CIRI | CRITICAL INFRASTRUCTURE RESILIENCE INSTITUTE

A DEPARTMENT OF HOMELAND SECURITY CENTER OF EXCELLENCE

Biennial Review 2020: CIRI Overview

David Nicol, PhD
Director
UIUC

10-11 June 2020

Three Missions:

- Innovative, outputs-oriented research
- Sustainable technology transition
- Scalable education & workforce development

Two-Year Objective:

A vibrant, growing, self-supporting hub of innovative research and solution development –

- Applying academic rigor to urgent challenges in CI resilience
- Delivering timely, practical, impactful solutions
  - Scalable
  - Sustainable
- Enhancing the knowledge and skills of the homeland security workforce
- Contributing to the safety and security of our Nation

Approach:

- Leverage lessons learned and networks formed
- Expand outreach to industry and other government
- Mind the gaps
- Constrain the problem
- Apply the best minds
- Maintain urgency
- Manage effectively and efficiently
- Fail fast and move on

Potential Theme Areas:

- Critical Infrastructure Interdependencies
- Industrial Control Systems Security
- Mobile, IoT, 5G, Emergency Comms
- Advanced Data Analytics
- Business, Finance, Insurance

Background, Context, Drivers:

- Broad mandate over a complex and interdependent domain
- Private sector focus
- Support multiple DHS components, .gov domain, other government
- Multi-disciplinary research with focus on impactful outputs
- Large number of *active* projects (9 research + 8 tech trans/WFD)
- Mix of academic and private sector partners
- Need for tech transition and workforce development

Target Impacts:

- Greater awareness of the **need** for secure and resilient critical infrastructure
- Greater understanding of **how** to make it secure and resilient
- Develop and **transition** to use/market impactful solutions
- Stimulate increased **investment** in resilience
  - Stimulate and leverage market forces
  - Craft sound, complementary policies and standards
- Help fill a growing **pipeline** of professionals entering the homeland security enterprise

Sample Previous Projects:

- Resilience Governance - NEU
- Insurance and Resilience (casualty & cyber) — Wharton, UIUC
- Flood Risk — Washington
- Regulatory Options for Managing Systemic Risks — Stanford/Cornell
- Quantifying Interdependencies of the Logical/Physical Internet Topologies — UCSD
- Community Resilience & Disaster Costs — PRI
- Resilience in Manufacturing through Digital Threading — UIUC

Current Projects (Research):

PROJECT	PI	INSTITUTION	CUSTOMER
Empirical Security Analysis of the Wireless Emergency Alerts System	Ha	Colorado University Border	CISA; Multiple private sector and government
Characterizing End-to-End Risk of the Telecommunications Supply Chain	Tien	Georgia Tech	CISA; Multiple private sector and government
Protecting the Nation's 911 System from Cyber Threats Present and Future	Balasubramanian	Karthik Consulting	CISA; Multiple private sector and government agencies.
EMP Risk Assessment and Mitigation Prioritization	Salo	Heartland	CISA; Multiple private sector and government agencies.
Hybrid Quantum-Classical Reinforcement Learning in Controlled Quantum Networks	Siopsis	University of Tennessee	CISA, USCG, FEMA, owners and operators of maritime ports

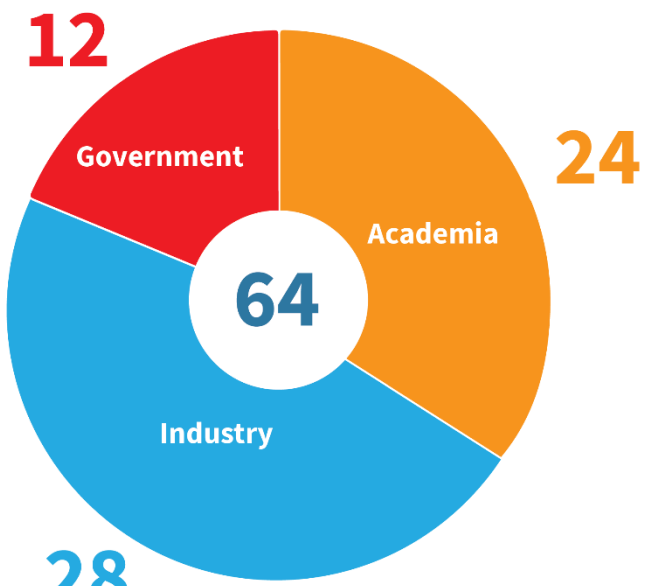
PROJECT	PI	INSTITUTION	CUSTOMER
Reliable Extraction of Emergency Response Networks from Text Data and Benchmarking with National Emergency Response Guidelines	Diesner	UIUC	FEMA
Leveraging AI for Disaster Response: scalable and effective algorithms for strategic planning	Dilkina	University of Southern California	FEMA; State, Local, Tribal government
Multi-Layer Cyber-Physical Supply Chain risk analysis for Improving the Resilience of IOT-Enabled Critical Infrastructures	Memon	New York University	CISA
NG911 Interoperability testing Program	Magnussen	Texas A&M University	CISA, FCC, First Responders Group

Current Projects (Tech transition):

PROJECT	PI	INSTITUTION	TRANSITION OUTPUT	CUSTOMER
National Scale Delivery of Cybersecurity Education by Integration of LMS and the Cyber Secure Dashboard	Medina / Whitesell	UIUC	Education delivery platform	Multiple 2-year and 4-year academic institutions
Supply Chain Cybersecurity Assurance for Critical Infrastructure	Jaskolka	Carleton University	Cybersecurity assessment tool/framework	CISA; Multiple private sector and government
Towards Community Resilience through Comprehensive Risk Assessment for Business Continuity	Shetty	Old Dominion University	Vulnerability scanner	CISA; Multiple private sector and government agencies.
Measuring Business and Economic Resilience in Disasters	Rose	University of Southern California	Data set; resilience self-assessment tool; economic consequence analysis & resilience tool	CISA; FEMA; NIST; Multiple private sector and government agencies.
Assessment and Measurement of Port Disruptions	Weaver	UIUC	Best practices guidance for risk analysis and threat planning; software platform for planning, simulation, response	CISA, USCG, FEMA, owners and operators of maritime ports
Understanding and Improving Cybersecurity of Manufacturers	Sandone / Salo	UIUC/Heartland	Recommendations for improvement of NIST standards; software platform for compliance with DFARS and NIST CSF	CISA; NIST; manufacturing industry
LEFT: An LTE-Oriented Emulation-Instrumented Fuzzing Test Bed	Yan	Binghamton	Analysis of research and test results; techniques for testing LTE-capable devices; fuzzing test bed	CISA; Mobile communications industry – phones and IoT devices
Mapping Infrastructure Interdependencies for Improved Emergency Management and Resilience Investment Decisions	Tien	Georgia Tech	New methodology for modeling interdependent infrastructure systems; recommendations for improving planning and risk assessment; software tool to automate system modeling and analysis	CISA; FEMA; Municipalities and their infrastructure suppliers; infrastructure owners and operators

CIRI by the Numbers

partners



(federal, state, local, territorial, and tribal)

29 total research projects

44 total events

787 outreach event attendees

327 students engaged

10 tech transition initiatives

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Biennial Review 2020: CIRI Management

