

The Office of **COMPUTER STUDIES** **NEWSLETTER**

SCHOOL OF SCIENCE | TECHNOLOGY | ENGINEERING | MATHEMATICS



Volume 3 Issue 2

July 2021



End of the Spring Term

We hope that your hard work has resulted in a well-deserved good grade for the past semester as you pursue your educational goals. You have probably found some of the Computer Science courses to be challenging last term. There is a lot of work involved, and many new concepts introduced. Your instructors have tried to do this in the most straightforward way possible, but we are always open to your perspective as the student, so please let us know your thoughts on what worked and what didn't.

For those who are completing their time at OCC this semester, the CS faculty hope you will stay engaged and in touch as you move on to new opportunities. For those who will be returning this fall, we look forward to providing you with the best education possible.

- Dr. Sylvia Riviello

CONTACT:
DR. SYLVIA RIVIELLO
Dean, School of Science,
Technology, Engineering & Math
sriviello@ocean.edu

DID YOU KNOW...

The Computer Science Club is rebooting with an online presence and special activities. See the Club News. Joining is easy. Just click on the self-enrollment link <https://ocean.instructure.com/enroll/TC9HDJ>.

Congratulations to Sean O'Connor, an OCC Computer Science major, who was selected as one of only two students from New Jersey community colleges for an internship with Otsuka, a pharmaceuticals company specializing in areas such as neuroscience, nephrology and digital innovations for mental health.

COMING THIS FALL

The spring semester marks the first offering of a new course in the realm of Cybersecurity – CSIT 200-Information Security Fundamentals. Students are taught the fundamental concepts and principles in the area of information security. This examines the relationships between, and concepts involved in, information assets, confidentiality, data integrity and availability, security threats and information damage.

