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- Low carbon footprint supports sustainability goals
- Grid independent capability - reliable and secure

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Dear Colleagues,

On behalf of the organization and technical committees, it is my pleasure to welcome you to the 2014 American Society for Engineering Education Zone 1 Conference, held at the University of Bridgeport on April 3-5, 2014.

The ASEE Zone 1 Conference is held once every 5-6 years and this issue of the Conference is anticipated to attract more than 1000 faculty, students and experts from academia and industry who are interested in engineering education, STEM Education, Research and Development in Engineering and Engineering Technology. The theme of the Conference is “Engineering Education: Industry Involvement and Interdisciplinary Trends.” The Conference is committed to fostering the exchange of ideas, enhancing teaching methods and curricula, and providing prime networking opportunities for faculty members, students and industry and government representatives.

The Conference features professional research papers sessions, in addition to student papers sessions and student posters presentations. The Conference also hosts panels, workshops, plenary sessions and industry exhibits, and features several prominent speakers. We look forward to a rich and varied program, and many presentations on the cutting-edge of research within various engineering disciplines. Topics to be covered through the various conference tracks include, but are not limited to:

Engineering design, performance and optimization, manufacturing, nanotechnology, chemical engineering, environmental engineering and energy, civil engineering, biotechnology, software engineering, computing, technology management, robotics, mechatronics, modeling, simulation, engineering innovation, mechanical design, new materials, electrical engineering and electronics, aerospace engineering and bioengineering.

The program also includes several social events throughout the duration of the Conference, in addition to excursion opportunities in Connecticut.

We look forward to your participation and hope that you will enjoy the conference.

Best regards,

Tarek Sobh, Ph.D., P.E.
Dr. Navarun Gupta is an Associate Professor of Electrical Engineering at University of Bridgeport. He also serves as the Department Chair there. Dr. Gupta received his Ph.D. from Florida International University in Miami. He has two master's degrees - one in Physics from Georgia State University and another in Electrical Engineering from Mercer University. He is the past chair of ASEE (American Society for Engineering Education), Northeast Section. Dr. Gupta's research interests lie in signal processing, and its applications in audio and bio signals.

Dr. Xingguo Xiong is an associate professor in Department of Electrical and Computer Engineering, University of Bridgeport, CT. He obtained his B.S. in Physics in 1994 from Wuhan University, China. He obtained his first Ph.D degree in Electrical Engineering in July 1999 from Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, China. He obtained his second Ph.D degree in Computer Engineering in July 2005 from University of Cincinnati, OH, USA. His research area includes MEMS (Microelectromechanical Systems), nanotechnology, as well as low power VLSI design and VLSI testing. He is the recipient of Recipient of 2009 Northeast ASEE (American Society of Engineering Education) Outstanding Teacher Award.
Dr. Joyce Hu

Dr. Joyce Hu is an associate professor and chair of Mechanical Engineering at University of Bridgeport. Dr. Hu received her B.E. and M.E. in Thermal Engineering from the Huazhong University of Science and Technology and Ph.D. in Mechanical Engineering from the Missouri University of Science and Technology. Her research has been focused on studying the transport phenomena (transport of heat, mass and momentum) in a wide range of applications, including manufacturing and materials processing, fuel cell design, thermal management of electronics, wellbore circulation in drilling operations, and vehicle aerodynamics. Her work has been published in prestigious journals and conferences. She is the Director of the Applied Computational Fluid Dynamics Laboratory at UB. Dr. Hu is a member of ASME, ASEE, and AWS.

Dr. Paul P. Botosani

Dr. Botosani is the founder of Engineering Laboratories and Automation Program at the School of Engineering, Fairfield University. He obtained his PhD in Electrical Engineering with the concentration in Automation and Telecommunication. He obtained his B.S. and M.S. in Electrical Engineering. Dr. Botosani is involved with the ASEE for more than 30 years wearing multiple hats: serving as a conference committee member, chair or co-chair of the student poster competition, organizer, membership chair, etc. Seven Awards was given to him for his contribution to ASEE. He also received the “Outstanding Zone Campus Representative Award”. Dr. Botosani has more than 30 years of teaching experience. He supervised hundreds of projects as well as MS theses. He developed and introduced many new undergraduate/graduate courses, new teaching/research laboratories in his area of expertise. He is the recipient of the 1989-1990 Fairfield University, School of Engineering “Outstanding Faculty Service Award”.

Buket D. Barkana received the B.S. degree in Electrical and Electronics Engineering from Anatolia University, Eskisehir, Turkey in 1994, and M.Sc. and Ph.D. degrees in Electrical and Electronics Engineering from the ESDGU, Eskisehir, Turkey in 1997 and 2005, respectively. She worked as a full time faculty at Anatolia University from 1995-1999, and worked as a Research Assistant at the ESDGU from 1999-2001. Dr. Barkana joined University of Bridgeport in January 2007, where she is currently an Associate Professor of Electrical Engineering. Her research and teaching interests include digital signal and image processing, and innovations in engineering education.

Dr. Hassan Bajwa

Dr. Hassan Bajwa received his BSc degree in Electrical Engineering from Polytechnic University of New York in 1998. From 1998 to 2001 he worked for Software Spectrum and IT Factory Inc, NY. He received his MS from the City College of New York in 2003, and his Doctorate in Electrical Engineering from City University of New York in 2007. Currently he is an Assistant Professor at the University of Bridgeport. His research interests are low power VLSI, Nano-circuit fabrics and nano-technology. His research interests include modeling and simulation of nano-electronic architectures, flexible electronics, RF circuit design, bio-electronics, nanostructured and nanoscale antennas for biomedical applications.
Dr. Khaled Elleithy
Web/Publicity Committee Chair
Associate Dean for Graduate Programs
Professor of Computer Science and Engineering

Dr. Elleithy is the Associate Dean for Graduate Studies in the School of Engineering at the University of Bridgeport. He is a professor of Computer Science and Engineering. He has research interests are in the areas of wireless sensor networks, mobile communications, network security, quantum computing, and formal approaches for design and verification. He has published more than two hundred fifty research papers in international journals and conferences in his areas of expertise.

Dr. Miad Faezipour
Speakers Committee Chair
Assistant Professor
School of Engineering

Miad Faezipour is an Assistant Professor in the Computer Science & Engineering and Biomedical Engineering programs at the University of Bridgeport and the director of the Digital/Biomedical Embedded Systems & Technology (D-BEST) Lab since July 2011. Prior to joining UB, she has been a Post-Doctoral Research Associate at the University of Texas at Dallas collaborating with the Center for Integrated Circuits and Systems and the Quality of Life Technology laboratories. She received the B.Sc. in Electrical Engineering from the University of Tehran, Tehran, Iran and the M.Sc. and Ph.D. in Electrical Engineering from the University of Texas at Dallas. Her research interests lie in the broad area of biomedical signal processing and behavior analysis techniques, high-speed packet processing architectures, and digital/embedded systems. Dr. Faezipour is a member of IEEE, EMBS and IEEE Women in Engineering.

