NYSETA SPRING 2013 CONFERENCE

Hosted by:

Fulton-Montgomery Community College
April 18-19, 2013

Schedule of Events

Thursday – April 18, 2013

8:00-10:00 AM   **Registration** –   Raiders Cove (Physical Education Building)

                     Breakfast -   Raiders Cove

10:15-11:50 AM   **Welcome** -   Dr. Dustin Swanger, FM President, Raiders Cove

                     Plenary Session -   Dr. John Garver, Wold Professor of Geology
                     Union College

	EET	CIT	MET	CIV/ARCH
12 - 12:50 pm	**Session 1** Rm: **C-125** Bldg: **Classroom**	**Session 1** Rm: **C-123** Bldg: **Classroom**	**Session 1** Exhibits/Lunch Rm: **Raiders Cove** Bldg: **Physical Education**	**Session 1** Exhibits/Lunch Rm: **Raiders Cove** Bldg: **Physical Education**
1 - 1:50 pm	**Session 2** Exhibits/Lunch Rm: **Raiders Cove** Bldg: **Physical Education**	**Session 2** Exhibits/Lunch Rm: **Raiders Cove** Bldg: **Physical Education**	**Session 2** Rm: **C-127** Bldg: **Classroom**	**Session 2** Rm: **C-127** Bldg: **Classroom**
2 - 2:50 pm	**Session 3** Rm: **C-123** Bldg: **Classroom**	**Session 3** Rm: **C-123** Bldg: **Classroom**	**Session 3** Rm: **C-127** Bldg: **Classroom**	**Session 3** Rm: **C-205** Bldg: **Classroom**
3 - 3:50 pm	**Session 4** Rm: **C-123** Bldg: **Classroom**	**Session 4** Rm: **C-123** Bldg: **Classroom**	**Session 4** Rm: **C-003** Bldg: **Classroom**	**Session 4** Rm: **C-205** Bldg: **Classroom**
4:00 pm	**Interest Group** Rm: **C-123** Bldg: **Classroom**	**Interest Group** Rm: **C-123** Bldg: **Classroom**	**Interest Group** Rm: **C-125** Bldg: **Classroom**	**Interest Group** Rm: **C-205** Bldg: **Classroom**

6:00-7:00 PM   **Attitude Adjustment Hour** – Holiday Inn

7:00-9:00 PM   **Dinner** – Holiday Inn

8:00 PM   **Dinner Presentation** – Holiday Inn

Christopher Borst, Associate Vice President for G450C Technical Operations
College of Nanoscale Science and Engineering

Chris will discuss 300mm technology development, 450mm industry transition status, and CNSE/NYS involvement in each (including educational and workforce training programs). Chris' position in the 450mm consortium with IBM, Intel, Samsung, TSMC, and GlobalFoundries will give us first-hand information on the enormous impact the 450mm effort has for all of our engineering technology programs and our students.

Plenary Session

10:30-10:50 AM   **"Adaptation to change and building resilience in the Mohawk Watershed: Engineering challenges in an important time of change"**

Keynote Speaker: Dr. John Garver, Wold Professor of Geology, Union College
Raiders Cove

Recent flooding in the Mohawk watershed should be evaluated in the context of a changing and dynamic hydrologic system. The hydrologic record of tributaries in the Mohawk watershed suggests that the most significant change has been in the last thirty years and much of this change can be attributed to an increase in the amount of precipitation and the frequency of extreme precipitation events in the Catskill Mountains. Changes in the record are subtle, but important. Climate models show that projected changes in mean annual precipitation for the Catskills range from an increase of ~10% to a decrease of 30% by the latter part of this century: and from this our conclusion is that climate modeling in its current form is not likely to be helpful for guiding near-term management decisions. Thus, a key to future flood mitigation and watershed management is to recognize variation in the regional distribution of these changes in precipitation, and the relative intensity of precipitation because this change has not been uniform across the State.

The abundance of water in the Schoharie Creek presents a considerable management challenge partly because much of this water appears to be associated with high discharge events ("extreme events"), many of which have caused significant flooding that is locally chronic. The Irene and Lee events or 2011 were one example of this new emerging extreme situation, and it needs to be emphasized that a major increase in water in this basin was recognized well prior to flooding of Irene and Lee.

One of the most important implications of this situation is that the recent floods in the Mohawk Watershed may be part of an emerging trend of increased water and sediment mobility in the system. If so, there are serious implications for the ability of the system to handle this water including an aging infrastructure that is underfit for this new hydrologic regime. Examples of infrastructure vulnerability include bridges, dams, storm water and sewer outfall systems that in many cases are more than 50-100 year old. Some of these structures are crucial to the State as they include water supply for NY City (Gilboa Dam) and other local municipalities, hydropower generation (Blenheim Pump Storage), and major transportation arteries including I-90 and rail lines that are key connections in the Eastern Corridor: all of which were damaged or impaired in the recent Irene/Lee events and will continue to be vulnerable in future events.

It is unlikely that we can easily engineer our way out of this situation without using cost-prohibitive strategies. Instead we should focus on innovation and smart design. We will not be able to prevent flooding in the Mohawk watershed and instead we have to be clever as to how we live with this changing natural hazard. This approach will have to include gradually clearing predicted floodways and using engineering solutions that anticipate more frequent extreme events.

Electrical Engineering Technology

Session 1   **Using Software to Enhance Student Learning - Mike J. Metaxas, PE**
12-12:50 pm   **Assistant Professor, Department of Engineering Technology, Queensborough Community College**
               Classroom Building – C-125

In this paper, we expand on the benefits of using hardware and software in project based learning and break down the skills required and learned in successfully completing a microcontroller based project. Some of these skills include hardware assembly (soldering, de-soldering, prototyping), software development (system analysis, software development, flowcharting and BASIC language programming) and troubleshooting (using DMM's and oscilloscopes).

