



# The CyberSentinel

**CyberPatriot Poster Contest — win an Apple iPod Shuffle or an iTunes gift card!**  
(See page 4 for details.)

## Commissioner's Cache

Congratulations on the completion of another school year! I hope that each of you is having a wonderful break from school. While you are enjoying your summer, preparations for CyberPatriot V (CP-V) will be in full swing. Our coach and mentor registrations continue to outpace previous years. As we inch closer to the competition season, you will find more competition information published in *The CyberSentinel* and on our Web site: [www.uscyberpatriot.org](http://www.uscyberpatriot.org). The CP-V competition schedule is located in this edition of *The CyberSentinel*. For those who want a head start on training, the CP-V training materials are hosted on our Web site. CP-V online coaches' meetings will be held in July and August. Once again, this month we highlight career opportunities and the accomplishments of our CyberPatriot competitors. That's it for now. Have a safe summer and I will see you back here, next month.



Bernard K. Skoch  
Commissioner  
CyberPatriot Program  
Air Force Association



## Program Office Bits

### CyberPatriot V Coach and Mentor Registration is Open!

Go to: [www.uscyberpatriot.org](http://www.uscyberpatriot.org)

- Coaches' Online Meetings— July 17 and 18, 2012
- CyberPatriot Poster Contest ends July 15, 2012



The Windber High School CyberPatriot Team receives a banner at their end of school year awards program from the Johnstown, Pennsylvania, AFA Chapter 221. The team was 1st Runner Up among CyberPatriot teams in Pennsylvania, during CyberPatriot IV.

## Cybersecurity Experts Needed

Right now is the time to join the cybersecurity career field. Highlighting the need for cybersecurity experts was a recently published *Washington Post* article on the requirement for cybersecurity experts in industry and government. In the article Tom Kellermann, vice president at Trend Micro and former member of President Obama's cybersecurity commission stated, "The government needs to hire at least 10,000 experts in the near future and the private sector needs four times that number..." [Click here for the Washington Post article.](#)

According to *The Washington Post* article, the cybersecurity

field has plenty of jobs, but too few qualified applicants.

The goal of CyberPatriot is to motivate students toward careers in technical fields, to meet our nations' needs. It provides a foundation for beginning a career in the cybersecurity field. The competition focuses on the aspects of cyber defense in a building block approach. With the guidance and mentoring of coaches and mentors, CyberPatriot competitors have a good background in cyber defense to obtain certifications and education in cybersecurity. CyberPatriot's Presenting Sponsor, Northrop Grumman, gave CyberPatriot competitors priority

hiring on paid summer internships, which was a first step for the interns toward a career in the cybersecurity field. In this newsletter is an article about one of those interns in San Antonio, Texas: Ricky Banda.

Secretary of Defense Leon Panetta summed up the vital need for cybersecurity experts in a speech on August 5, 2011: "We could face a cyber attack that could be the equivalent of Pearl Harbor [that could] ... take down our power grid system, take down our financial systems in this country, take down our government systems, take down our banking systems ... they could virtually paralyze this country."

## This Month's Question

What is the annual salary of an entry-level employee in the cyber field?

(The answer appears on Page 4.)

## Features

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## How to Prepare for a Career in Networking

Information technology (IT) is one of the few sectors of the American economy that still has sustained growth and offers qualified people the opportunity to land high-paying jobs. But, for people who are entering the job market – CyberPatriot alumni, for example – the question remains: How can they become qualified in IT and be marketable to employers? In this article we will discuss how to prepare for a career in networking.

Networking (linking computer devices together) is a major category of IT. Security is one of the foundations of networking. One way to increase your appeal to prospective employers is to be certified on the types of networks that they use. Cisco Systems, Inc., a CyberPatriot sponsor, has nearly 75% of the world's market share in enterprise routers, according to Infonetics Research, and is the

networking industry leader. [Click here for the Infonetics Research report.](#)

Cisco offers five distinct certification levels starting with Entry-level, and ending with Architect. (See Figure 1.) The following descriptions of certification levels are found



Figure 1. Cisco Certification Levels. (Source:Cisco)

on the Cisco Web site.

•**Entry.** Entry level Cisco certifications begin either with CCENT as an interim step to Associate level, or a Cisco Certified Technician (CCT) certification. With a CCENT, a network professional demonstrates the skills required for entry-level network support positions - the starting point for many successful careers in networking. CCTs have the skills to diagnose, restore, repair and replace critical Cisco networking and system devices .

•**Associate:** A Cisco Certified Network Associate (CCNA) certification validates the ability to install, configure, operate, and troubleshoot medium-size route and switched networks, including implementation and verification of connections to remote sites in a WAN.

(Continued on page 3.)

## CyberPatriot Competitor Lands Internship with Northrop Grumman

**Jose "Ricky" Banda**, a two-year veteran of CyberPatriot, is now a paid cyber engineer intern for Northrop Grumman in San Antonio, Texas. The Northrop Grumman Foundation is the CyberPatriot Presenting Sponsor.



