IPaT Fall Town Hall

September 6, 2018

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IPaT Spring Town Hall

Institute for People and Technology
FALL TOWN HALL

September 6, 2018 | 3:30pm - 5:15pm

Learn about IPaT activities for Fall 2018

Discuss evolution to IRI 2.*

Jump start conversations for IPaT initiatives

Talk with your colleagues, discuss new ideas, and swap summer stories

email: ipat@gatech.edu

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New Faces

Shawn Imtiazuddin

Systems Support Engineer

Sean McNeil

Photographer, GTRI

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New Faculty

Grace Leslie
Music Technology

Ben Shapiro
Interactive Computing

Anne Sullivan
Psychology

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IPaT In Coda

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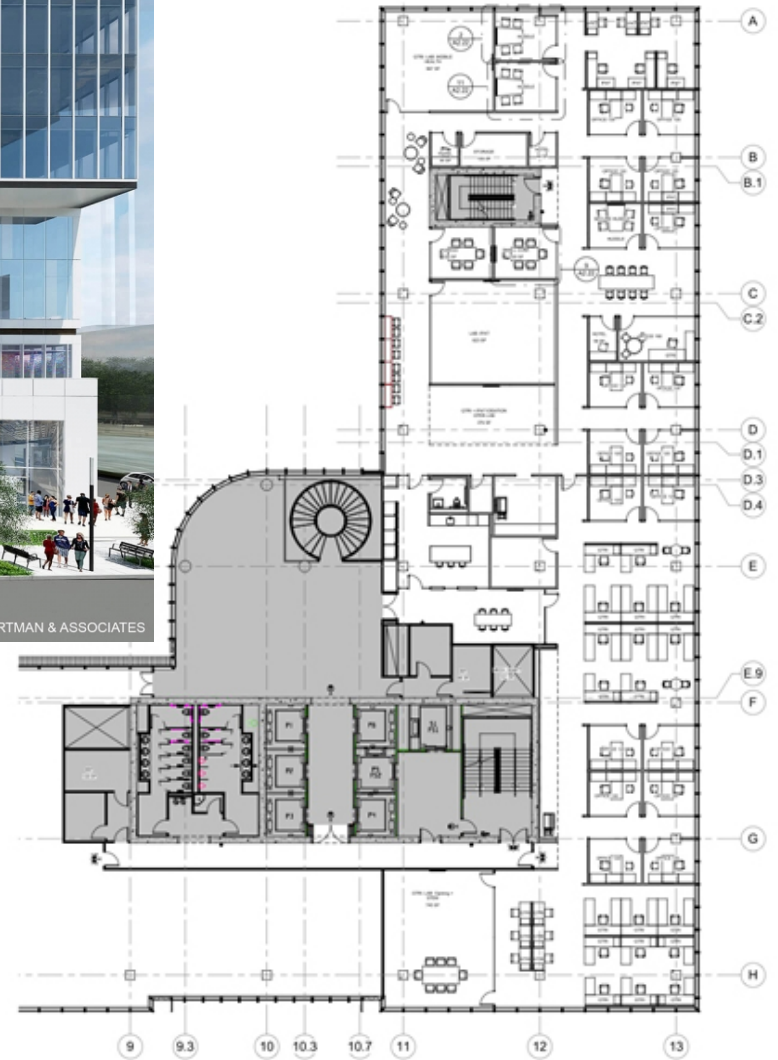
IPaT Fall Schedule

Everyday Georgia Exhibition   Sept 27, 2018

GVU / IPaT Research Showcase   Oct 10, 2018

Thursday Think Tanks

Thursdays, 3:30-5pm
Sept 13, 20; Oct 4, 18, 25; Nov 1, 8

Convergence Innovation Competition (CIC)   Nov 14

Games for Change Jams   **b**many dates…

IPaT Research Directors Sept 13, Nov 1, Nov 29
8:30-10am

IPaT Holiday All Hands   Dec 12

Everyday Georgia
Exhibit Opening & Reception
Thursday, September 27
4:00 - 6:00 pm

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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.

Fall 2018:

- Sept 13   Atlanta Map Room
- Sept 20   The Reality of Poverty in a STEM Environment
- Sept 27   Everyday Georgia reception
- Oct 4   Robert Wood Johnson Foundation
- Oct 18   Computing & Society
- Oct 25   Creating a Smart Campus
- Nov 1   Mobile Health Platforms
- Nov 8   Future of esports

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Convergence Innovation Competition (CIC) Wednesday, November 14