FALL COURSES

CSIT110 – Introduction to Computers

CSIT115 – Introduction to Computer Game Development

CSIT123 – Integrated Office Software

CSIT131 – Multimedia for the Web

CSIT163 – Introduction to C++ Programming

CSIT165 – Programming I

CSIT166 – Programming II

CSIT168 – Introduction to Python Programming

CSIT175 – Digital Logic & Circuits

CSIT176 – Computer Organization

CSIT185 – Networking I

CSIT200 – Information Security Fundamentals

CSIT212 – Systems Analysis

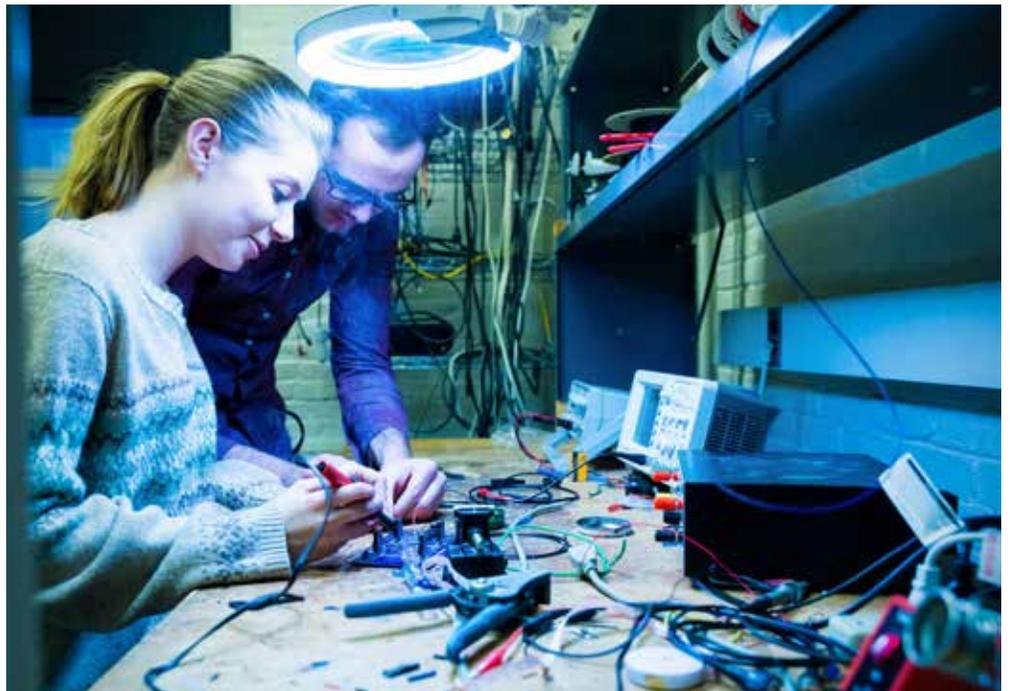
CSIT213 – Database Management

CSIT240 – Ethical Hacking Techniques & Tools

CSIT265 – Data Structures and Analysis



CONTACT:
PROF. EDMOND HONG
College Lecturer II,
Computer Science
ehong@ocean.edu



CS TIP LINE

Hi Dr. Cohen,

I tried the Computer Science Club trivia quiz and I was surprised by some of the questions. Do you know the answer to "I was on the cover of Time Magazine - a first. Who am I? - Thanks. Cpp.h

Dear Cpp.h,

That's easy – *The Computer*. Caused quite a stir at the time because the cover story was Time Magazine's pick as "Person of the Year." Have an item you'd like to share or a question you need answered?

Please contact Dr. Cohen. (gcohen@ocean.edu).

CLUB NEWS

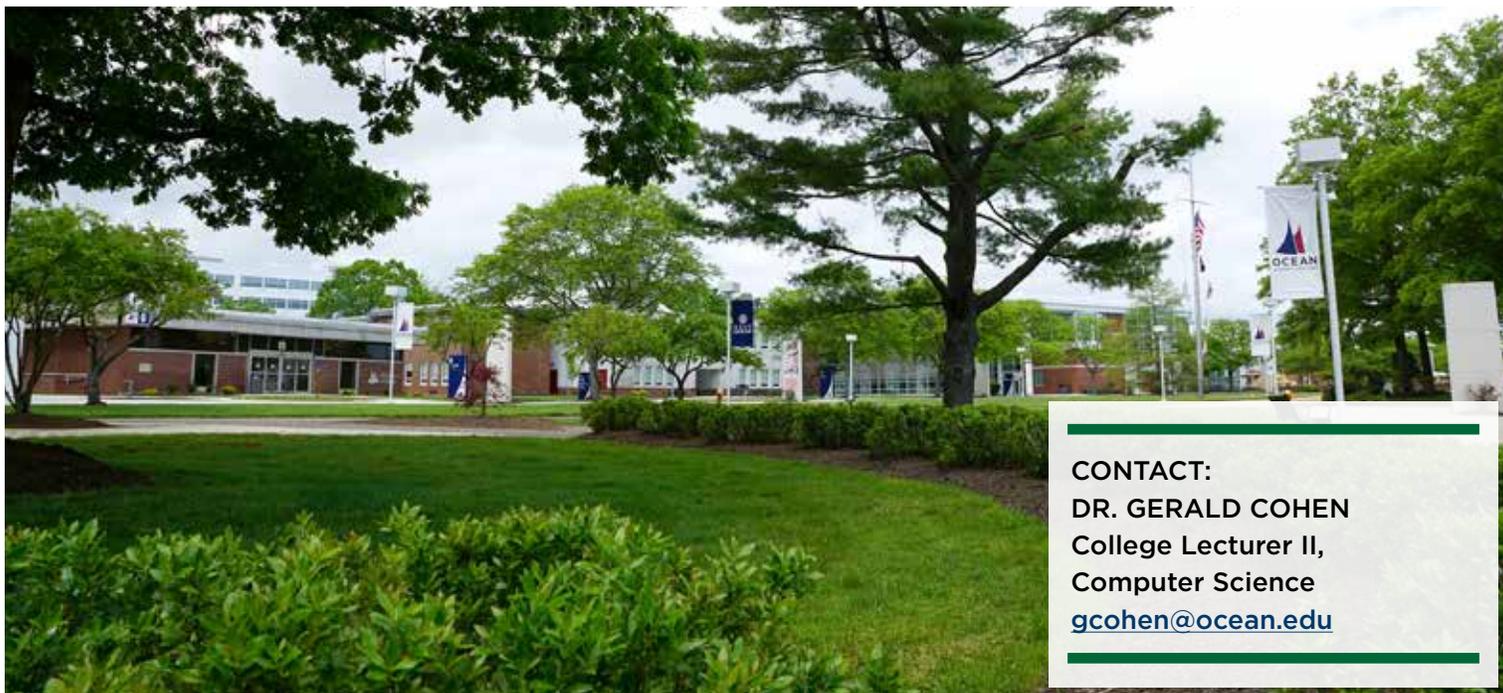
Computer Science Club:

