

CNAP: IUP Expansion of CAE-C Education Project

Meeting's Agenda on April 11, 2018

Action:

1. Approval of last meeting's minutes held on March 28, 2018, see attachment #1.

Announcements:

1. Dr. Rafoth and his students delivered a brief presentation on April 2 to the faculty of the Computer Science Department to promote the project services. See attachment #2 for the proposed presentation points and attachment #3 for survey results.
2. Dr. Farag has contacted Dr. Masilela regarding possible collaboration. The UBMS program will not start till mid-June 2018.
3. Dr. Farag contacted the RI to explore potential funding agencies that might be interested in funding our work after the NSA fund expires. They want us to complete the form in attachment #4.
4. Dr. Fiddner has started communicating with all previous GenCyber camp teachers to announce for our CNAP and GenCyber camps. GenCyber camp will be held in the week of June 18-22, 2018. See GenCyber camp fliers in attachments #5 and #6.

Discussions:

1. Dr. Fiddner, with the help of Dr. Rafoth, came up with the final version of the agenda/topics (see attachment #7) to be discussed with the Pittsburgh Technology Council (PTC) in a meeting between us and PTC personnel that will be facilitated by Dan Yuhas, IUP IT manager.
2. Discussion and updates of the findings of the Research Study and updates on visual representation.
3. We need to address the issues with IRB approval so that we can collect data this semester too. Proposed courses are COSC 300, 356, 454, & 432. Other courses will also be included. Tentative schedule is below:
 - COSC 300: Tuesdays at 10:30 AM in 320 Stright Hall
 - COSC 432: Thursdays at 10:30 AM in 320 Stright Hall
 - COSC 356: M/W/F at 9:40 AM in 107A Stright Hall
 - COSC 454: T/R at 1:30 PM in 107A Stright Hall

4. Content and Organization of the Web Portal at www.iup.edu/caecexpansion including Multimedia contents and how to best present/organize them.
5. Planning for the June 4th summer camp.
6. Sarah, updates regarding MM editing (pictures and videos) and posting on the project Web portal.

Project Components Status Reports:

1. Research Component: Dr. Machado
2. Tutoring/Writing Center: Dr. Rafoth
3. Cybersecurity local consortium: Dr. Fiddner
4. Web Portal, Summer Camp, and Weekend Workshops: Dr. Farag.

New Business:

??

CNAP: IUP Expansion of CAE-C Education Project

Meeting Minutes for Wednesday, March 28th, 2018

Meeting Commenced at 10:50 a.m. in HSS 123.

Attended by: Dr. Farag, Dr. Fiddner, Dr. Rafoth, Alex Ashcom, Amber Stewart, Krista Sarraf, Sarah Bradshaw, Dameron Braxton, and Hunter Sargent

1. March 7th minutes unanimously approved at 10:50 a.m.
2. Dr. Rafoth will hold a meeting with Computer Science faculty on April 2nd to discuss the importance of the grant.
3. Dr. Fiddner will edit agenda being sent to Pittsburgh Technology Council (PTC) to include subjects of research and other updates.
4. Our team will work on collecting more data from Cyber-Security classes offered this spring.
5. Braxton and Sarah will continue to progress the organization's website by adding the videos of the workshop to the "PowerPoint and Videos" menu.
6. The date of the Summer camp will be the Week of June 4th. Exact dates are still being determined due to Dr. Farag being out of state for NSA related meetings.
7. X
8. The committee agrees to have the June 4 daily camp schedule similar to the workshops we offered (9:00 AM – 2:30 PM).
9. Dr. Farag will contact Dr. Calvin Masilela to explore possible collaboration between our program and his UBMS program.

10. Dr. Farag will contact the IUP research Institute to discuss possible funding sources to continue this project after the NSA grant expires.
11. The committee decided to limit participation in the proposed summer camp on the week of June 4-8, 2018 to middle and high-school students from surrounding school districts.
12. Meeting adjourned at 11:35 a.m.

Submitted By: Hunter Sargent and Waleed Farag.

