



**Board of Regents
Committee on Economic Development and Technology Commercialization**

December 7, 2022

Virtual (public listen only access at 443-353-0686, Conference ID: 539 556 479)

Committee Members will be sent Zoom information

Materials can be found here: <https://www.usmd.edu/regents/agendas/>

Public Session Agenda

- (1) Research and Economic Development Highlights (Information Item)
- (2) Featured Innovators: Siddharth Kaza, Associate Provost and Dean of Graduate Studies and Blair Taylor, Director of the Center for Interdisciplinary and Innovation Cybersecurity (Cyber4All), Towson University (Information Item)
- (3) Committee Charge Update (Action Item)
- (4) USM Office of the Vice Chancellor for Research and Economic Development Update on Early Capital Program (Information Item)

Office of the Vice Chancellor for Research and Economic Development

Board of Regents Committee on
Economic Development and Technology
Commercialization

Update

December 7, 2022





Agenda

1. Research and Economic Development Highlights
2. Featured Innovators: Siddharth Kaza and Blair Taylor
3. Committee Charge Update
4. Update on Early Capitol Pilot Program

1. Research and Economic Development Highlights

- **Institute for Health Computing, collaboration between UMD, UMCP, University of Maryland Medical System, and Montgomery County**
 - ✓ <https://today.umd.edu/mpower-universities-partners-announce-new-health-computing-institute>
- **\$20 Million award from ARPA-E to InventWood, a UMCP spin-off for wood materials development**
 - ✓ <https://today.umd.edu/the-wood-that-could-and-did-receive-20m-award>

- **Two Grants for \$32.5 Million to UMES from Howard Hughes Foundation and NOAA for diversifying STEM Education**
 - ✓ <https://www.wmdt.com/2022/11/umes-receives-2-5m-grant-to-expand-stem-programming-push-for-diversity-in-science/>
 - ✓ https://www.wboc.com/news/regional/maryland/umes-receives-30m-noaa-grant-to-diversify-marine-sciences-workforce/article_2b237df4-09d6-59bc-9506-2a3088d65571.html
- **\$7.5 Million from NOAA for new UMCES to lead launch of U.S. Harmful Algal Bloom Control Incubator**
 - ✓ <https://www.umces.edu/news/innovative-incubator-to-jumpstart-efforts-to-control-harmful-algal-blooms>

2. Featured Innovators:

**Siddharth Kaza, Ph.D., Associate Provost for
Research and Dean of Graduate Studies, Towson
University**

**Blair Taylor, D.Sc., Director, Cyber4All, Towson
University**



BOARD OF REGENTS

SUMMARY OF ITEM FOR
INFORMATION

TOPIC: Featured Innovators: Siddharth Kaza & Blair Taylor

COMMITTEE: Economic Development and Technology Commercialization

DATE OF COMMITTEE MEETING: Wednesday, December 7, 2022

SUMMARY:

Siddharth Kaza, Associate Provost and Dean of Graduate Studies and Blair Taylor, Director of the Center for Interdisciplinary and Innovation Cybersecurity (Cyber4All) at Towson University will present information about cybersecurity education and innovation initiatives.

FISCAL IMPACT: This item is for information purposes.

CHANCELLOR'S RECOMMENDATION: n/a

COMMITTEE RECOMMENDATION:

DATE:

BOARD ACTION:

DATE:

SUBMITTED BY: Michele Masucci 410-409-2236
mmasucci@usmd.edu

SecurEd Inc. TU grown, TU bred TU Strong

How a not-for-profit Startup emerged within Towson University



Cybersecurity is everyone's business

"Cybercrime is the greatest threat to every company in the world."

Ginni Rometty

President and CEO, IBM (2020)



Cybersecurity is everyone's business

Cyber attacks and disinformation are threat to our social
and political structures

Cybersecurity is everyone's business

Ransomware attacks affected nearly 1,800 schools in the US during 2020, impacting over 1.3 million students.

[FortiGuard Labs](#) Threat Research Report



OWSON
NIVERSITY

Cybersecurity
is everyone's
business

There is a
hacker
attack every
39 seconds.

Cybersecurity is everyone's business

Foreign adversaries are capable of disrupting critical national infrastructure, potentially bringing down the electric grid.

OWSON
UNIVERSITY



**TOWSON
UNIVERSITY**

There is a huge, growing
shortfall of cyber talent.

Cybersecurity is everyone's business



Cybersecurity has challenged schools and universities to meet the cyber workforce demand.

There is a dire shortage of
cyber faculty.