Dr. Neal Lewis
Exhibits Committee Chair
Associate Professor
School of Engineering

Dr. Neal Lewis received his Ph.D. in engineering management in 2004 and B.S. in chemical engineering in 1974 from the University of Missouri – Rolla (now the Missouri University of Science and Technology), and his MBA in 2000 from the University of New Haven. He is an associate professor in the School of Engineering at the University of Bridgeport. He has over 25 years of industrial experience, having worked at Procter & Gamble and Bayer. Prior to UB, he has taught at UMR, UNH, and Marshall University.
Dr. Jani Macari Pallis is the founder and CEO of Cislunar Aerospace, Inc., an engineering and research firm located in San Francisco, California. With a background in biomedical industrial, mechanical and aeronautical engineer, she specializes in fluid dynamics, with an emphasis on air, space and marine vehicles, sports equipment, and the relationship between athletic injuries and equipment. Pallis has conducted leading edge research and development for organizations such as NASA, the Department of Energy, the US Air Force, Daimler Benz, and Quantum Parachutes. She has applied the same science and engineering skills to a variety of marine sports as well as tennis, volleyball, winter and wheelchair sports. As the lead aerodynamicist from Cislunar Aerospace to the Hawaiian America’s Cup XXX (1999-2000) challenger, she and her staff conducted computer simulations on new sail and mast designs.

Dr. Prabir Patra, Assistant Professor of Mechanical Engineering and Program Director, Biomedical Engineering received his Master’s and Ph.D. degrees from Indian Institute of Technology (IIT) Kharagpur, India. He did his postdoctoral research at the University of Massachusetts Dartmouth and Rice University.

Linfeng Zhang is an Associate Professor in the Department of Electrical Engineering at the University of Bridgeport (UB). He joined the UB Electrical Engineering faculty in 2007 and establish Renewable Energy Research Lab. He received his PhD in Electrical Engineering from Wayne State University in 2006. His teaching and research interests include renewable energy, energy management, and thin-film chemical sensor. He has published his research articles in different peer-reviewed journals, including Physics Review-B, Sensors and Actuators-B, Energy Conversion and Management, and IEEE Sensor Journal.
# Conference Schedule

## Thursday Events - April 3, 2014

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:30 - 4:00</td>
<td>Open Registration - 1st Floor, Magnus Wahlstrom Library</td>
</tr>
<tr>
<td>1:00 - 2:30</td>
<td>Workshop [1] - Education Connection - Discovery Pavilion, Magnus Wahlstrom Library</td>
</tr>
<tr>
<td>2:30 - 2:45</td>
<td>Break (Coffee available at the Magnus Wahlstrom Library, 5th floor)</td>
</tr>
<tr>
<td>4:30 - 5:30</td>
<td>Middle Atlantic Section Executive Committee Meeting – Meeting Room 1, Magnus Wahlstrom Library</td>
</tr>
</tbody>
</table>

## Friday Events - April 4, 2014

Note: Exhibits are open from 9:00 am to 5:00 pm Social Room – Student Center.

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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</thead>
<tbody>
<tr>
<td>8:00 - 6:00</td>
<td>Open Registration - 1st Floor, Magnus Wahlstrom Library</td>
</tr>
<tr>
<td>8:45 - 10:00</td>
<td>Professional Papers Parallel Sessions [1] – Magnus Wahlstrom Library</td>
</tr>
<tr>
<td>10:00 - 10:15</td>
<td>Break (Coffee available at the Student Center and Library 5th floor)</td>
</tr>
<tr>
<td>10:15 - 11:00</td>
<td>Keynote Speech, Dr. Atam Dhawan, New Jersey Institute of Technology - Great Room, Student Center</td>
</tr>
<tr>
<td>11:00 - 11:15</td>
<td>Break (Coffee available at the Student Center and Library 5th floor)</td>
</tr>
<tr>
<td>11:15 - 12:30</td>
<td>Student Papers Parallel Sessions [1] – Magnus Wahlstrom Library, Mandeville &amp; Carlson Hall</td>
</tr>
<tr>
<td>11:30 - 12:30</td>
<td>Panel [1] - Trends, Opportunities and Challenges in Biomedical Nanotechnology – 152, Carlson Hall</td>
</tr>
<tr>
<td>12:30 - 1:30</td>
<td>Lunch &amp; Speech, Dr. Damir Novosek, Quanta-Technology – Great Room, Student Center</td>
</tr>
<tr>
<td></td>
<td>Student Poster Competition – Social Room, Student Center</td>
</tr>
</tbody>
</table>

## Saturday Events - April 5, 2014

Note: Exhibits are open from 9:00 am to 2:00 pm Social Room – Student Center.

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30 - 9:30</td>
<td>Northeast Section Executive Committee Meeting – Meeting Room 6, Magnus Wahlstrom Library</td>
</tr>
<tr>
<td>9:00 - 2:00</td>
<td>Open Registration* – 1st Floor, Magnus Wahlstrom Library</td>
</tr>
<tr>
<td>9:45 - 11:00</td>
<td>Professional Papers Parallel Sessions – Magnus Wahlstrom Library</td>
</tr>
<tr>
<td>11:00 - 11:15</td>
<td>Break - (Coffee available at the Magnus Wahlstrom Library 5th floor)</td>
</tr>
<tr>
<td>11:15 - 12:30</td>
<td>Student Papers Parallel Sessions – Magnus Wahlstrom Library, Carlson Hall</td>
</tr>
<tr>
<td>12:30 - 1:30</td>
<td>Lunch - Great Room, Student Center</td>
</tr>
<tr>
<td></td>
<td>Student and Professional Paper Awards Presentation</td>
</tr>
<tr>
<td></td>
<td>Update from Zone I Chair of ASEE, Dr. Suzanne Keilson, Loyola University</td>
</tr>
<tr>
<td></td>
<td>Speech, Dr. David McLaughlin, University of Massachusetts, Amherst</td>
</tr>
<tr>
<td></td>
<td>Great Room, Student Center</td>
</tr>
<tr>
<td>2:00</td>
<td>Conference Excursions</td>
</tr>
<tr>
<td></td>
<td>Mohegan Sun Casino Tour Shuttle – Tower Clock, Park Ave.</td>
</tr>
<tr>
<td></td>
<td>Space Day at the Discovery Museum – Tower Clock, Park Ave.</td>
</tr>
</tbody>
</table>
Dr. Atam P. Dhawan
Professor and Chairperson
Electrical & Computer Engineering Department
New Jersey Institute of Technology

Atam P. Dhawan obtained his bachelor’s and master’s degrees from the Indian Institute of Technology, Roorkee, and Ph.D. from the University of Manitoba, all in Electrical Engineering. From 1985-2000, he held faculty positions in Electrical & Computer Engineering, and Radiology departments at University of Houston, University of Cincinnati, University of Texas, University of Texas Medical Center (Dallas) and University of Toledo. In July 2000, he joined NJIT where he served as the Chair of the Department of Electrical and Computer Engineering for nine years. Currently he is Distinguished Professor of Electrical & Computer Engineering and Executive Director of Undergraduate Research and Innovation. He is also an Adjunct Professor of Radiology at the University of Medicine and Dentistry of New Jersey.

Dr. Dhawan is Fellow of the IEEE for his contributions in medical imaging and image analysis. He is also an elected Fellow of the American Society of Biological and Medical Engineering. He has published more than 215 research articles in refereed journals, books, and conference proceedings. His current research interests are medical imaging, multi-modality medical image analysis, adaptive learning and pattern recognition. His research work has been funded by NIH, NSF and several industries.
Lunch Speech I – Friday, April 4th, 12:30 – 1:30 pm.

Dr. Damir Novosel
President
Quanta-Technology, LLC

Damir Novosel is president of Quanta Technology, a subsidiary of Quanta Services, a Fortune 500 company. Previously, he was vice president of ABB Automation Products and president of KEMA T&D US. Damir is one of the nation’s leading business and technology leaders in the areas of T&D power systems and utility automation. He has developed and helped implement a number of pioneering concepts, methods, and products that improved reliability and efficiency of power grids.