Bi-Annual competition
- Over 100 students annually
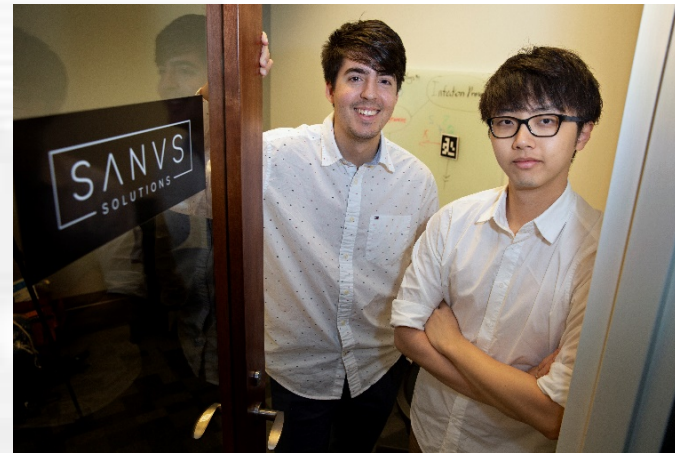- http://cic.gatech.edu/

Categories:
- Climate Solutions

- Active Aging

- 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 Sunday 11/11/18

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

Interested? Questions?

Contact GT-RNOC

rnoc-lab-staff@lists.gatech.edu

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Everyday Georgia:
Exhibit Opening and Reception
Thursday, September 27

13 stories

Portraits and audio interviews

Different walks of life and regions of the state

Collaboration with Office of the Arts and GT Library

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2018 IPaT Impact Report

2018 IPaT Impact Report

The impact of our research and educational activities

Initiatives and partnerships across Georgia

IPaT's four research pillars

IPaT Capabilities and Support for the GT Research Community

Professional Staff   *email: ipat@gatech.edu*

Business Operations (Cynthia Moore)

Marketing and Communications (Alyson Powell Key)

Research Operations (Matt Sanders)

Industry Partnerships (Siva Jayaraman)

Grants and Finance (Francine Lyken)

Think Tanks and CIC (Jennifer Mullins)

Space and Events (Don Schoner)

Applied Research

Leigh McCook, Deputy Director (GTRI)

Russ Clark and Matt Sanders, Research Network Operations Center (RNOC)

Maribeth Gandy, Interactive Media Technology Center (IMTC)

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IRI Metrics

Proposal development & support	Events and Activities
• Center and training grant proposals • Multi-PI proposals **Measures** # submitted proposals supported # new awards # granted proposed supported	• Programming related to proposal dev & spt • Team-building events, seminars, etc. • Events supporting external relationship mgmt. • Events in support of colleges, schools, GTRI, etc. **Measures** # events # attendees at each event Interdisciplinarity of events
External Relationship Management • Support and build relationships with external partners **Measures** # events # external partners in FY Interdisciplinarity of events	**Facilities** • Support for faculty working across multiple GT units **Measures** Facility use statistics (external, internal) Facility/equipment availability and uptimes Budget stewardship

Additional EVPR working groups for Communications, IT Support, Finance, Grants and HR

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.
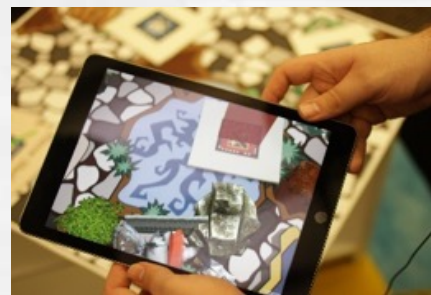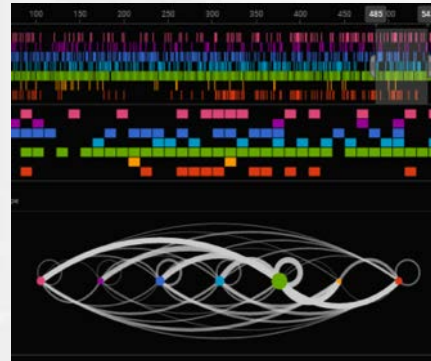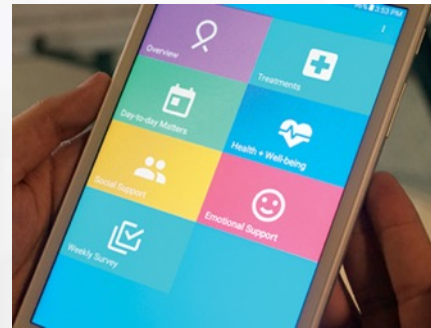
Research Pillars

Lifelong Health and Wellbeing

Smart Cities and Inclusive Innovation

Platforms and Services for Socio-Technical Systems

Shaping the Human Technology Frontier

IPaT Research Pillars

Lifelong Health and Wellbeing

Smart Cities and Inclusive Innovation

Platforms and Services for Socio-Technical Systems

Human Technology Frontier

email: ipat@gatech.edu

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IPaT Research Pillars: Faculty Co-Directors