A recent graduate of Southwest High School, Banda is enrolled in the San Antonio College/ Texas A&M (San Antonio) program in IT with a focus on security. He plans to compete in the National Collegiate Cyber Defense Competition (CCDC), a CyberPatriot partner competition.

The Alamo IT and Security Academy (ITSA) CyberPatriot team, which included Banda, finished in 3rd Place at the CyberPatriot III National Finals Competition. As a result, Banda and his teammates were employed by the 24th Air Force in San Antonio for a year, beginning in May 2011. As part of his work, he and his teammates received SECRET clearances. Paid as government employees, they worked at 24th Air Force during the summer, after school, and during school breaks.

Banda attributes his success in cybersecurity

The Southwest High School CyberPatriot letterman's jacket awarded to Ricky Banda and his Southwest High School CyberPatriot team. The school's principal, JoAnn Fey, said that she awarded the jackets, because the team, "could be a catalyst for change in the way of thinking about what defines achievement and success, not limiting it to sports."



The Airman's Patch received by Ricky Banda from the 24th Air Force.

to his participation in the CyberPatriot program and hard work. On his own, he pursued multiple certifications to include the Cisco Certified Network Associate and the A+ Certified Computer Technician.

To sum up his success, Banda said, "I have found in my 18 years, that with passion and strength, any obstacle, no matter how big nor how small, can be overcome with pure willpower and positivity. My mark on the world will be to show no matter how young, no matter what the ideal is, anything can be accomplished with the correct mindset to do so."

### Coaches' Corner

- **CyberPatriot V Coach Registration.** CyberPatriot V Coach Registration is open at: [www.uscyberpatriot.org](http://www.uscyberpatriot.org). Coaches must be registered and cleared before their teams may register.
- **Coaches' Online Meeting** will be held in three 45-minute repeat sessions on July 17 and 18 at different times to accommodate different time zones and work schedules. Check your e-mail in mid-July for details.

### The CyberSentinel

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## How to Prepare for a Career in Networking (cont'd)

•**Professional.** The Cisco Certified Network Professional (CCNP) level is the advanced level of certification.

•**Expert.** The Cisco Certified Internetwork Expert (CCIE) and Cisco Certified Design Expert (CCDE) are the highest level of achievements for network or design professionals.

•**Architect.** Cisco Certified Architect is the highest level of accreditation achievable within the Cisco Certification program.

CyberPatriot alumni might consider the CCENT or CCNA certifications as entry points into a career in networking and network security.

Cisco has nine different paths in their certifications:

- Data Center
- Routing & Switching
- Design
- Storage Networking
- Wireless
- Voice
- Service Provider
- Service Provider Operations
- Network Security

The Network Security path is directed toward

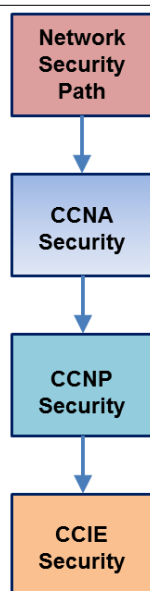


Figure 2. Cisco Network Security Certifications

network professionals who design and implement Cisco Secure networks. (See figure 2.)

A CCNA Security certification is the first, but important step on the network security path. With a CCNA Security certification, a network professional demonstrates the skills required to develop a security infrastructure, recognize threats and vulnerabilities to networks, and mitigate security threats.

To obtain training for certifications, Cisco offers the Cisco Networking Academies and study materials. Third party companies offer courses, also. The certification examinations are normally given by a Cisco certified company.

A certification examination may cost several hundred dollars. Normally, applicants take a course for the certification or engage in study prior to taking the examination.

Networking can be a follow-on career path after CyberPatriot. For more information on Cisco Systems Inc. networking certifications, go to: <http://www.cisco.com/web/learning/index.html>



AFA Chairman of the Board Sandy Schlitt talks to competitors at the CyberPatriot IV National Finals Competition.



## Spotlight on the U.S. Naval Sea Cadet Corps

The Air Force Association announced on Wednesday, June 6, 2012, the addition of the Naval Sea Cadet Corps as a new category in the nation's largest and fastest growing high school cyber defense competition, CyberPatriot.

Until now, CyberPatriot had five subcategories in their All Service Division, comprised of Junior ROTC units of the Air Force, Army, Navy and Marine Corps, and Civil Air Patrol units. Now, the Naval Sea Cadet Corps joins the All Service Division.

The Naval Sea Cadet Corps is a youth development organization supported by both the U.S. Navy and U.S. Coast Guard that serves to teach individuals 13 to 17 years old about the sea-going military services, U.S. Naval operations and training, community service, citizenship, and an understanding of discipline and teamwork. For more than 50 years, the mission of the Naval Sea Cadet Corps has been to provide American youth with leadership abilities through hands-on training

"In the decades since our establishment, a prime mission of ours has been to expand the horizons of our sea cadets to help them

become mature young adults and prepare them for success," said CAPT (Ret.) Jim Monahan, U.S. Naval Sea Cadet Corps Executive Director. "This partnership with AFA and CyberPatriot is another opportunity to foster essential skills to enrich their development -- from cyber awareness and basic technological skills to teamwork and critical thinking. We look forward to participating in CyberPatriot V and the many years to follow."

