

OVERVIEW

Mission and Activities



BTI Institute Mission

The BTI Institute

- Conducts and transitions research
- Develops innovative technological solutions, and
- Provides trans-disciplinary education

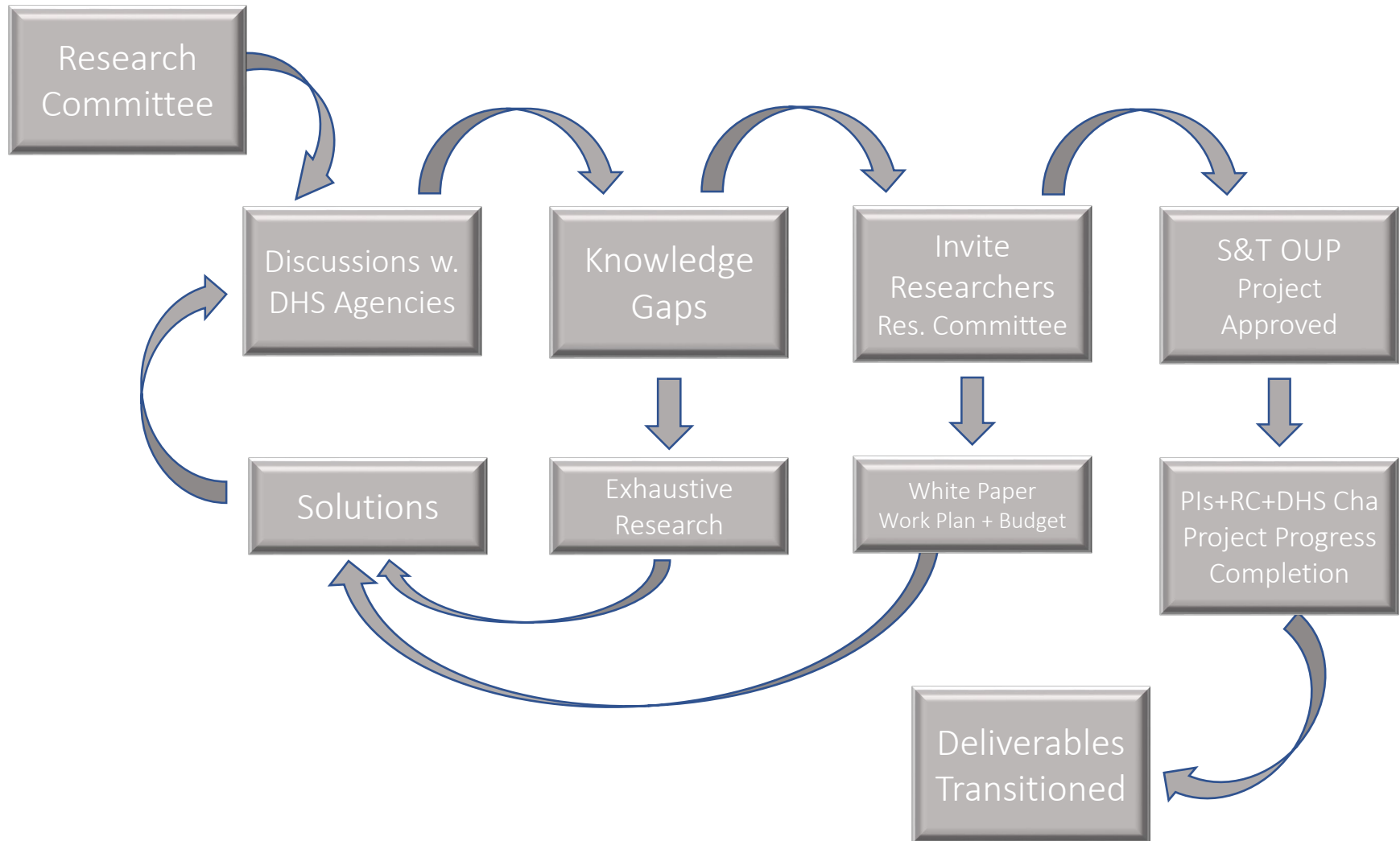
Research: Customer Discovery

- Fully understand knowledge gaps
- Develop research solutions to challenges faced by DHS customers and key stakeholders

