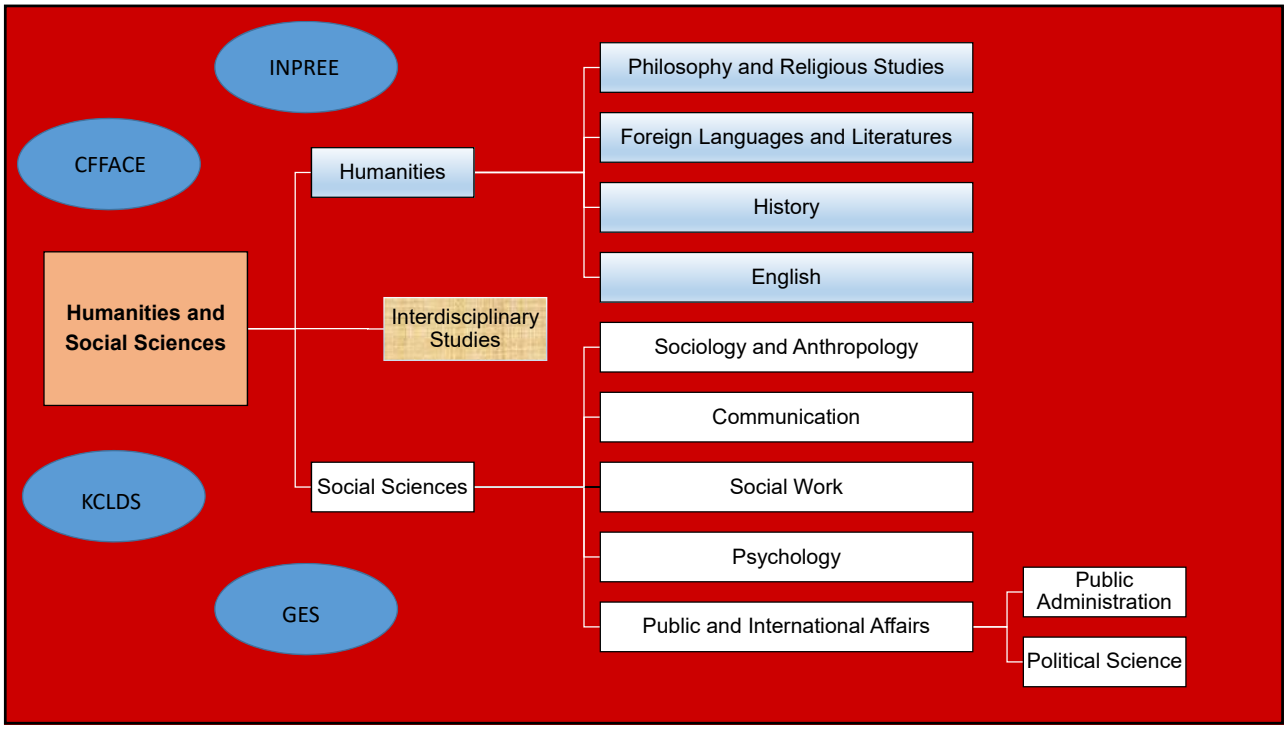
Joint Faculty Meeting: Design, Humanities, & Social Sciences

26 March 2018

College of Design

- Overview by Dean Hoversten



A Snapshot of our College

- 4,300 students
- 600 faculty and staff
- 50+ majors, 40+ minors, 12 master's degrees, five Ph.D. programs, three dual-degree programs and four graduate certificates
- 38,600 alumni

Designing Your Life (After Graduation)

Immersive Environments to Augment Human-Machine Interactions

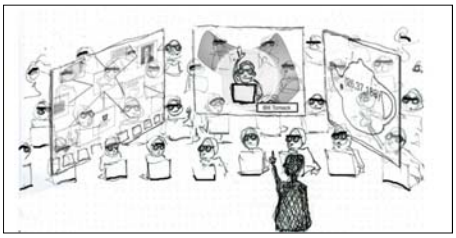
(Roger Azevedo, Psychology)

Using Virtual Reality to Foster Interdisciplinary Collaboration in an Undergraduate Course on Human and Machine Learning and Intelligence

(Azevedo, Jhala, Fitzpatrick, & Berreth)