LifeLong Health and Wellbeing

Beth Mynatt and
Jon Duke / Sherry Farrugia

Smart Cities and Inclusive Innovation

Jennifer Clark and Debra Lam

Platforms and Services for
Socio-Technical Systems

Rahul Basole and Russ Clark

Shaping the Human Technology
Frontier
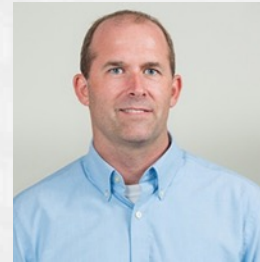
Keith Edwards and Maribeth Gandy

MCI Empowerment Program

Craig Zimring
College of Design
SimTigrate Design Lab

Jennifer DuBose
College of Design
SimTigrate Design Lab

Beth Mynatt
Interactive Computing

Brain Jones
IMTC / Aware Home

Brad Fain
GTRI/ Home Lab

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EMORY UNIVERSITY

THE JAMES M. COX FOUNDATION

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Aging

- Emory / GT / Cox Foundation create Mild Cognitive Impairment Empowerment Program, $23.7M

- TechSAge 2 RERC

- ERC Planning Grants + Engagement Grant

Pediatrics

- Access to Preventative Dental Care (NIH, 1.5M)

- RWJF IRL: Community-Based Approaches

Two new **Diabetes Translational Research** seeds grants

CHHS: 10th annual conference and 8th for PE

IPaT Research Infrastructure

- 3rd party HITRUST Certification for HIPAA compliant environment

- CMS DUA updated to allow remote access and use of shared resources

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

GA Smart Communities receive funding and support to envision, explore, and plan for their smart futures.

- City of Albany, City of Chamblee, Chatham County, Gwinnett County + GT Researchers

CEE researchers developed a **hybrid traffic simulation of North Ave**; mix of preprogrammed & real-time data-driven intersections.

**Open Government Data in the Smart City**: Interoperability, Urban Knowledge, and Linking Legacy Systems

- Society and Computing Engagement Grant

- Smart Campus Engagement Grant

IPaT Research Infrastructure: **CoA Data**

Smart Bases and Smart Installations : Marine Logistics Command in Albany GA

Through interdisciplinary expertise in technology and policy, IPaT is developing innovative approaches to shaping resilient and sustainable communities.
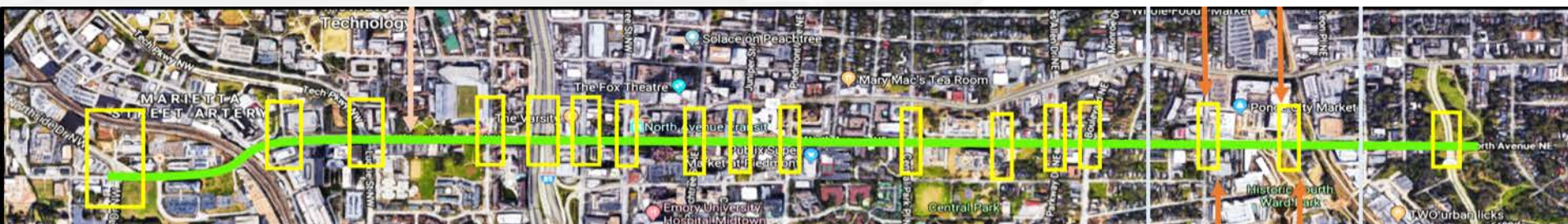
NSF: Broadening Participation in Computer Science Through Programming and the Arts Across Learning Spaces

Digital Drawer (NEH) with Historic Rural Churches of Georgia

IPaT Research Infrastructure: Mobile App Development and Publishing Support

Mobile Media Surveys and Data Visualization for Zika Surveys, CDC

Engagement Grants
- Manufacturing and VR
- Wearables and the Arts
- esports

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

Smart Sea Level Tools for Emergency Planning and Response

Careful Coding partnership with Westside: Tools for data quality control, data wrangling, and contributing to resident data literacy

Rqmts and Design for Diabetes-and-Work Clinical Decision Support, CDC/NIOSH

Medicare/Medicaid Information System, GA Dept of Community Health

IPaT Research Infrastructure: Refreshed VM hosting infrastructure; Project storage on the way and support for new Cloud resources; Openshift environment up and hosting m.gatech.edu

Platforms and Services for Complex Ecosystems
Quantifying Ecosystem Transformation (Intel)

Decoding Digital Infrastructures and the Boundary Resource Economy (Google)

