from

WARRIOR to

CYBER WARRIOR ©

Every American business out there: If you want somebody who knows how to handle pressure, billions of dollars' worth of equipment, who knows how to operate under fire, hire a veteran. We have an obligation. They fought over there. They have gone through these god awful sands and deserts in the middle of a war. They are in god-forsaken places in Afghanistan. They shouldn't have to come home and fight for a job.

Vice President Joe Biden, NBC Nightly News December 1, 2011

March 9, 2012

Warrior to Cyber Warrior:

Empowering Warriors to Take their Skills to a New Battlefield

"Our mission is to bridge the gap for our returning veterans and wounded warriors between military service and a career as a cyber-warrior. We will transition their skills from one battlefield to another and provide a foundation for continued service to country and support to themselves and their families with dignity and integrity."

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INTRODUCTION

A Warrior's transition from military service to a successful career in the civilian workplace can be fraught with challenges. A decade of war combined with an economic recession has taken its toll on our nation's servicemen and women. Today one million Veterans are unemployed. Thirty percent of these have recently separated from Active Duty or returned from service in Iraq or Afghanistan with National Guard or Reserve units. Twenty percent served in the Persian Gulf War. Out of desperation many take any available job for the paycheck and simply give up on professional fulfillment and building a better life for themselves and their families. But they remain at high risk for unemployment, substance abuse, bankruptcy, divorce, incarceration, homelessness and suicide.

Warrior to Cyber Warrior (W2CW©) puts Veterans and Wounded Warriors back on the path to economic independence with an approach to training and a career that is both empowering and practical. *This not-for-profit entity leverages the award winning instruction of Lunarline's School of Cyber Security along with the ECHO360 Blended Learning System to train, certify and prepare for students for jobs in the field of cyber security – an industry experiencing explosive growth and demand for a qualified workforce.* Moreover, the W2CW© program matches students with their prospective public or private sector employer from *day one* of training. Employers in Federal Agencies and commercial companies commit to one or more warrior students and then follow them through the training process. When the time comes for them to enter into their internship or actual employment, both parties are actively engaged in achieving a successful outcome and mutually comfortable with each other.

W2CW© provides our nation's Warriors with an opportunity to continue to serve their country. Only the battlefield has changed.

CYBERSECURITY: THE NEW BATTLEFIELD

President Obama has identified cyber security as one of the most serious economic and national security challenges we face as a nation, and one that we are not adequately prepared to counter. One of the primary challenges is the availability of a trained cyber security workforce – people who understand and support the need for national security and are prepared to enter the battlefield of the future. Our nation's computer systems are appallingly vulnerable due to the severe shortage of

"While billions of dollars are being spent on new technologies to secure the U.S. Government in cyberspace, it is the people with the right knowledge, skills, and abilities to implement those technologies who will determine success. In order to effectively ensure our continued technical advantage and future cyber security, we must develop a technologically-skilled and cyber-savvy workforce and an effective pipeline of future employees."

National Cyber Security Initiative, 2011

computer security specialists and engineers with the skills and knowledge necessary to do battle against would-be adversaries. How bad is this shortage? It is estimated that today a minimum force of 30,000 to 40,000 cyber security specialists are needed by Federal Government agencies and major corporations. Unfortunately, today's army of cyber warriors is not yet sufficient to meet the demand.

WARRIORS TO CYBERWARRIORS: THE DEMAND MEETS THE NEED

Both the public and private sectors are demanding highly-skilled, highly-trained cyber security specialists to work at various skill levels in order to protect information and information systems. Wounded Warriors and other Veterans have exceptional abilities and real-life experience serving America in a wide variety of military occupations.   They are the ideal recruits for the army of Cyberwarriors needed to defend our nation's networks.

In March 2012 the Institute for Veterans and Military Families (IVMF) at Syracuse University issued an employment brief titled "The Business Case for Hiring a Veteran: Beyond the Clichés." The publication drew from academic literature to suggest a robust, specific and compelling business case for hiring individuals with military background and experience.   The business case was based on 10 research-informed propositions on the value of a veteran in a competitive business environment, all of which are superbly applicable to the field of Cyber Security.