Damir was elected to National Academy of Engineers in 2014 and is IEEE Power and Energy Society (PES) President Elect. He served as chair of the PES Technical Council and Vice President of technology from 2010 to 2012.

Dr. Novosel holds 16 US and international patents and published over 100 articles in Transactions, Journals and Proceedings, receiving PES 2011 and 2013 Prize Paper Awards. He has led or participated in numerous industry standards, publications and other initiatives.

He holds PhD and MS degrees in electrical engineering from Mississippi State University, where he was a Fulbright scholar, and the University of Zagreb, Croatia, respectively.

Lunch Speech II – Saturday, April 5th, 12:40 – 1:30 pm.

Dr. David McLaughlin,
Director of the Engineering Research Center for CASA
University of Massachusetts, Amherst

David McLaughlin is Professor of Electrical and Computer Engineering at UMass Amherst and Director of the Engineering Research Center for Collaborative Adaptive Sensing of the Atmosphere (CASA). CASA is a national-scale research project involving nearly 200 people from 19 different organizations pursuing a 10-year goal of revolutionizing our ability to predict and respond to extreme weather events.

A proud alumnus of UMass Amherst, David grew up in the Boston area suburbs tending with robots and radios. His father, a civil engineer, told him that electrical engineering was a good career path, and by the time he was in seventh grade, David set his sights on becoming an electrical engineer. He studied electrical engineering as a UMass undergraduate from 1980 – 1984 and as a graduate student from 1984 – 1989. His PhD advisor and mentor, the late Professor Robert McIntosh inspired him to become a professor and taught him how to think big and to communicate his ideas effectively. After finishing his PhD, he spent 10 years on the engineering faculty at Northeastern University where he created the Radar Systems Laboratory and led that university’s development of a BS Degree program in Computer Engineering. He joined the faculty of the College of Engineering at UMass Amherst in 2000.
Professional Paper Presentation Sessions

The 2014 American Society for Engineering Education Zone 1 conference theme “Engineering Education: Industry Involvement and Interdisciplinary Trends” allows interpretation of educational research in a broad manner. Therefore, the professional paper track includes state of the art research reporting the most recent outcomes of various engineering disciplines and include post doctoral, Ph.D. dissertation, or master's project and thesis related research. The professional track also includes significant contributions to STEM education while reporting the outcomes of new classroom learning methods along with manuscripts that further the debate on educational issues. Professional papers are peer reviewed by at least two experts in the related areas.

Student Paper Presentation Sessions

Engineering education targets the needs of industry, and relevant industries should be encouraged to participate in engineering education endeavors. Furthermore, nowadays technology is demonstrating a trend toward interdisciplinary research and development activities. Many technological problems require the collaboration of engineers from diverse engineering, science and technology fields and backgrounds. The student paper track includes undergraduate and graduate student papers, which address the various challenges and paradigms within Engineering and Engineering Technology Educational and Research efforts. Student papers are peer reviewed by at least two experts in the related areas.

Student Poster Presentation Sessions

Students are encouraged to present their on-going or finished projects. Poster abstracts have been submitted by graduate and undergraduate students and reviewed by the Posters Technical Committee. Posters will be presented by students and judged during the Conference on Friday, April 4, 2014, starting at 11:00 am.

Outstanding Teacher Award (NE Section)

The American Society for Engineering Education (ASEE) is committed to excellence in the instruction of engineering and engineering technology students and will recognize an outstanding engineering or engineering technology educator from the Northeast Section. This individual is then nominated as Northeast Section's representative for the ASEE National Outstanding Teaching Medal for 2014.

The Award:
The award, presented at the spring meeting of Zone I, consists of a certificate of recognition.

Qualifications:
Candidates must be members of the ASEE Northeast Section who teach any subject included in an ABET accredited engineering or engineering technology curriculum, including faculty teaching courses at two-year or community colleges. Those teaching humanities and social studies, mathematics, science, applied science and computing science are also eligible. The award recipient must agree to attend the spring meeting at which the award is presented; otherwise, the award will be given to the next highest ranked candidate who agrees to attend. Exceptions will be made for emergency conditions. Currently serving officers of the Northeast Section and members of the Awards Committee are not eligible for nomination.

Evaluation:
1. Classroom Performance
2. Teaching Scholarship Contributions
3. ASEE and Local Participation

Candidates not selected for this year’s award will automatically be considered for the next year’s award. These candidates will be afforded the opportunity to update their applications.
Awards

Professional Paper Awards

This year, the American Society for Engineering Education, the University of Bridgeport and industry partners are offering several paper awards to authors of exceptional quality papers. The winning papers will be announced during the Saturday lunch at 12:30 pm.

ASEE Best Paper Award ($300)

This award is established to recognize outstanding contributions in the field of engineering education with a particular focus on the ASEE Zone 1 Conference theme: “Engineering Education: Industry Involvement and Interdisciplinary Trends.” Research demonstrating commitment to fostering the exchange of ideas, enhancing teaching methods and curricula, and providing prime networking opportunities for faculty members, students and industry and government representatives is especially encouraged.

Decisyon, Inc. Big Data Analytics Award ($300)

Today, both fast growing emerging markets and established economies are producing increasingly large streams of structured and unstructured data that need to be harnessed and leveraged to improve the speed and quality of corporate decision making. Therefore, this award will be presented to the professional paper that demonstrates significant contributions to the academic and industrial software solutions that integrate data analysis, planning and execution to improve decision making in an operational business process such as manufacturing, supply chain or customer service operations. Special emphasis will be given to the research that considers real life solutions to decision making problems via utilization and analysis of large volumes of data.

e-Richards Consulting Award ($100)

Technology advancement is one of the major forces that drive economic growth. Therefore, this award will be presented to the professional paper for significant contributions to the IT related community. The priority will be given to the contributions of lasting and major importance to the improvement of personal skills in IT and related engineering fields such as computer science. Special emphasis will be given to the research that considers changing landscape of technology.

John F. Welch College of Business Digital Marketing Award ($300)

The marketing field has gone through tremendous change while integrating the latest technology-driven advances in data collection, analysis, targeting, communicating, and selling capabilities. Myriads of new business models are appearing in the marketplace – all making use of new software solutions. This award will be given to the top paper at the crossroads of technology and marketing. Specifically, the paper should indicate in an applied manner how a particular software or technology can be used to advance the marketing capabilities of a firm.

University of Bridgeport School of Engineering Award ($250)

This award will be given to the best written and presented paper at the conference; both for overall excellence and intellectual merit. Preference will be given to research endeavors with the greatest positive impact on engineering practices and approaches towards solving pertinent industrial problems.

Xerox Foundation Award ($300)

An open and diverse scientific community is crucial in the development of world-class talent in science, technology, engineering, and mathematics (STEM). Therefore, this award will be presented to the professional paper that focuses on developing systemic approaches to increase the representation and advancement of women, underprivileged, and underrepresented groups in STEM education and careers. Papers discussing opportunities, developing models, and creating solutions and hence contributing to the development of a more diverse science and engineering workforce are especially encouraged.
Awards

Student Paper Awards

Several student paper awards will be given at the 2014 American Society for Engineering Education Zone 1 Conference. All students' papers submitted at the Conference will be considered for the Paper Awards. The finalists for Paper Awards will be selected by a panel of judges based on the originality, quality and scientific merit of the paper. At least one author from each of the finalists is required to attend the Conference and make an oral presentation.

The student paper awards will be conferred upon the author(s) based on their presentations at the Conference, in addition to the quality of the accepted paper. The quality and content of the presentation and the level of interaction with the audience during the Q&A session will be utilized by the judges in the selection process. The winning papers will be announced during the Saturday lunch at 12:30 pm.