Education: Develop Innovative Curricula

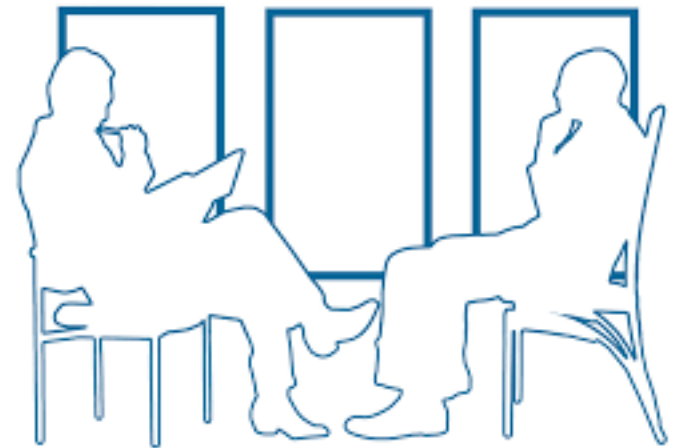
- Help train the next generation of homeland security experts
- Provide educational opportunities for career advancement

Customer Discovery & Stakeholder Engagement



DHS Programs Visited

- **CBP Office of Trade**
(ACE, COEE, IPR, Forced Labor)
- **CBP Office of Field Operations**
(Biometrics, APTL, APP, CCS, C-TPAT)
- **USBP Strategic Planning and Analysis**
Directorate
- **CBP Office of Human Resources**
Management (Human Capital Analytics &
Accountability, Workforce Resiliency)
- **Office of Citizenship (CAIS)**
- **CBP Office of Training and Development**





Partial list of Meetings

- Oct 23, 2018 Executive Director **James Byram** and colleagues
- Oct 24, 2018 Branch Chief **Stenzel** and colleagues
- Oct 25, 2018 Executive Assistant Commissioner **Brenda Smith** and DEAC **Cynthia Whittenburg**
- Nov 8, 2018 Director **David McGurk** and colleagues (teleconference)
- Nov 14, 2018 Executive Director **John Leonard**
- Nov 14, 2018 Executive Director **Deborah Augustin**
- Nov 14, 2018 Assistant Chief **Melissa Herrera** and **Officer Ed Fowler**
- Nov 15, 2018 Executive Director **Colleen Manaher's** Office (XD Manaher was not present)
- Nov 15, 2018 Executive Director **Larry Fluty** and Director **Patricia Hawes-Coleman**
- May 1, 2019 Deputy Chief **Michael R. Jones** (CAIS)
- May 2, 2019 Director **Manuel Garza, Jr.** and colleagues
- May 2, 2019 Director **Johanna Estes** and Attorney **Thomas Kendrick**
- May 2, 2019 Program Analyst **Benjamin Wojtasik**
- May 2, 2019 Deputy Assistant Commissioner **Paul Baker**
- May 2, 2019 Director **Patricia Hawes-Coleman**