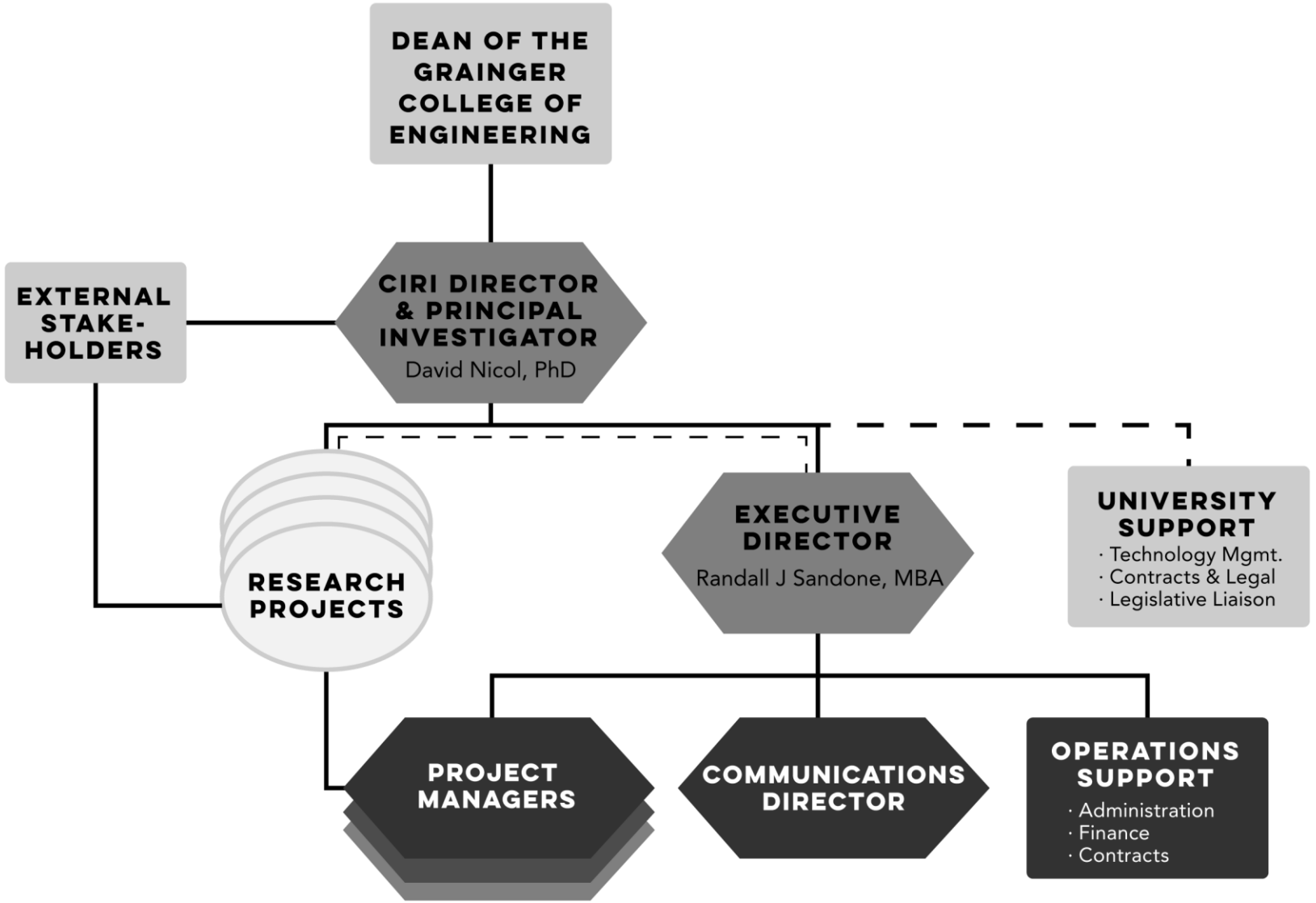
Randall Sandone, CCISO
Executive Director
UIUC

10-11 June 2020

Center Ops & Admin Management:

Objective: Efficient and responsive management of the CIRI enterprise in support of DHS/CIRI mission accomplishment

- Service-oriented, entrepreneurial mindset
- Facilitate collective (DHS + CIRI) focus on vision, mission, outreach, impact
- Maintain project schedules, ensure quality deliverables
- On-time, quality response to DHS needs
- Efficiently and effectively achieve communications objectives
- Ensure timely and efficient transition to practice/market
- Optimize return on budget allocation
- Ensure total compliance with contractual requirements


DEAN OF THE GRAINGER COLLEGE OF ENGINEERING
EXTERNAL STAKE-HOLDERS
CIRI DIRECTOR & PRINCIPAL INVESTIGATOR
David Nicol, PhD
RESEARCH PROJECTS
EXECUTIVE DIRECTOR
Randall J Sandone, MBA
UNIVERSITY SUPPORT
· Technology Mgmt.
· Contracts & Legal
· Legislative Liaison
PROJECT MANAGERS
COMMUNICATIONS DIRECTOR
OPERATIONS SUPPORT
· Administration
· Finance
· Contracts

Executive Director

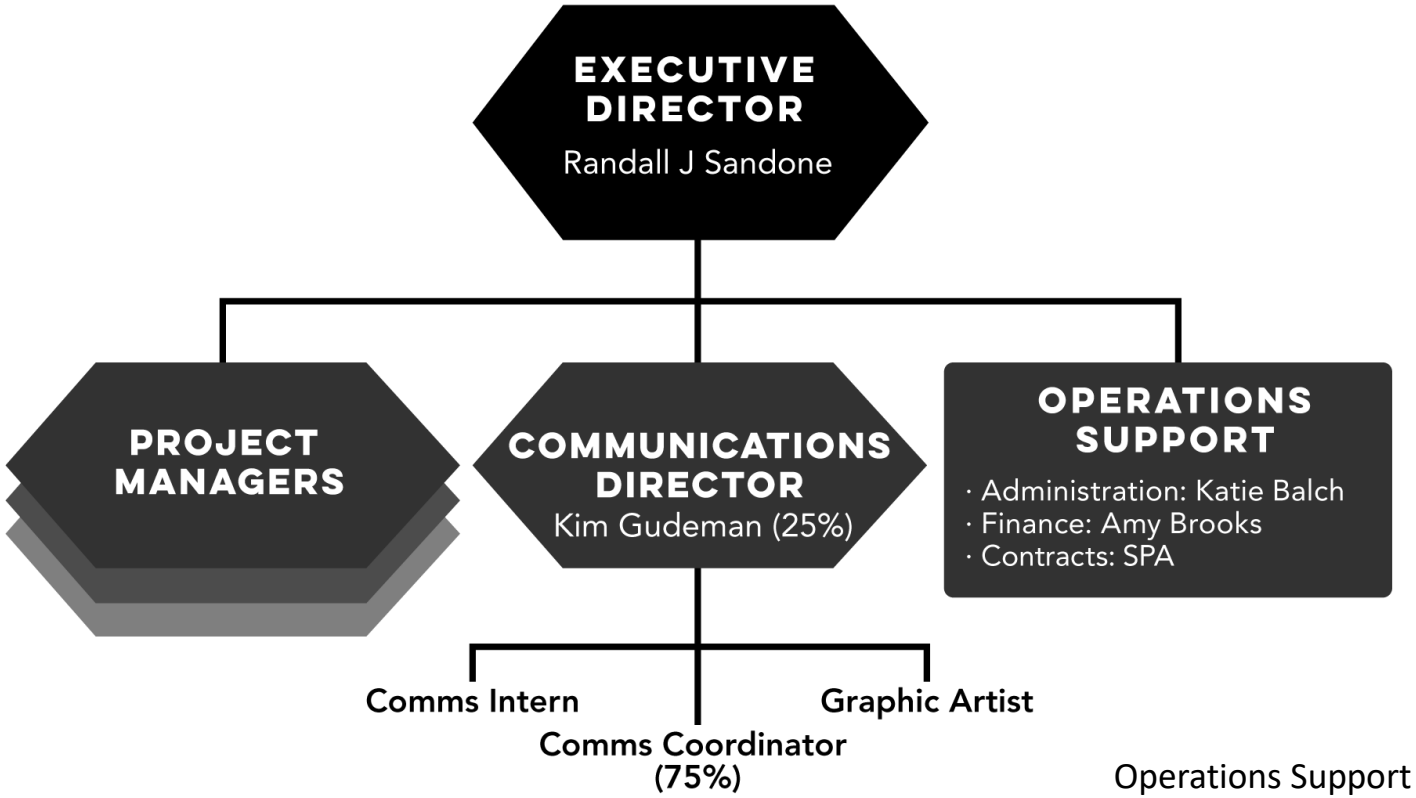
- Advise and assist Director as needed
- Government liaison
- Day-to-day management of operations
- Oversight of communications initiatives
- Project management oversight
- Customer outreach

All positions permanent & full time.

- **Maintain project schedules; ensure quality deliverables**
- Liaise and coordinate with research teams
- Maintain open and effective comms between CIRI, OUP, and research teams
- Maintain project management data in Zoho
- Maintain HSUP project reporting system
- Support reports generation

- **Maximize student engagement; promote homeland security careers**
- Develop, coordinate, and manage internship programs and student programs
- Coordinate and manage the administration of MSI research initiatives
- Coordinate with research projects regarding education & workforce dev
- Plan and manage CIRI outreach events
- Support reports generation

- **Timely, effective, transition to practice**
- Develop, coordinate, and manage the technology transition plan and program
- Develop, coordinate, and manage tech transition initiatives
- Coordinate and manage tech transition gate reviews
- Support reports generation



Communications

- Develop and manage the CIRI brand and the strategic communications plan
- Develop and manage content for all communications efforts, including the website, brochures, newsletters, social media, video production, and more.
- Represent CIRI on communications committees for DHS OUP and/or other COEs
- Promote CIRI research, education initiatives, and thought leadership to national and international media
- Help plan and promote CIRI events including webinars, conferences, summits, and trade shows, etc.