A special Canvas website has been established to not only serve as a remote gathering place but also to host special events and activities. The very first activity has been a Computer Science Trivia Contest. Congratulations to Andrew Conigliaro who got 18 out of 20 questions correct. Joining is simple – just self-enroll using the following link: <https://ocean.instructure.com/enroll/TC9HDJ>.

If you have an interest in a specific topic that you would like to explore or share, please contact Dr. Cohen (gcohen@ocean.edu).

Makers Club:

This is a group of self-motivated, technology based DIYers or inventors getting together to be more creative and productive in a teamwork environment. Members utilize common objects or scrapped parts in our daily life to make useful things. There is no limitation on what we can do. Imagination is our driving force, hands-on is our culture, and science and technology are our tools. Due to the pandemic, we are unable to have group get-togethers, but are planning to promote some projects such as Arduino control/robotics programming in a virtual environment. We welcome new members to join our club. Details will be announced on Ocean Connect soon. Contact Prof. Hong (ehong@ocean.edu) for details.



CONTACT:
DR. GERALD COHEN
College Lecturer II,
Computer Science
gcohen@ocean.edu



Cybersecurity Club:

The Ocean County College Computer Science Department is launching a new Cybersecurity Club. The club is student-run, and its president is Zachary Soricelli. Professor Weiss is the faculty advisor.

The purpose of the club is to learn about cybersecurity and to apply those learnings to compete in “Capture the Flag” events. So far, the club has 15 members and has hosted several activities, including:

- A presentation on “[The Story of Secure Unix](#)” by Professor Weiss, a first-hand account of the roles a famous astronaut, a famous cryptographer and an infamous hacker played in the development of the first general-purpose operating system approved for mixing classified and unclassified data on the same platform.
- An overview of [CSAW '21 Cybersecurity Games and Conference](#) by Stef Daley from New York University, the coordinator of the event.
- A description of a virtual lab environment and toolset that may be used as a practice platform for the team’s competitive activities.

Students may self-enroll in the Canvas club page at: <https://ocean.instructure.com/enroll/ATNRAH>