Augmented Reality Based Presentation and Sensing for Learning

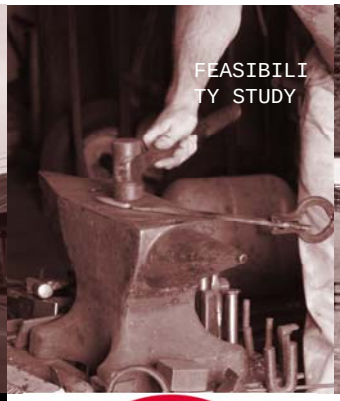
(Watson, Azevedo, & Fitzpatrick)



Multimodal Multichannel Real-Time Human Data – Detect, Track, Model, Represent, and Foster Learning, Problem Solving, and Reasoning Across Disciplines
(Collaborations with **Deborah Littlejohn** and **Matthew Peterson)**

NC STATE UNIVERSITY

SOUTHEAST EQUINE RESEARCH AND EDUCATION PARTNERS (SEREP)



Exploring the feasibility and designing a multidisciplinary Equine Research and Education Center (EREC) where private industries and local and regional academic institutions can work in partnership on enhancing the regional equine-based economy.

Craig C. Brookins, Ph.D.
College of Humanities and Social Scie

Celen Pasalar, Ph.D.
College of Design

Duarte Morais, Ph.D.
College of Natural Resources

Regional Community Analysis – GIS mapping, history, etc.

Long-term/Multimodal Engagement – Mini-town halls, public hearings, focus-groups, interviews, stakeholder check-ins, etc.

Research – Online equine business survey, case-study, environmental preference survey, focus group visioning workshops, etc.

Site Identification – GIS analysis, stakeholder input, real-estate market search

Master Plan – Site layout and design

Spatial Programming and Design – Functions, space arrangements, facility design

The successful implementation of the future Equine Research and Education Center and its mission requires a strong and sustainable vision, partnerships, research & educational focus, and physical environment that effectively support and address the equine related needs in the region.

Food and Housing Security among NC State Students Initiative

Vision

All NC State students will have access to sufficient, nutritious, culturally appropriate, and affordable food & safe, affordable housing accessible to the university.

Launched in fall, 2017

Tom Barrie, Architecture

Affordable Housing & Sustainable Communities Initiative

Mary Haskett, Psychology

"Thinking"

- Student Survey
  - 14% food insecure past 30 days
  - 9.6% homeless past year

"Doing"

- Applying expertise across disciplines to develop a comprehensive coordinated system of care to help students meet their basic needs

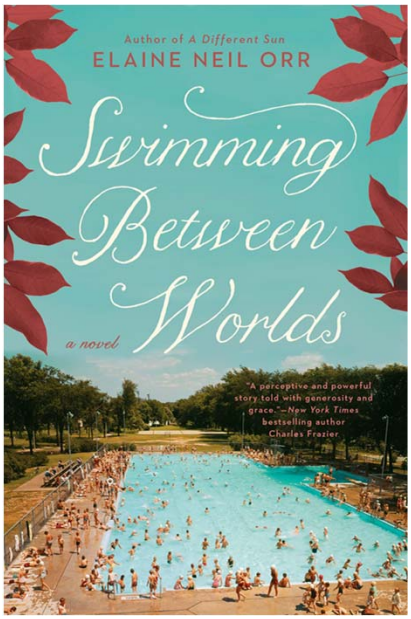
SWIMMING BETWEEN WORLDS

Conjuring an Architect in Fiction

The miracle of fiction is that history comes along to back you up.

Elaine Neil Orr, Professor, English

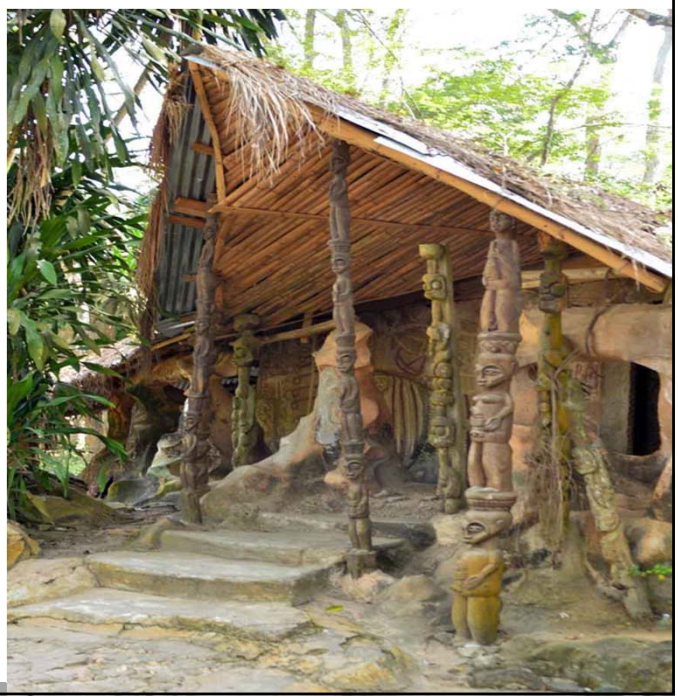
Collaboration with Abie Harris, 1957 graduate, NCSU School of Design, Paris Prize in Architecture, 1959, University Architect, 1993-99; Fellow, American Institute of Architects