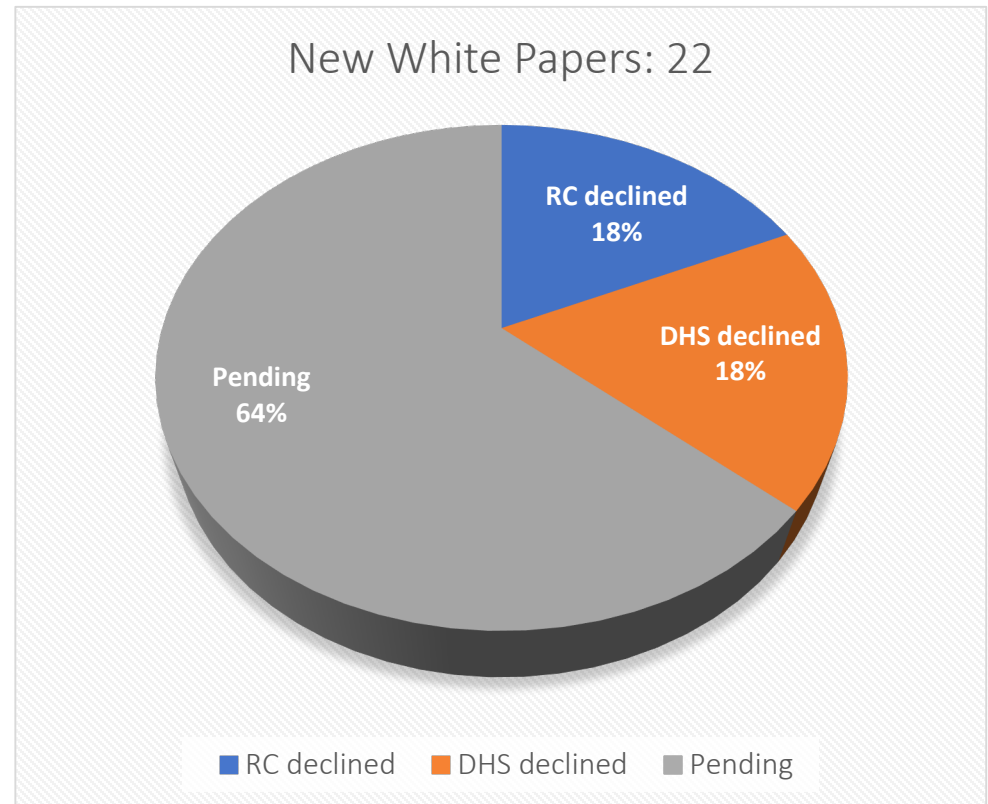
Some Topics of Relevance to DHS

- **Trade Facilitation & Enforcement:**
Enforcement, deterrence, seizures: strategies to optimize process
- **Return on Investment**
- **Forced Labor:** DNA, Blockchain
- **Big Data Analytics**
- **Cognitive Analytics**
- **Single Window 2.0:** Data efficiency, modeling FDA
- **Futurist Studies:** Port of the future; drones; biometrics
- **3D Printing:** Impact on manufacturing, licensing, regulation
- **Antidumping/Countervailing Duty**
- **Import Safety**
- **Quantitation of Crude Oil & Natural Gas** production by country
- **Free Trade Agreements**
 - 15 bi-lateral agreements
 - US/Mexico/Canada Trade Agreements
- **De Minimis** threshold
- **Narcotics:** Drug Harm Index
- **CBP Task Force Resiliency**
- **National Threat Analysis**
- **Intellectual Property Rights**
- **Tariffs:** aluminum/steel current priority
- **Chemical signature** of Petroleum, Natural Gas, and Minerals
- **Cross-Functional Workforce Training**

BTI Institute Response

Developed 22 new white papers

- 4 declined by RC
- 4 declined by DHS
- 6 white papers progressed to Work Plans
- 14 projects currently under review by DHS



Summary of Projects Developed

Project Description	DHS Entity	Champion or POC	Initiation Date	Current Status
Laser-Based Fiber Optic Intrusion Detection Technology, Dave Iffergan, BEI Security	Acquisition	Borkowski	11 June 2019	White Paper
Industrial Policy Strategies in Mexico for Slowing Migration, Adam Rose, CREATE	Policy	Huston/Cole	14 May 2019	White Paper
Paradigm Shift in US Border Patrol Staffing Models, Gary Hale, Baker Institute at Rice U	USBP	Herrera	23 April 2019	White Paper
Digital and Social Surveillance Net, Tim Mackey, UC San Diego	ICE/HSI USBP	Etter/Teed Herrera	22 April 2019 22 April 2019	White Paper
DNA Assays for Determining Honey Origins, Richard Willson, U Houston	LSS	Fluty/Coleman	02 April 2019	Work Plan
A Retrospective Study on the US Economic Effect of Raising <i>De minimus</i> , Christine McDaniel, Trade Partnerships, LLC	Trade/EAC	Whittenburg	02 April 2019	Work Plan
Preparatory Education Opportunities for US Citizenship Exams, Michelle Belco, U Houston	USCIS	McHale	01 April 2019	Declined

Summary of Projects Developed Cont'd

Project Description	DHS Entity	Champion or POC	Initiation Date	Current Status
The US Drug Harm Index, Kristina Acri, Colorado College	Trade	Leonard	28 March 2019	Declined
Investigation of Cryptocurrency Network for Combatting Illicit Trade, Aziz Mohaisen, U Central Florida	ICE/HSI	Giangregorio	19 March 2019	Declined
Promoting Integration of Immigrants Through Language Learning, Ferenc Bunta, U Houston	USCIS	McHale	27 February 2019	Work Plan
Validating Deterrence Models for Trade Enforcement, George Thompson, ANSER, Inc.	Trade	Whittenburg	20 February 2019	White Paper
Forensic Characterization of Imported Crudes, Ramanan Krishnamoorti, U Houston	Pet NG CEE	McGurk	20 February 2019	Declined
Fingerprinting Source of Steel and Aluminum Imports, Thomas Monecke, CO School of Mines	LSS	Fluty/Coleman	15 February 2019	White Paper
Future of the Border, Andy Hines, U Houston	Trade	Whittenburg	28 January 2019	Work Plan
Risk and Protective Factors in Suicide Prevention, Lisa Sullivan, Infuse, Corp.	Human Capital	Wojtasik	09 January 2019	Work Plan