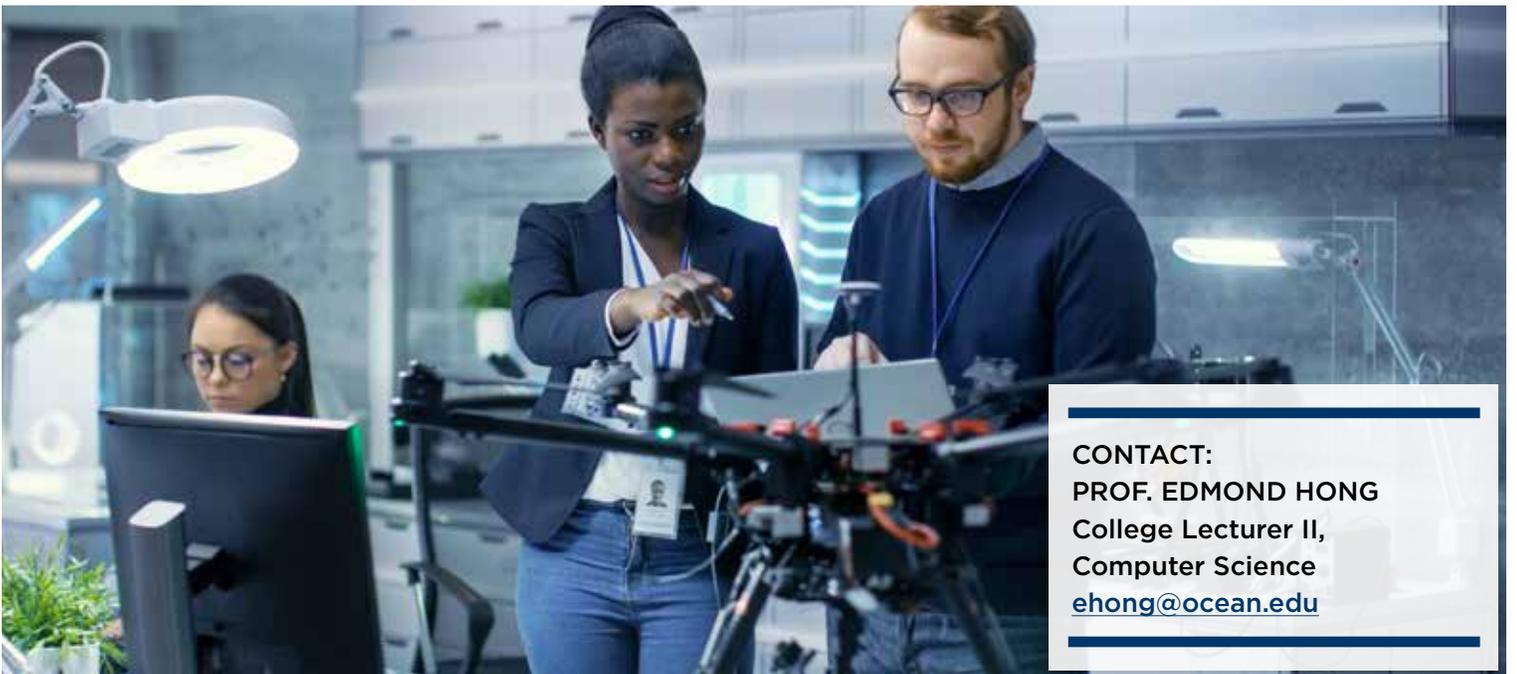
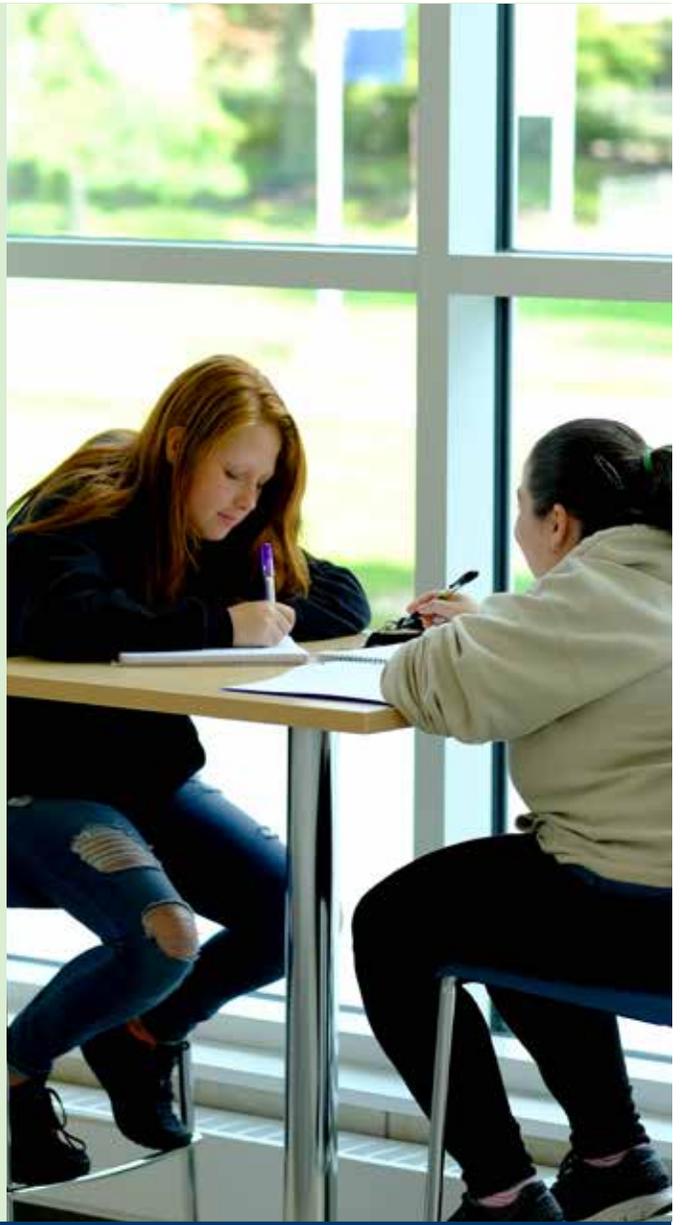
For more information, email zachary_soricelli@students.ocean.edu.