Graduate Students Paper Awards:
First Place: $300
Second Place: $200
Third Place: $100
Honorable Mentions

Undergraduate Students Paper Awards:
First Place: $300
Second Place: $200
Third Place: $100
Honorable Mentions

Student Poster Competition Awards

The ASEE, the University of Bridgeport and industry partners sponsored several monetary awards for the highest ranking, presented posters.

Competition placement will be based on a comparison of comments from at least four judges. As a result, the judges will spend time talking to the presenters, asking questions and listening their description of project and contributions. The judges will be aware that the projects being presented may not have been completed at the time of competition. Accordingly, physical demonstrations will not be a component of judging.

The selection of the winning presentations will be based on:
1. Clarity of poster and oral presentations
2. Quality of Methodological Approach
3. Overall responses to the judges' questions
4. Completeness of work

The poster awards will be announced at the Conference banquet on Friday, April 4, 2014.

Graduate Students Paper Awards:
First Place: $300
Second Place: $200
Third Place: $100
Honorable Mentions

Undergraduate Students Paper Awards:
First Place: $300
Second Place: $200
Third Place: $100
Honorable Mentions
Workshops

Each workshop will provide a forum to address a specific topic on an aspect of Multidisciplinary Engineering Education and Research, and Industry Involvement in Engineering Endeavors at Institutions of Higher Education in the U.S., which are the main themes of the Conference.

Workshop Session 1 – Thursday, April 3th, 1:00 – 2:30 pm – Discovery Pavilion, Magnus Wahlstrom Library
Education Connection - Improving Engineering Education through Technology Integration and the Development of 21st Century Inquiry Skills: An Innovative Approach to Pre-service Teacher Education

Presenters
Jonathan Costa, Director of School and Program Services, Education Connection
Mhora Lorentson, Director of the Center for Collaborative Evaluation and Strategic Change, Education Connection

Workshop Session 2A – Thursday, April 3th, 2:45 – 4:15 pm – 500A Magnus Wahlstrom Library
IEEE Electron Devices Society - Engineers Demonstrating Science: An Engineer Teacher Connection: The EDS-ETC Program.

Presenters
Carmen Lilley, Ph.D., Theoretical and Applied Mechanics, Northwestern University
Christopher Jannuzzi, EDS Executive Director, IEEE
Fernando Guarin, Senior Engineer/Scientist, IBM Microelectronics SRDC

Workshop Session 2B – Thursday, April 3th, 2:45 – 4:15 pm – 500D Magnus Wahlstrom Library
Discovery Museum and Planetarium – Space Science Experience at the Discovery Museum

Presenters
Danielle LaChance, Instructor, Discovery Museum and Planetarium
David James Mestre, Director of Space Science Education, Discovery Museum and Planetarium
Lynn Harris Olins, Director of Education, Discovery Museum and Planetarium
Melinda M. Gremse, Instructor, Discovery Museum and Planetarium

Panels

The Conference will host the following 3 panels:

1. Panel – Friday, April 4th, 11:15 am – 12:30 pm – 152 Carlson Hall
Panelists:
Dr. Russel Heinrich, CooperSurgical, Inc.
Dr. Shankar Krishnan, Wentworth Institute of Technology
Dr. Prabir Patra, University of Bridgeport
Dr. Miad Faezipour, University of Bridgeport
Theme: Trends, Opportunities and Challenges in Biomedical Nanotechnology

2. Panel – Friday, April 4th, 1:30 – 2:45 pm – 152 Carlson Hall
Panelists:
Ms. Theodora Saunders, Sikorsky
Mr. Anatoly Zayaruzny, ZAYA-RUZO Street Organs
Dr. Zheng (Jeremy) Li, University of Bridgeport
Theme: Automated, Intelligent and Additive Technologies

3. Plenary Session – Friday, April 4th, 3:00 – 4.15 pm – 152 Carlson Hall
Speakers in the Plenary Session:
3:00 – 3:25 Dr. Essam Badreddin, University of Heidelberg, Reaction-time Based Autonomy For Human-Machine-Interaction
3:25 – 3:50 Dr. Devdas Shetty, University of District of Columbia, Trends in Smart Manufacturing and Product Creation
3:50 – 4:15 Dr. Anirban Misra, North Bengal University, Design of Quantum Magnets
The goal of a tutorial is to provide an informal forum for researchers or educators to discuss, present and elaborate on important and emerging areas relating to an aspect of Multidisciplinary Engineering Education and Research; and Industry Involvement in Engineering Endeavors at Institutions of Higher Education in the U.S.; which are the main themes of the Conference.

**Tutorial 1** – Thursday, April 3th, 1:00 – 2:30 pm – 500A Magnus Wahlstrom Library
Instructing Solar PV Laboratories - Michael Paradis, Department of Energy SITN Solar Photovoltaic Instructor.

This tutorial will present and describe the most common components currently being used in solar PV systems. Also, two different solar PV installation training units will be presented, and their corresponding laboratory activities will be discussed.

**Tutorial 2** – Thursday, April 3th, 1:00 – 2:30 pm – 500B Magnus Wahlstrom Library
The Urgency for Systems Engineering Education - Theodora Saunders, Mgr, Sys Engrg/Mfg Tech, Sikorsky Aircraft.

This tutorial will provide an overview of Systems Engineering, and the skills required by the systems engineering practitioners capable of meeting the 21st century challenges. The urgency for developing systems engineering practitioners will be addressed and a synergistic and collaborative approach among Government, Academia and Industry will be proposed.

**Tutorial 3** – Thursday, April 3th, 2:45 – 4:15 pm – Discovery Pavilion, Magnus Wahlstrom Library

Sustainability, energy efficiency, environmental and resiliency concerns represent major societal trends that are driving innovation in the electric power system. This tutorial will highlight change-enabling technologies and the exciting career opportunities that are emerging in the grid of the future from the speaker’s perspective as a Senior Engineering Manager at FuelCell Energy and Connecticut Chapter Chair of the IEEE Power & Energy Society.
<table>
<thead>
<tr>
<th>Friday</th>
<th>4-Apr</th>
<th>8:45-10 am</th>
</tr>
</thead>
<tbody>
<tr>
<td>Session F-1-1</td>
<td>Engineering Education Tools and Methods II</td>
<td>Discovery Pavilion - Magnus Wahlstrom Library</td>
</tr>
<tr>
<td>Chair</td>
<td>Dr. Steven P. Marra</td>
<td><a href="mailto:spmarra2@gmail.com">spmarra2@gmail.com</a> The Johns Hopkins University</td>
</tr>
<tr>
<td>8:45</td>
<td>9:00</td>
<td>95 Matthew Baideine, Cristian Robbins, Jeffrey Starke – United States Military Academy</td>
</tr>
<tr>
<td>9:00</td>
<td>9:15</td>
<td>78 Vazgen Shekoyan – Quensborough Community College</td>
</tr>
<tr>
<td>9:15</td>
<td>9:30</td>
<td>62 Girma Tewolde – Kettering University</td>
</tr>
<tr>
<td>9:30</td>
<td>9:45</td>
<td>90 Yves Ngabonziza, Hendrick Delcham – City University of New York</td>
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<tr>
<th>Friday</th>
<th>4-Apr</th>
<th>8:45-10 am</th>
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</thead>
<tbody>
<tr>
<td>Session F-1-2</td>
<td>Innovations in Student Learning</td>
<td>500A - Magnus Wahlstrom Library</td>
</tr>
<tr>
<td>Chair</td>
<td>Dr. Tomás Estrada</td>
<td><a href="mailto:estradat@etown.edu">estradat@etown.edu</a> Elizabethtown College</td>
</tr>
<tr>
<td>8:45</td>
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<td>90 Yves Ngabonziza, Hendrick Delcham – City University of New York</td>
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<tr>
<td>9:00</td>
<td>9:15</td>
<td>58 Beverly Woolf, Enid Sichel, Mark Floryan – University of Massachusetts</td>
</tr>
<tr>
<td>9:15</td>
<td>9:30</td>
<td>56 Amanda Marie Spiewak – University of New Haven</td>
</tr>
<tr>
<td>9:30</td>
<td>9:45</td>
<td>82 Tomislav Bujanovic, Prasanta Ghosh – Syracuse University</td>
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# Professional Papers Program