New RFP 2019

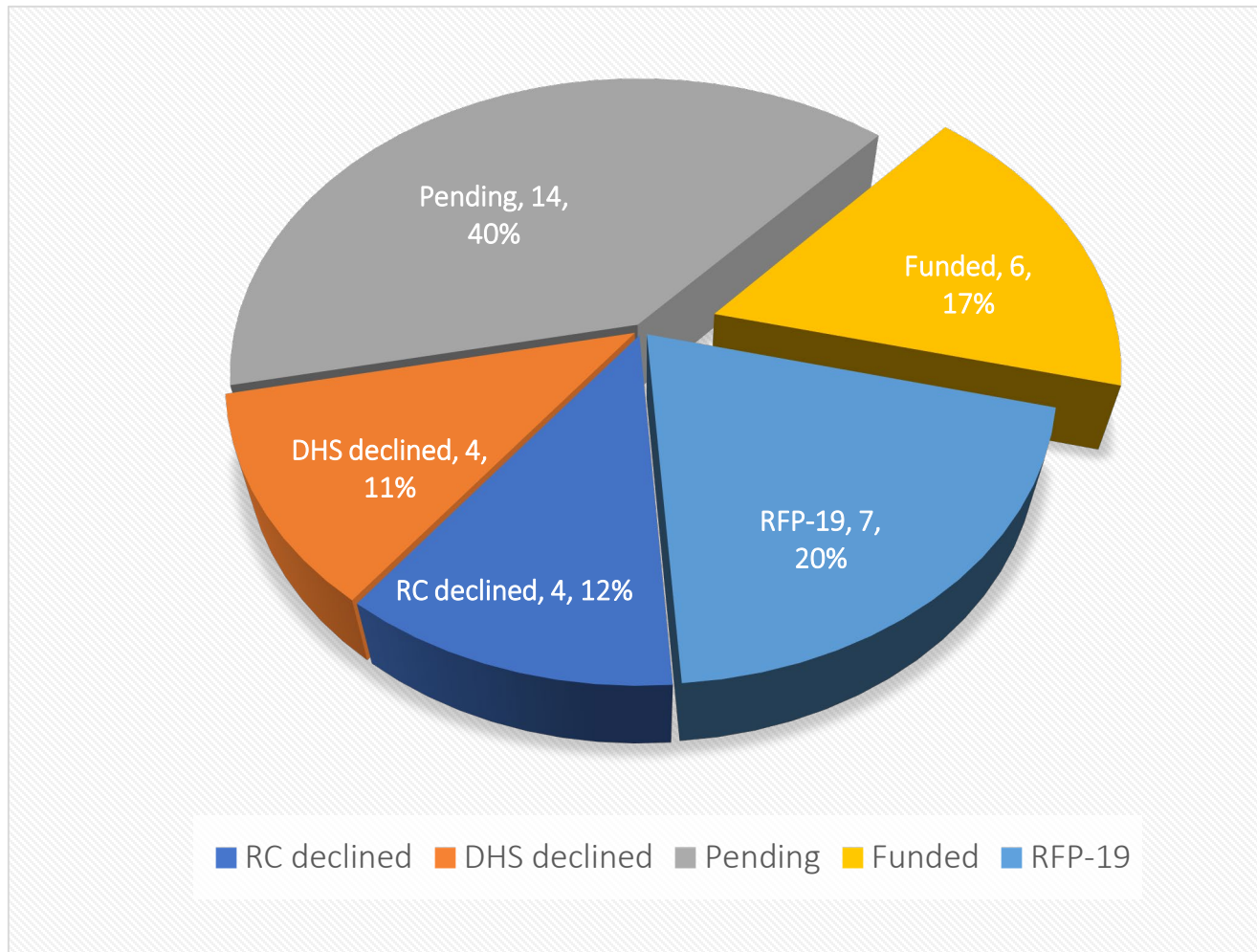
- Invited proposals that address research questions related to the Conference on Prosperity and Security in Central America.
- Focus on development and employment creation in Northern Triangle Countries
- Special emphasis on
 - e-commerce
 - private-sector investment
 - employment opportunities as alternatives to emigration
 - best practices or productive policies
 - immigration policies
 - infrastructure for productive investment
- Seven proposals currently under review by DHS