Session 2   **Exhibitors and Lunch**
1:00-1:50 pm   **Physical Education Building - Raiders Cove**

Session 3   **Introduction to the Raspberry Pi – Kyle Bonfey, Rich Prestopnik, Rob Salkin**
2:00-2:50 pm   **Fulton-Montgomery Community College**
               Classroom Building – C-123

This session is an introductory discussion of the low cost, high power Raspberry Pi credit card sized computer. The system runs on Linux and is designed to easily interface to standard devices as well as through general purpose I/O pins to external circuitry. We will look at the features of the Pi, how to setup a system and how to download useful features. We will demonstrate the use the Python programming language to control external circuits.

Session 4   **Introducing Concepts in Electronics and Computer Programming Using Wearable Technology**
3:00-3:50 pm   **Jeanne W. Christman, Assistant Professor - Computer Engineering Technology**
               Rochester Institute of Technology
               Classroom Building – C-123

Wearable Technology, a trend that started with children's light up shoes, is showing limitless possibilities in entertainment, sports, medicine and the military. Examples of wearable, embedded technology can be seen everywhere, especially in the entertainment industry, making it interesting and exciting for today's students. Combining concepts from ac and dc circuits, electronics and, most importantly, computer programming, wearable technology provides a creative platform for engaging students in these topics.

4:00-4:30 pm   **Interest Group Meeting**
               Classroom Building – C-123

Computer and Information Technology

Session 1   **Enhancing Computer and Information Technology via Computer Virtualization Technologies**
12-12:50 pm   **Jim Boardman, Assistant Professor and Chair of Computer and Information Technology Department**
                            SUNY Alfred
                            Classroom Building – C-123

The presentation will demonstrate how academic institutions can efficiently and effectively provide students with a laboratory environment that includes complex layered network architectures and simultaneous interaction with multiple operating systems via desktop and enterprise computer virtualization.

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Mechanical Engineering Technology

Session 1   **Exhibitors and Lunch**
12-12:50 pm   **Physical Education Building - Raiders Cove**

Session 2   **SUNY Initiative for Curricula Changes**
1:00-1:50 pm   **John Campbell, Professor, Engineering Sciences, Director, Mechanical Technologies Program**
     Cayuga Community College
     Classroom Building – C-127

The topic will be the new SUNY Initiative for curricula changes. SUNY wants every community college program to lineup, so we have to have an agreement on what is being offered. Community Colleges traditionally do not match programs or levels of education.

Session 3   **Teaching Impact Stress and Deflection in Strength of Materials**
2:00-2:50 pm   **Ti-Lin Liu, Associate Professor, Manufacturing & Mechanical Engineering Tech/Packaging Science**
     Rochester Institute of Technology
     Classroom Building – C-127

Damage due to an external impact is a major concern in the design of structures and/or Machines. Where a suddenly applied load with a short contact time, or an object with a high speed could cause a major damage of the structure. Which is the major issue in automobile, packaging, bridge, and other designs areas. But, impact loading is a subject which is not well attended in MET and/or CET courses. In this presentation, the possibility of introducing this topic in Strength of Materials is open for discussion.

Session 4   **The Influence Mechatronics has on Mechanical Engineering Technology**
3:00-3:50 pm   **Kent Powell, Industry Sales Manager, Amatrol, Inc.; Allegheny Educational Systems**
     Classroom Building – C-003

Mechatronics is about the integration of all things mechanical, electrical, fluid power, robotics, and software. For a person to become fluid in the concepts of Mechatronics they must apply themselves to learn mechanical concepts and how they are integrated into an automated system by interfacing with other technologies to produce a finished product. We will highlight the mechanical nature of the Mechatronics equipment at the college and how it is integrated into a working system.

4:00-4:30 pm   **Interest Group Meeting**
     Classroom Building – C-125

Architectural/Civil Engineering Technology

Session 1   **Exhibitors and Lunch**
12-12:50 pm   **Physical Education Building - Raiders Cove**

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Session 3   **FMCC Campus Architecture**
2:00-2:50 pm   **Joel Chapin, Professor, Fine Arts**
Classroom Building – C-205

FMCC Campus architecture was created by Edgar Tafel the Chief Architect for Frank Lloyd Wright. The discussion will focus on the influence of the Bauhaus movement on 20th century modernist architecture.

Session 4   **A New Approach**
3:00-3:50 pm   **Edward T. Davis, Assistant Professor, Department of Engineering Technology**
Queensborough Community College
Classroom Building – C-205

Any study involving Materials and Methods of Construction will be extensive and in great depth. Instructors are faced with required subject matter to fulfill within the fifteen week semester. Students, most of who have no background in Material and Methods will feel some apprehension as to what lies ahead. How can instructors improve and incorporate sustainability within the subject matter of Materials and Methods? One method discusses a basic, simple, description of sustainability for a specific material; using applications that are familiar to the students; and within the course and subject matter to be covered during the semester (15 weeks) The object is to make the students aware that "all materials shall not be taken for granted". A short questionnaire can be used to measure the students understanding of basic sustainability. The goal is to teach the student an understanding of basic sustainability and how it can be applied in subsequent courses and in the workforce.

4:00-4:30 pm   **Interest Group Meeting**
Classroom Building – C-205

Friday – April 19, 2013

8:00-10:00 AM   **Breakfast/Business Meeting** – Holiday Inn

10:00-12:00 PM   **Tour –   Beechnut Plant**

Tour Information

Beechnut Plant
100 Hero Drive
Amsterdam, NY 12010