International Faculty
Eduardo Catalano, Horacio Caminos, George Matsumoto, Matthew and Stanislava Nowiki

The global novel

"Everything was timing. Even architecture. The time the eye takes to comprehend the foundation, the rising wall, the shape of the portico, the heartbeat of windows, the rise of the roofline, the surging back-and-forth of the brain's receptors comprehending, achieving finally the vault of sky."



Sealed Air Unboxing Project,
COD, Graphic Design Dept, 2017

Unboxing Observation
Benchmarking
User Interviews
Personas & Scenarios
User Journey Map
Ideation/Sketches
UX Storyboards
Lo-Fi Prototypes
Critiques
Bodystorming
Revised User Journey
Hi-Fi Prototypes
Scenario Videos
Final Presentation

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VICTORIA'S LOST PAVILION

Tony Harrison, Paul Fyfe, David Hill, Grey Isley, Sharon Joffe, Andrew McCall, Sharon Setzer

- A 19th century experiment in British art & architecture
- Interdisciplinary collaboration among English and Architecture
- Immersive content delivered in web browsers, in-person projection spaces, & VR headsets

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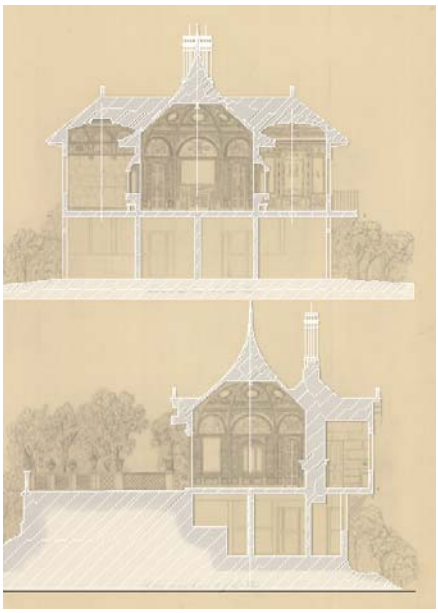

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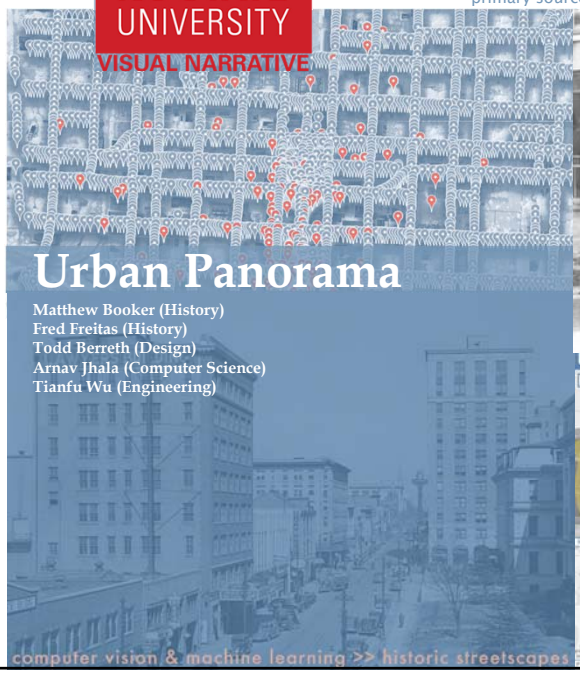
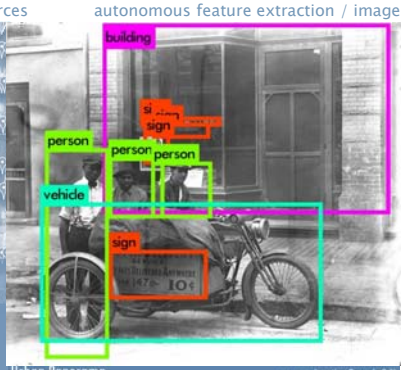
VISUAL NARRATIVE