CONTACT:
DR. GERALD COHEN
College Lecturer II,
Computer Science
gcohen@ocean.edu

TIMELY NEWS

Coming this fall is a brand new 3-credit course, CSIT175 – Digital Logic & Circuits, a brainchild of Professor Hong (ehong@ocean.edu) that he will also be teaching. A course such as this is required by computer science and engineering degrees programs in most four-year colleges. It is a fundamental knowledge set for modern technology fields, especially Computer Engineering, Electrical Engineering, Advance Manufacturing Automatic Control, Mechatronics, and Robotics. This course introduces the fundamentals of digital logic and logic circuits, and their implementation in computers, robotics and electronic control systems. Students (and instructors) will learn digital concepts, logic gates (AND gates, OR gates, XOR gates, etc. except Bill Gates) with hands-on lab experiments and fun projects. Additionally, we will learn how these digital circuits build up a whole computer in theory. There is no prerequisite for this course but some programming knowledge will be a great help. It is anticipated that it will make your learning of CSIT-176 (Computer Architecture and Organization) a lot easier, or if you have already taken CSIT-176, this course will lift your digital circuit knowledge to a new level.



CONTACT:
PROF. EDMOND HONG
College Lecturer II,
Computer Science
ehong@ocean.edu

CYBERSECURITY CORNER

Cybersecurity In the News

Between the [Colonial Pipeline](#) and [SolarWinds](#) attacks, you can't go a day without hearing about the importance of cybersecurity today. In addition to these incidents, the FBI has noted a [significant increase in cybercrime](#) as a result of the COVID-19 pandemic. The demand for capable cybersecurity professionals has never been higher, and OCC is proud to be engaged in multiple endeavors to prepare current students and engage future students in this important and lucrative field.