Lesser known fact

Meeting the Challenge

- Limited access to quality curricula.
- Addressing the cyber faculty shortage is a long-term goal
- Providing free cyber curriculum can help institutions build cyber programs



Over \$3.4 million dollars in funding to Towson University



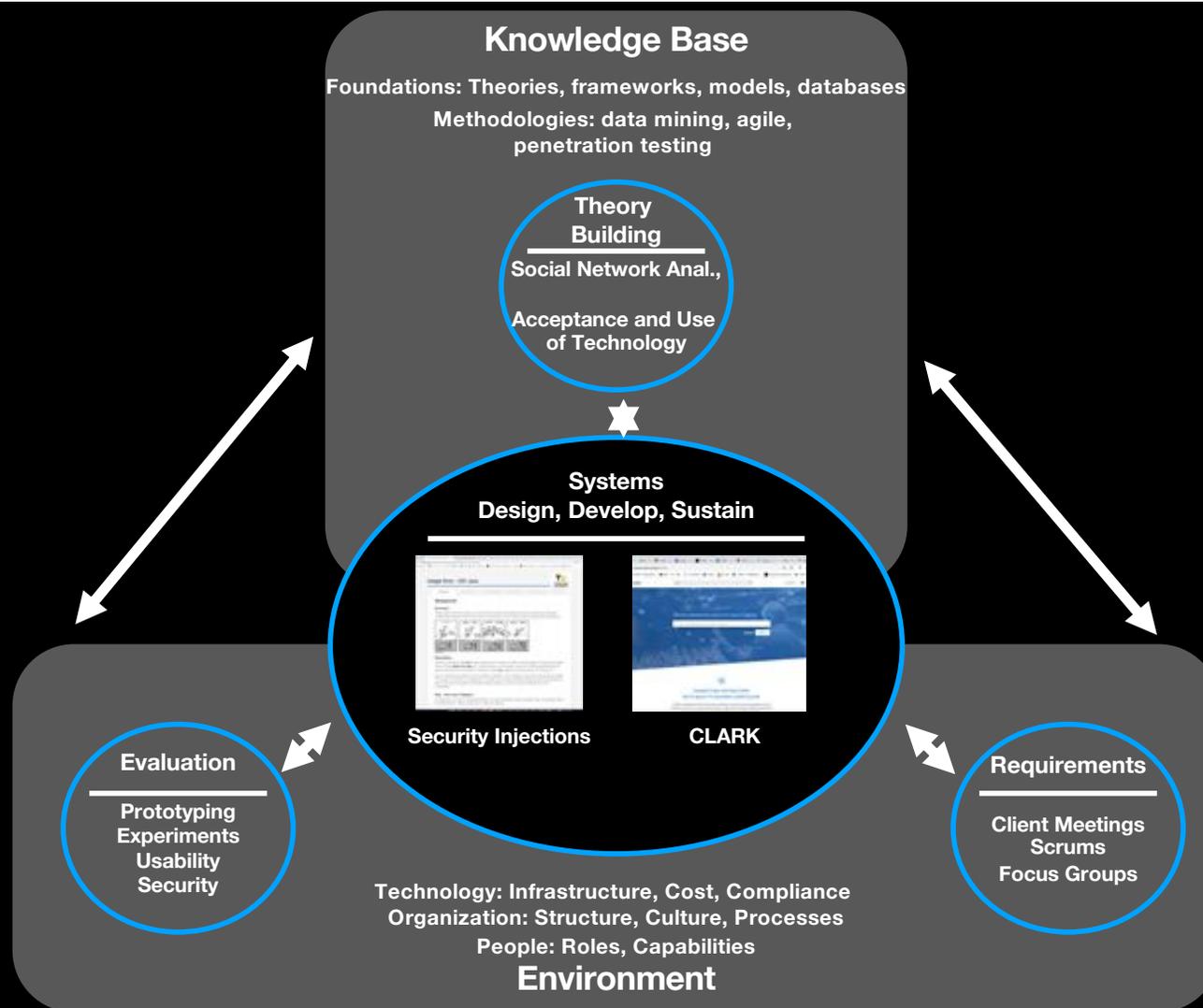
Cyber4All Research Group

www.towson.edu/cyber4all

4 doctoral, 5 masters, 5 undergraduates, 1 high-school intern
several faculty collaborators

Design Science Research Paradigm





The screenshot shows the CLARK website homepage. At the top left is the CLARK logo. A search bar is located at the top center. On the top right are links for 'Sign In' and 'Register'. Below the navigation bar is a banner celebrating the 5th birthday of CLARK. The main content area features a section titled 'Teach Cyber Today... Secure Tomorrow' with a paragraph describing the platform's offerings and a button to 'BROWSE 1,120+ LEARNING OBJECTS'. To the right of this section is a video player with a red play button and a YouTube logo. Below the main content is a section titled 'What can we help you with today?' containing three cards: 'Teach Something Now', 'Build My Cyber Program', and 'Explore Collections', each with a 'Get Started >' link.