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<thead>
<tr>
<th>Friday 4-Apr</th>
<th>8:45-10 am</th>
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<tbody>
<tr>
<td><strong>Session F-1-5</strong></td>
<td>Technology and Engineering Education</td>
</tr>
<tr>
<td>Chair</td>
<td>Prof. Dan Tenney</td>
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<tr>
<td>Chair</td>
<td>Dr. Keith Gardiner</td>
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## Closing Remarks - END OF SESSION
## Professional Papers Program

**Friday 4-Apr 1:30-2:45 pm**

<table>
<thead>
<tr>
<th>Session F-2-4</th>
<th>Engineering Education III</th>
<th>500C - Magnus Wahlstrom Library</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chair</td>
<td>Dr. Gad J. Selig</td>
<td><a href="mailto:gadselig@bridgeport.edu">gadselig@bridgeport.edu</a></td>
</tr>
<tr>
<td>1:30 1:45 79</td>
<td>Richard Millham – Durban University of Technology</td>
<td>Does Self-Regulating E-Learning Assist in Secondary School Preparation for Engineering Education?</td>
</tr>
<tr>
<td>1:45 2:00 32</td>
<td>William Alpert – University of Connecticut</td>
<td>Efficiency of College Education in the Labor Market of the United States</td>
</tr>
<tr>
<td>2:00 2:15 20</td>
<td>Gad J. Selig – University of Bridgeport</td>
<td>Critical Success Factors for Winning Entrepreneurs and the Role of an Incubator - A Case Study</td>
</tr>
<tr>
<td>2:15 2:30 108</td>
<td>Gary P. Halada, Nancy McCoy Wozniak – Stony Brook University</td>
<td>Enhancing Assessment of Experiential Learning in Engineering Education through Electronic Portfolios</td>
</tr>
<tr>
<td>2:30 2:45</td>
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**Saturday 5-Apr 9:45-11 am**

<table>
<thead>
<tr>
<th>Session S-1-1</th>
<th>Innovations in College and Career Readiness</th>
<th>Discovery Pavilion - Magnus Wahlstrom Library</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chair</td>
<td>Dr. Ahmed El-Abbasy</td>
<td><a href="mailto:aaelabbasy@yahoo.com">aaelabbasy@yahoo.com</a> Jazan University</td>
</tr>
<tr>
<td>9:45 10:00 79</td>
<td>Richard Millham Durban – University of Technology</td>
<td>Does Self-Regulating E-Learning Assist in Secondary School Preparation for Engineering Education?</td>
</tr>
<tr>
<td>10:00 10:15 76</td>
<td>Ashwin Satyanarayana, Hong Li, Josephine Braneky</td>
<td>New York City College of Technology</td>
</tr>
<tr>
<td>10:30 10:45 50</td>
<td>Leslie Chandrakantha – John Jay College of CUNY</td>
<td>Magnetotaxis for Nanofabrication</td>
</tr>
<tr>
<td>10:45 11:00</td>
<td>Closing Remarks - END OF SESSION</td>
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**Friday 4-Apr 1:30-2:45 pm**

<table>
<thead>
<tr>
<th>Session F-2-5</th>
<th>Quantitative Methods in Engineering and Engineering Education I</th>
<th>500D - Magnus Wahlstrom Library</th>
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</thead>
<tbody>
<tr>
<td>Chair</td>
<td>Dr. Nelson Ngoh</td>
<td><a href="mailto:ngoh@bridgeport.edu">ngoh@bridgeport.edu</a> University of Bridgeport</td>
</tr>
<tr>
<td>1:30 1:45 34</td>
<td>Wafa Mohamed Elmannai, Khaled Eileitty – University of Bridgeport</td>
<td>A new Algorithm Based on Discrete Fourier Transform to Improve the Lifetime of Underwater Wireless Sensor Networks Communications</td>
</tr>
<tr>
<td>1:45 2:00 96</td>
<td>Wei Lu Keene – State College</td>
<td>Phylogenetic Analysis Using Bayesian Model</td>
</tr>
<tr>
<td>2:00 2:15 22</td>
<td>Sunil Dehipawala, Vazgen Shekoyan, Haishen Yao – Queensborough Community College</td>
<td>Using Mathematics Review to Enhance Problem Solving Skills in General Physics Classes</td>
</tr>
<tr>
<td>2:15 2:30 61</td>
<td>Farshid Zabihian – West Virginia University Institute of Technology</td>
<td>Alternative Approach to Teach Gas Turbine Based Power Cycles</td>
</tr>
<tr>
<td>2:30 2:45</td>
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**Friday 4-Apr 1:30-2:45 pm**

<table>
<thead>
<tr>
<th>Session F-2-6</th>
<th>Data and Algorithms in Engineering III</th>
<th>CELT Room - Magnus Wahlstrom Library</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chair</td>
<td>Dr. Tooran Emami</td>
<td><a href="mailto:Tooran.Emami@usCGA.edu">Tooran.Emami@usCGA.edu</a> U.S. Coast Guard Academy</td>
</tr>
<tr>
<td>1:30 1:45 65</td>
<td>Richard Steven Colon, Prabir Patra, Khaled Eileitty – University of Bridgeport</td>
<td>Random Word Retrieval for Automatic Story Generation</td>
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</table>

**Saturday 5-Apr 9:45-11 am**

<table>
<thead>
<tr>
<th>Session S-1-2</th>
<th>Hands-on Learning in Engineering Education</th>
<th>500A - Magnus Wahlstrom Library</th>
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</thead>
<tbody>
<tr>
<td>Chair</td>
<td>Dr. Paul B. Crilly</td>
<td><a href="mailto:crillypb@gmail.com">crillypb@gmail.com</a> U.S. Coast Guard Academy</td>
</tr>
<tr>
<td>9:45 10:00 74</td>
<td>Joseph A. Levert SUNY Maritime College Andy Grosso – New York State Industries for the Disabled, Inc.</td>
<td>NYSID's Project CREATE: An Organizational Model for Service Learning through Assistive Technology Development</td>
</tr>
<tr>
<td>10:00 10:15 18</td>
<td>Paul B. Crilly – United States Coast Guard Academy</td>
<td>An Innovative Approach to Teaching An Undergraduate Electromagnetics, Antennas and Propagation Course</td>
</tr>
<tr>
<td>10:15 10:30 13</td>
<td>Thair Jamal Khdour, Shaima Salem – ABAQA Applied University</td>
<td>The effects of integrating knowledge management with E-Learning systems</td>
</tr>
<tr>
<td>10:30 10:45 97</td>
<td>Shanon Reckinger, Blanca Acu, Katherine Fitz – Fairfield University</td>
<td>Ocean Circulation in a Rotating Tank: An Outreach Project in Fluid Dynamics</td>
</tr>
<tr>
<td>10:45 11:00</td>
<td>Closing Remarks - END OF SESSION</td>
<td></td>
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</tbody>
</table>
### Professional Papers Program

