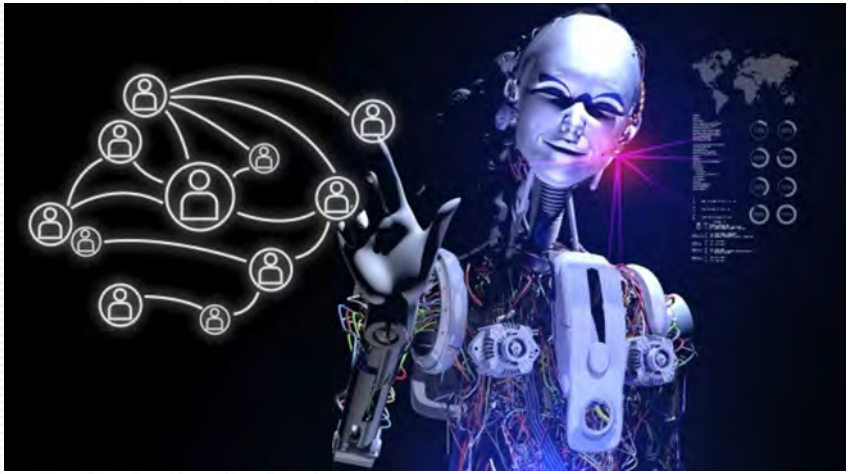
WHAT IS OUR SENSE OF THE FUTURE?

Buckminster Fuller: Innovation makes current system obsolete

- Most students will be younger than 18 or older than 24
- Degrees/credentials will be smaller fraction of educational products
- Declining market for disciplinary education
- Career paths will be complex, responsive to changing workplaces and markets
- Episodic education not tied to calendars
- Distributed (not stove piped) value chains
- Personalized delivery not massed produced
- Person-to-person (human) experiences ascendant
- Learners need to learn how to succeed when there is a churn of knowledge
- Whole person (non-cognitive) education will be a differentiator

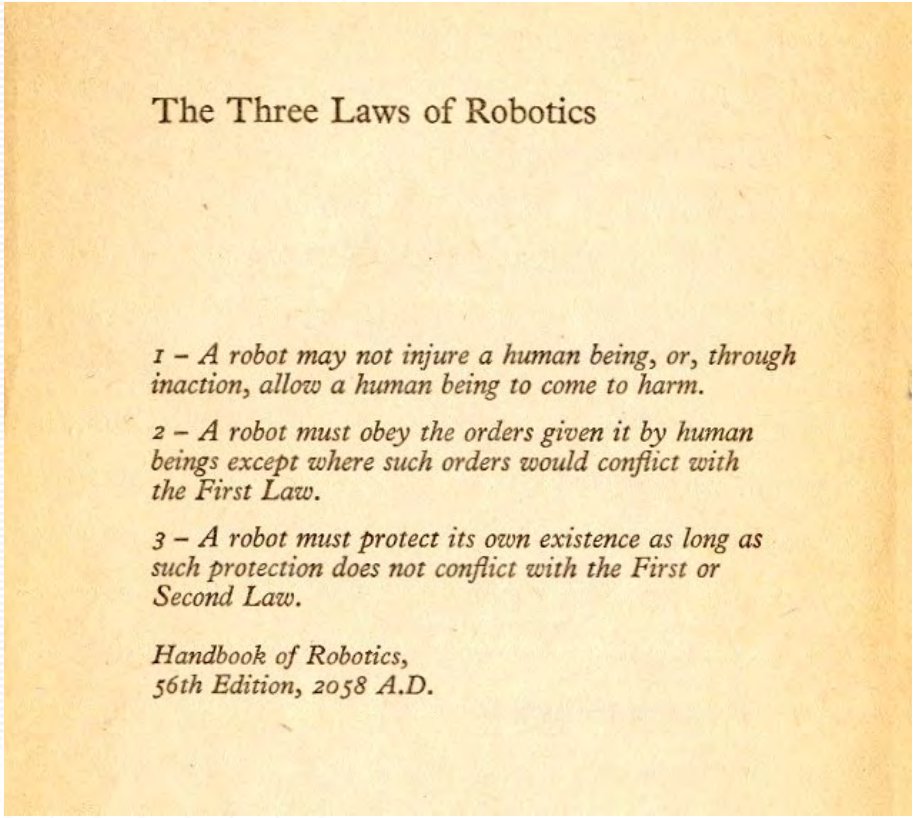
AI DEFINED EDUCATIONAL TECHNOLOGY

- Intelligent tutoring systems
- Predictive models
- Human-centered, scalable, personalized experiences
- Removing accidents of circumstance
- Ethics, agency and responsibility



AI DEFINED EDUCATION WILL BE A HUMAN+MACHINE SYSTEM: WHAT KIND OF SCHOOL WILL TRAIN THE AI'S?