Operations Support

- Clerical and logistical support of leadership team
- Maintain financial accounting of administrative and research budget
- Generate financial reports as needed
- Pre-award grant negotiation and administration
- Post-award administration and liaison with sub-awardees

Project Management:

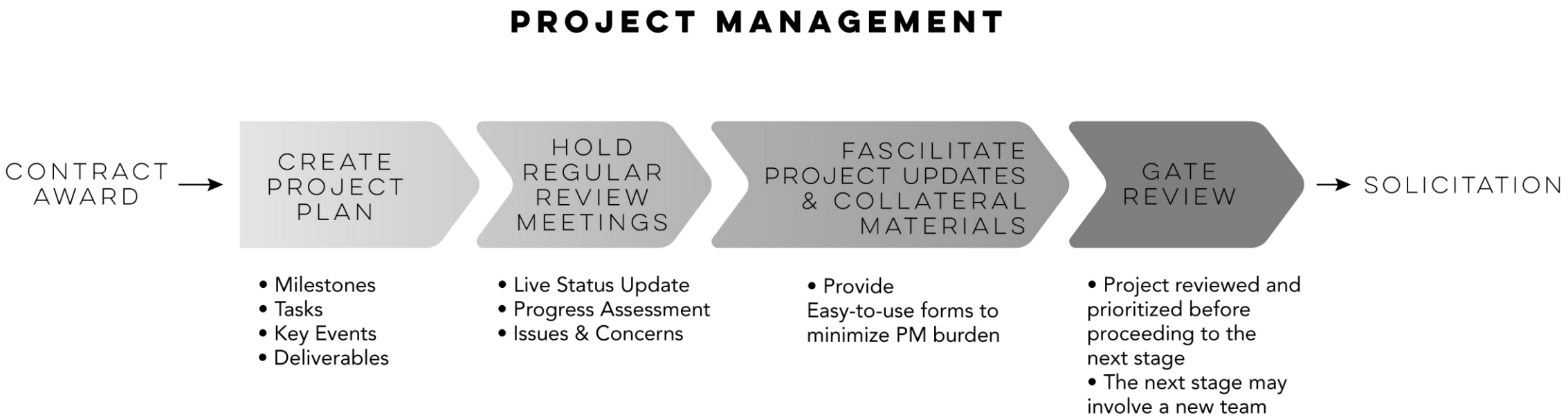
Objective: On-time, on-budget performance and quality deliverables

- Team and service-oriented entrepreneurial mindset
- Commitment to CIRI vision and mission
- High-touch, low-demand engagement with research teams
- Sound science, solid progress, customer engagement
- Provide timely, accurate, dispassionate reports and advice to leadership

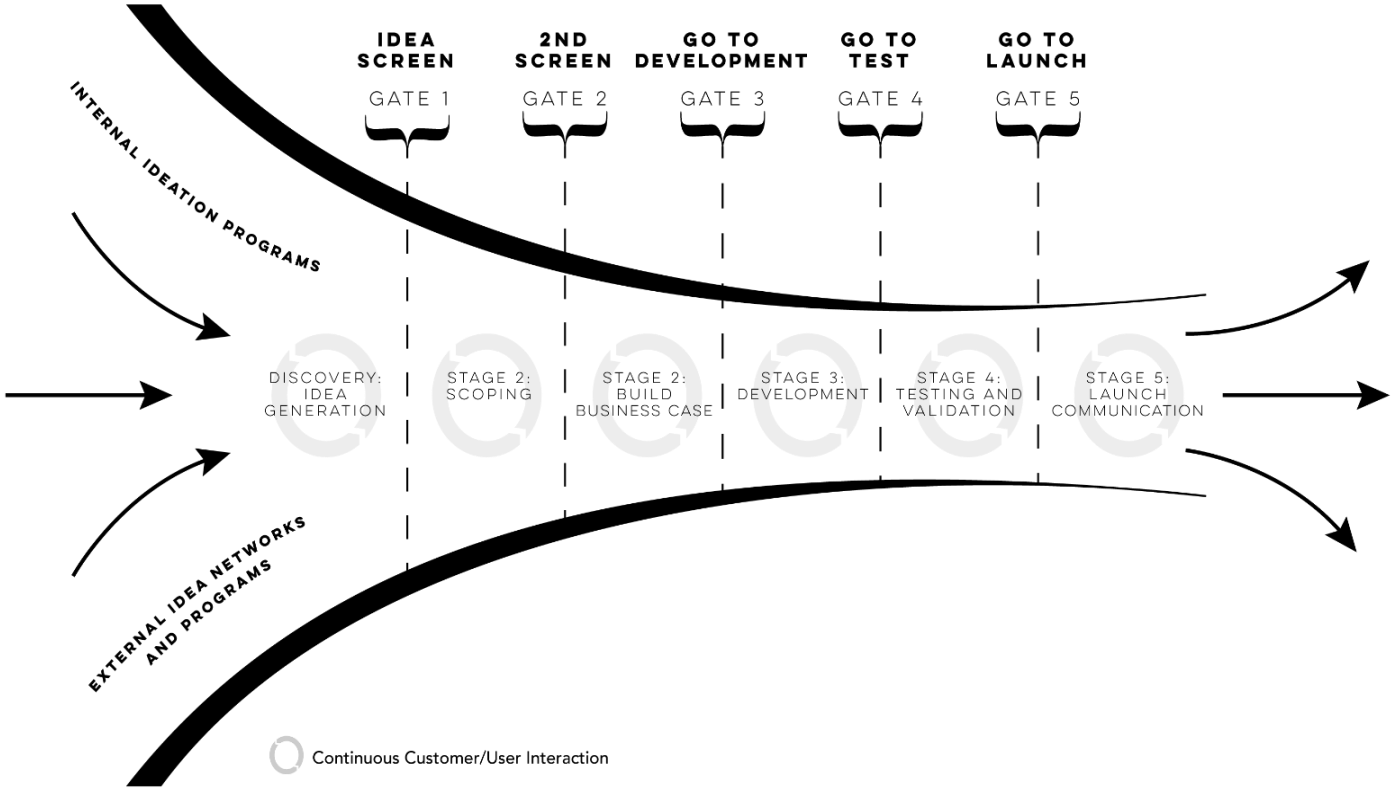
Performance Metrics:

- Driven by “science, progress, customer” framework
- Science review with COE Director & Principal Investigator, David Nicol
  - Valid hypothesis and sound testing methodology?
  - Necessary and appropriate resources being applied?
  - Issues relating to science or methodology?
- Regular project reviews with Executive Director, PM & DHS PM
  - Milestone/Task/Deliverables/Financial progress review
  - Issues potentially impacting performance
- Customer engagement required from Day 1
  - Engage in research
  - Participate in transition