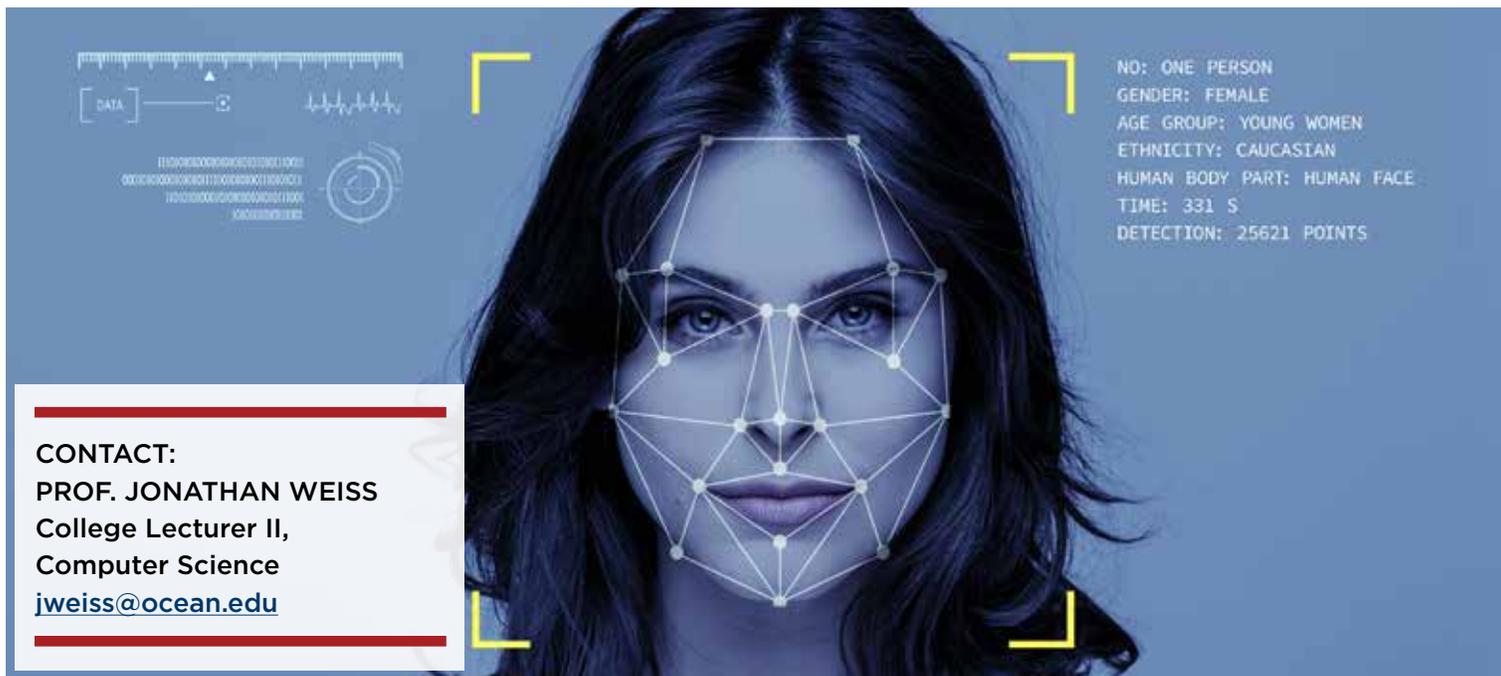
New Cybersecurity Course Offerings

OCC's Cybersecurity curriculum has been approved through the Curriculum Committee, the College Senate and the Ocean County College Board of Trustees, and partnerships have been established for Security+ (version SY0-601) certification support from CompTIA and Certified Ethical Hacker (version 11) support with EC Council. As a result OCC will be offering new courses in the fall of 2021. Information Security Fundamentals (CSIT 200) will be re-engineered to include a CompTIA's eLearning platform to allow students to supplement the in-class lectures with self-paced learning that will fully prepare them for the Security+ certification. This class is currently scheduled for Mondays and Wednesdays in the fall, from 8-9:15 a.m. Professor Weiss will also be delivering the first version of the Ethical Hacking: Tools and Techniques course (CSIT 240) in the fall, currently scheduled from 9:30-10:45 a.m. on Mondays and Wednesdays. Students taking this course will be eligible to pursue the EC Council's Certified Ethical Hacker v11 certification with discounted access to subsequent preparation courseware and exam vouchers.

If you have any questions about these offerings, or the current version of CSIT 200 being delivered in the first summer 2021 session, please e-mail Professor Weiss at jweiss@ocean.edu.