- Humans who teach AI agents to teach humans
  - Train
  - Explain
  - Sustain
- Responsible human+machine ecosystem*
  - Accountable
  - Fair
  - Transparent
  - Honest
  - Human Agency
- Agency
  - Humans have a stake in the outcome
  - Humans have control over inner workings of machines


The Three Laws of Robotics

1 – A robot may not injure a human being, or, through inaction, allow a human being to come to harm.

2 – A robot must obey the orders given it by human beings except where such orders would conflict with the First Law.

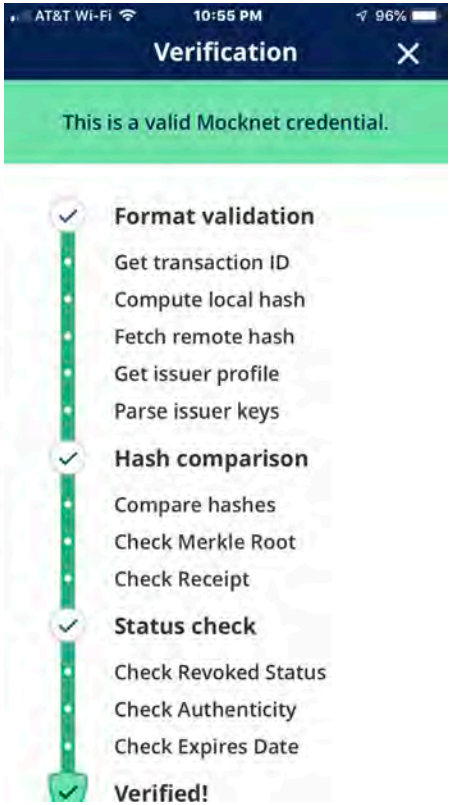
3 – A robot must protect its own existence as long as such protection does not conflict with the First or Second Law.

Handbook of Robotics,
56th Edition, 2058 A.D.

*Paul Daugherty and H. James Wislon, Human+Machine: Reimagining Work in the Age of AI, Harvard, Business Review Press, 2018

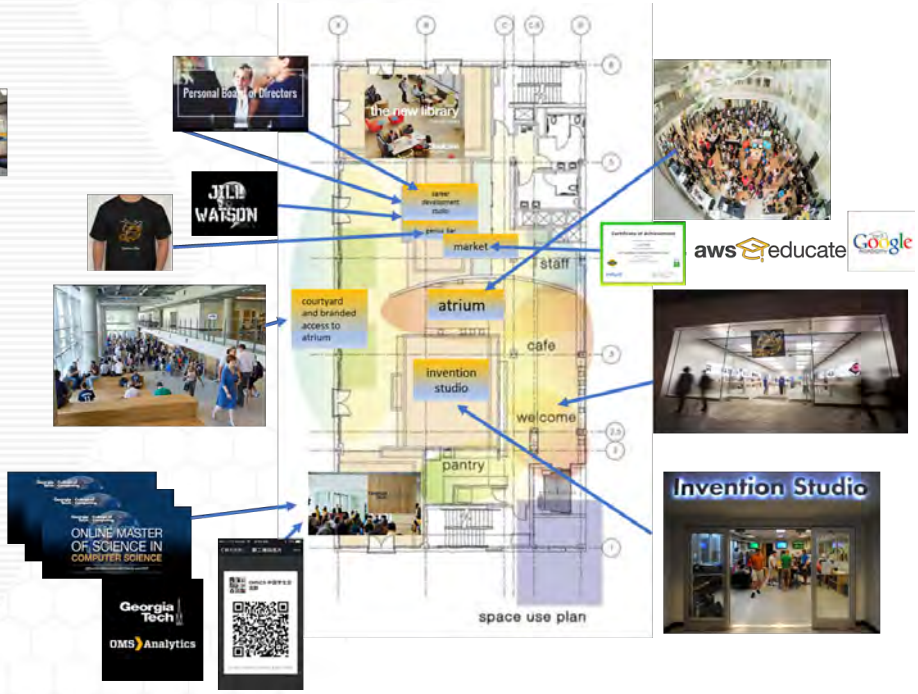
BLOCKCHAIN TRANSCRIPTS: DISTRIBUTED, AUTONOMOUS REGISTRARS

- Authenticated documentation of educational attainment owned by students, not institutions
- Sustainable in a world where students interleave work and learning with many organizations
- Disintermediates accreditors, ranking agents, and others who extract value
- Allows employers to target employees who will succeed
- Creates a true marketplace



atrium

- Investigate different kinds of university presence
- Scalable service model that enhances brand
- Satisfies demand for personal interaction
- Bridge cyber-physical gap
- Follow retail models
  - Apple Store
  - Amazon/Good Housekeeping Store
- Renew public university mission
- Develop a new university workforce