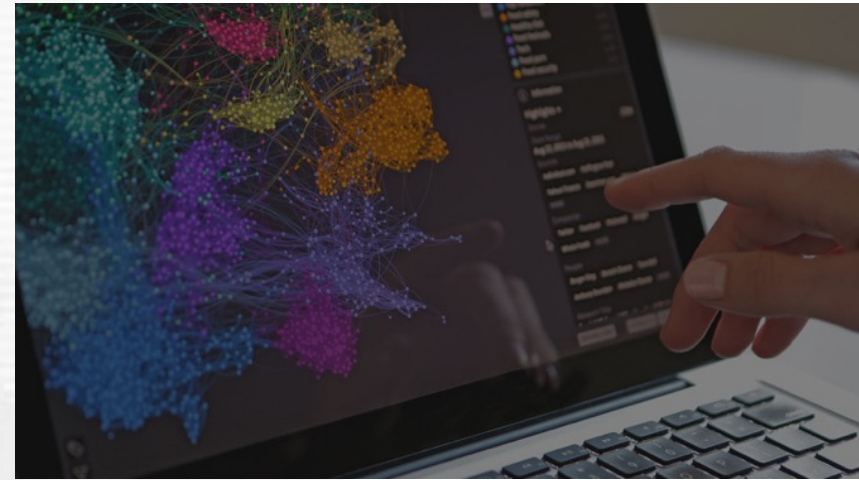Understanding Ecosystems of Hype (NorthernLight)

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.

Platforms for Competitive Intelligence

Socio-technical systems are complex, dynamic, evolving, and global. Comprehensive insights into such systems are crucial for anticipating risks, identifying opportunities, and managing growth. Yet, actionable insights are difficult to achieve as existing tools, data, and methods have significant limitations.

Source: Quid/Google Images

The focus of this initiative is to

- Build an interdisciplinary community of scholars and practitioners, across GT and beyond, that is interested in defining the future of competitive intelligence

- Establish a research agenda that identifies grand challenges and opportunities across different domains

- Facilitate knowledge exchanges between industry and academia

- Identify and advance the state-of-the-art in competitive intelligence tools, data, and methods

- Enable funded research streams

Project Research Activities

- Visualizing and Analyzing Complex Emerging Systems (e.g., AI industry, Connected Vehicles, APIs, IoPT, Platform Economy, etc.)

- Computational Modeling of Multi-Level System Phenomena (Technologies, Products, Services, Firms, Ecosystems)

- Curation of Structured, Unstructured, Alternative Datasets

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 and 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

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Wearable Technology and Society: Artistic Collaboration Support

Clint Zeagler
Wearable Computing Center

Jay Bolter
Literature, Media, and
Communication

Georgia Tech
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Artistic Collaboration Support

Wearable Technology and Society

LMC 4813

Clint Zeagler

clintzeagler@gatech.edu

Jay Bolter

jay.bolter@lmc.gatech.edu

Performance Driven Wearable Technology
Transdisciplinary Collaboration

photo by Felicity Palma

Zeagler, Clint, Maribeth Gandy, Scott Gilliland, Delton Moore, Rocco Centrella, and Brandon Montgomery. 2017. "In Harmony: Making a Wearable Musical Instrument as a Case Study of Using Boundary Objects in an Interdisciplinary Collaborative Design Process." In *Designing Interactive Systems DIS 2017*. Edinburgh: ACM.

Zeagler, C., Gilliland, S., Fisher, K., Boyle, S., & Levy, L. (2017, September). Le Monstré: an interactive participatory performance costume.
In *Proceedings of the 2017 ACM International Symposium on Wearable Computers* (pp. 260-264). ACM.
BEST PAPER AESTHETICS DESIGN EXHIBITION