#### Saturday 5-Apr 9:45-11 am

**Session S-1-3**

**Wireless Systems**

500B - Magnus Wahlstrom Library

**Chair**

Dr. Shankar Krishnan

**Session S-1-4**

**Quantitative Methods in Engineering and Education II**

500C - Magnus Wahlstrom Library

**Chair**

Dr. John I. Finnie

**Session S-1-5**

**Engineering Education Tools and Methods II**

500D - Magnus Wahlstrom Library

**Chair**

Prof. Francis Hopcroft

---

**Saturday 5-Apr 9:45-11 am**

**Session S-1-3**

**Wireless Systems**

9:45 10:00 53 Abdelrahman Elleithy, Gonhsin Liu, Varun Pande - University of Bridgeport

Theoretical versus Practical Results of an Advanced Power Model used in Communications of Wireless Sensor Networks

10:00 10:15 51 Abrar Mohammed Alajlan - University of Bridgeport

High-Level Abstractions in Wireless Sensor Networks: Status, Taxonomy, Challenges, and Future Directions

10:15 10:30 75 Abdul Razaque - University of Bridgeport

Pheromone Termite (PT) Model to provide Robust Routing over WSNs

10:30 10:45 40 Ali M Eliashidi - University of Business and Technology

Performance Analysis of WDM-PON FTTH Using Different Pulse Shapes at 10 Gbps and 20 Gbps

10:45 11:00 Closing Remarks - END OF SESSION

---

**Saturday 5-Apr 9:45-10:45 am**

**Session S-1-4**

**Quantitative Methods in Engineering and Education II**

9:45 10:00 101 Syed S Rizvi, Khaled Elleithy, Mustafa Khan - University of Bridgeport

An Opportunistic Frequency Channels Selection Scheme for Interference Minimization

10:00 10:15 64 Arafat Abu Mallouh, Khaled M Elleithy, Zakariya Qawaqneh, Ramadhan J Mstafa, Adwan Alanazi - University of Bridgeport

EM-SEP: An Efficient Modified Stable Election Protocol

10:15 10:30 41 Islam A Ashry - University of Business and Technology

Investigating the Performance of Apodized Fiber Bragg Gratings for Sensing Applications

10:30 10:45 52 John Finnie - University of Massachusetts

Does the Birkbeck type bedload sediment trap effect local flow velocity?

10:45 11:00 59 Tristan Cowan, Cheryl Li - University of New Haven

Design Requirements for an ROV for Marine Science Education

10:45 11:00 Closing Remarks - END OF SESSION

---

**Saturday 5-Apr 9:45-11 am**

**Session S-1-3**

**Wireless Systems**

9:45 10:00 54 Omar Yahya, Miad Faezipour - University of Bridgeport

Automatic Detection and Classification of Acoustic Breathing Cycles

10:00 10:15 17 Anatoliy Gordonov - The College of the Staten Island/ CUNY

The Cost of Preventing a Buffer Overflow

10:15 10:30 67 Arafat Abu Mallouh, Khaled M Elleithy, Ramadhan Mstafa, Adwan Alanazi - University of Bridgeport

A Highly Secure Quantum Communication Scheme for Blind Signature using Qubits and Quutrits

10:30 10:45 57 Muhammad Wasmimuddin, Nnavarun Gupta - University of Bridgeport

Design and Implementation of Least Mean Square Adaptive Filter on Fetal Electrocardiography

10:45 11:00 Closing Remarks - END OF SESSION

---

**Saturday 5-Apr 9:45-10:45 am**

**Session S-1-6**

**Quantitative Methods in Engineering and Education III**

9:45 10:00 55 Mohammad Daneshzand, Reza Zoroofi, Miad Faezipour - University of Bridgeport

MR Image Assisted Drug Delivery in Respiratory Tract and Trachea Tissues Based on an Enhanced Level Set Method

10:00 10:15 68 Lile Yu, Jingyun Xiao, Xingguo Xiong, Prabir Patram - University of Bridgeport

A Magnetic Micropump with Tr-membrane Fully Differential Structure

10:15 10:30 37 Muneer Alshowkan, Khaled Elleithy - University of Bridgeport

Authenticated Multiparty Secret Key Sharing Using Quantum Entanglement Swapping

10:30 10:45 99 Xingguo Xiong, Hanyu Xie - University of Bridgeport

Authenticated Multiparty Secret Key Sharing Using Quantum MEMS Dual-mode Electrostatically Actuated Micromirror

10:45 11:00 Closing Remarks - END OF SESSION

End of Schedule.
# Student Papers Program

## Friday 4-Apr 11:15am -12:30 pm

<table>
<thead>
<tr>
<th>Session SFA-1</th>
<th>Engineering Education - I</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chair</td>
<td>Frank Kuchinski</td>
</tr>
<tr>
<td>Time</td>
<td>11:15 - 11:30</td>
</tr>
<tr>
<td>Speaker</td>
<td>Ketul B Shah, Aritra Ghosh, Md Naim Hossain, Young Lee – Texas A&amp;M University-Kingsville</td>
</tr>
<tr>
<td>Title</td>
<td>Enhancing Engineering Educational Using Virtual Lab Technology</td>
</tr>
<tr>
<td>Time</td>
<td>11:30 - 11:45</td>
</tr>
<tr>
<td>Speaker</td>
<td>Katherine Aho, Kavitha Chandra, Ed Roberts – University of Massachusetts Lowell</td>
</tr>
<tr>
<td>Title</td>
<td>Introducing programming into the physics curriculum at Haverhill High School using the R language</td>
</tr>
<tr>
<td>Time</td>
<td>11:45 - 12:00</td>
</tr>
<tr>
<td>Speaker</td>
<td>Carli D. Flynn, Cliff I. Davidson, Sharon Dotger – Syracuse University</td>
</tr>
<tr>
<td>Title</td>
<td>Engineering Student Misconceptions about Rate and Accumulation Processes: Preliminary Evidence for the Development of the Rate and Accumulation Concept Inventory</td>
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## Friday 4-Apr 11:45am -12:30 pm

<table>
<thead>
<tr>
<th>Session SFA-4</th>
<th>Renewable Energy - I</th>
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<tbody>
<tr>
<td>Chair</td>
<td>Dr. Hassan Bajwa</td>
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<tr>
<td>Time</td>
<td>11:15 - 11:30</td>
</tr>
<tr>
<td>Speaker</td>
<td>Matthew Foley, Matthew Janiga, John Adams, Yan Varun Pande, Jayanta Paul, Manuel Curillo, Jani Macari Pallis – University of Bridgeport</td>
</tr>
<tr>
<td>Title</td>
<td>Design and Implementation of a Pure Sine Wave Single Phase Inverter for Photovoltaic Applications</td>
</tr>
<tr>
<td>Time</td>
<td>11:30 - 12:15</td>
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<tr>
<td>Speaker</td>
<td>Mohamed A. Ghalib, Yasser S. Abdalla, R. M. Mostafa – Beni-Suef University</td>
</tr>
<tr>
<td>Title</td>
<td>Self Sustaining Solar Powered Cansat</td>
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## Friday 4-Apr 11:45am -12:30 pm