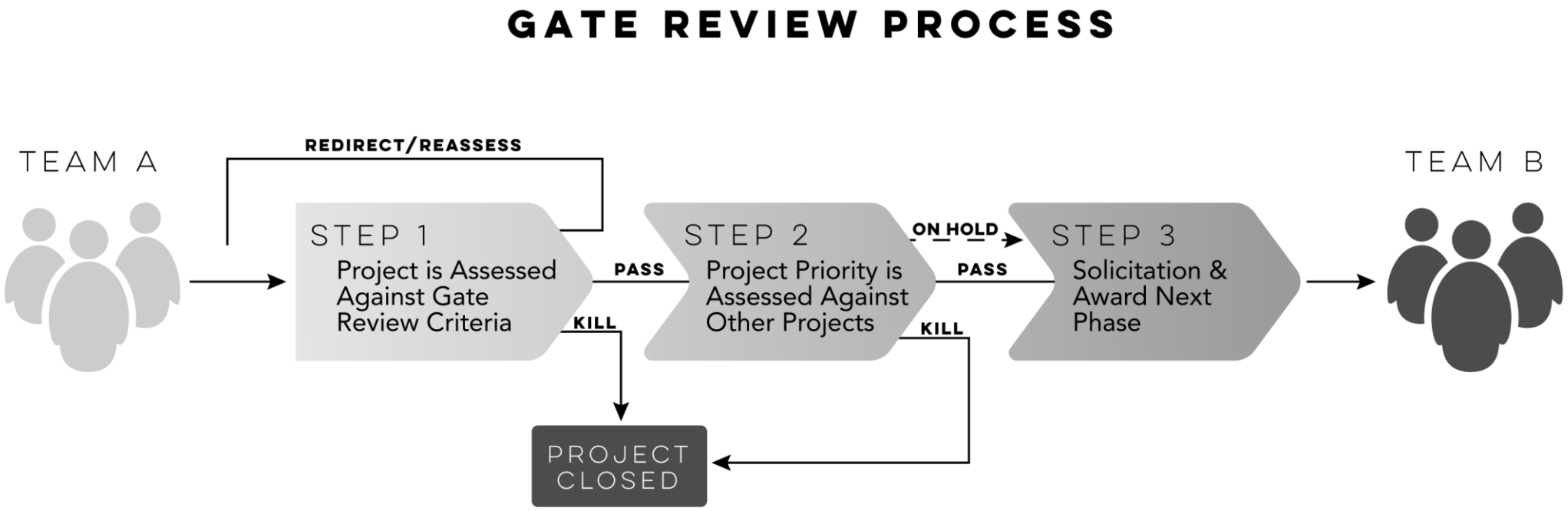
Project Management:

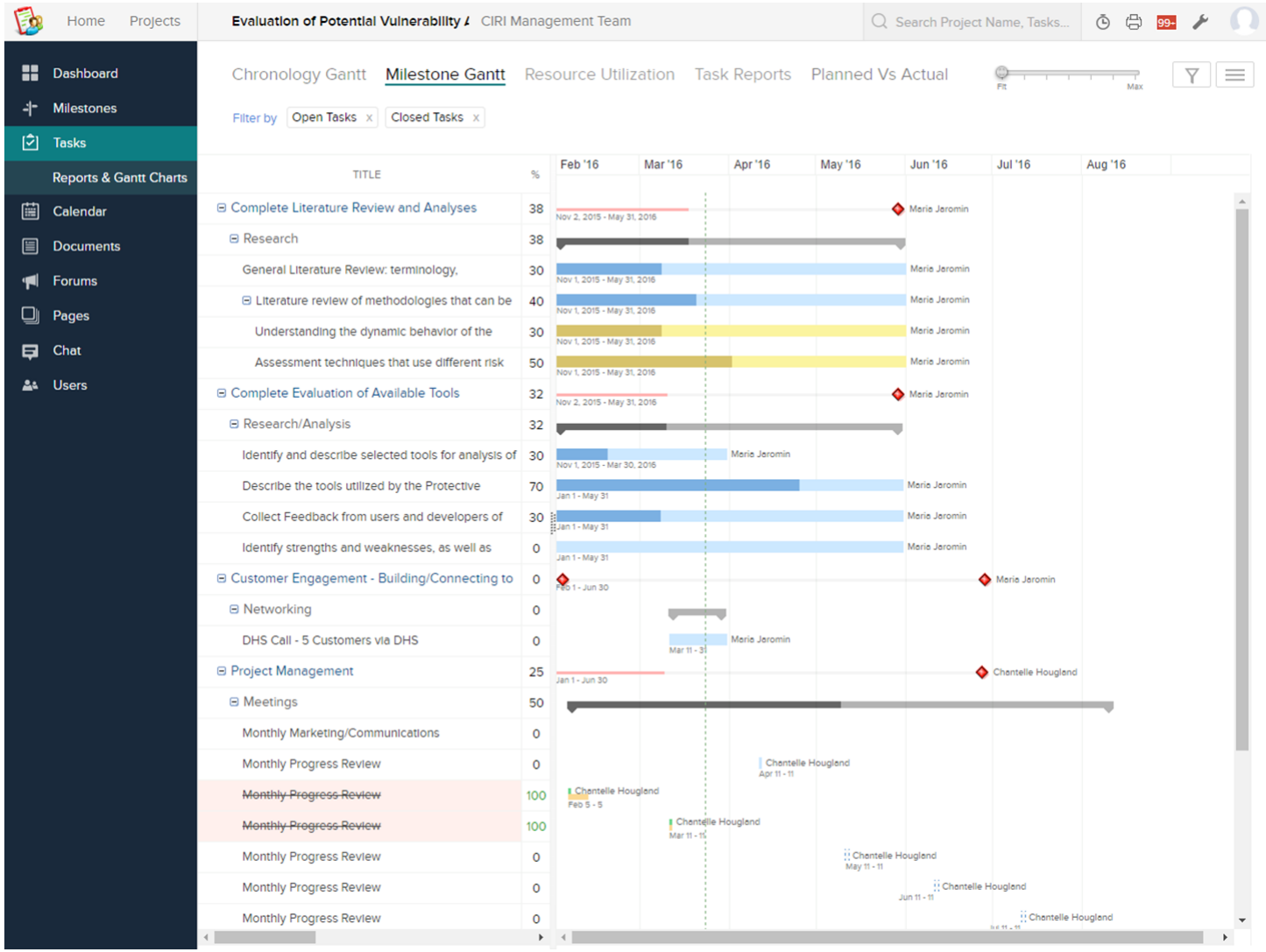


Stage Gate Review Model



Gate Review:


GATE REVIEW PROCESS
TEAM A
REDIRECT/REASSESS
STEP 1
Project is Assessed Against Gate Review Criteria
PASS
STEP 2
Project Priority is Assessed Against Other Projects
ON HOLD
PASS
STEP 3
Solicitation & Award Next Phase
TEAM B
KILL
KILL
PROJECT CLOSED


Home
Projects
Evaluation of Potential Vulnerability /
CIRI Management Team
Search Project Name, Tasks...
Dashboard
Milestones
Tasks
Reports & Gantt Charts
Calendar
Documents
Forums
Pages
Chat
Users
Chronology Gantt
Milestone Gantt
Resource Utilization
Task Reports
Planned Vs Actual
Filter by
Open Tasks
Closed Tasks
TITLE
%
Feb '16
Mar '16
Apr '16
May '16
Jun '16
Jul '16
Aug '16
Complete Literature Review and Analyses 38
Research 38
General Literature Review: terminology, 30
Literature review of methodologies that can be 40
Understanding the dynamic behavior of the 30
Assessment techniques that use different risk 50
Complete Evaluation of Available Tools 32
Research/Analysis 32
Identify and describe selected tools for analysis of 30
Describe the tools utilized by the Protective 70
Collect Feedback from users and developers of 30
Identify strengths and weaknesses, as well as 0
Customer Engagement - Building/Connecting to 0
Networking 0
DHS Call - 5 Customers via DHS 0
Project Management 25
Meetings 50
Monthly Marketing/Communications 0
Monthly Progress Review 0
Monthly Progress Review 100
Monthly Progress Review 100
Monthly Progress Review 0
Monthly Progress Review 0
Monthly Progress Review 0
Maria Jaromin
Chantelle Hougland

Financial Management:

Objective: Accurate, timely, efficient management of budget

- Strict adherence to policy and directives
- Accurate and responsive support both pre- and post-award
- Accurate and responsive support to leadership and OUP data requests
- Anticipatory versus reactive mindset

DHS CIRI Financial Status @ 06/04/2020

	FY2015	FY2016	FY2017	FY2018	FY2019^	FY15 - FY19	FY20*
Project	Budget	Budget	Budget	Budget	Budget	Total Budget	
R&D TBD	$ 2.453	$ 2.640	$ 2.621	$ 2.600	$ 2.160	$ 12.474	$ 3.000
Administrative #	$ 1.004	$ 1.160	$ 1.079	$ 0.900	$ 1.590	$ 5.733	$ 1.100
Total	$ 3.457	$ 3.800	$ 3.700	$ 3.500	$ 3.750	$ 18.207	$ 4.100

Administrative budget includes consultants

^ Projected as of 06/30/2020

*Under development

FY2020 Estimated Budget:

Total Admin:	$	941,884	23%
Total Research:	$	1,847,791	45%
Total Tech Trans/WFD:	$	729,081	18%
Total F&A:	$	581,244	14%
TOTAL[1]:	$	4,100,000	