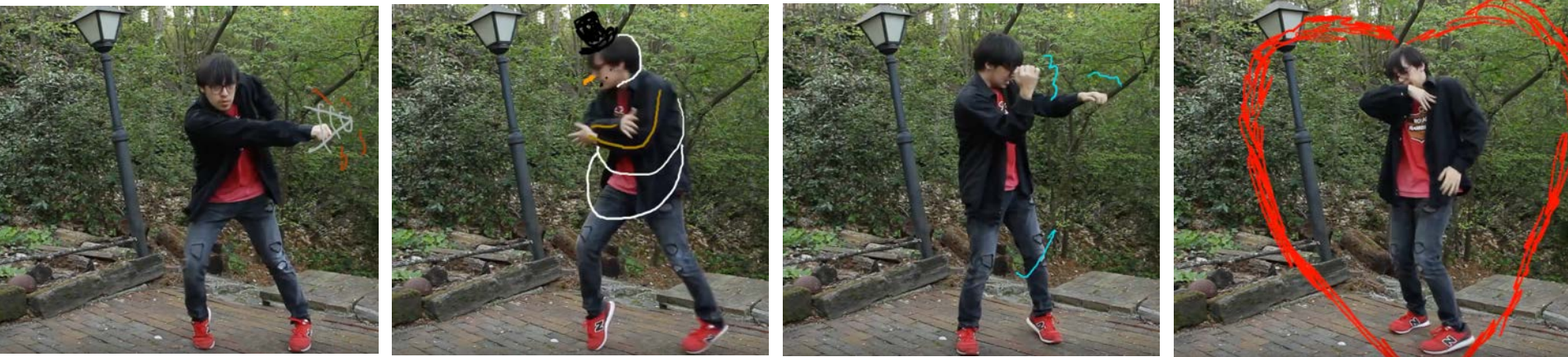# Student Engagement

Materials Are Important

Performance Artist Collaborators

Jaye Lise

Edie Cheezburger

Max Woo

wcc.gatech.edu

Clint Zeagler

clintzeagler@gatech.edu

Jay Bolter

jay.bolter@lmc.gatech.edu

TOWARDS A CENTER FOR COMPUTING & SOCIETY

ELLEN ZEGURA
CARL DISALVO
MICHAEL BEST

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WHY COMPUTING AND SOCIETY?

The influence of computing is remarkable, and its future frequently touted as unbounded. Yet against this backdrop of unprecedented development lays sobering recent events in which computing has managed not to advance society, but instead to fray it.

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WHY COMPUTING AND SOCIETY?

The time is right – indeed urgent – for computing as a diverse community to mature and take ownership of the many steps needed to mitigate negative impacts of research and development, as well as harness computing in service of pressing social problems.
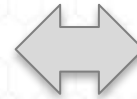
Georgia Tech
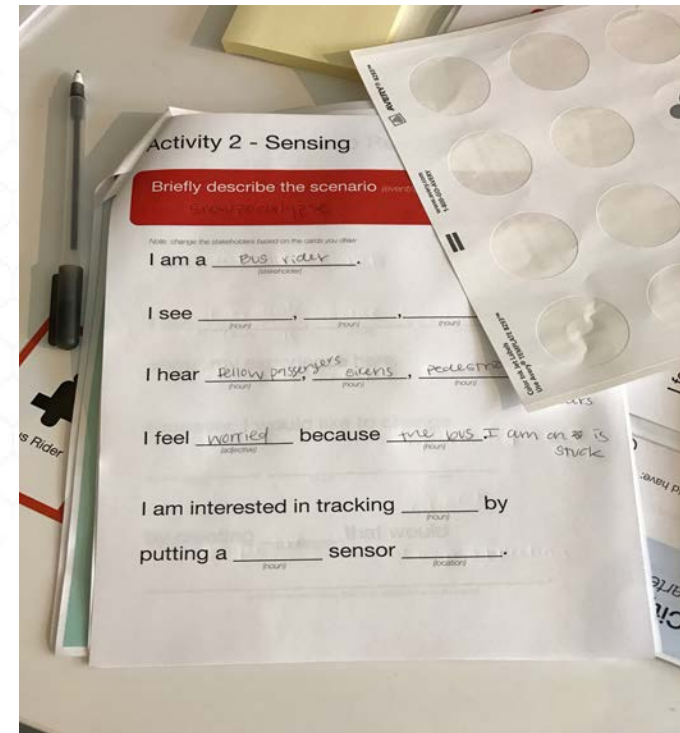
COMPUTING AND SOCIETY THEMES

- Data Justice

- Peace Technologies

- Civic Media

- Poverty
- Class
- Gender
- Race
- Democracy
- Markets

- Int'l Development
- Smart & Connected Comm
- Education & Informal Learning
- Data Science

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HOW?

- This center is an open work

- We are taking a participatory approach to defining it's goals, processes, and structure

- GVU/IPaT funding will be used to support a design workshop for the center

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HOW CAN YOU PARTICIPATE?

- Bi-weekly Engagement Group ("C&S Tea")
    - Informal project presentations
    - Group discussion
    - Convivial snacks and drinks
- Mailing list (subscription info shortly)
- IPaT Think Tank on Thursday, October 18, 3:30-5pm