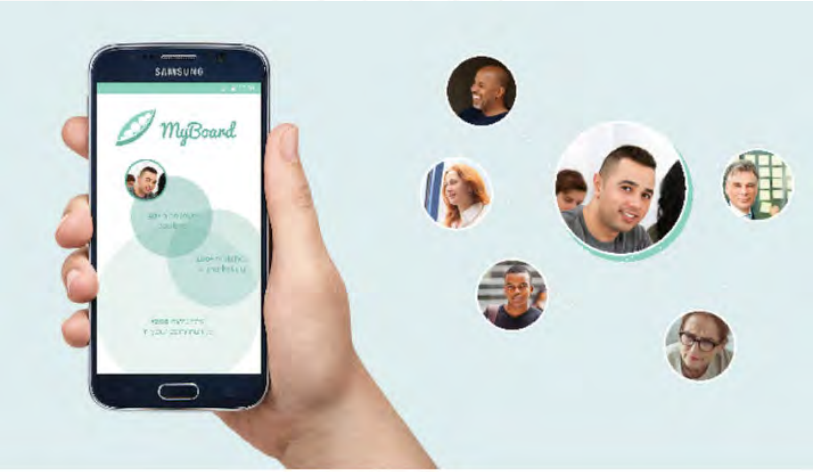


L^3: USING TECHNOLOGY TO ENHANCE LEARNING EXPERIENCES

- Living Library for Learning™: based on Human Library™
- Curated communities who make themselves available for interactions
- Bringing people together is expensive, complex, and not available on demand
- Principals get to know students by name (and vice-versa)
- Removes case studies and other sources of bias as mediator of interaction

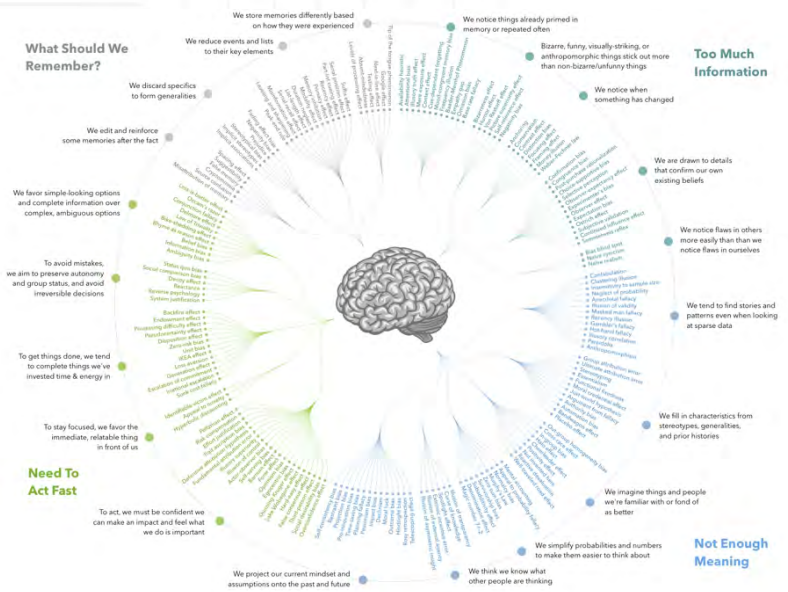
A PERSONAL BOARD OF DIRECTORS

- Success is often a matter of networks rather than achievement
- Create personalized on-tone templates
- Leverage large amounts of data to advise
- User journeys from @censusAmericans
- Networked communities in the style of GeoCities
- Early warning signals from the churn of knowledge
- Tool for “genius bar” advisors in GT atrium



WHOLE PERSON EDUCATION

- The Gatsby Effect
- Moving beyond cognitive skill acquisition
- Examples
  - Statistics as basis for judgement
  - Literature as basis for leadership
  - Great Books curriculum as basis for media literacy
  - Science as a model for ethical engineering
- How do humans acquire non-cognitive skills?
- The science of everyday thinking