1.   Veterans are entrepreneurial.
2.   Veterans assume high levels of trust.
3.   Veterans are adept at skills transfer across contexts/tasks.
4.   Veterans have (and leverage) advanced technical training.
5.   Veterans are comfortable and adept in discontinuous environments.
6.   Veterans exhibit high levels of resiliency.
7.   Veterans exhibit advanced team-building skills.
8.   Veterans exhibit strong organizational commitment.
9.   Veterans have (and leverage) cross-cultural experiences.
10.   Veterans have experience and skill in diverse work settings.

Moreover the W2CW$^©$ cybersecurity training program will provide these already field tested Warriors with multiple cyber security career pathways, both technical and analytical. The W2CW$^©$ approach to training and career placement is what makes

this program stand out as significantly unique from all other training and job placement programs for Warriors and Wounded Warriors. This is how it works:

1. Create a pipeline of cybersecurity employment in both public and private sectors.
2. Accept cohorts of qualified Warriors into the W2CW$^{©}$ program.
3. Retrain Warriors in cybersecurity over six month period so they earn Security + Certification.
4. Over watch for mental adjustment transitioning from military to private sector.
5. Ensure that Warriors graduate with Security + certification.
6. Retain W2CW$^{©}$ graduates as mentors and marketers of program.

THE PROGRAM ELEMENTS

1.1 A CURRICULUM SPECIFICALLY DESIGNED FOR THE W2CW© PROGRAM

The six (6) month long W2CW$^{©}$ program consists of training and certification. Because the course is on-line students can attend class, communicate, and conduct research anytime anywhere. Additionally, the program incorporates a dedicated online community with mentoring, coaching, and peer support. While content delivery is customized to meet the individual needs of each participating warrior student, everyone is held responsible for learning the core curriculum. Warrior students are held to the rigorous standards of cybersecurity training, leveraging the Lunarline School of Cybersecurity to provide a curriculum that is continuously updated and refined to exemplify best practices in the industry.

The curriculum has been developed by instructional designers who are Veterans who have made this transition from Warrior to Cyber Warrior or have first-hand experience in how Warriors learn.

In order to create an optimum learning environment, the W2CW$^{©}$ program

> *"What scared me more than any search and destroy mission 'outside the wire' was going home and trying to find a job."*
>
> **- U.S. Army Corporal (Ret) Chris**

leverages the Echo 360 blended learning system that provides a combination of online and classroom training through lecture capture tailored to individual learning experiences. The curriculum incorporates diverse instructional methods that include distribution via smart phones or iPads and training using virtual environments and gaming.

Designers also took into account demands from cybersecurity professionals, Internet users, legislators, and IT experts for increased diversity in cybersecurity education as well as more "hands on" reality-based training that is both comprehensive and clearly applicable. This multi-disciplinary professional training in cybersecurity covers specific technical subjects like computer security principles, networking, and security engineering and security operational and management subjects such as system authorization and privacy. There are no specific prerequisites for a Warrior to participate in the program; however, familiarity with information technology (IT) is definitely a benefit.

Each student will graduate the program with sufficient knowledge to be successful in an entry level career in cyber security and the Security+ Certification, one of the foundational certifications required by Federal agencies and commercial entities. Students may elect to add specialized training elements to their program and attain certification in other areas, such as the Certified Information Privacy Professional (CIPP). Attachment A provides an overview of the curriculum.

The W2CW© designers were motivated by Frank Reeder, an official with OMB, when he stated: "Cybersecurity is not a single field; it's like medicine, a field that requires a range of subspecialties. We may need a generalist running the hospital, but when I go in for neurosurgery, I want someone who is a certified neurosurgeon. The world of cybersecurity has the same type of complexity."

1.2 AN ONLINE COMMUNITY TO SUPPORT THE W2CW© STUDENT

Unlike many training programs, the W2CW© program does not demand that warrior students unmake and rebuild themselves. It casts no dispersions on the "ground truth" of military core values, character traits and combat or combat support experiences. Waylon Krush, Lunarline's CEO – himself a Veteran - explains it best: "As Service-Disabled Veterans, we here at Lunarline are fully committed to this project, having gone through this particular transition ourselves. We know personally how important it is to use the very same values instilled in us through our experience with the Armed Services in our careers after returning home. Those core values of honor, integrity, commitment, teamwork, and excellence are all used every day working in cyber security."