Georgia Institute for People
Tech and Technology

Connecting Georgia Tech with the Future of ESports

Laura Levy
Institute for People and Technology

Anne Sullivan
School of Literature, Media, and Communication

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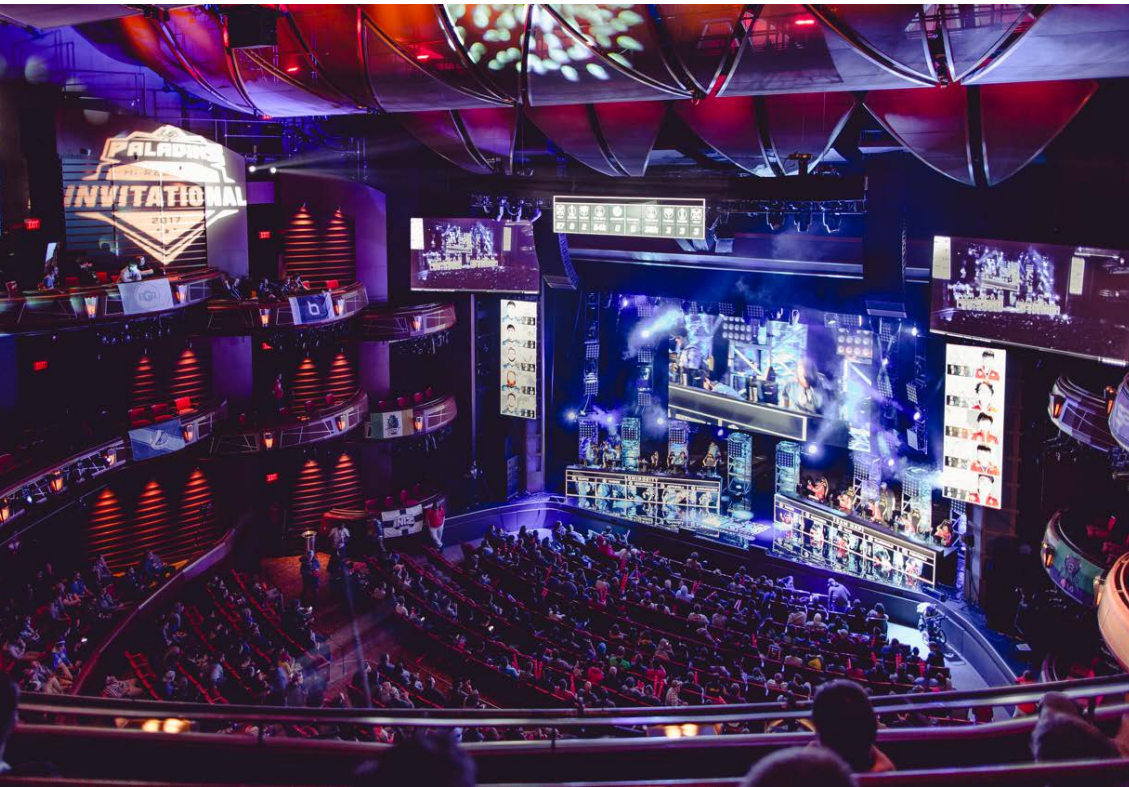# CONNECTING GEORGIA TECH WITH THE FUTURE OF ESPORTS

Laura Levy & Anne Sullivan

What is the future of the esport's fan experience and how can we help define it?

FUTURE OF ESPORTS

➤ Designing towards an esports culture

➤ Supporting fan experience between games

➤ Fan acquisition

➤ Attracting/supporting diverse communities

➤ Appreciating feats by players

➤ Connecting fans and players

VIP CLASS – FUTURE TECHNOLOGIES OF SPORTS

- ➤ Fall 2018 - future
- ➤ Handpicked students to work on industry problems
- ➤ Working with Braves, GTAA, Hi-Rez

- ➤ Funding to support travel to
  - ➤ Blizzard Arena, OWL Season Game

- ➤ Connecting industry and Georgia Tech for new research opportunities

The Mild Cognitive Impairment Empowerment Program's Innovation Accelerator:

Building a Diverse Coalition of Students, Faculty and Researchers to Address Aging-Related Cognitive Impairment

Craig Zimring
Jennifer DuBose
Gabrielle Campiglia
Herb Velazquez
College of Design

Brian Jones
IMTC

Brad Fain
GTRI

Georgia Tech | SimTigrate Design Lab

Georgia Tech | HomeLab

MCI Empowerment Program

- Part of larger Brain Health Village

- ~4-year program to provide a day program and home support for people with MCI ("fellows")