COSC Faculty Meeting Monday, April 2, 2018 at 8:00 am

- I. Who are we and why are we here?
 - a. Dr. Ben Rafoth, Professor, English Department; The Jones White Writing Center
 - b. Ms. Krista Sarraf, Doctoral Student, Composition and Applied Linguistics
 - c. Ms. Jing Zhang, Doctoral Student, Composition and Applied Linguistics
 - i. We are all working with Dr. Farag on the CNAP grant, whose goal is to improve technical and communication skills among cyber security students in rural western PA.
 - ii. We are here to (1) acquaint you with what we are doing, (2) to invite you to take advantage of resources to benefit your students, and (3) to give us your feedback on a brief questionnaire).
- II. How are we helping Dr. Farag's students improve their writing?
 - a. We are using a strategy: Assign, Require, Revise, Reply.
 - i. Dr. Farag gives his students a writing assignment
 - ii. The assignment requires students to meet with a tutor or submit asynchronously
 - iii. The student drafts, revises, and edits – with assistance from the tutor.
 - iv. The tutor sends Dr. Farag a brief report of the visit (reply).
 - b. Tutors are trained and supervised [Alex Ashcom, Criminal Justice?; Alyssa Chesnutwood, Biology; Emily O'Donnell, English Education; Hunter Sargent, Computer Science; Maddie Hornstein, Biochemistry and Computer Science; Tori Murray, History and Anthropology?]
- III. What resources are available?
 - a. For students: Tutoring is available (1) face-to-face in Stright and Eicher; and (2) synchronously and asynchronously on our website. Additional help is available in our growing collection of videos and help sheets.
 - b. For faculty: We provide Faculty Reports for tutoring sessions; We can coordinate your assignments with the tutors; We have cut-and-paste text for your syllabus on our website.
- IV. What does our research tell us about the writing skills of cyber security students and professionals?
 - a. Students report that they are very confident they have the writing and speaking skills they need.
 - b. Students report that they use online resources such as Grammarly.
 - c. Professionals report that they do a lot of writing (much more than they expected when they were college students)
 - d. Professionals report that their biggest challenge is adjusting their writing for different audiences.

Quick Survey

Please respond to the following.

1. Do you give your students assignments that require them to write more than a paragraph or two? (circle one)

Hardly ever

Sometimes

Often

Almost always

2. In general, how would you rate the quality of your students' writing? (circle one)

1

2

3

4

5

Unclear

Disorganized

Wordy

Error-filled

Clear

Organized

Concise

Error-free

Unable to Judge

3. Would you be interested in learning more about any of the following resources available to you? (please check)

Short videos on topics related to effective writing

Handouts for students (available electronically)

Workshops for your students

Tips for faculty on designing writing assignments

Tips for grading writing

One-to-one tutoring for your students

Other: (please describe)

If you checked any of the boxes above, please provide:

Name: _____ **E-mail address:** _____

4. Would you be interested in resources for your students on any of the following topics? (please check)

Using technical and nontechnical language

Email communication

Organization

Transitions

Thesis statements

Paragraphs

Sentence structure

Punctuation

- Grammar
- Word Choice
- Proofreading
- Other: (please describe)

When finished, please fold and we will collect. Thank you.



att #3

April 10, 2018

Dear IUP Computer Science Faculty Member,

Following up on our presentation at the April 2nd faculty meeting, we would like to share the survey results with you and respond to your requests for specific writing resources.