OCC CYBERCAMP

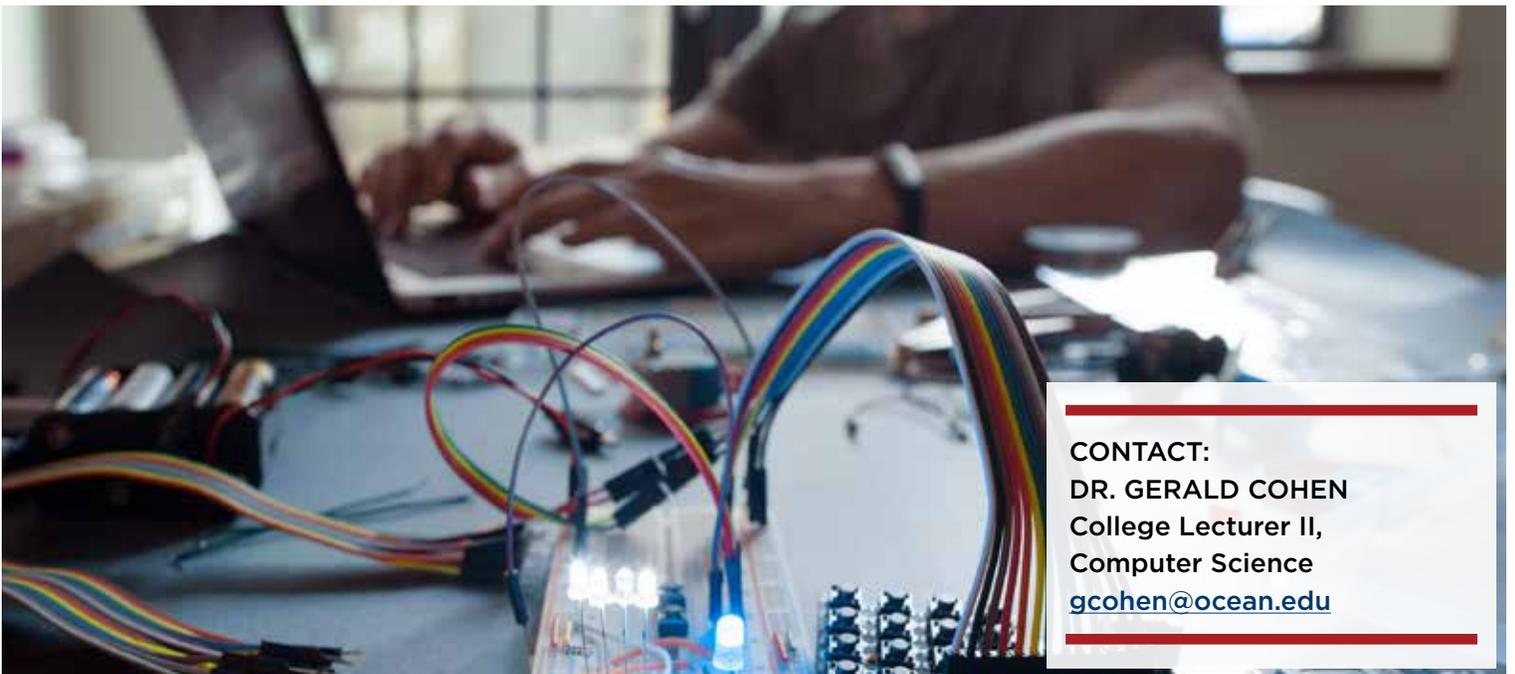
OCC will be hosting a CyberCamp for Ocean County middle school and high school students in August of 2021. Morning sessions will be devoted to cybersecurity awareness for middle schoolers, incorporating fun games and activities to teach them about cybersecurity principles and careers. Afternoons will include



practical labs and real-world hands-on experiences for high schoolers who may have interest in pursuing future education and careers in cybersecurity.