1 - Includes $500K from DOT

Funds Management

- Tight budget scrutiny
- “One & done” if/when appropriate
- Reallocation of funds to new project opportunities
- Requests for re-quote of proposed budgets
- Efficient use of contractors to support specialized and/or temporary needs
- “Bang for the Buck Award” — FY18 (S&T Showcase)
- Pursuit of leveraged funding

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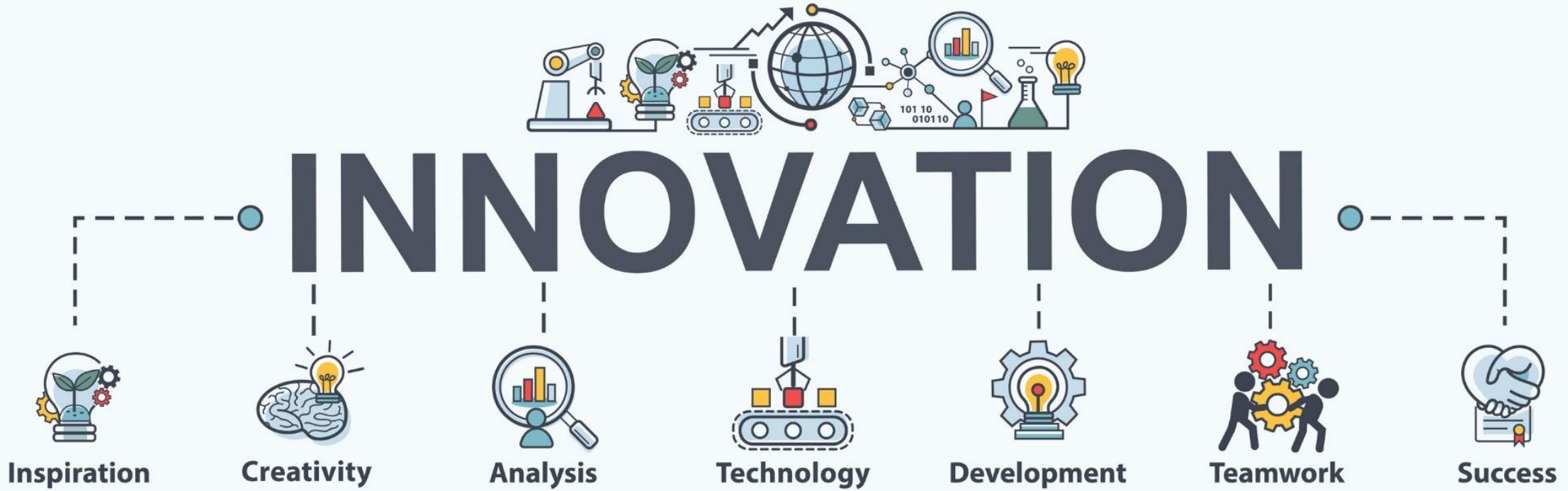
Technology Transition: Strategies, Projects, Status

Jose Medina Cruz, JD
Sr. Program Manager
Technology Transition
UIUC

Transition to Practice

Objective: Maximize CIRI impact through timely, efficient, *sustainable* transition of outputs to DHS/HSE



Transition Types

Type 1: Basic Research

- Projects that aim to answer pressing questions that will help advance other research and development projects or will provide information that will inform subsequent research.

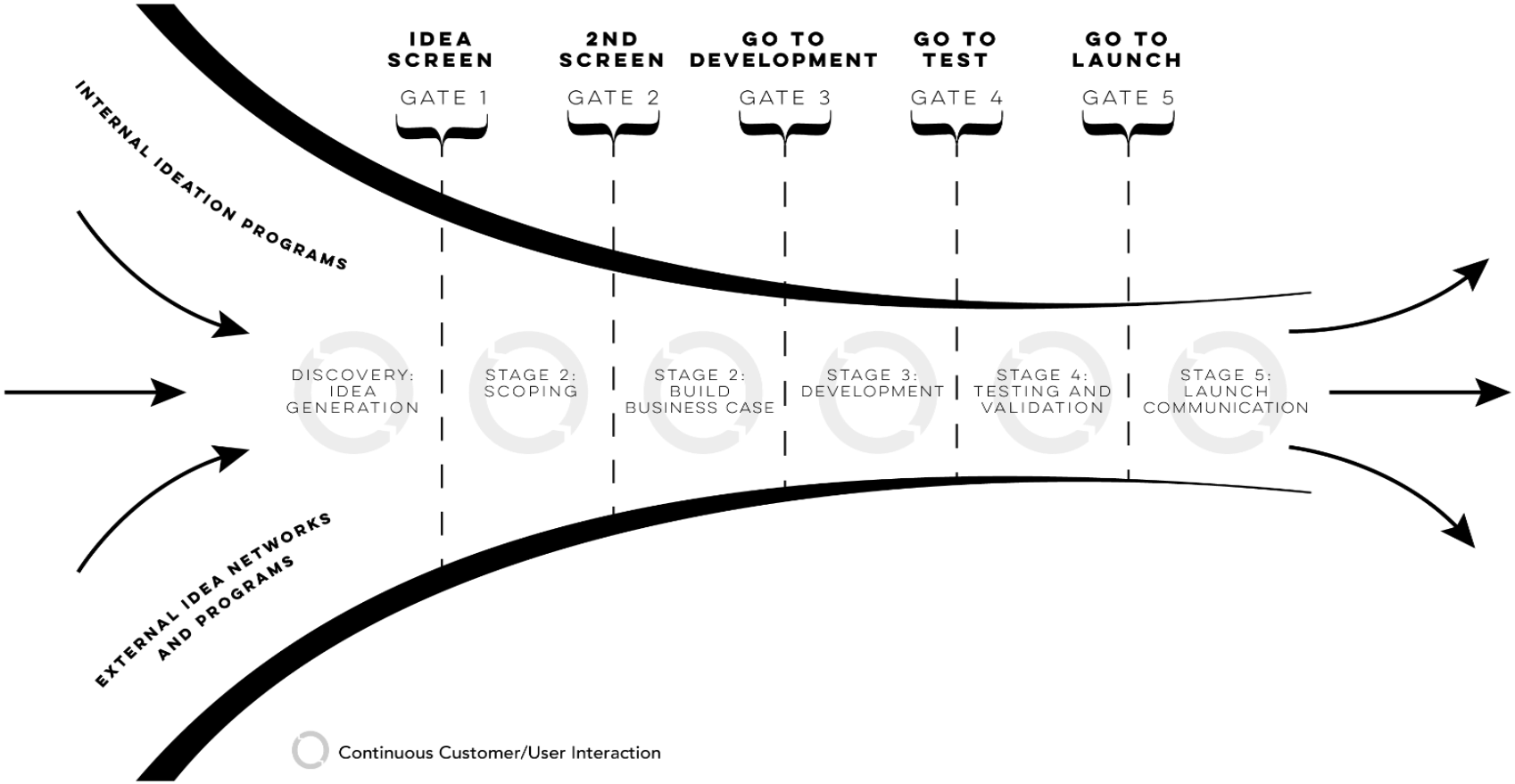
Type 2: Knowledge Products

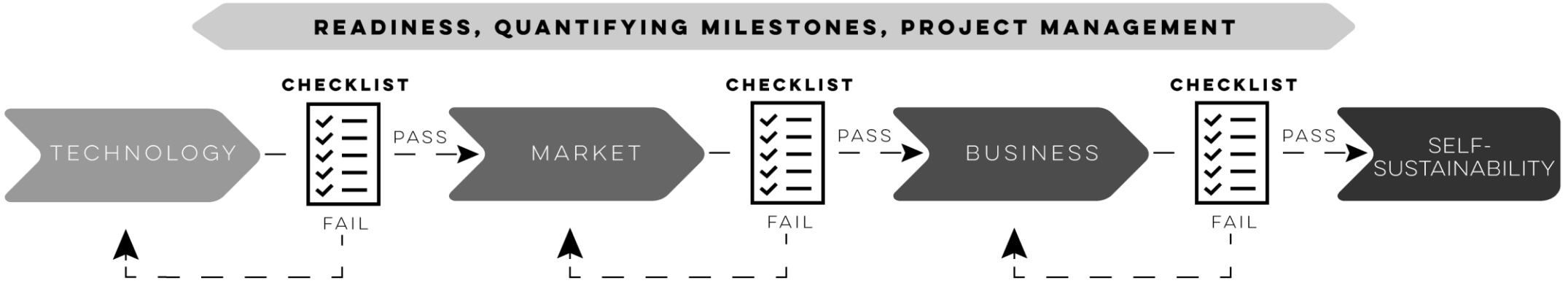
- Projects that generate knowledge products such as policy recommendations, proposed standards, or regulatory guidance.