Active Projects

- Six ongoing projects funded by OUP from previous RFP
- Total Direct and Indirect Cost: \$1.08 M



BTI Institute Portfolio: 35 Projects



Funded Research Projects



Transforming Trade and Ensuring Global Supply Chain Security with Blockchain and Smart Contracts

Weidong “Larry” Shi, Ph.D., University of Houston
Eleftherios Iakovou, Ph.D., Texas A&M University

Leverage new technologies around blockchain to improve the mission of CBP in facilitating global trade and ensuring compliance with trade law and regulations.

DHS Champion: Vincent Annunziato, Director, Business Transformation & Innovation, CBP



Exploring Homeland Security Applications for Unmanned Autonomous Systems at Maritime Ports

Benjamin Rohrbaugh, David Hansell, and
Brian Henderson, Lantern UAS LLC

Systems based on UAS technology have the potential to contribute to several aspects of port security with minimal impact on current port operations.

DHS Champion: Namdoo Moon, Ph.D., Program Manager, CWMD



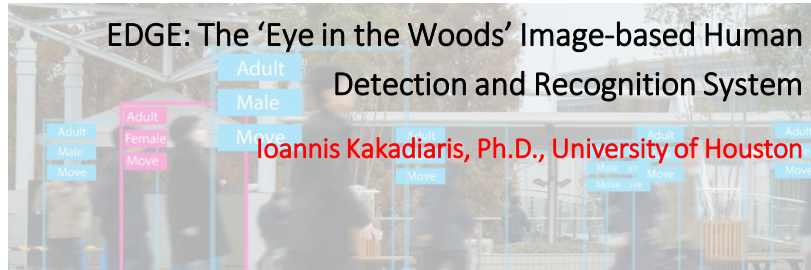
Validating Deterrence Models for Scanning Technologies

George Thompson, ANSER

Enabling policymakers to make decisions about scanning technologies, screening rates, and other deployment issues with full understanding of the deterrence impacts.

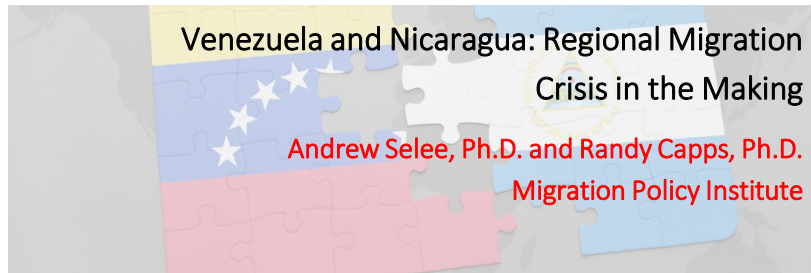
DHS Champion: Namdoo Moon, Ph.D., Program Manager, CWMD

Funded Research Projects



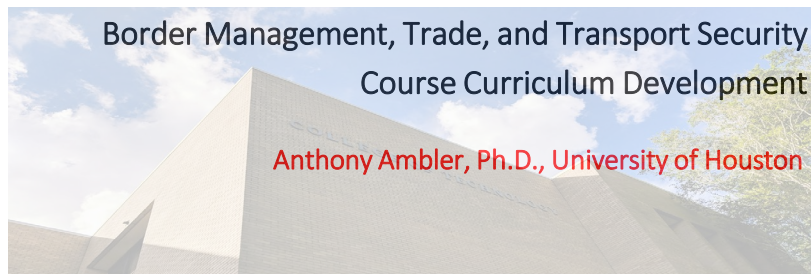
Successful detection and recognition of person-of-interest and data-driven accurate insight to the whereabouts and activity patterns of human crossers.

DHS Champion: Arun Vemury, Director, Biometric and Identity Technology Center



Examine the current and potential impact of migration, assess current regional responses, and suggest steps that the U.S. government can take to prevent a broader hemispheric crisis.

DHS Champion: David Cloe, Director, Latin America and Caribbean Affairs, Office of Strategy, Policy and Plans



Establish a pathway for post-secondary graduates to pursue a career with the Homeland Security Enterprise. Provide DHS personnel educational opportunities for career advancement

DHS Champion: Paul Baker, Ph.D., Deputy Assistant Commissioner, CBP Office of Training and Development