In order to reinforce this seminal concept that distinguishes the W2CW© program from all other cybersecurity training, its developers have designed a W2CW© online community.

Online communities for Veterans, Wounded Warriors, military wives and military children proliferate across the Internet. Iraq and Afghanistan Veterans of America and Wounded Warrior Project boast members numbering in the thousands. Like them. The philosophical underpinnings of the W2CW© online community are grounded in military culture. However unlike other communities, the W2CW© online community is not an adjunct to the Cybersecurity curriculum, similar to elective courses or ad hoc career counseling services offered through many web sites. It is a core component.

Participation is mandatory and critical to the successful completion of the program. Warrior students can take advantage of assigned one-on-one mentoring, peer support and a basic communications course providing a review of writing and speaking skills. Movement back and forth between cybersecurity instruction to online community experience is seamless and occurs on a regular basis. This natural flow is facilitated by the W2CW© faculty, many of whom are Veterans themselves, acting as mentors as well as trainers.

Additional resources to address the body, mind, spirit and family are "on offer" to each warrior student on a personalized basis. Subject matter experts and behavioral health professionals stand ready to guide and coach any warrior student on an individual basis upon request. From corporate CEOs to authors of books about transition from the military to civilian workplace, mental health professionals with specialties in mTBI[1], PTS[2] and other psychological conditions, financial advisors, entrepreneurs, spiritual caregivers, marital relations counselors and Internet search experts, our resource pool is made up of experienced, knowledgeable, and compassionate volunteers.

1.3 A COHORT OF FELLOW STUDENTS

Veteran warriors know a structure built around the team concept. W2CW© replicates the basic combat unit where you could count on your battle buddy to "watch your back" by admitting warrior students in cohorts of ten. Although W2Cw students may be scattered across the country, they will transition to cyber warriors together in a small tight cohort with access to their unique online password-protected, community. From orientation to graduation, it is incumbent on every warrior student to actively participate in peer to peer support. Moreover upon matriculation from the W2CW© program, alums are expected to continue to support the next generation of cyber warrior students by mentoring members of new cohorts, acting as job recruiters, W2CW© marketers and most important of all, reviewers and critics of the W2CW© curriculum, teaching practices, and life skill coaching.

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[1] mTBI – Mild Traumatic Brain Injury

[2] PTS – Post Traumatic Stress

THE PATH TO THE W2CW© PROGRAM

In the fall of 2011, two Northern Virginia companies came together to pool resources, time and talent to create the Warrior to Cyber Warrior program. The Cybersecurity firm, Lunarline, is Veteran-owned service disabled small business whose founders have a history of commitment to helping military service members by training and hiring them for careers in cybersecurity. The distance learning company, Echo 360, had been seeking viable way to give back to those who had served in the Iraq and Afghanistan wars for over three years.

It was apparent to both companies that gainful and personally satisfying employment was crucial to successful transition from military service to civilian life for our nation's mostly young Veterans. It was also apparent that, as the United States seeks to balance its budget and recover from the Recession, the US military was rapidly downsizing after a decade of war. With unemployment remaining at the highest levels since the Great Depression and companies outsourcing to international workforces in order to stay in business, few industries demonstrate a shortage of human resources to meet the demand. One of the few exceptions is Cybersecurity.