Type 3: Tools, Technologies, or Services ***

- Projects that will result in the development of tools, technologies, or services that will deliver impact only when and if deployed and used within the homeland security enterprise.

Stage Gate Review Model





Checklist and Criteria Model

- Projects are assessed with respect to three technology transition components:
  - **(1) Technology**: Provides a systematic approach to mature the technology.
  - **(2) Market:** Provides insights on transition viability by identifying target end-user customers and competitors that guide the business model and the design of the technology solutions.
  - **(3) Business:** Provides insights on a sustainable business structure to allow the technology to thrive in the market.

Features

- This is a **structured and repeatable transition process** to track objective, comparable progress and the stage of transition with the goal of self-sustainability
- Each stage has a checklist and criteria which needs to be fulfilled to advance to the next stage
- Based on Gate Review Criteria, the Checklist consists of **requirements that must be fulfilled** to advance

Intellectual Property

Assessment

- Review the disclosure, analyze the competitiveness based on checklist and scoring system
- Team evaluates potential opportunities based on team composition

Protection

- Due Diligence: Compile inventory of IP assets
- File patent and trademark applications via institution's technology management offices
- Execute cooperation agreements

Marketing

- Identify opportunities by market research including secondary sources and direct interviews
- Identify product-market fit via customer discovery and customer validation

Commercialization

Form Startup Business

- Work to assist the founders in planning, creating and finding funding for the startup

Existing Business

- Work closely to identify mutual interests, goals, plans

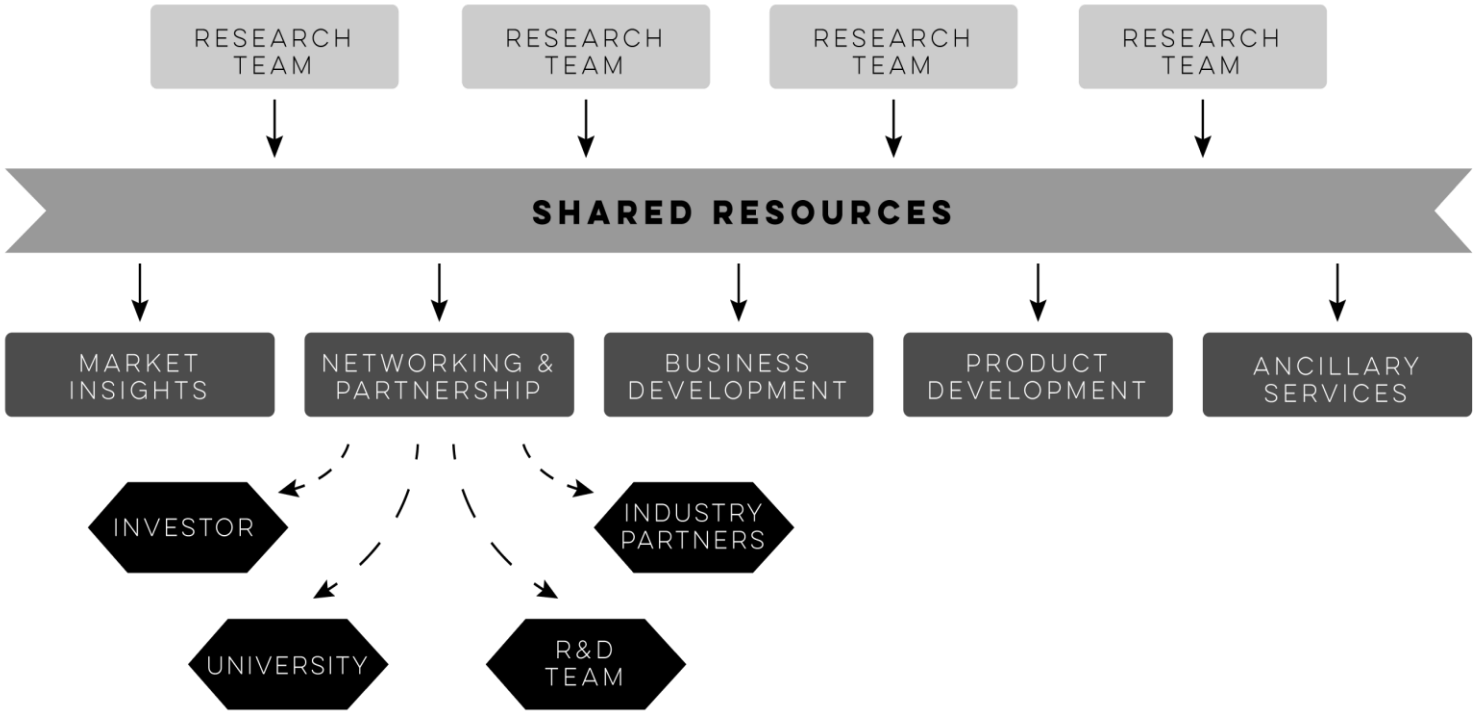
Licensing/Acquisition

- Sign agreement
- A license agreement: give rights for a technology's financial and other benefits
- An option agreement: enable a third party to evaluate the tech before licensing

Product Development

- Continue the advancement of technology and develop new product or service
- Further development, regulatory approvals, sales, and marketing, training

Shared Resources



PROJECT	PI	PROJECT TYPE	TRANSITION OUTPUT	CUSTOMER
National Scale Delivery of Cybersecurity Education by Integration of LMS and the Cyber Secure Dashboard	Medina / Whitesell	Type 2 & 3	Education delivery platform	Multiple 2-year and 4-year academic institutions
Supply Chain Cybersecurity Assurance for Critical Infrastructure	Jaskolka	Type 3	Cybersecurity assessment tool/framework	CISA; Multiple private sector and government
Towards Community Resilience through Comprehensive Risk Assessment for Business Continuity	Shetty	Type 3	Vulnerability scanner	CISA; Multiple private sector and government agencies.
Measuring Business and Economic Resilience in Disasters	Rose	Type 2 & 3	Data set; resilience self-assessment tool; economic consequence analysis & resilience tool	CISA; FEMA; NIST; Multiple private sector and government agencies.
Assessment and Measurement of Port Disruptions	Weaver	Type 2 & 3	Best practices guidance for risk analysis and threat planning; software platform for planning, simulation, response	CISA, USCG, FEMA, owners and operators of maritime ports
Understanding and Improving Cybersecurity of Manufacturers	Sandone / Salo	Type 2 & 3	Recommendations for improvement of NIST standards; software platform for compliance with DFARS and NIST CSF	Type 2: CISA; NIST; Type 3: manufacturing industry
LEFT: An LTE-Oriented Emulation-Instrumented Fuzzing Test Bed	Yan	Type 2 & 3	Analysis of research and test results; techniques for testing LTE-capable devices; fuzzing test bed	CISA; Mobile communications industry – phones and IoT devices
Mapping Infrastructure Interdependencies for Improved Emergency Management and Resilience Investment Decisions	Tien	Type 1, 2, & 3	New methodology for modeling interdependent infrastructure systems; recommendations for improving planning and risk assessment; software tool to automate system modeling and analysis	Type 1: CISA; Type 2: CISA; FEMA; Municipalities and their infrastructure suppliers; Type 3: - infrastructure owners and operators

Research Projects

PROJECT	PI	PROJECT TYPE	TRANSITION OUTPUT	CUSTOMER
Empirical Security Analysis of the Wireless Emergency Alerts System	Ha	Type 2 & 3	Best practice guidance for risk analysis	CISA; Multiple private sector and government
Characterizing End-to-End Risk of the Telecommunications Supply Chain	Tien	Type 2 & 3	Characterize vulnerabilities in terms of physical assets or technologies, service-based operational procedures, and disruptions as well as corresponding impacts levels of risk. Characterize the changes in risk to telecommunication infrastructure with the transition to 5G.	CISA; Multiple private sector and government
Protecting the Nation's 911 System from Cyber Threats Present and Future	Balasubramanian	Type 2	Recommendations for PSAP's delivered as NIST Cybersecurity Framework Profile for PSAP's including final assessment summary and recommendations for risk management.	CISA; Multiple private sector and government agencies.
EMP Risk Assessment and Mitigation Prioritization	Salo	Type 2 & 3	A report that assess electrical and systems design approaches intended to mitigate EMP effects on mobile cell sites.	CISA; Multiple private sector and government agencies.
Hybrid Quantum-Classical Reinforcement Learning in Controlled Quantum Networks	Siopsis	Type 2	Best practices guidance for risk analysis and threat planning; software platform for planning, simulation, response	CISA, USCG, FEMA, owners and operators of maritime ports