ON THE CRITICAL PATH TO THE LIFETIME VISION

Fusing Research and Education

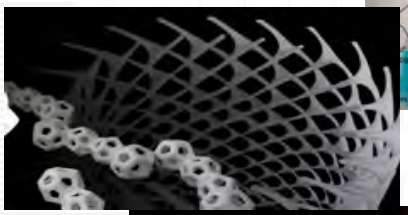
Agile Educational Enterprise

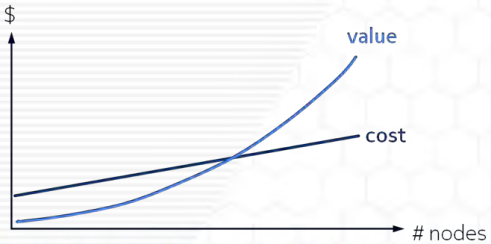
Flexible experiences

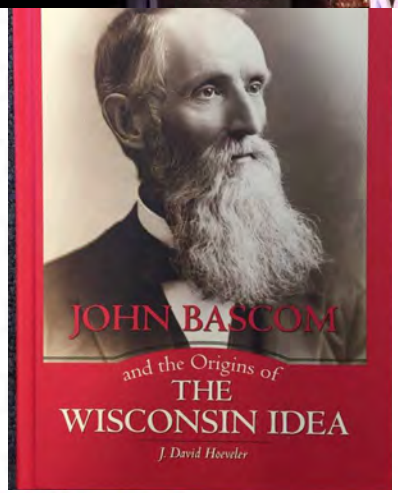
Renewal

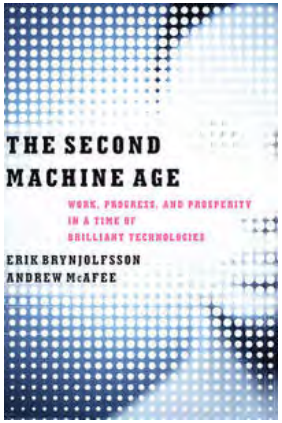
Guides, Coaches, Sherpas

Campus, learning space , physical places









COMMISSION ON
CREATING THE NEXT®
IN EDUCATION

Georgia Tech

DISCUSSION

The Future of Work at the Human Technology Frontier

Charting the Future of Work at the Human Technology Frontier
Maribeth Gandy Coleman, IMTC

Creating the Next in Education at Georgia Tech
Rich DeMillo, CoC, C21U

Project Briefs on the Future of Work for Health and Humanitarian Services
Jon A. Sanford, CoD, CATEA
Keaton Fletcher, CoS, Psych
Brad Fain, GTRI, CACP

Panel: Convergent Research
Lizanne DeStefano, CEISMC
Kaye Husbands Fealing, IAC, PP
Leigh McCook, GTRI

email: ipat@gatech.edu

Technology, Teams, and Healthcare

Keaton A. Fletcher, Ph.D.

Ruth Kanfer, Ph.D.

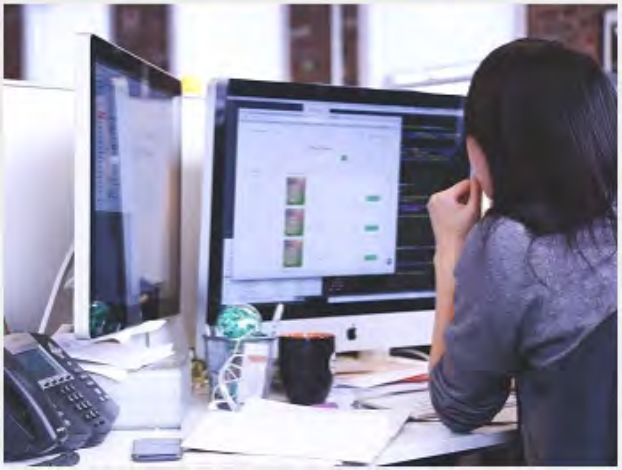
Work Science Center

Psychology, College of Sciences

Work Science Center

- Science in translation
  - Blogs
  - Podcasts
  - White Papers
  - Speaker Series

Workers and Technology



Work Across the Lifespan

The Modern Workforce

Work21.gatech.edu

Georgia Tech
CREATING THE NEXT

Work Science Center

- Science in translation
  - Blogs
  - Podcasts
  - White Papers
  - Speaker Series

Work21.gatech.edu

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Introducing Technology to Healthcare

- Da Vinci Case
- Training needs
  - Technical
  - Non-technical
- Job re-design
  - Psychological
  - Social
  - Physical
- Team dynamics

Introducing Technology to Healthcare

- How does introduction of a new technology alter team dynamics?
- How can we introduce a new technology so as to minimize harm to team dynamics?