OCC CYBERSECURITY SEMINAR SERIES

There were two very interesting presentations delivered in April as part of the OCC Cybersecurity Seminar Series. The first, on April 2, was by Dr. Edward Amoroso, chief executive officer of TAG Cyber, an industry analysis company, and former Chief Information Security Officer (CISO) for AT&T. Dr. Amoroso presented “A Random Walk Through Cybersecurity,” sharing personal anecdotes, industry directions and predictions for the future of this very topical field. The second presentation, on April 30, was by Julian Cohen (no relation to Dr. Cohen), who has served as CISO, Director of Security and Analyst for a range of industries, including Cryptocurrency, Defense, HealthCare and Financial. Mr. Cohen presented “A History of Vulnerability Disclosure,” talking about the evolution of thought and practice in uncovering and disseminating exploitable software flaws and “Bug Bounties.” Both talks were very well attended and will be available via recording shortly at the bottom of the [OCC Cybersecurity landing page](#). Previous talks from Howard Israel of Mandiant/FireEye and Dr. Cheryl Cooper of T-Mobile USA are available there today, and yet another talk, delivered in March 2021 by Karl Siil of Johns Hopkins Applied Physics Laboratory’s Cyber Defense Department, will also be added shortly, along with the April talks by Dr. Amoroso and Mr. Cohen.



CONTACT:
DR. GERALD COHEN
College Lecturer II,
Computer Science
gcohen@ocean.edu

The Office of COMPUTER STUDIES NEWSLETTER

SCHOOL OF SCIENCE | TECHNOLOGY | ENGINEERING | MATHEMATICS



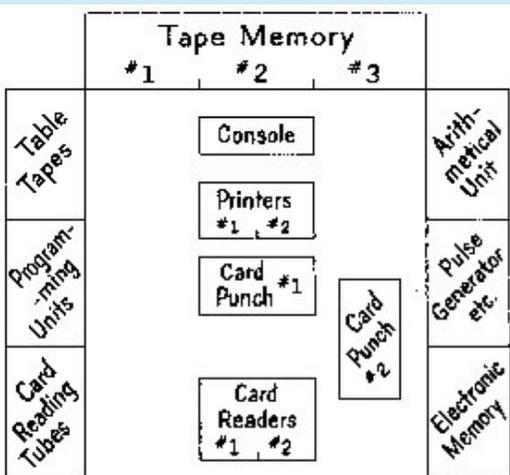
POTPOURRI

The following is an excerpt from an article by Frank da Cruz at Columbia University.

The full article can be found at <http://www.columbia.edu/cu/computinghistory/ssec.html>.

THE IBM SELECTIVE SEQUENCE ELECTRONIC CALCULATOR

IBM's Selective Sequence Electronic Calculator (SSEC), built at IBM's Endicott facility under the direction of Columbia Professor Wallace Eckert and his Watson Scientific Computing Laboratory staff in 1946-47, is shown here after it was moved to the new IBM Headquarters Building at 590 Madison Avenue in Manhattan, where it occupied the periphery of a room 60-feet long and 30-feet wide ([Dr.] Herb Grosch estimates the dimensions of its "U" shape at 60 + 40 + 80 feet, 180 feet in all, about half a football field!)



Watson Senior, upon first viewing SSEC prior to the public unveiling: "There is just one thing," he said somewhat off-handedly. "The sweep of this room is hindered by those large black columns down the center. Have them removed before the ceremony." But since they supported the building, the columns stayed. Instead, the photo in the brochure handed out at the ceremony was carefully retouched to remove all traces of the offending columns.

"Designed, built, and placed in operation in only two years, the SSEC contained 21,400 relays and 12,500 vacuum tubes. It could operate indefinitely under control of its modifiable program. On the average, it performed 14-by-14 decimal multiplication in one-fiftieth of a second, division in one-thirtieth of a second, and addition or subtraction on nineteen-digit numbers in one-thirty-five-hundredth of second... For more than four years, the SSEC fulfilled the wish [Thomas] Watson had expressed at its dedication: that it would serve humanity by solving important problems of science. It enabled Wallace Eckert to publish a lunar ephemeris ... of greater accuracy than previously available... the source of data used in man's first landing on the moon". "For each position of the moon, the operations required for calculating and checking results totaled 11,000 additions and subtractions, 9,000 multiplications, and 2,000 table look-ups. Each equation to be solved required the evaluation of about 1,600 terms — altogether an impressive amount of arithmetic which the SSEC could polish off in seven minutes for the benefit of the spectators".