Research Projects (cont'd)

PROJECT	PI	PROJECT TYPE	TRANSITION OUTPUT	CUSTOMER
Reliable Extraction of Emergency Response Networks from Text Data and Benchmarking with National Emergency Response Guidelines	Diesner	Type 2 & 3	Produce a document that provides insights into the current collaboration structures that exist between agencies at various levels of the government. In addition we will map information flows and resource exchanges to further support effective responses.	FEMA;
Leveraging AI for Disaster Response: scalable and effective algorithms for strategic planning	Dilkina	Type 2 & 3	A tool and methods for more effective and efficient use of finite assets (funds, equipment). The project will provide decision support tools for recommendations and policies for long-term infrastructure investments and the ability to systematically study trade offs between performance metrics.	FEMA; State, Local, Tribal government
Multi-Layer Cyber-Physical Supply Chain risk analysis for Improving the Resilience of IOT-Enabled Critical Infrastructures	Memon	Type 2 & 3	Provide a risk analysis system backed by decision analytic tools that are scalable and generic for applicability to a wide range of IoT-Enabled Infrastructures	CISA
NG911 Interoperability testing Program	Magnussen	Type 2 & 3	Identify technical means for conducting inter-operability testing and identify a sustainable business model for inter-operability testing.	CISA, FCC, First Responders Group

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Workforce Development and Student Engagement

Andrea Whitesell, Sr. Program Manager
Education & Workforce Development
UIUC

Workforce Development and Student Engagement Objectives

- Engage students in hands-on learning experiences
- Expose students to national cybersecurity standards (CSF, NICE, DoD)
- Develop and deploy tools to address the national cybersecurity skills gap
- Develop and deploy tools to match properly skilled personnel to appropriate cybersecurity tasks

CIRI Workforce Development Student Engagement

- Host DHS Summer Research Teams for MSI
  - **5 teams** over 4 summers (2017-2020)
  - All projects received follow-on funding
- CIRI Summer Internship Program
  - Hosted Students from CIRI SLA partner schools (summer 2018)
- CyberPatriots Camp
  - Middle school students
  - Gave talk on cybersecurity career opportunities

CIRI Workforce Development Student Engagement (cont.)

- CIRI Internship and SRT: 10-week program
- DHS/CIRI provides lodging, stipend and meal plan
- University of Illinois faculty member advises research project
- Program includes weekly educational seminars on research ethics, scientific writing, presenting, creating research posters, and others
- Program concludes with a webinar presentation and a poster session for local researchers
- 2019 teams attended the DHS COE Summit and participated in the Grand Challenge, poster session, and government human resource roundtable
- 2020 SRT virtual – working with advisor David Nicol

CIRI Workforce Development Student Engagement (cont.)

- Illinois Business Consulting (IBC) largest professionally-managed, student-run university consulting organization in the country; at Gies College of Business at UIUC
- FACES is a Registered Student Organization that prepares students to become consultants
- IBC/FACES provide students with real-world project opportunities while helping clients (CIRI) solve business challenges
- Consulting CIRI on product market analysis (**10** CIRI Projects)
- CIRI has hired a small team of student interns to help with deep dives on business analysis
- **77 students** engaged over four years

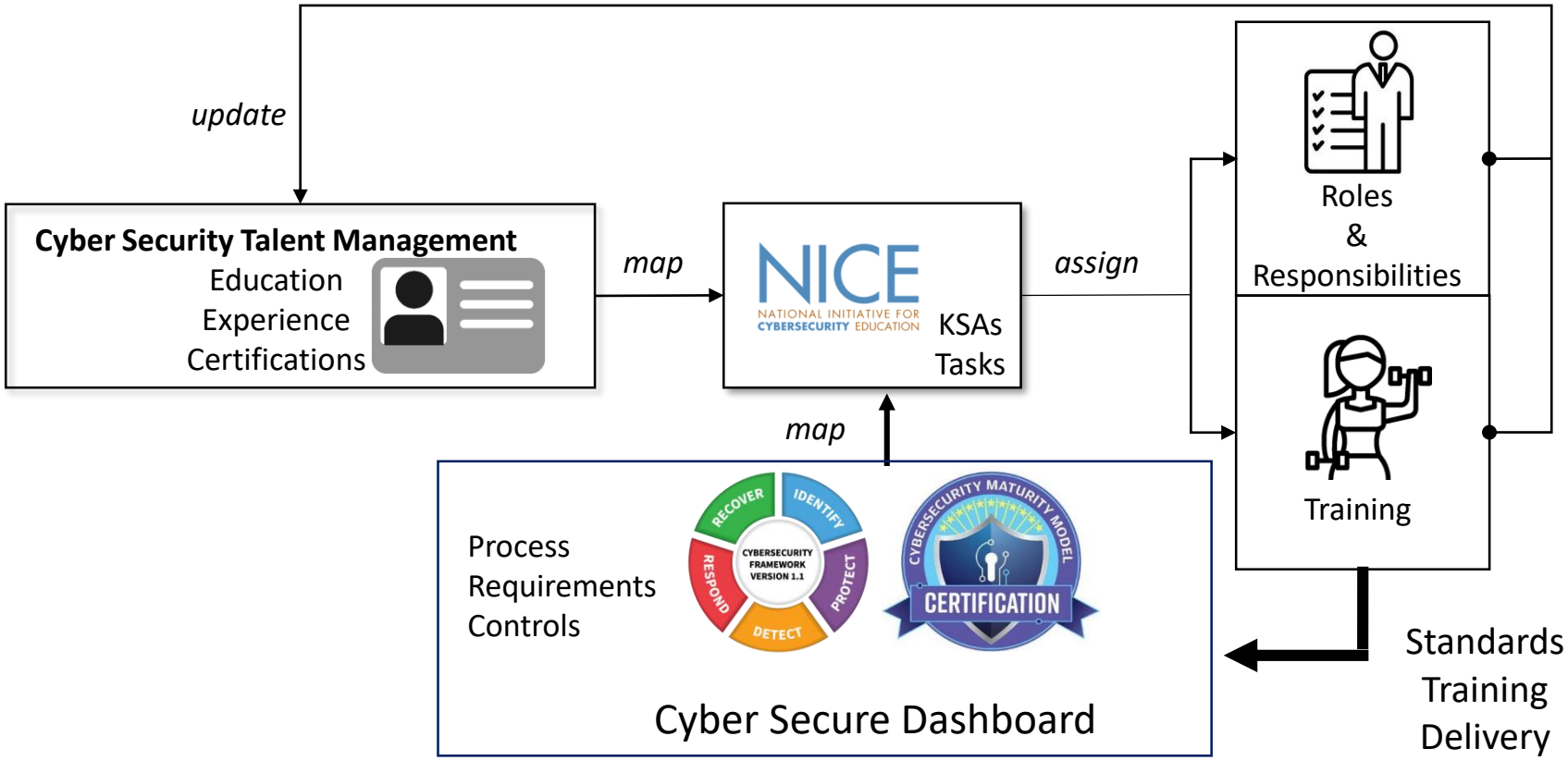
National-scale Cybersecurity Workforce Initiatives

- Training the people (students, employees, upskilling)
  - Leveraging DHS-funded capabilities:
    - Cyber Secure Dashboard – cybersecurity standards to improve security and resilience
    - Port Disruptions Tool – effective mitigation strategies to reduce impact of disruptions
    - Business Resilience Calculator – cost-effective resilience tactics to reduce losses
- Certification Programs:
  - Certified Cybersecurity Risk Management Professional (MCI)
  - Others pending

National-scale Cybersecurity Workforce Initiatives (cont.)

- Matching people to tasks
  - CyberTalent Bridge (2wav)
    - Determine mapping between cybersecurity standards (NIST, DoD) and NICE Framework
    - Map cybersecurity tasks to qualified personnel
    - Identify skills/training gaps
    - Assist HR managers in filling these gaps

Process Powered by People -> Maturity



Other WFD Initiatives

- Current
  - Mt. Hood Community College/SBDC
- Proposed
  - Proposal submitted to NSA
  - Lead: Florida International University
  - Develop K-12 cybersecurity curricula and pipeline to NSA/DHS CAE programs

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CIRI Communications

Kim Gudeman, Communications Director
UIUC

What are the overall communications objectives?