- GT is key player

- Technology and built environment have integral roles, led by GT faculty

- Monitoring technology will be installed in 60 homes
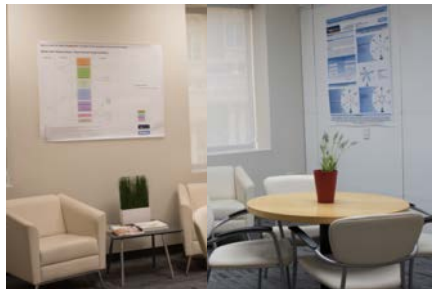
- GT to run Innovation Accelerator
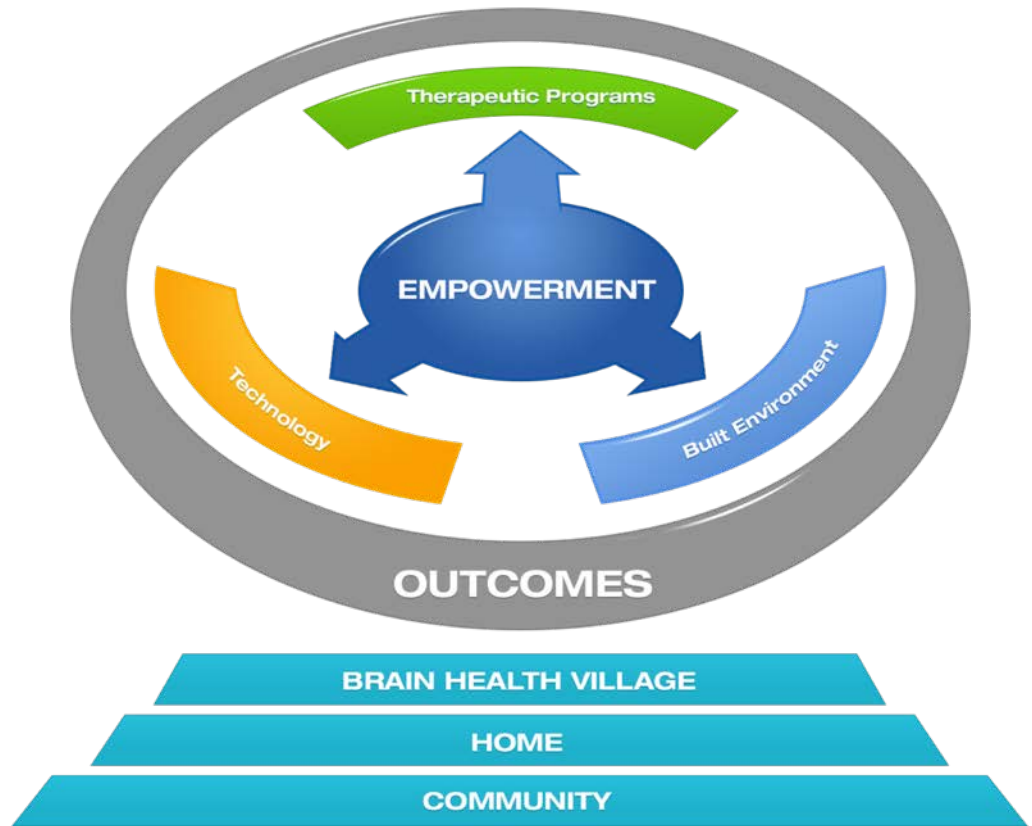
BUILT ENVIRONMENT PROJECTS

Lead: Craig Zimring

Empowerment Center at the Brain Health Village
a one-of-a kind evidence-based empowerment center

Support Social Interaction
in physical and virtual space

Use Light and Sound
to improve mood and sleep

Human Centered Design
inspiration, ideation, testing, & implementation

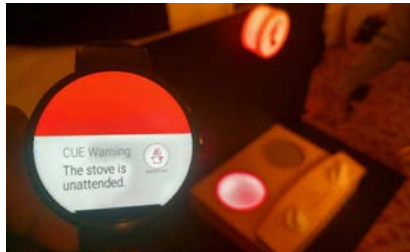**Safe Smart Kitchen**
to increase independence

TECHNOLOGY PROJECTS

Leads: Brian Jones and Brad Fain

Innovate mobile support
for therapeutic program, caregivers, and activities on the go.

Encourage exercise
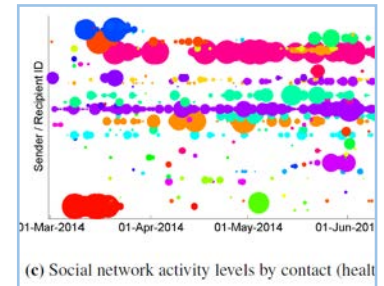and social interaction.

Ensure safety
during daily activities in the home.

Track progress
to inform sustained care.

Support memory
room to room and based on schedules, calendars and time of day.

Measure key changes
in sleep, gait, physical activity, and social interaction.

(c) Social network activity levels by contact (health

INNOVATION ACCELERATOR PROCESS

Lead: Jennifer DuBose

Co-Design with Fellows
Include people with MCI to define problems and innovate solutions
Course based projects
From Industrial Design, CS, HCI, ARCH, and others

Industry Engagement
Attract industry to collaborate on solutions for successful aging

Seed Grants
For GT/Emory teams 3 a year at $50,000 each

WHAT IS THE POTENTIAL BENEFIT TO YOU?

Access to
- Brain health fellows (aka patients) and their care partners
- Homes of the fellows for research and deployment
- Providers and clinicians for collaborating
- Rich set of data from fellows in the program
- Real world problems for student projects
- Annual seed grant opportunities in therapy, technology and built environment innovations to empower people with cognitive impairment

HOW CAN YOU ENGAGE?

