

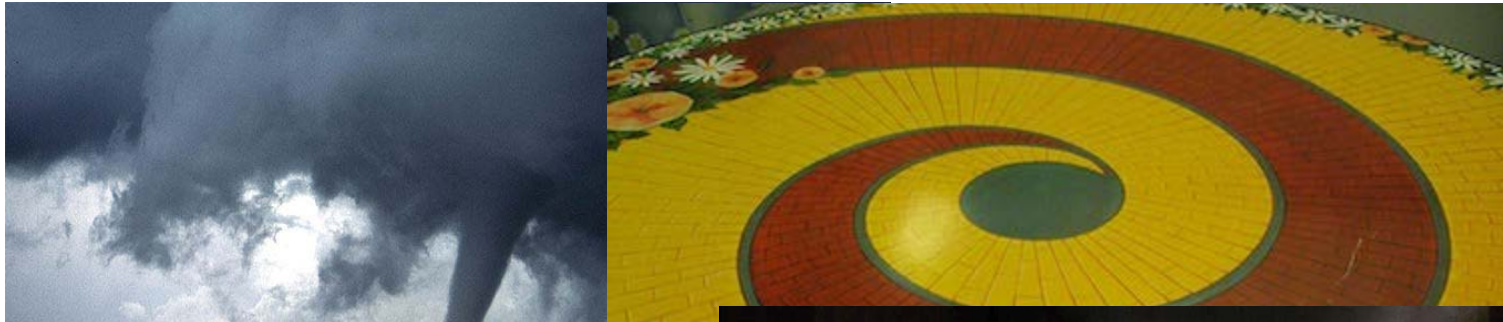
How to Help Interns Stay on the Yellow Brick Road to a Career in Cybersecurity

Engage Your Cybersecurity Interns and Bring Out Their Best Qualities

The Fantasy



The Reality



Attract People to the Road

- **The best way is by showing that it is a calling, an honorable path**
 - Computer systems are needed to keep our society running
 - They can't exist without people to protect them
 - This is the space race of the early 21st century
- **This career will allow you to spar with some of the smartest people on the planet**



Create the Start of the Road

- **Give them “on-ramps”**
 - Build a specific recruiting portal
 - Create specific intern positions
- **Help them take their first steps**
 - Resume writing workshops
 - Help decide areas of interest
- **Give them special orientation**
 - Interns need to know different things
 - Allows them to network
- **Give interns levels to accomplish**
 - Allows for multi-year progression

JOHN DOE
Full Address • City, State, ZIP • Phone Number • E-mail

OBJECTIVE: Design apparel print for an innovative retail company

EDUCATION:

UNIVERSITY OF MINNESOTA City, State
May 2011
College of Design

- Bachelor of Science in Graphic Design
- Cumulative GPA 3.93, Dean's List
- Twin-cities Iron Range Scholarship

WORK EXPERIENCE:

AMERICAN EAGLE City, State
July 2009 - present
Sales Associate

- Collaborated with the store merchandiser creating displays to attract clientele
- Use my trend awareness to assist customers in their shopping experience
- Thoroughly scan every piece of merchandise for inventory control
- Process shipment to increase my product knowledge

PLANET BEACH City, State
Aug. 2008 - present
Spa Consultant

- Sell retail and memberships to meet company sales goals
- Build organizational skills by single handedly running all operating procedures
- Communicate with clients to fulfill their wants and needs
- Attend promotional events to market our services
- Handle cash and deposits during opening and closing
- Received employee of the month award twice

HEARTBREAKER City, State
May 2008 - Aug. 2008
Sales Associate

- Stocked sales floor with fast fashion inventory
- Marked down items allowing me to see unsuccessful merchandise in a retail market
- Offered advice and assistance to each guest

VICTORIA'S SECRET City, State
Jan. 2006 - Feb. 2009
Fashion Representative

- Applied my leadership skills by assisting in the training of coworkers
- Set up mannequins and displays in order to entice future customers
- Provided superior customer service by helping with consumer decisions
- Took seasonal inventory