Generate political and funding support on the Hill through targeted messaging

Establish CIRI as thought leader in critical infrastructure and cybersecurity to raise CIRI profile

Promote CIRI's initiatives and tools/technology to broader homeland security enterprise

Educate general public about importance of investment in more secure and resilient critical infrastructure

Target Audience

DHS
and its components

The Hill, industry,
and general public

What strategies and tactics will make it happen?

Thought-leadership through PR

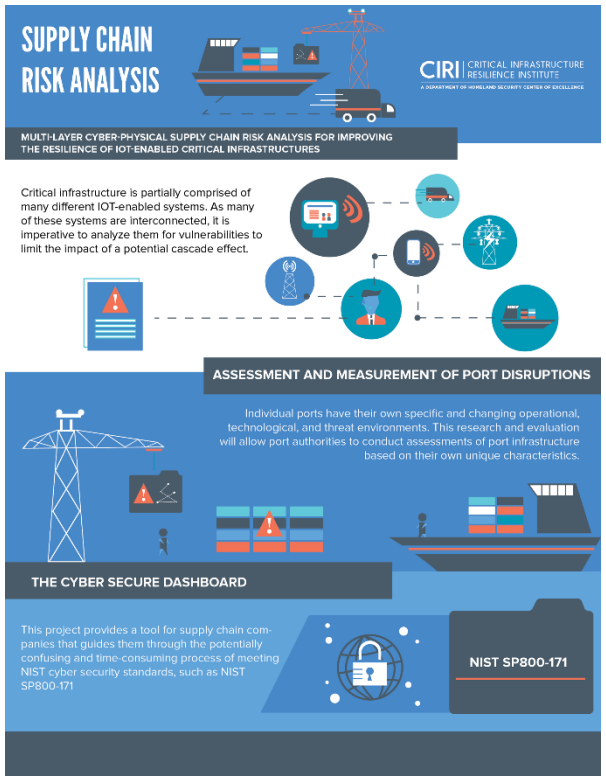
Event marketing

Original content on strategic mission areas

What progress have we made?

MARKETING MATERIALS

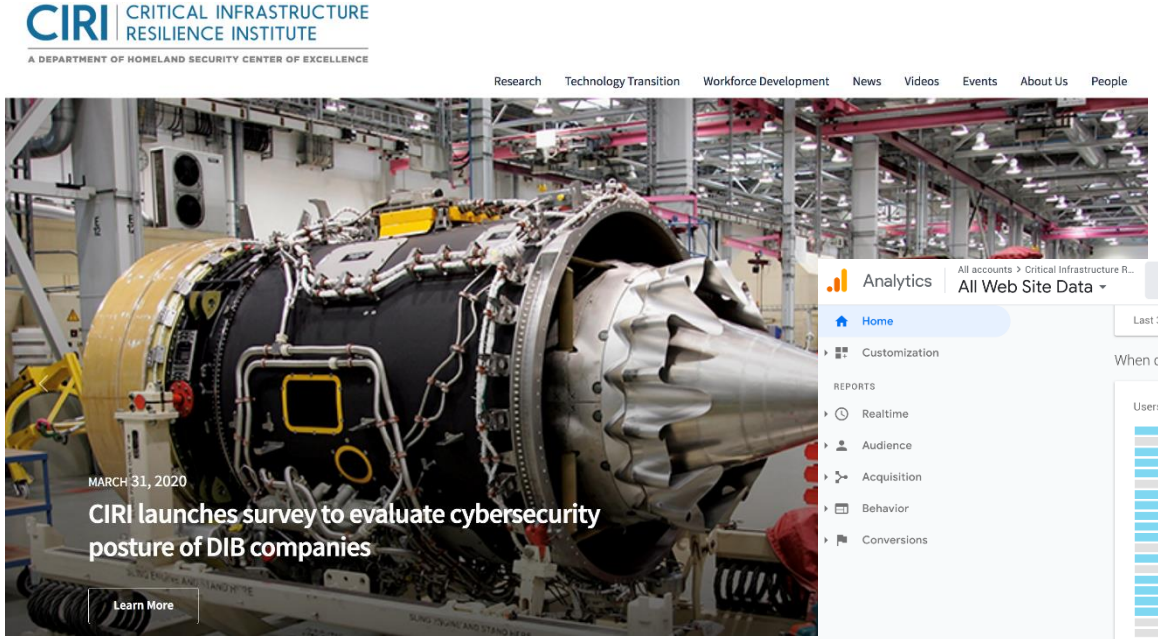
INFOGRAPHICS



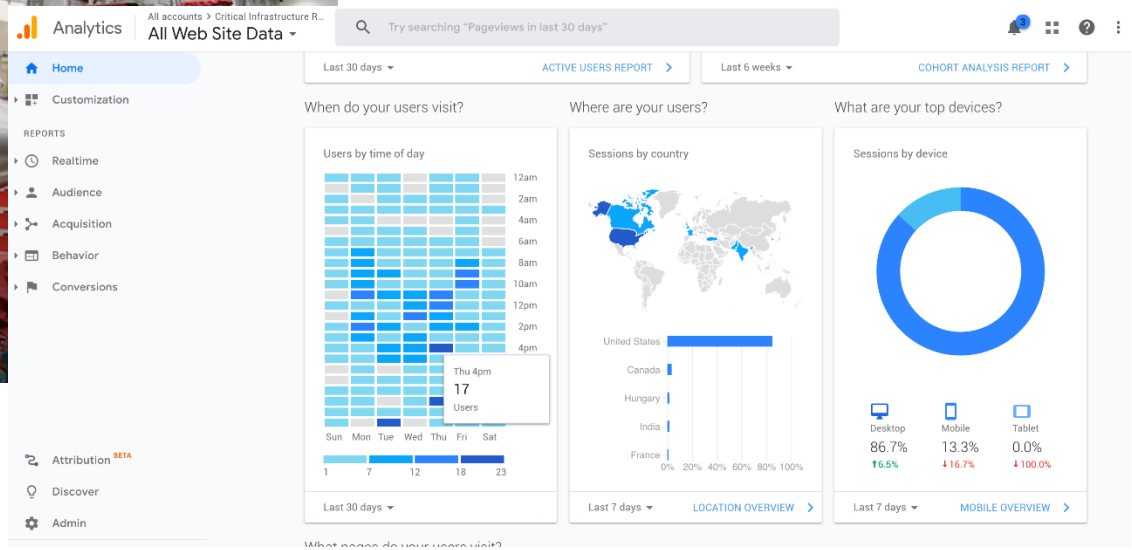
VIDEOS

What progress have we made? *(cont'd.)*

NEW WEBSITE | ciri.illinois.edu



WEBSITE ANALYTICS



+16%
Followers on Twitter in past 12 mo.

+31%
Followers on Facebook past 12 mo.

What are our plans for the next 12-18 months?

Strategic event marketing

Face-to-face briefings

Develop a PR strategy to promote thought leadership

Webinars (continued)

Marketing collateral

Mass media strategy

What are our plans for the next 12-18 months? *(cont'd.)*

Trade publication strategy

Grow social media engagement

Mobile communica-tions

HADR

Interdepen-dencies

Supply chain

Multimedia storytelling

Backup Slides

Center-Level External Stakeholder Board:

- David Nicol, PhD – CIRI Director
- Randall Sandone – CIRI Executive Director
- Georgia Harrigan, CIRI Program Manager, DHS OUP (ex officio)
- Chris Doyle – Chairman
- Faye Francy – Director, Auto-ISAC
- Elisabeth Case – Managing Director, Cyber Advisory Practice, Marsh

External Stakeholder Board (cont.)

- Wayne “Jake” Carson, USTRANSCOM, Mission Assurance
- Sue Armstrong, Associate Director, DHS CISA ISD
- Anthony F. Beverina, Chief Strategy Officer, Socially Determined, Inc.
- Andrew Loulousis, Senior Director, TechNexus
- Dr. Robert S. Spalding III, Brig Gen, USAF (R), Senior Fellow, The Hudson Institute
- Dr. David Winwood, Interim Executive Director, Louisiana Business & Technology Center and LSU Innovation Park, Louisiana State University