Throughout the fall of 2011 and winter of 2012, Lunarline and Echo360 worked to research and develop the Warrior to Cyber Warrior program. Thought Leaders from both the military and the cybersecurity field have accepted the opportunity to serve on an Academic Advisory Board. Lunarline and Echo 360 worked together to create the optimal "studio" for lecture capture, design the curriculum and engage the subject matter experts needed to support all aspects of the program. It became clear that the only way achieve the mission was to create the curriculum and online

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[3] A separate entity co-located with the Lunarline School of Cybersecurity

community and test the idea with the "proof of concept" cohort starting in June 2012 and graduating six months later. **If these first ten warrior students were successful learning the material, obtaining their Security + certification, negotiating their internships and, upon graduation, securing job placement, the program would work.**

W2CW management reached out to key Warrior and Wounded Warrior constituencies such as the Army Wounded Warrior, Wounded Warrior Project, USMC Wounded Warrior Regiment, Department of Labor, Hire Heroes, U.S. Chamber of Commerce's Hiring Heroes, Give an Hour, the Coalition for 100,000 jobs, Joining Forces, the Mission Serves and Blue Star Families to "get the word out." The response across the board was enthusiastic, "What can we do to help?"

A VISION FOR THE FUTURE

Beginning in the summer of 2012, the W2CW$^©$ program will be supported by both the public and private sectors through federal state and local government grants, corporate and individual sponsorships and donations. Naturally, funding will determine how quickly the W2CW$^©$ will be able to add cohorts and even broaden enrollment to include other categories of the military community, such as military family members. However, at no time will W2CW$^©$ directly charge its Warrior students for their training and career placement.

APPENDIX A – W2CW© CURRICULUM

	WARRIOR TO CYBER WARRIOR PROGRAM OUTLINE[4]	
Week 1	**Introduction and Orientation**	**Continuous Throughout Program**
Week 2	**Cyber Security Fundamentals (Part 1)**	**Peer to Peer Support**
Week 3	**Cyber Security Fundamentals (Part 2)**	• **Virtual P2P environment** (W2CW website)
Week 4	**Cyber Security Fundamentals (Part 3)**	• **P2P Blog/discussion group and chat**
Week 5	**Cyber Security Fundamentals (Part 4)**	• **Connection to other vet Programs**
Week 6	**CompTIA Security+ Certification (Part 1)**	
Week 7	**CompTIA Security+ Certification (Part 2)**	**Professional Development**
Week 8	**CompTIA Security+ Certification (Part 3)**	• **Connect to professional publications**
Week 9	**CompTIA Security+ Certification (Part 4)**	• **Industry specific RSS feeds**
Week 10	**CompTIA Security+ Certification Exam**	• **Webinars with professionals in industry**
Week 11	**Privacy**	
Week 12	**Recovery Planning (Par 1)**	
Week 13	**Recovery Planning (Part 2)**	**Job Placement Support**
Week 14	**FISMA/NIST Risk Management**	• **Resume writing/ review**
Week 15	**FISMA/NIST Risk Management**	• **Job search advisement**
Week 16	**DIACAP Introduction**	• **Interview tips**
Week	**Software Assurance (Part 1)**	• **Networking**

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[4] Note that this curriculum is subject to modification based on identified requirements or due to a student's selection for a specific secondary focus area, such as Privacy.

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Week 18	**Software Assurance (Part 1)**	
Week 19	**CAPSTONE Exercise**	
Week 20-23	**Internship with Industry**	
Week 24	**Graduation**	**Alumni Development** • **Bring graduates of program back into the mentorship/ P2P virtual environment**

ABOUT THE SUPPORTING COMPANIES

Lunarline

Lunarline is a leading provider of cyber security solutions, specialized IA services, and certified security training to all US Federal Government (Civilian, DoD, and IC), as well as to customers in selected commercial markets. Lunarline is a VA Certified Service-Disabled Veteran-Owned Small Business (SDVOSB) and is a recipient of the DOT Cyber Security Excellence Award, the Cyber Warfare Forum Initiative 5-Start Training Award, and was named as one of America's Fastest-Growing Private Companies in the Inc. 5000.

Echo360

As a global leader in blended learning and lecture capture products, Echo360 helps higher education institutions keep pace with modern students' learning needs through products that digitally record and upload learning content. Echo360 has been recognized with a Product Line Strategy of the Year Award from Frost & Sullivan and named a Visionary Vendor in Educational Technology by IT research firm Basex. Echo360's products facilitate better instruction for large collections of students, lower costs and enrich learning experiences by enabling students to easily access and share multimedia content. Through Echo360's platform, students can replay recorded sessions and review information from instructors online; at their convenience and across various devices.