<table>
<thead>
<tr>
<th>Session SFA-5</th>
<th>Robotics - I</th>
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<tbody>
<tr>
<td>Chair</td>
<td>Yakov Toporovsky</td>
</tr>
<tr>
<td>Time</td>
<td>11:15 - 12:15</td>
</tr>
<tr>
<td>Speaker</td>
<td>Tamer Abukhalil, Madhav Patil – University of Bridgeport</td>
</tr>
<tr>
<td>Title</td>
<td>The Design and Fabrication of an Upright Collapsible Transport System For Pushing Children</td>
</tr>
<tr>
<td>Time</td>
<td>11:30 - 12:00</td>
</tr>
<tr>
<td>Speaker</td>
<td>Zachary Boorman, Richard Freitas, Kristie Kordana, Adam Stanley – Roger Williams University</td>
</tr>
<tr>
<td>Title</td>
<td>Object Tracking Using Autonomous Quad Copter</td>
</tr>
<tr>
<td>Time</td>
<td>11:45 - 12:00</td>
</tr>
<tr>
<td>Speaker</td>
<td>Carlos A. Munoz – University of Bridgeport</td>
</tr>
<tr>
<td>Title</td>
<td>Robotic Artist- Automated Picture Portrait</td>
</tr>
<tr>
<td>Time</td>
<td>12:00 - 12:15</td>
</tr>
<tr>
<td>Speaker</td>
<td>Abdulrahman Alkhodairy, Sarosh Patel – University of Bridgeport</td>
</tr>
<tr>
<td>Title</td>
<td>Solar Powered Charging Station</td>
</tr>
<tr>
<td>Time</td>
<td>12:15 - 12:30</td>
</tr>
<tr>
<td>Speaker</td>
<td>Solar Powered Charging Station</td>
</tr>
<tr>
<td>Title</td>
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<tr>
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<th>Topic</th>
<th>Room</th>
<th>Chair</th>
<th>Abstract</th>
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<tbody>
<tr>
<td>11:15</td>
<td>SFA-10</td>
<td>Computer Science and Engineering - I</td>
<td>Team Meeting Room 2 - Magnus Wahlstrom Library</td>
<td>Dr. Carolyn Sher DeCusatis</td>
<td>New York City College of Technology - Efficient Critical System Event Recognition and Prediction in Cloud Computing Systems</td>
</tr>
<tr>
<td>11:45</td>
<td>SFA-12</td>
<td>Material Science and Biochemistry</td>
<td>Team Meeting Room 3 - Magnus Wahlstrom Library</td>
<td>Dr. Carolyn Sher DeCusatis</td>
<td>New York City College of Technology - Efficient Critical System Event Recognition and Prediction in Cloud Computing Systems</td>
</tr>
<tr>
<td>12:15</td>
<td>SFA-13</td>
<td>Manufacturing System Coordinated Optimization Model and Its Applications</td>
<td>Team Meeting Room 4 - Magnus Wahlstrom Library</td>
<td>Dr. Carolyn Sher DeCusatis</td>
<td>New York City College of Technology - Efficient Critical System Event Recognition and Prediction in Cloud Computing Systems</td>
</tr>
</tbody>
</table>
# Student Papers Program

## Friday 4-Apr 11:15am - 12:30 pm

### Session SFA-11

**Mechanical System Design - I**

- **12:00** 253 – Carlson Hall
  - **11:15** Mohamed Tayseer, Fouad Zoghieb, Ismail Alcheikh and Mohammad N.S. Awadallah – Petroleum Institute, Abu Dhabi, UAE
  - **Social Network: Academic and Social impact on college student**

### Closing Remarks - END OF SESSION

**12:15 12:30**

**Chair** Amos St. Germain

- **stgermaina@wit.edu**
- Wentworth Institute of Technology

## Friday 4-Apr 11:15am - 12:30 pm

### Session SFA-12

**Biomedical Engineering**

- **12:00** 108 – Carlson Hall
  - **11:15** Nicholas S. Rosasco, Dane Brown – Towson University, US Naval Academy
  - **Digital Freedom Fighting: An Interdisciplinary Science and Engineering Education Module**

### Closing Remarks - END OF SESSION

**12:15 12:30**

**Chair** Dr. Christopher J. Brigham

- **cbrigham@umassd.edu**
- University of Massachusetts - Dartmouth

## Friday 4-Apr 11:15am - 12:30 pm

### Session SFA-2

**Engineering Education - I**

- **3:00** 500A - Magnus Wahlstrom Library
  - **3:00 3:15** Varun Pande, Jayanta Paul, Manuel Curillo, Jani Macari Pallis – University of Bridgeport
  - **Dicosat-Research Satellite for a 5th grader**

### Closing Remarks - END OF SESSION

**4:00 4:15**

**Chair** Dr. Sunil Dehipawala

- **sdehipawala@qcc.cuny.edu**
- The City University of New York

## Friday 4-Apr 11:15am - 12:30 pm

### Session SFB-1

**Engineering Education - II**

- **3:00** Discovery Pavilion - Magnus Wahlstrom Library
  - **3:00 3:15** Athul Jose, M Pandi – Anna University, Chennai, India
  - **An Advanced Nelder Mead Simplex Method for Clustering of Gene Expression Data**

### Closing Remarks - END OF SESSION

**12:15 12:30**

**Chair** Athul Jose

- **mpandi@annauniv.edu**
- Anna University, Chennai, India

## Friday 4-Apr 11:15am - 12:30 pm

### Session SFB-2

**Engineering Education - III**

- **3:00** 500A - Magnus Wahlstrom Library
  - **3:00 3:15** Mohammadjafar Esmaeili, Ali Eydgahi – Eastern Michigan University
  - **The Relationship of Active Learning Based Courses and Student Motivation for Pursuing STEM Classes**

### Closing Remarks - END OF SESSION

**4:00 4:15**

**Chair** Athul Jose

- **mpandi@annauniv.edu**
- Anna University, Chennai, India

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**Student Paper Friday Afternoon Session (April 4, 2014)**

### Friday 4-Apr 3:00pm - 4:15pm

**Session SFB-1**

**Engineering Education - II**

- **3:00** Discovery Pavilion - Magnus Wahlstrom Library
  - **3:00 3:15** Nicholas S. Rosasco, Dane Brown – Towson University, US Naval Academy
  - **Digital Freedom Fighting: An Interdisciplinary Science and Engineering Education Module**

### Closing Remarks - END OF SESSION

**3:15 3:30**

**Chair** Nicholas S. Rosasco

- **nrosasco@towson.edu**
- Towson University, US Naval Academy

## Friday 4-Apr 3:00pm - 4:15pm

### Session SFB-2

**Engineering Education - III**

- **3:00** 500A - Magnus Wahlstrom Library
  - **3:00 3:15** Athul Jose, M Pandi – Anna University, Chennai, India
  - **An Advanced Nelder Mead Simplex Method for Clustering of Gene Expression Data**

### Closing Remarks - END OF SESSION

**3:15 3:30**

**Chair** Athul Jose

- **mpandi@annauniv.edu**
- Anna University, Chennai, India

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**Student Papers Program**
### Student Papers Program

<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
<th>Session</th>
<th>Location</th>
<th>Chair</th>
<th>Speaker(s)</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Friday 4-Apr</strong></td>
<td><strong>3:00pm - 4:15pm</strong></td>
<td>SFB-3</td>
<td>Team Meeting Room 1 - Magnus Wahlstrom Library</td>
<td>Dr. David McLaughlin</td>
<td>Damien Laird, Jack Price, Ioannis A. Raptis (University of Massachusetts Lowell)</td>
<td>Spider-Bots: A Low Cost Cooperative Robotics Platform</td>
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<td>Madhav D Patil, Tamer Abuakhali (University of Bridgeport)</td>
<td>Design and Implementation of Heterogeneous Robot Swarm</td>
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<td>Timothy A. Zimmerman (University of Hartford)</td>
<td>Neural Network Based Obstacle Avoidance Using Simulated Sensor Data</td>
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#### Closing Remarks - END OF SESSION