Survey Results of COSC Faculty Members (n = 8)

1 Do you give your students assignments that require them to write more than a paragraph or two?

Hardly ever (0) Sometimes (5) Often (1) Almost always (2)

2 In general, how would you rate the quality of your students' writing?

1 (0) 2 (4) 3 (4) 4 (0) 5 (0)
(Unclear, dis-organized, wordy, error-filled) (Clear, organized, concise, error-free) Unable to Judge

3 Here are the Top Five resources COSC faculty wanted to learn more about – and how to access them.

Writing Resources

How to Access Them

- | | |
|--|--|
| 1. Online handouts for students | See 4 below. |
| 2. Online short videos to improve writing | See 4 below. |
| 3. Improving my students' writing while adding little or no time to my workload. | Practice and feedback are keys to improving writing. Here are 3 things to try:
■ Take 3 minutes at the end of class and ask everyone to recap, in writing, what they learned. ■ Award points for meeting with a writing tutor. ■ Give students short writing assignments, require them to meet with a tutor before submitting, and mark the papers Credit/No credit. |
| 4. Workshops for my students | The Jones White Writing Center offers workshops on lots of topics. Visit our website www.iup.edu/writingcenter and call 7-3029 to schedule. |
| 5. Tips for faculty on designing and grading writing assignments | Contact the Writing Across the Curriculum Director , Dr. Bryna Siegel Finer, at brynasf@iup.edu . Bryna welcomes the chance to help faculty with writing assignments and to coordinate with the writing center. |

4 You indicated interest in these resources for your students. They are available!

- | | | |
|---|-------------------------------|--------------|
| Using technical and nontechnical language | Writing reports and proposals | Punctuation |
| E-mail communication | Paragraphs | Word Choice |
| Organization | Avoiding plagiarism | Proofreading |
| Transitions | Formatting | Grammar |
| Thesis statements | Sentence structure | Word Choice |

All of these resources are now available to you on X: Public -> Writing Resources -> Library for Computer Science Faculty

IUP's Jones White Writing Center helps hundreds of students each semester.

E-mail Dr. Ben Rafoth at brafoth@iup.edu or call me at 7-3029 to learn more.

Funding Search Form

Name		Department	
Email		Phone	
Title of Project			

Please answer the following questions as accurately and detailed as possible

1. Anticipated period of performance (timeline of project):

[Click to type your response]

2. Estimated dollar amount needed:

[Click to type your response]

3. Known collaborators (external to Indiana University of Pennsylvania):

[Click to type your response]

4. Key Words associated with potential project:

[Click to type your response]

5. Type of grant:

Research Teaching Service/Outreach Travel Other

6. Abstract summary (1 page max) of activities that grant would support:

[Click to type your response]

4H #5

www.iup.edu/iupgencyber

IUP's 2018

Combination GenCyber Camp

JUNE 18 TO JUNE 22, 2018

**IUP GENCYBER: CYBERSECURITY CAMP FOR
MIDDLE AND HIGH SCHOOL STUDENTS**

- Learn detailed information about cybersecurity basics
- Learn hacking defense techniques
- Acquire skills to land your dream job
- Do any of the topics interest you? Apply today at www.iup.edu/iupgencyber

Through this opportunity, you will learn safe online behavior, increase knowledge of cyberspace, and explore cybersecurity careers.

Advantages*

Offered at no cost!

Sphero Ollie Robot for each participant!

FREE lunch and afternoon snack!

Instruction and mentorship from IUP faculty and other experts!

Skills and knowledge for a growing career field!

Apply NOW space is limited!

Questions?

gen-cyber@iup.edu

Location:

IUP main Campus

Project PI and Co-PI

Waleed Farag, PhD

PI - Computer Science

Soundararajan Ezekiel, PhD

Co-PI - Computer Science



*program is contingent on funding released by NSA

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**IUP GENCYBER: CYBERSECURITY CAMP FOR
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- Learn detailed information about cybersecurity
- Learn about promising careers for students
- Acquire skills to change the future of your students
- Do any of the topics interest you? Apply today by visiting www.iup.edu/iupgencyber

Through this opportunity, you will learn safe online behavior, become part of the solution to the nation's shortage of skilled cybersecurity professionals, and help inspire young people to join the field

Advantages*

Offered at no cost!

\$500 stipend
for each participant!

Act 48 Credits

FREE lunch and
afternoon snack!

Mileage reimbursement
for those who qualify

Multidisciplinary
cybersecurity teaching
skills, and modules to be
used in the classroom!

Apply NOW space
is limited!