"We at AFA emphasize education in all we do," said Mike Dunn, President and CEO of AFA. "This new partnership with the Naval Sea Cadet Corps helps expand the educational outreach of the CyberPatriot program and provides knowledge and training for hundreds of more students on cybersecurity. We are utterly thrilled to have them involved and look forward to a long partnership."

For more information on the Naval Sea Cadet Corps, please see [www.seacadets.org](http://www.seacadets.org).



A Sea Cadet, also a CyberPatriot competitor, mans his computer.



U.S. Naval Sea Cadet Corps Director, CAPT Jim Monahan (USN, Ret.), signs the CyberPatriot Memorandum of Understanding as AFA President, Lt. Gen. Mike Dunn (USAF, Ret.) looks on.



### Answer to Monthly Question

The answer is: There is no easy answer to the question. Major factors in salaries are certifications/education, experience, location, and job availability. After an Internet search and discussion with people in the field, in a major city, a person with a college degree in computer science may have a beginning annual salary of \$50,000—\$60,000. With no degree, but multiple certifications such as CCNA and MCSA, a person may earn \$30,000—\$40,000 annually. With more experience and certifications, the salaries increase. Another factor in the job market is that if you are willing to move to another area, opportunities for employment and higher salaries increase.

## A Day in the Life — Profile of a Northrop Grumman Cyber Pro

Welcome to “A Day in the Life,” a new feature highlighting cyber pros at Northrop Grumman. The stories will give CyberPatriots a window into the profession and provide helpful career advice.

### **Alfred Gonzalez, Cyber Architect, Northrop Grumman Information Systems**

When Alfred Gonzalez, a 2010 Virginia Tech computer engineering graduate, joined Northrop Grumman two years ago, he wondered how the company would use his new-found skills and expertise. He quickly learned that his university training would benefit him every day, but on a completely different level.

“Rather than working towards solving a specific problem for a professor, I’m constantly adapting solutions to ever-changing cyber threats,” said Gonzalez. “There’s always a new challenge, making my job very interesting.”

Gonzalez is a cyber architect with Northrop Grumman’s Cybersecurity Group. He is performing research on a technology development project called the Security Architecture Reference Application for a mobile tablet device. As part of his job, Gonzalez researches how to prevent botnets and malware from infiltrating secure information systems. “I’m constantly looking at different network security threats, researching how they could get through a defensive architecture, and deciding what enhancements need to be made. The app is one way to visualize these architectures as they continue to evolve to match the threat.”

Collaboration with colleagues and vendors is a big part of his job as he works to implement new technologies and cyber architectures to enhance security. These new technologies will one-day become part of Northrop Grumman’s cyber solutions “We’re even experimenting with cloud functionality and the pros and cons of bringing your own device to work.”

Gonzalez’s experience is not limited to the office. Last year, he put his skills to work helping craft the requirements for a cybersecurity game for students called Cyber CIEGE and also participated in CyberPatriot IV. At this year’s National Finals Competition, Gonzalez shared his experiences during the career panel and participated as a member of the Red Team. “I’ve been presented with many great opportunities; I never thought I’d be involved in such cool stuff,” added Gonzalez.

His advice to college-bound students interested in cybersecurity, “Although I initially focused on software, I later found that I really loved hardware and that’s where most of my research was done. My advice is to broaden your expertise. Computers are incorporated into almost every aspect of our lives, I realized there were many different ways to work with cybersecurity, so stay flexible. Find that right fit for you!”

## CyberPatriot V Competition Dates

Oct 1-12, 2012	Combined Practice Round
Nov 2-3, 2012	All Service Division Round 1
Nov 16-17, 2012	Open Division Round 1
Nov 30-Dec 1, 2012	All Service Division Round 2
Dec 7-8, 2012	Open Division Round 2
Dec 10 - (TBD)	CyberNEXS Practice Round
Jan 11-12, 2013	Combined Semifinals Round 3
Jan 18-19, 2013	Round 3 Back-up Date
Feb 1-2, 2013	Combined Consolation Round 3.5
Mar 14-15, 2013	National Finals Competition

### CyberPatriot Poster Contest

Win an Apple iPod Shuffle or a \$50 iTunes gift card!

The CyberPatriot Program Office is hosting a contest for a CyberPatriot V promotional poster. The winning design will be featured in high schools, Naval Sea Cadet Corps units and Civil Air Patrol squadrons across the nation! [Click here for full contest details.](http://www.uscyberpatriot.org/CP5/CP%20V%20Documents/CP%20V%20Poster%20contest.pdf) “Have you got what it takes?”

(Eligibility is limited to any high school student, including public, private, parochial, and approved home school programs, and any member of Civil Air Patrol or US Naval Sea Cadet Corps of high school age.)

Hyperlink: <http://www.uscyberpatriot.org/CP5/CP%20V%20Documents/CP%20V%20Poster%20contest.pdf>



Competitors search a “suspect” during the forensics portion of the CyberPatriot IV National Finals Competition.

### Presenting Sponsor:

**NORTHROP GRUMMAN**  
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