primary sources

autonomous feature extraction / image parsing





Urban Panorama

Matthew Booker (History)
Fred Freitas (History)
Todd Berreth (Design)
Arnav Jhala (Computer Science)
Tianfu Wu (Engineering)

computer vision & machine learning >> historic streetscapes

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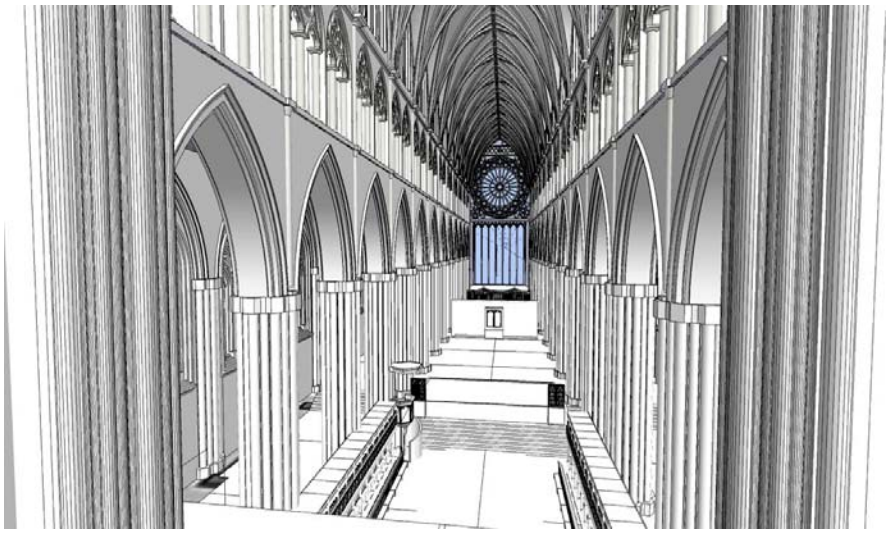
VISUAL NARRATIVE

+ investigating history topics via computational media and interactive systems
+ project-based course where teams of student historians, designers and computer scientists work collaboratively to design and develop interactive media experiences, centering on an exploration of primary sources, visualization and analysis, and public storytelling and engagement.
+ project types include interactive data visualizations and map-making, serious games development, virtual/mixed-reality experiences, interactive exhibition design, among others.

VIRTUAL ST. PAUL'S
CATHEDRAL PROJECT
A DIGITAL RE-CREATION OF WORSHIP AND PREACHING AT ST. PAUL'S CATHEDRAL IN EARLY MODERN LONDON



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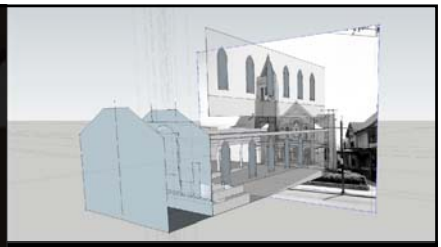
VIRTUAL MLK PROJECT

DEPARTMENTS OF COMMUNICATION + ARCHITECTURE + GRAPHIC DESIGN



3D MODELING
Turning drawings into digital models

RENDERINGS
Drawings based on plans and photographs

ARCHIVAL DATA
Original images and photographs

Victoria J. Gallagher, Ph.D. (Director)
Keon M. Pettiway, M.F.A., Ph.D.
Derek Ham, Ph.D.
David Hill, AIA
Courtney Barr

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PUBLIC EXHIBITIONS

NC STATE + SMITHSONIAN'S NATIONAL AMERICAN HISTORY MUSEUM

01. COLLECTIVE SOUND EXPERIENCE

02. HISTORICAL EXPERIENCE

03. LISTENING EXPERIENCE

04. VIRTUAL REALITY EXPERIENCE

05. SIMULATION EXPERIENCE

06. SHARE YOUR CREATIVE PROTEST

Each of the six components interact with and complements one another to expand visitors' knowledge of civil rights history, of the scope of civic and political engagement, and of the potentially transformative and affective aspects of public address.