- Fall meet up to introduce campus community to issue and solicit input (Date TBD)

- Spring meet up to further develop core synergies identified at first meet up (Date TBD)

- IPaT Think Tank on January 24th

- ERC Planning Grants on Aging at GT
  - Augmentation Systems and Intelligent Support Technologies for Aging (Co PI Mynatt)
  - Engineering Research Center for Aging-centric Engineering Technologies (AgETech) (Co PI Hertzog)

- Website and listserve forthcoming, for now…..
  - Contact Jennifer DuBose at Jennifer.dubose@design.gatech.edu to be added to group list

Building Capacity for Sustainable, Interdisciplinary, Smart Campus Research: A Needs Analysis

Multiple Smart Campus efforts underway including: smart buildings, student health and wellness, energy management, future workspace and data center, and automated transportation.

Each of these have long range ambitions tied to Georgia Tech's strategic plan and have the potential to fuel Georgia Tech researchers for decades to come.

Goal: find repeatable and sustainable models for the support of long running, multi-disciplinary projects/studies across time and space.

Join us at the Think Tank:

Thursday, October 25th

Initial Focus:

- Data Use Agreements & MOU's

- Accessible Data

- Repeatable Processes/Procedures

- Reliable and Accessible Platforms for service operation and research

- Proven Funding Models (sponsored, operational, self sustaining)

- Student engagement models

Initial Community:

- LBC & Coda Research Neighborhoods and Operators

- Global Change, Serve Learn Sustain, and GVU, and IPaT SCC Communities

- GT Auxillary Services, Health Center, Facilities, OIT, Space Planning, etc.

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Understanding the Changing Nature of Work

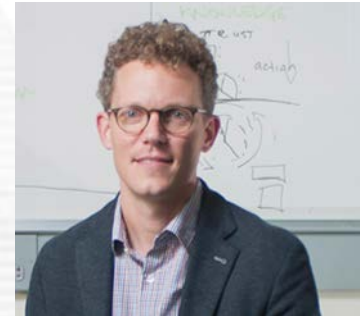Chris Le Dantec, Digital Media

Thomas Kurfess, Mechanical Engineering

Alyssa Rumsey, Digital Media

Understanding the Changing Nature of Work

Manufacturing facilities present an opportunity to understand how digital technologies like AR/VR impact workplace practices

- Research Question: What is the impact of VR for engineering analysis on the nature of work?

- Formed a new partnership with GE Aviation - Human Factors and Maintainability Group to conduct a usability study in the field

- Intersection with NSF Future of Work initiatives at the Human Technology Frontier

GE Aviation

Georgia Tech **GVU Center**

Professor Chris Le Dantec
Digital Media Program

ledantec@gatech.edu

Alyssa Rumsey, PhD Student
Digital Media Program
arumsey3@gatech.edu

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Georgia Smart Community Challenge

Debra Lam, Managing Director
Smart Cities and Inclusive Innovation
IPaT

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Projects

Chatham County

City of Savannah, Creative Coast

Improve flood warnings, emergency response action plans, flood predictions for future flood events

- Test a pilot sensor network for seal level flood risk during natural disasters
- Kim Cobb, School of Earth & Atmospheric Science

City of Albany

Dougherty County, DCA, Initiative for Community Housing, Fight Albany Blight

Improve measurement of public funds allocation, neighborhood infrastructure

- Evaluate an automated housing registry to support property inventory management
- Omar Issac Asenio, School of Public Policy

Gwinnett County

GDOT, Cities of Berkeley Lake, Duluth, Norcross, Suwanee

Improve connectivity, safety, quality of life

- Evaluate traffic management technologies for improved vehicle mobility
- Angshuman Guin, School of Civil and Environmental Engineering

City of Chamblee

City of Doraville, MARTA, Assembly CID, Stantec

Reduce road congestion, increase pedestrian and traveler safety, improve community equity

- Study mobility improvements using AVs which travel from MARTA stations into the community
- Ellen Dunham-Jones, School of Architecture

Reception Breakouts

Wearable Technology and Society: Artistic Collaborations   **Yellow Jacket balcony**
Clint Zeagler and Jay Bolter

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

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

Building a Diverse Coalition   **Burdell**
of Students, Faculty and Researchers to Address
Aging-Related Cognitive Impairment
Craig Zimring, Jennifer DuBose, Gabrielle Campiglia,
Brian Jones, Brad Fain, and Herb Valasquez

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

Building Capacity for Sustainable, Interdisciplinary,   **Fire Pit next to Café**
Smart Campus Research: A Needs Analysis
Russ Clark and Matt Sanders

Platforms for Collective Intelligence   **Townhall Tall Table**
Rahul Basole

Smart Cities and Inclusive Innovation   **Café High Tops**
Debra Lam and Jennifer Clark

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Georgia Institute for People
Tech and Technology

Thank You

Reception and Networking

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