CLARK Search... Sign In Register

About CLARK Collections Resources Topics

HAPPY 5TH BIRTHDAY CLARK

Teach Cyber Today... Secure Tomorrow

CLARK is the largest platform that provides **FREE** cybersecurity curriculum. It is home to high-value, high-impact cyber curriculum created by top educators and reviewed for relevance and quality. Whether you're looking to teach something new tomorrow, align with curriculum guidelines and standards, or refine your current course, CLARK has free resources ready for you to use!

[BROWSE 1,120+ LEARNING OBJECTS](#)

What is CLARK? Watch later Share

Watch on YouTube Faculty and students have developed provide educators with a solution.

What can we help you with today?

Teach Something Now
I'm looking for curriculum on a topic
[Get Started >](#)

Build My Cyber Program
I'm working on designation/accreditation
[Get Started >](#)

Explore Collections
I'm looking for curriculum from a specific collection
[Get Started >](#)

SecurEd Inc.

- Founded by Towson University Professors in 2017
- Intellectual Property Licensed from TU
- Consists of current and former TU undergraduate and graduates



Securing the Nation through Education
A 501 (c) (3) Corporation

www.secured.team



- SecurEd moves into TU incubator space
- Towson contributes space to the SecurEd in kind



60+ students
Employed in
TU Research
Lab

18 current
employees
in SecurEd



MIKE FRANZ
*Product Manager
Adjunct Professor, TU
MS in CS, TU '20
BS in CIS, TU '18*



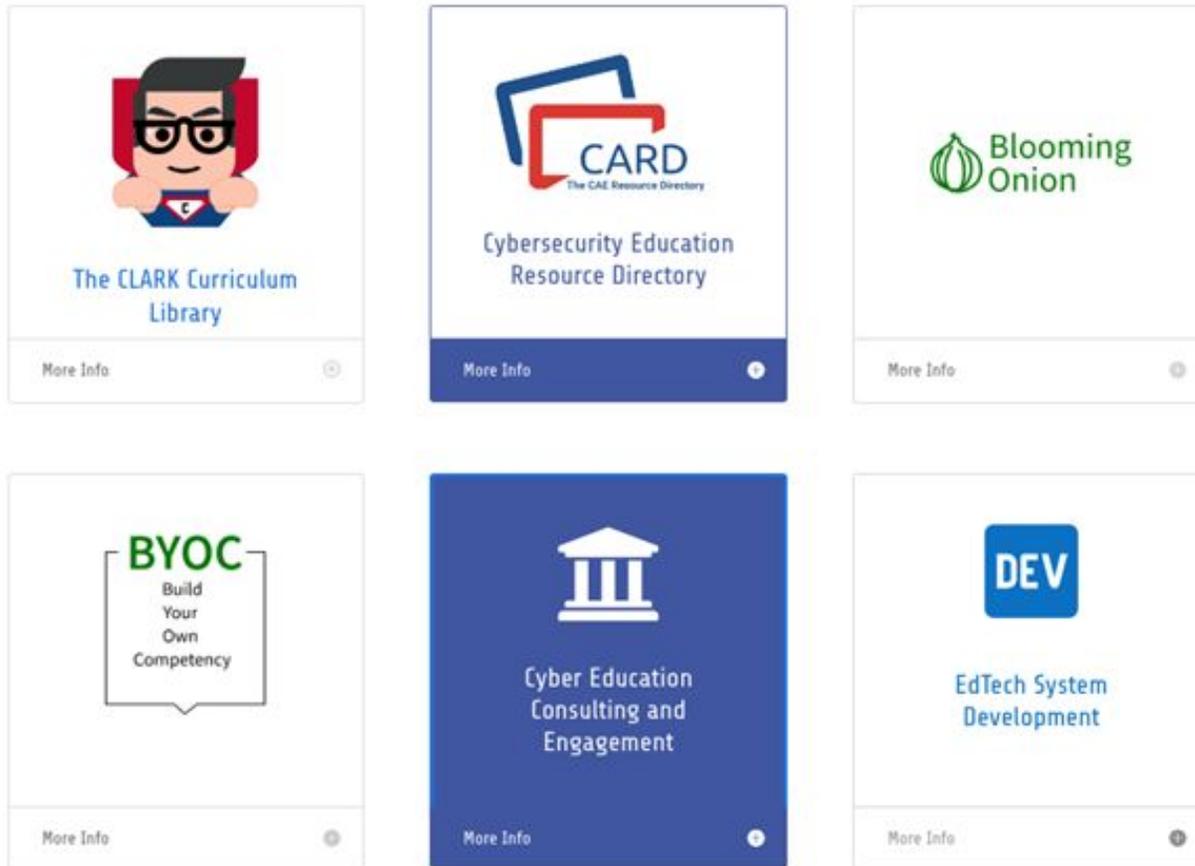
PAIGE ZALEPPA
*Director of Operations
Adjunct Professor, TU
PhD in IT, in progress
MS in CS, TU '21
BS in CIS, TU '19*



