CyberUSA 2019

Workforce development – planning for the future of cyber

Cybersecurity Veterans Assistance Project (C-VAP): Through the Eyes of an Avatar

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Big Picture Overview

**In Phase 1** – we partnered with a university & veteran-owned cyber company to create a 12 week college course in our 3D virtual campus as an NSA-funded pilot for veterans.

**In Phase 2** – we leveraged the successes & lessons learned of Phase 1 to create an Intro to Cyber Fundamental series to help bootstrap a veteran’s exploration of a cybersecurity career.

We discovered very specific unmet needs that motivates DLG to explore a 3D virtual “new collar cyber institute” approach.

**In Phase 3** – propose to create a “new collar cyber institute” inside DHX as a “community of communities” collaboration.
May 2017 Cybersecurity Informational Session
at Wright Patt AFB -- hosted by the USO
Cybersecurity – Veterans Assistance Project (C-VAP) facilitate career pathways for veterans, active duty, etc.

Discovery Lab Global (DLG): Cybersecurity – Veterans Assistance Project

Learn about cybersecurity as a career opportunity. Participate in a hands-on learning experience utilizing virtual reality (VR) to facilitate the opportunity. No prior virtual reality experience is needed. Middle school students have had fun learning our VR.

Q1: What is being offered?
A1: An opportunity to learn about cybersecurity as a high paying career field and what it takes to get your foot in the door. Interested vets will first learn virtual reality (VR) technology from their home. This will gain them access to our 3D cybersecurity learning campus.

Q2: What will I learn that can’t be learned by researching it myself?
A2: As an avatar you will enter into a veteran friendly 3D virtual cybersecurity learning campus to explore cybersecurity as a potential career opportunity – even if you have no cybersecurity training.

Q3: What’s the catch?
A3: It begins with learning virtual reality (VR) via a project-based approach organized through a partnership of DLG and HumanIT. This will require 3-5 hours a week for 10 weeks to learn the VR basics and then apply them to a mentored VR project that helps you take the first steps to getting IT certifications towards a cybersecurity career.

We request an RSVP so that we can plan accordingly – please do so by sending an email with “C-VAP” in subject line (without quotes) to rob.williams@discoverylabglobal.com

June 2017
Summer Pathfinder
WPAFB Personnel

Oct 2017
Fall Program
NSA-Funded

Fundamentals of Cybersecurity Camp
School of Information Technology
University of Cincinnati

Join us in learning Key Cybersecurity Skills
The short fall of cybersecurity talent working in the federal government poses an imminent national security risk. Through the Fundamentals of Cybersecurity program, the University of Cincinnati, in partnership with Discovery Lab Global and HumanIT, will train you to find a place in this critical need area.

This program is designed for:
- Current government employees
- Veterans and active military
- Public service employees

Benefits of attending this government funded training program:
- No cost, no risk, online part-time Virtual Reality camp
- Work one-on-one with mentors to receive 3 college credits
- Scholarships available if you plan to continue in a degree or certificate program

Whether you are already in a government position, a veteran, or in another public service area, this program provides accessibility for all, and is a great opportunity to merge your service experience into the cybersecurity field to enhance or start a new career with the government or private sector.

This free 12-week camp can lead to up to 72 credits, or you can begin an associate or certificate program.

Application Due: September 25, 2017
Class Starts: September 29, 2017

Discovery Lab - Global (DLG)... Dr. Rob Williams – Executive Director... email: rob.williams@discoverylabglobal.com
Discovery Lab - Global (DLG) as a 501(c)(3) builds on legacy of former AFRL Discovery Lab

- Physical campus: AFRL Discovery Lab *
  - Summer at the Edge (SATE) * : 100+ students
- Virtual campus (3D): Deep Horizons*
  - Stretch Goal – Global Reach: 1000+ avatars

* rebranded in 2016 as not-for-profit Discovery Lab Global (DLG), Summer at Discovery's Edge (SADE) & Deep HoriXons (DHX)
Our Target Demographics
- they don’t know where or how to begin