LAS collaboration + experience

Jessica Jameson, PhD
Professor of Communication
Communication Rhetoric and Digital Media, PhD Faculty

Sharon Joines, PhD
NC State University Faculty Scholar
Professor of Industrial Design

The Laboratory for Analytic Sciences (LAS)

- founded in 2013 by the National Security Agency
- a mission-oriented, translational research laboratory in support of the DoD and the Intelligence Community
- an immersive collaboration model
- brings together researchers and mission analysts with multidisciplinary teams
- to create tradecraft, tools, and techniques that are used to discover, understand, and report key insights across the IC.

Challenges faced in 2013 - D03…

Lead to LAS intentionally focusing on, studying, and supporting collaboration

Research Objective - RQ55 (Sensemaking):

How do interventions (training, facilitation, structural) help multidisciplinary groups avoid tendencies toward privileging shared over unique information and engage in collective sensemaking and problem solving?

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Early Interventions

Early Interventions: Creation of DO3 teams
- Collaboration teams and facilitation in six teams
- Team Lead Meetings & Quarterly Reviews

Crafting Intentional Interdisciplinarity: CCTs
- Kick Off events
- Engaged scholarship workshop
- Charters
- Onboarding/offboarding
- Health Checks

Connecting LAS Performers & External Experts
- Weekly Research Meetings WRM
- H&SS/IDSS Seminars
- LAS Symposium
- Onboarding protocol

Current Interventions

Intentional Interdisciplinarity
- Kick off events
- Charters
- Onboarding/offboarding