Rooted in



Product Diversification



Funding Diversification



CLARK

Digital repository of cybersecurity curriculum

<https://clark.center>



NCYTE
CENTER



What people are saying?



Meet CLARK, the cybersecurity learning platform that's powered by a team of Towson students. With a mission to "code responsibly," a team of TU software engineering students is running a platform where faculty can find and build cybersecurity curriculum.

Steve Babcock
Technical.ly

"CLARK is a National Treasure. It has top quality curriculum. People from all over the world use it And it is now one of the things I brag on when I am working in the national arena."

Lynne Clark
Chief of the Center for Education, Innovation, and Outreach
National Security Agency

Building the Future

- Entrepreneurship is infectious
 - We built SecurEd at Towson University
 - **Five SecurEd** students went on to form their own companies
- Providing students hand-on experience
 - Independent studies
 - Projects
 - Work experience
- Ultimate TU/SecurEd experience
 - Undergraduate studies at TU/Work at SecurEd
 - Masters studies at TU/Work at SecurEd
 - Teach at TU
 - PhD at TU





The Cyber Center at 10 West



20 SUPPORTED VENTURES



250 EMPLOYEES



6 PATENTS



OVER \$2M IN NON DILUTIVE FUNDING



\$650K IN VC FUNDING

OVER \$5M IN REVENUE



66% LED OR CO-LED BY WOMEN OR MINORITIES

ONE EXIT FOR JUST UNDER \$10M CASH TO FORTUNE 500 (NO DILUTIVE FUNDING)

Thank you

Blair Taylor (Director, Cyber Center)

btaylor@towson.edu

Sidd Kaza (Associate Provost for Research)

skaza@towson.edu



3. Committee Charge Update

- Committee name remains same
- Charge changes reflect new role and responsibility for Office of Research and Economic Development
- Charge reflects expanded focus to include research and innovation policy, programs, and administration as relevant to the committee's focus on economic development



BOARD OF REGENTS

**SUMMARY OF ITEM FOR
INFORMATION**

TOPIC: Amendment to Committee Charter

COMMITTEE: Economic Development and Technology Commercialization

DATE OF COMMITTEE MEETING: Wednesday, December 7, 2022

SUMMARY:

The Economic Development and Technology Commercialization Committee charge was developed in late 2019. A re-formatted and slightly updated version was approved in 2020. Additional modifications have been made to reflect the change to the USM Office of Research and Economic Development in name and expanded focus. A summary of the changes is below:

- Committee name remains same
- Charge changes reflect new role and responsibility for Office of Research and Economic Development
- Charge reflects expanded focus to include research and innovation policy, programs, and administration as relevant to the committee's focus on economic development

FISCAL IMPACT: This item is for information purposes.

CHANCELLOR'S RECOMMENDATION: n/a

COMMITTEE RECOMMENDATION:

DATE:

BOARD ACTION:

DATE:

SUBMITTED BY: Michele Masucci 410-409-2236

mmasucci@usmd.edu



Board of Regents
Committee on Economic Development and Technology Commercialization
December 7, 2022

Charge:

The Committee on Economic Development and Technology Commercialization shall provide strategic leadership for the USM's research, economic development, technology commercialization, innovation, and entrepreneurial initiatives, programs, and policies.

Role and Responsibilities:

The Committee on Economic Development and Technology Commercialization shall consider and report or recommend to the Board of Regents on matters concerning economic development and technology commercialization, innovation and entrepreneurial initiatives, and research, including translational research and technology transfer.

Members of the Committee on Economic Development and Technology Commercialization are appointed annually by the Chairperson of the Board. The Committee shall meet as needed, but no fewer than four times during the fiscal year.

