

Invitation to Engage in pps{CyberTacticsFest}

- Cybersecurity Coaching, Mentorship, Development Program-

We enthusiastically invite you to help support the pps{CyberTacticsFest}, an initiative to introduce cybersecurity education in Pittsburgh Public Schools. Your role is not only crucial for nurturing upcoming talents but serves as an opportunity for you to expand your expertise, develop leadership skills, apply your insights, and make a substantial impact in the field.

As a broad overview of the season and competition: The competition environment consists of 16 Kali VMs (student boxes) and 20-26 ZorinOS VMs (target boxes). The competition itself is an offensive/defensive capture the flag in which teams of 8 are simultaneously capturing flags the other teams 10-13 target boxes while defending flags on their own. All the flags are directly tied to skills presented and housed on the competition SharePoint.

To prepare for the competition, MS Teams meetings are held 7-9pm Tuesday and Thursday evenings starting in February. These “combined” practices utilize the cyber.org range to present the skills needed to be successful in the competition or present the opportunity for students apply the skills in mini-challenges that combine skills recently presented. Towards the end of the season, whole team challenges are presented to allow teams to develop their collective skills.

You are invited to participate in the following ways: A coach, mentor, or developer.

As a coach you will be attached to a team of 4-8 students who are expected to learn 1-4 ‘work roles’ each. You, and potentially a co-coach, will be given access to the cyber.org range to hold practices outside of the normal presentation times. Practices times will be up to you and your team. Those with PA child abuse clearances will have the freedom to host practices at any time, those who do not have clearances need to coordinate with PPS staff to ensure that someone with clearances will be in the virtual meeting. The content of the practices can be as simple as a review of the concepts and skills taught in the combined practice or a practical exercise for the team. The combined practices tend to lack the repetitions needed to develop skills, however, the content of the practices is by and large left up to the coaches.

As a mentor, you will be attached to a single ‘work role’ and the skills associated with it. You will assist in the application and integration of that work role more vertically by helping develop the location of flags in the final competition, the small-team challenges associated with that work role, the practical exercises associated with the work role on the SharePoint (can be linked directly to picoCTF) and the presentation of that work role during combined practices. The level and time commitment of the mentors is more based upon the task. They will be given access to the Cyber.org range (picoCTF is whitelisted on the Kali) to ensure practical exercises developed are feasible, the pps{CyberTacticsFest} SharePoint to advise on content, as well as the template for the target machines to develop flags for the final competition.

As a developer, you will be assisting in the development of the final competition. The final competition scenario is a fictional school in which something mysterious is happening. Last year’s scenarios were Science Teachers as Lizard People Overlords and Track Coaches as Immortal Trojans. Each scenario had 3 ‘layers’ of boxes at various levels of difficulty for the network teams to get into and 3 ‘levels’ of difficulty for the host teams to capture flags out of. The development of the target machines, and the scenarios that go along with them, requires a broader understanding of how the various skills being taught could manifest as flags in an environment. Alternatively, you may develop additional capabilities to monitor the competition. Some items on the horizon are utilizing CTFd for flag submission, SecOnion for automatic points awarding, a live scoreboard and a live broadcast of SecOnion and WireShark to share and promote the competition with outside professionals.

Your participation in this initiative would be greatly appreciated as it has outgrown its current level of support. This is a remarkable opportunity to leave a lasting imprint in the cybersecurity education landscape. We earnestly hope you will consider joining us at pps{CyberTacticsFest}. Your expertise, passion, and guidance will be pivotal to our students' success.

Feel free to reach out to Jacob Boyce at jboyce1@pghschools.org to express your interest or any queries.

Thank you for considering this vital contribution to shaping the future of cybersecurity education.

Warm regards,

Jacob Boyce

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