- Communication
- Coordination
- Cognition

Georgia Tech Research Institute

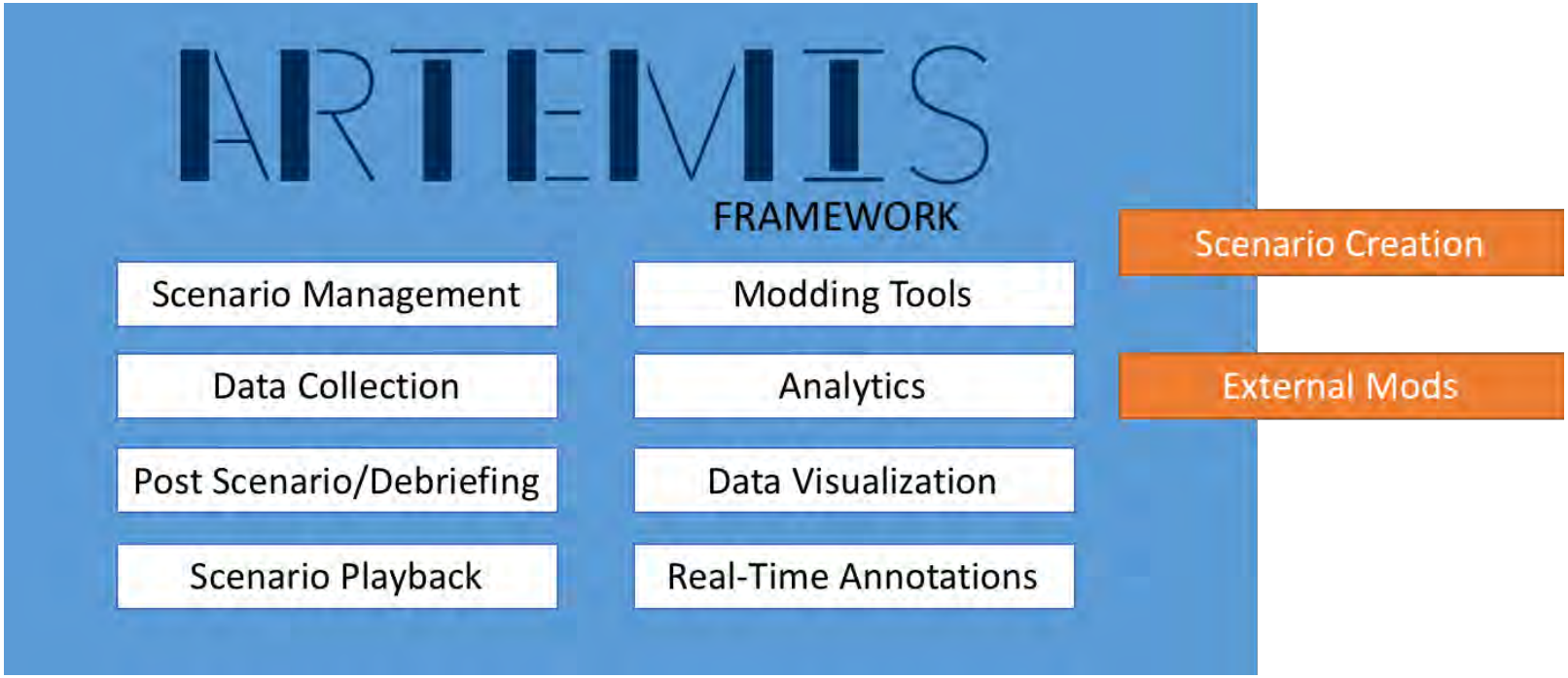
ARTEMIS

AUGMENTED REALITY TESTING OF EQUIPMENT in MULTIPLE IMMERSIVE SIMULATIONS

Dr. Brad Fain
Atlanta, GA

What is ARTEMIS?