Cyber Related Education

Cyber Related Experience

Extensive

None to Little

student pursuing Masters in cyber

Wizard

our target demographics

cyber career field in military

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Here is the actual 3D virtual Cybersecurity Campus that we created for our veteran outreach.
DLG’s 3D Virtual Cybersecurity Campus inside our Deep HoriXons (DHX)

We can reach any veteran ... globally ... with this C-VAP opportunity
Offers An **Enhanced** Learning Experience – It’s More Than Just Another On-Line

CVAP Student Capstone Project
a $85 **Cybersecurity Testbed**

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Virtual Poster Session: Example of An Enhanced Learning Experience

Everything Created from Scratch
Starting with Flat Piece of Land
Imagine Building a 3D Virtual CyberUSA Campus & Then Creating Interactive Demos & Events in It

Create initial primitive Objects ("prims")

"Texture" the prims

Change object’s Shapes

Scripting – software brings objects to life
Let’s Look at the Actual Cyber Course and Class Room in our Virtual Cybersecurity Campus
## Cybersecurity Fundamentals Course Overview

### Topical Syllabus for Cohort 1

<table>
<thead>
<tr>
<th>Weeks</th>
<th>Dates</th>
<th>Topics</th>
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</thead>
<tbody>
<tr>
<td>1 – 2</td>
<td>09/29 – 10/12</td>
<td><strong>Introduction to Deep HorIXons:</strong> KickOff Meeting, Virtual Reality Academy</td>
</tr>
<tr>
<td>3 – 4</td>
<td>10/13 – 10/26</td>
<td><strong>IT Essentials:</strong> PC Hardware, Operating Systems, Software Applications</td>
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<tr>
<td>5 – 6</td>
<td>10/27 – 11/09</td>
<td><strong>Introduction to Networking:</strong> OSI, TCP/IP, Network Services, Traffic Forensics</td>
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<tr>
<td>7 – 8</td>
<td>11/10 – 11/23</td>
<td><strong>Introduction to System Administration:</strong> CLI, User Administration, OS Security Features</td>
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<tr>
<td>9 – 10</td>
<td>11/24 – 12/07</td>
<td><strong>Introduction to Scripting:</strong> PHP, Webpages, Databases, System Vulnerabilities</td>
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<tr>
<td>11 – 12</td>
<td>12/08 – 12/21</td>
<td><strong>Introduction to Cybersecurity:</strong> Domains, Case Studies, Security Tools, Whitehat Hacking</td>
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Let’s Walk In on a Cyber Class Room

Entrance into one of the Cyber Class Room

CVAP Cyber Course Syllabus

CVAP Cyber Course Schedule

We are downstairs right off the lobby. This is where the CVAP Cyber Class has been held. Let’s go in and look around.
This Classroom also Serves as CVAP Multi-Media Learning Center

cyber course materials

functional white boards

in-world videos

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Some Successes & Lessons Learned

**Successes:**

1. Tremendous support from Wright Patterson Air Force Base (AFB)
2. Strong interest every time we announce a class.
3. Students credit the experience in helping to make better career planning decision & even to secure entry level cyber position

**Lessons Learned:**

1. Need to develop a pre and post-”test” to better quantify results
2. Need to customize to the 3 different reasons why students sign up
3. Collaborations & partnerships will be crucial to any scale up
Phase 2:

Created a short DLG seminar series *Intro to Cybersecurity Fundamentals* to help bootstrap a veteran’s pursuit of a cybersecurity career as an avatar.

Let’s take a look...
We Asked: “What Do You Hope to Learn?”

**Answer 1**: I hope to get a better understanding of what all the hype is about.

**Answer 2**: Cybersecurity is becoming more important in our office and I need a better understanding of how to practice it and implement it.

**Answer 3**: I’m separating from the (      ) in 2 years and I want to learn more about cybersecurity as a career opportunity and what steps I need to take.