VOLUNTEER EXPERIENCE:

TARGET CORPORATION City, State
August 2009
Brand Ambassador

- Represented Periscope Marketing and Target Inc. at a college event
- Engaged University of Minnesota freshmen in the Target brand experience

Create the Start of the Road

- **Clear the way with your managers**
 - Expose them to value of “new eyes”
 - Intern positions take attention, not just money
 - Prepare the managers for the work of having an intern
- **Create work specifically for interns**
 - Break off work into small chunks
 - Make sure that work makes a difference
 - Allow them to work together
 - Mix project and everyday work
 - Make clear goals and expectations
 - Not charity, have them make a difference



Keep Them on the Road

- **Assign them a mentor**
 - Model the behavior you would like them to follow
 - Help them understand the subtleties of work
 - Help them through the bureaucracy
 - Help cover intern technical gaps



Keep Them on the Road

- **Build esprit de corps**
 - Create specific intern events
 - Create levels of capability for intern-to-intern mentoring
 - Make them feel wanted
 - Pique their interest in cyber security
 - Expose them to your organization's senior management
 - Give them food



Keep Them Moving on the Road

- **Interns – some assembly required**
 - Don't reject them because they don't have all skills on day one
- **If you invest in them, they will respect you**
 - Think of them as brand ambassadors for your intern program
- **Check in from time-to-time**
 - An internship can be overwhelming
 - Cut their red tape



Keep Them Moving on the Road

- **Provide them courses**
 - Not just the compliance ones
 - Have them identify what technical training is needed
 - Look at <http://opensecuritytraining.info>
 - Include threat actor classes, best way to show importance
- **Give them time to learn**
 - Tell them to do this
 - Give it time to sink in



Don't Block Their Progress

- **Interns are coming from a much more open culture**
 - University resources
 - Personal equipment
 - They may have cloud computing accounts
 - They are used to being connected to their friends
- **Corporate restrictions could be jarring**
 - Some government agencies block webmail, chat, and social media tools
 - Do you block “hacking” sites?
 - High bandwidth to the Internet?
- **Stifling Restrictions**
 - Circumvention
 - Disengagement
 - Lack of conversion



Don't Block Their Progress

- **You will have to build/use a lab**
 - Percentage of lab time during the week
- **You must provide them with tools**
 - A corporate laptop (let them work where they want)
 - Access to VM infrastructure, routers, malware jail
 - Access to the Internet on a DMZ
- **What you can provide**
 - Access to data
 - Experts to help them



Give Them a Safe Place During Their Travels

- **You will need to explicitly tell them**
 - Don't try to break into things without permission
 - Don't jeopardize a possible background check
- **DoD and energetic materials**
- **Many things that many of us did when we were young were not illegal**
 - They are now



Give Them a Safe Place During Their Travels

- **WebGoat and other platforms to learn attacking skills**
- **Foster participation in Capture-the-Flag competitions**
 - Structure and conduct one if you can
- **Provide them with workspaces that they can break even accidentally**
- **Encourage and support trial-and-error**
 - Engineers use it every day to discover and learn



The End of the Road Should Not Be the End of the Road

- Talk with each intern to evaluate the experience
- What is the right timeline for the intern and your organization?
- What kind of work does the intern want to do upon returning?
- Will your organization be able to support that interest?
- As a manager, plan for a percentage of returning interns – either as interns or employees



The End of the Road Should Not Be the End of the Road

- **Do you assign a mentor for their “between-internship?”**
 - Provide frameworks for mentors
 - Provide help for school projects
- **Do you identify alums?**
 - Your intern program builds esprit de corps
 - Create email lists, social groups for alums



Last Request

- **If you know of someone who wants to be a cyber security intern**
 - Look us up on MITRE at www.mitre.org/student
 - Twitter @MITREonCampus



Thank You for Your Time

MITRE