- A platform for testing FirstNet enabled innovations
- Easily reconfigured into different tools:
  - Training
  - Scenario Generation
  - Objective Testing for Tools or HUDs
- A tool for studying the future of work for first responders – police fire fighters, and EMS enabled by FirstNet Technologies
- Capable of being delivered as a Virtual Reality (VR) experience
- Last and not least, an optimized and objective research tool


ARTEMIS
FRAMEWORK
Scenario Management
Modding Tools
Data Collection
Analytics
Post Scenario/Debriefing
Data Visualization
Scenario Playback
Real-Time Annotations
Scenario Creation
External Mods

Future of Work for First Responders

- Just in time training
  - EMT receives life saving instructions on a specific procedure
  - Police officer briefed on management of someone with a suspected cognitive impairment one the way to the emergency
- Human – Drone – AI collaboration
  - AI monitors social media channels to identify relevant contextual information
  - Drone gathers data from a different perspective to enable police response
- Ad hoc deeply integrated team networks (distributed response management)
  - Police, fire, and EMS respond from multiple municipalities and an ad hoc network of response teams form to coordinate emergency management

THANK YOU!

Dr. Brad Fain

brad.fain@gtri.gatech.edu

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HUMAN-TECHNOLOGY FRONTIERS & THE FUTURE OF WORK

2019 IPaT Spring Town Hall
Panel on Convergent Research

Kaye Husbands Fealing

Diversity, Equity & Inclusion Considerations

Georgia Tech School of Public Policy

January 31, 2019

Georgia Tech
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Areas of Expertise in SPP

1. **Science, Technology & Innovation Policy**

   Innovation Ecosystem & Public Policy; TextMining & Data Analytics; Intellectual Property

2. **Energy, Climate & Environmental Policy**

   Energy Policy; Environmental Policy; Sustainability

3. **Information & Communications Technology Policy**

   Cybersecurity Policy; Internet policy; Technology & Disabilities

4. **Organization Design, Stem Education, Careers & Workforce**

   S&E Careers & STEM Education; Broadening Participation & Performance in STEM; Politics of Organizations; Organization of Science & Technology

5. **Ethics & Philosophy of Science & Technology**

   Engineering Ethics; Environmental Ethics; Biomedical Ethics; AI & Ethics

6. **Economic Development & Social Policy**

   Regional Innovation; Smart Cities; Health Policy & Management

7. **Program Evaluation, Public Management & Administration**
8. **Policy Process, Leadership, & Pre-law**

- Who ***is producing*** knowledge?
- Who ***gets to decide*** what knowledge is produced?
- Who **wins**, who **loses**?
- **Research agenda**:
  - Organizations
  - Populations
  - Geography
  - Processes/Networks
  - Recruitment
  - Communication

➢**Danger of reproducing existing inequalities**

- Need to assess the ***future of our own work*** (research and curriculum)
  - Conceptual gaps
  - Methodological gaps
  - Tools gaps
  - Data gaps
- In addition to organizational **structures**, consider
  - Incentive structures
  - Power structures
  - Ethical structures
  - Technological structures

➢**Consider *inclusive innovation***

(Utz & Dahlman, "Promoting Inclusive Innovation," 2007; Prahalad & Mashelkar, "Innovation's Holy Grail," *HBR*, 2010)

QUESTION

Do we run the risk of reinforcing ***existing biases*** or even introducing ***new types of bias*** in the age of AI?

Kaye Husbands Fealing

Diversity, Equity & Inclusion Considerations

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email: ipat@gatech.edu

Georgia Tech Institute for People and Technology

IPaT Star Award

Congrats and Thank You to the PHDI Team

Matt Noury

Paul Diederrich

Richard Starr

Megan Denham

Shawn Imtiazuddin

Wesley Stewart

Oscar Perez

Shawn Guffey

Matt Sanders

PHDI now certified to meet HITRUST CSF v9.1

The Protected Health Data Infrastructure (PHDI) houses projects and datasets from **any** campus unit with PHI/PII compliance needs including HIPAA, HITECH, CMS and Sponsor specific

PHDI is a **OneGT** operating model with support from the EVPR/IPaT, GTRI-ICL, OIT Cybersecurity and Network Services, GTRI Information Systems and Research Security, and other unit and lab IT professionals and researchers

IPaT Star Award

Congratulations to the Click Safe Team!
(a project funded by the Department of Family and Children Services):

Nick Mulkey

Brian Davidson

Thomas Lester

Jeremy Johnson

Winston Messer

Evan Stuart

Trevor Goodyear

Click Safe
A System Designed with Your Safety in Mind

IPaT Star Award

IPaT Star Award

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Thank You

Reception and Networking

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CREATING THE NEXT