Questions?

gen-cyber@iup.edu

Location:

IUP main Campus

Project PI and Co-PI

Waleed Farag, PhD

PI - Computer Science

Soundararajan Ezekiel, PhD

Co-PI - Computer Science



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ENDURING COLLABORATION

We requested and the IUP's Office of IT Services facilitated this meeting with the Pittsburgh Technology Council (PTC) because:

- (1) We would like to describe our model and why we believe it may be of interest to you,
- (2) We seek your advice about whether the model addresses needs in the Western Pennsylvania and Pittsburgh area, and if so, then
- (3) We seek your support in disseminating it through your community of IT professionals, and
- (4) We ask you to help us identify ways to support the model once NSA funding ceases.

The PTC, as the foremost IT professional organization within the Western Pennsylvania region, provides expertise and resources to help provide better educated cybersecurity employees and a better-informed public about cybersecurity. We welcome this opportunity to meet with the PTC to help build a collaborative cybersecurity education network/community as part of a National Security Agency (NSA) grant to develop and sustain a scalable, portable model for use anywhere in the United States to "improve and expand cybersecurity education in rural areas." Our research has identified a gap in the communication skills of cybersecurity students and professionals, specifically critical thinking and related oral and written communication skills, and our project aims to address this gap through instruction, workshops, tutoring, and online resources.



The full scope of the IUP team's effort can be accessed at its website, <https://www.iup.edu/compsci/events/cae-c-expansion/>

Writing and Communications Skills Tutoring

Our project offers specialized STEM-related cybersecurity writing tutors for cybersecurity/computer science undergraduate students. Tutors meet students face-to-face at multiple locations and online. The online/virtual service has been expanded to cybersecurity students at Westmoreland County Community

College (WCCC) and Pennsylvania Highlands Community College (Cambria County). Dr. Waleed Farag, PI, and Dr. Ben Rafoth, Co-PI, are also working with faculty in the Computer Science Department to design assignments for students that develop both technical and writing skills.

- **(PTC)** Provide advice to improve tutoring process and tools, e.g., videos/powerpoint presentations
- **(IUP)** Provide instruction, workshops, tutoring, and online resources to interested organizations
 - Less than 10 hours of one-to-one consultations and tutoring services per month: No charge
 - Ten or more hours of services per month: Hourly or project-based terms negotiable.
- **(IUP)** Provide editing and research services to interested organizations
- **(PTC)** Provide support to continue undergraduate tutoring program once NSA grant expires

Research - Undergraduate and IT professionals surveys of writing and communication skills

- **(IUP)** Provide results of undergraduate and IT professional survey results if desired
- **(PTC)** Review results of undergraduate surveys for utility and scope
- **(PTC)** Provide IT professional subjects for interviews to expand sample size and gather additional data on their perceptions of skills undergraduates are lacking when they enter the workforce from more subjects ← I don't understand how this relates to the proposal.

Internships focused on critical thinking and communication skills involved in IT/cybersecurity professions (?)

(PTC) Provide paid (preferable) or unpaid internships for undergraduates during academic breaks (summer, winter, or spring) or during academic terms of indeterminate or predetermined duration

Shadowing to observe the variety and frequency of critical thinking and communication skills involved in IT/cybersecurity professions

(PTC) Allow individuals or groups of undergraduate or high school students to observe an IT professional(s) performing their usual daily routine for any period of time from a couple of hours, a day, a couple of days, or for as long as the parties agree

Mentoring

(PTC) Provide IT professionals to serve as an advisor to guide student(s) in their professional/academic pursuits

Speakers

- **(PTC)** Provide IT professionals as speakers for cybersecurity-related events, e.g., Cybersecurity Day events, workshops, summer camps, classes, and any other occasion that might publicize and inform the public and prospective practitioners of IT/cybersecurity topics
- **(IUP)** Faculty and management to provide similar service within their areas of expertise

Expert Instructors

- **(PTC)** Provide IT professionals to guest lecture in scheduled classes and instruct at workshops and summer camps
- **(IUP)** Faculty and management to provide similar service within their areas of expertise