Connecting LAS Performers & External Experts
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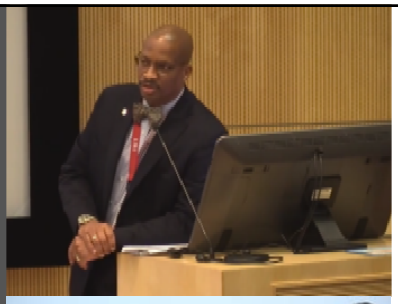
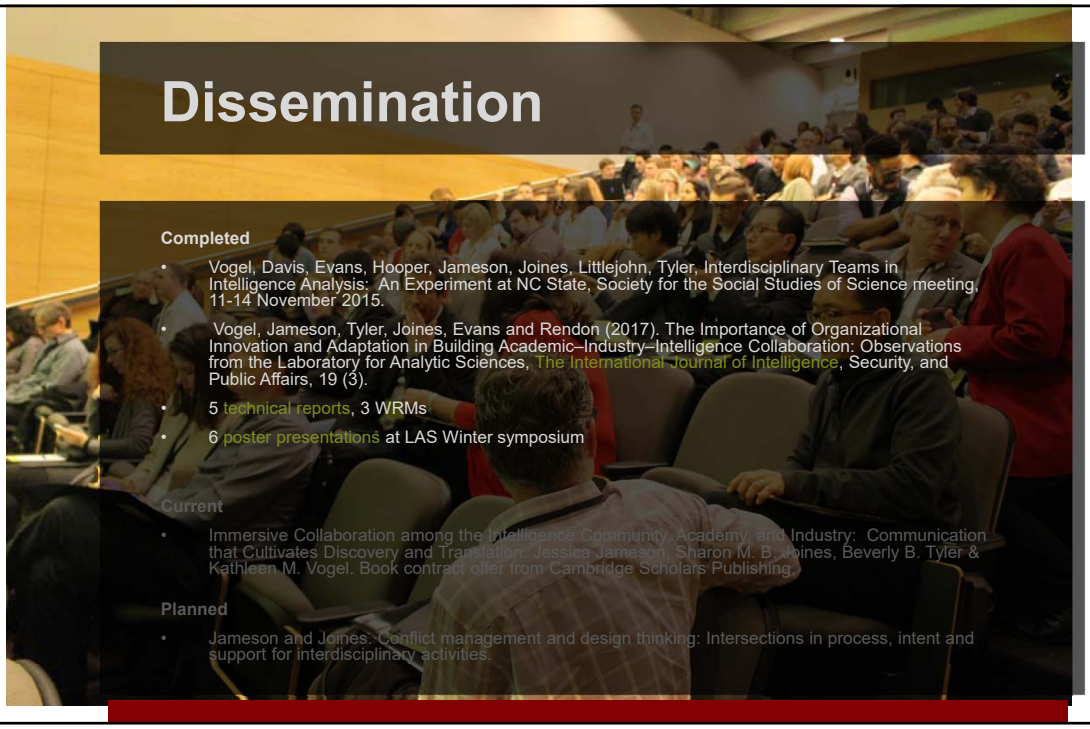
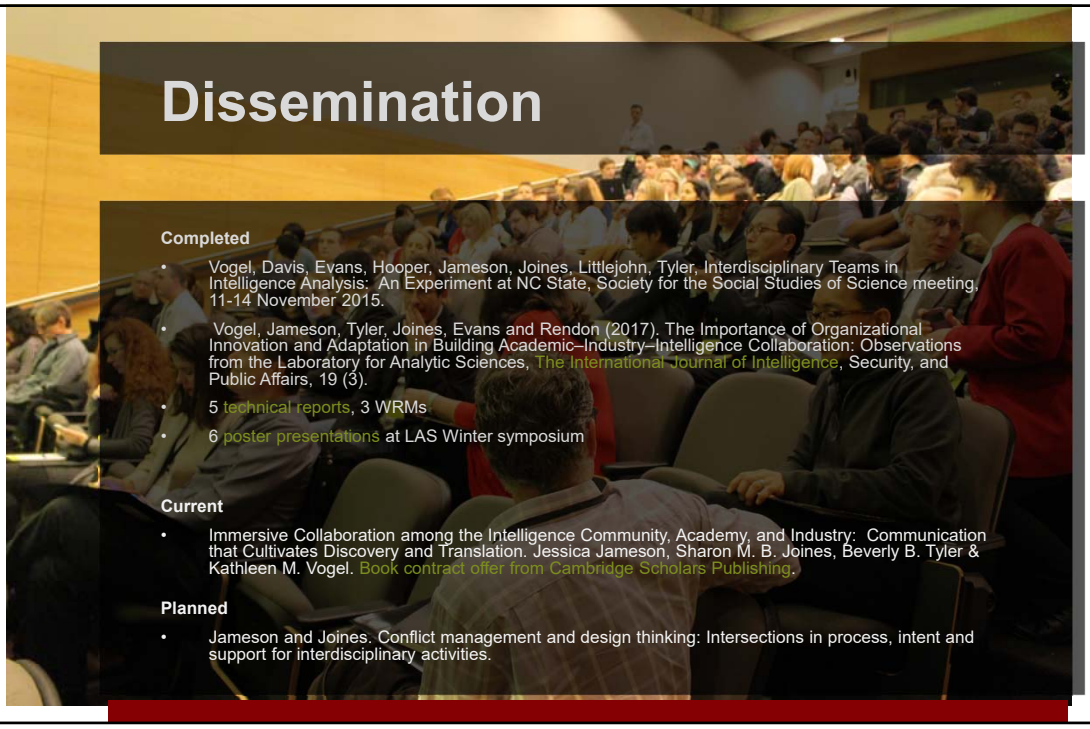
Design thinking short course (2016, 2017, 2018)

Workshops
- Focused discovery activities (1 in 2017, 3 in 201
- Communication in interdisciplinary research (201
- Advanced topics in design thinking (2018)




Dissemination
Completed
Vogel, Davis, Evans, Hooper, Jameson, Joines, Littlejohn, Tyler, Interdisciplinary Teams in Intelligence Analysis: An Experiment at NC State, Society for the Social Studies of Science meeting, 11-14 November 2015.
Vogel, Jameson, Tyler, Joines, Evans and Rendon (2017). The Importance of Organizational Innovation and Adaptation in Building Academic–Industry–Intelligence Collaboration: Observations from the Laboratory for Analytic Sciences, The International Journal of Intelligence, Security, and Public Affairs, 19 (3).
5 technical reports, 3 WRMs
6 poster presentations at LAS Winter symposium
Current
Immersive Collaboration among the Intelligence Community, Academy, and Industry: Communication that Cultivates Discovery and Translation. Jessica Jameson, Sharon M. B. Joines, Beverly B. Tyler & Kathleen M. Vogel. Book contract offer from Cambridge Scholars Publishing.
Planned
Jameson and Joines. Conflict management and design thinking: Intersections in process, intent and support for interdisciplinary activities.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