<table>
<thead>
<tr>
<th>Reason #1</th>
<th>Session #1</th>
<th>a one-hour overview from 30,000 ft</th>
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<tbody>
<tr>
<td>Reason #2</td>
<td>Session #2</td>
<td>basic concepts and definitions</td>
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<tr>
<td></td>
<td>Session #3</td>
<td>examples of actual cyber attacks</td>
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<tr>
<td>Reason #3</td>
<td>Session #4</td>
<td>“new collar” career pathway</td>
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<tr>
<td></td>
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<td>strategies – education, training,</td>
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<td></td>
<td>&amp; certification</td>
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<td></td>
<td>Session #5</td>
<td>an actual advertised position</td>
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</tbody>
</table>
Example Intro to Cyber Fundamentals Seminar in Progress

Discovery Lab – Global (DLG)...

Dr. Rob Williams – Executive Director...

email: rob.williams@discoverylabglobal.com
Session #1 (Big Picture)

Session #2 (Def’n & Concepts)

Session #3 (Example Attacks)

Session #4 (New Collar Strategies)

Session #5 (Deep Dive - An Actual Position)

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To “humanize” and to motivate our CVAP program....

... we’d like to introduce some of our DLG CVAP alumni students and share

• what kind of help they feel they could benefit from ...and...

• what they have to say about their experience
Questions that CVAP Students Ask

• What programs, degrees, certifications and future classes should I focus on?

• I am older and concerned that may be an issue with perspective employers.

• Are there opportunities for me to work on a part-time “internship” to gain valuable experience and to also prove myself?
You sometimes wonder ...  
Are we making a difference?
I want to provide you with an update on my efforts to securing a career in Cyber Security.

I'm happy to inform you that I start an exciting position at WPAFB with a DoD contractor next Monday!

I obtained my security clearance and I'm continuing my education to obtain an Associate's Degree in Cyber Security.

THANK YOU for accepting me into the CyberSecurity camp and providing me with such an awesome opportunity!

I hope you can share my good news as a great testament for all your efforts and proof of the opportunities the camp provides...

- Mike L.

Director’s note – Mike truly gets ALL the credit... he made it happen
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Our Desired Next Steps – Phase 3: “New Collar” Approach to Helping Veterans ... & Others

Select REAL job posting as our roadmap for helping DLG students to pursue a future entry-level cybersecurity position.

1. Teach to the Job Description & create training opportunities

2. Form Security+ study groups – to help members prepare

3. Create 3D virtual cyber club

4. Create industry connections & guest speaker / career fair events

5. ... and so much more
To Interested CyberUSA Member States:

Our Ask

• Help us extend cyber opportunities to veterans in your state as part of a “community of communities” strategy

• Following chart illustrates the proposal

• This approach could be adapted to help small businesses get “cyber-smarter” – via our “enhanced” learning strategy.

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Veteran Outreach Collaboration Opportunity with Members States Across CyberUSA

CyberUSA Press Release (October 20, 2016) – Original CyberSTATEs

- Maryland – Army Research Laboratory
- California – Naval Base San Diego
- Texas – Ft Hood (Army)
- Massachusetts – Hanscom AFB
- South Carolina - Charleston Navy Base
- Louisiana – Barksdale AFB
- Colorado – Ft Carson (Army)

- Pearl Harbor
- Hickman AFB
- Univ of Hawaii

Bases in Original CyberSTATEs
Bases in Sampling of Other States
How Would It Work, You Ask?
(Simply Add Veterans to Your Outreach – We Can Help)

1. Informal CyberUSA **Partnership**

2. Create a **Virtual CyberUSA Campus**

3. **Recruit** On-Base Training Offices

4. **Recruit** Partnering Companies
   - Volunteer as Guest Speakers
   - Subject Matter Experts

5. **Recruit** & On-Board the Students
   - Avatar Account
   - Avatar Training

6. Conduct Kick Off & **Other Events** in the Virtual CyberUSA Campus

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