Created in July 2011 in recognition of the increasing importance of translational research, entrepreneurship and innovation, and the supply of skilled workers in STEM fields for the State of Maryland, the Committee, working with the Vice Chancellor for Research and Economic Development, may expect to receive information for review in order to consider, and/or act on any of the following matters:

- A. Aligning resources with market demand
- B. Leveraging USM resources through collaborations
- C. Enhancing partnerships with industry, state, and federal entities
- D. Strengthening the USM Research and Innovation ecosystem, including engaging with research funding and commercialization partners, enhancing research administration and compliance infrastructure, and fostering excellence in scholarship, research, creative, and innovation
- E. Strengthening the USM entrepreneurial ecosystem, including engaging the investment community and enhance access to capital for USM affiliated startups and innovators



BOARD OF REGENTS

**SUMMARY OF ITEM FOR
INFORMATION**

TOPIC: Office of the Vice Chancellor for Research and Economic Development Early Capital Pilot Program Update

COMMITTEE: Economic Development and Technology Commercialization

DATE OF COMMITTEE MEETING: Wednesday, December 7, 2022

SUMMARY:

An update will be provided on the Early Capital Pilot, which will provide flexible, non-prescriptive early capital alongside resources and accountability to a diversity of USM-affiliated entrepreneurs and ventures across the System and state. In June, the Committee approved the use of up to \$200,000 per year over 3 years in USM fund balance for the pilot. A minimum of \$100,000 in matching funding must be secured in order for USM's first year of fund balance contribution to be accessed, and that funding has been secured, enabling the launch of the program in early 2023.

FISCAL IMPACT: This item is for information purposes.

CHANCELLOR'S RECOMMENDATION: n/a

COMMITTEE RECOMMENDATION:

DATE:

BOARD ACTION:

DATE:

SUBMITTED BY: Michele Masucci 410-409-2236

mmasucci@usmd.edu

4. Program Updates

- Early Capital Pilot Update

USM Early-Stage Entrepreneurship Capital Pilot

*Lindsay Ryan, Interim Executive Director for
Economic Development - USM*



Early-Stage Resource Study and Recommendations

- **September 2021 - March 2021** EDTC charges USM to study how to better support entrepreneurial success, earlier than the Momentum Fund; and equitably support a **diversity** of entrepreneurs and ventures broadly across USM. More than 100 stakeholders engaged.

- **April 13, 2022** – EDTC reviewed findings to work collaboratively with non-USM partners and leverage existing resources, with additional specific recommendations:
 -  **1. Connect** – More effectively coordinate and communicate entrepreneurial resources
 -  **2. Enhance** – Angel investment; Professional services; Facilities/equipment; MIPS
 -  **3. Capitalize** – In the context of above, enable flexible, non-prescriptive early capital to be deployed alongside resources and accountability

- **June 9, 2022** – \$200,000 per year over 3 years is recommended from the USM fund balance for a pilot. A minimum of \$100,000 in matching funding must be secured in order for USM's first year of fund balance contribution to be accessed.

Why an Early Capital Pilot? Why USM?

Thesis: Small amounts of capital responsibly deployed to entrepreneurs can provide demonstrable economic development impacts.

USM is Uniquely Positioned:

- Diversity and critical mass of ventures, entrepreneurs
- Expertise and familiarity for improved due diligence
- Accompanying non-capital support
- Administrative efficiencies

Vision: A platform to responsibly invest in very early-stage entrepreneurs toward the goal of benefitting Maryland's economy.

Design Recommendations/Guidelines

Key Facets

Not trivial implementation goals!

1. Grants and other forms of early capital
2. Maximize impact: quick to obtain, smartly deployed
3. Address access barriers (e.g., students, smaller institutions) head-on, not reactively
4. Sustainable business model

Other Details to Optimize Impact and Accessibility

- Potential multiple submission formats (e.g., written, pitch) and/or submission help
- Uses stage-gating and standardized terms for upfront/milestone payment
- The process itself adds value for rejected applicants
- Leverages diligence via other programs
- Ideally, a mix of funding vehicles – grants, convertible notes, and others

Updates

- \$100,000 secured in order to “unlock” USM fund balance!
- Conversations with institutional advancement professionals regarding collaboration on additional fundraising
- Application and review process designed and tested; operating principles, governance processes, and evaluation plan drafted
- Institutional members of Steering Committee identified

Next Steps

- Convene Steering Committee institutional representatives
 - Identify any non-institutional members to include
 - Finalize initial program and see through until launch in early 2023

- Launch initial marketing efforts
 - Pre-registration to better understand demand
 - Continue ecosystem understanding and engagement in the pilot success

- Finalize external raise processes, legal agreements, and accounting

Contact OVRED

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