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<td>Friday 4-Apr</td>
<td>3:00pm - 4:15pm</td>
<td>SFB-4</td>
<td>Team Meeting Room 1 - Magnus Wahlstrom Library</td>
<td>Dr. Shankar Krishnan</td>
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<td>Friday 4-Apr</td>
<td>3:00pm - 4:15pm</td>
<td>SFB-5</td>
<td>Team Meeting Room 1 - Magnus Wahlstrom Library</td>
<td>Dr. Paul Crilley</td>
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<td>Friday 4-Apr</td>
<td>3:00pm - 4:15pm</td>
<td>SFB-6</td>
<td>Team Meeting Room 1 - Magnus Wahlstrom Library</td>
<td>Dr. Kavitha Chandra</td>
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<td>Friday 4-Apr</td>
<td>3:00pm - 4:15pm</td>
<td>SFB-7</td>
<td>Team Meeting Room 1 - Magnus Wahlstrom Library</td>
<td>Dr. Tracie Ferreira</td>
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### Student Papers Program

**Friday, 4-Apr 3:00pm - 4:15pm**

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<thead>
<tr>
<th>Session SFB-8</th>
<th>Control System</th>
<th>CELT Room - Magnus Wohlbricht Library</th>
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<tbody>
<tr>
<td>Chair</td>
<td>Dr. Tara Kulkarni</td>
<td><a href="mailto:tkulkarn@norwich.edu">tkulkarn@norwich.edu</a></td>
</tr>
<tr>
<td></td>
<td>Sk Hasan Hafizul Haque, H. M. Imran Hassan, S. M. Abul Hossein - University of Bridgeport</td>
<td>Comparison of Control System Using PLC &amp; PID</td>
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<td>Christopher Palmieri, Judith Hoynmans, Cole Gingrich, Tooran Emami, Aaron Dahlen, and Joseph Staier – United States Coast Guard Academy</td>
<td>Electrical Engineering Capstone Project on Dynamic Position System</td>
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<td>Suleman Belal Kazi, Sherjeel Sikander, Sadia Yousafzai, Suleman Mazhar – Ghulam Ishaq Khan Institute, Pakistan</td>
<td>Fall Detection Using Single Tri-Axial Accelerometer</td>
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**Closing Remarks - END OF SESSION**

### Friday, 4-Apr 3:00pm - 4:15pm

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<tr>
<th>Session SFB-9</th>
<th>Hardware Design</th>
<th>153 – Carlson Hall</th>
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<tbody>
<tr>
<td>Chair</td>
<td>Dr. Christopher J. Brigham</td>
<td><a href="mailto:cbrigham@umassd.edu">cbrigham@umassd.edu</a> - University of Massachusetts - Dartmouth</td>
</tr>
<tr>
<td></td>
<td>Robert A. Hilton – University of Hartford</td>
<td>Reverse Engineering the Volcano CAN BUS Framework for Engine Control Unit Programming</td>
</tr>
<tr>
<td></td>
<td>Thy Dinh, Bryan Slater, Farshid Zabihian - West Virginia University Institute of Technology</td>
<td>NASA Space Flight Design Challenge</td>
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<td>Sundaes Zafar, Aparicio Carranza – New York City College of Technology</td>
<td>Motion Detecting Camera Security System with Email Notifications and Live Streaming Using Raspberry Pi</td>
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<tr>
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<td>Jian Chen, Xingguo Xiong, Mirza Rishad Hasan – University of Bridgeport</td>
<td>PSPICE Implementation of an 8-bit Low Power Energy Recovery Full Adder</td>
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</table>

**Closing Remarks - END OF SESSION**

### Friday, 4-Apr 3:00pm - 4:15pm

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<th>Session SFB-10</th>
<th>Engineering Design Project</th>
<th>252 – Carlson Hall</th>
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<tbody>
<tr>
<td>Chair</td>
<td>Dr. Syed Rizvi</td>
<td><a href="mailto:ssr16@psu.edu">ssr16@psu.edu</a> The Pennsylvania State University - Altoona</td>
</tr>
<tr>
<td></td>
<td>Bryan Slater, Thy Dinh, Braden Frazier, Farshid – Zabihian, West Virginia University Institute of Technology</td>
<td>Comparative Analysis of Electric Motorcycle</td>
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</table>

**Closing Remarks - END OF SESSION**

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### Friday, 4-Apr 3:00pm - 4:15pm

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<th>Session SFB-11</th>
<th>Computer Science and Engineering - II</th>
<th>253 – Carlson Hall</th>
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<tbody>
<tr>
<td>Chair</td>
<td>Dr. Carolyn Sher DeCusatis</td>
<td><a href="mailto:csher-decusatis@citytech.cuny.edu">csher-decusatis@citytech.cuny.edu</a> New York City College of Technology</td>
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<tr>
<td></td>
<td>Tiago Martins Ribeiro, Raimundo Pereira da Cunha Neto – CEUT</td>
<td>Hadoop Based Enhanced Cloud Architecture</td>
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<td>Hamoud Alshammari, Hassan Bajwa, Jeongkyu Lee – University of Bridgeport</td>
<td>Clouds and Cloud Shadows Removal from Infrared Satellite Images in Remote Sensing System</td>
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<td>Brett Ferris, Jay Stahle, Ibrahim Baggi – University of New Haven</td>
<td>The Effectiveness of Built In Firewalls</td>
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**Closing Remarks - END OF SESSION**

### Friday, 4-Apr 3:00pm - 4:15pm

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<th>Session SFB-12</th>
<th>Mechanical System Design - II</th>
<th>108 – Carlson Hall</th>
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<tbody>
<tr>
<td>Chair</td>
<td>Ikeuchi Katsushi</td>
<td><a href="mailto:ki@cvl.iis.u-tokyo.ac.jp">ki@cvl.iis.u-tokyo.ac.jp</a> University of Tokyo</td>
</tr>
<tr>
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<td>Yuanxiong Luo, Jeremy (Zheng) Li – University of Bridgeport</td>
<td>Automated Mechanical System Design to Insert the Copper Wire into the Plastic Block</td>
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<td>Juan Suarez, Edson Borja – WVU Tech</td>
<td>Modeling Iced Bio-Bandage Design for Skin Burns</td>
</tr>
<tr>
<td></td>
<td>Arar Alkhader, Junling Hu, Akimwumi Akinrinmimi, Prabr Patra, Xingguo Xiong – University of Bridgeport</td>
<td>A Multidisciplinary Approach to Retrofitting a Vintage Pinball Machine with a Unique Fog Generation System</td>
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**Closing Remarks - END OF SESSION**

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### Friday, 4-Apr 3:00pm - 4:15pm

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<th>Session SFB-13</th>
<th>Control Systems Design</th>
<th>254 – Carlson Hall</th>
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<td>Chair</td>
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**Closing Remarks - END OF SESSION**
### Student Paper Saturday Session (April 5, 2014)

**Session SSA-1**

**Design and Simulation**

**Chair:** Dr. Hongwei Sun

**Discovery Pavilion - Magnus Wahlstrom Library**

- **11:15**
  - **11:30** 256 Rahmi Allamadani, Feng Chen - University of Hartford
  - **11:45** 225 Yang Zhai, Jeremy (Zheng) Li - University of Bridgeport

- **12:00**
  - **12:15** 236 Shiangyu Lin, Junyi Zou, Xingguo Xiong, Prabir Patra - University of Bridgeport

**12:15** Closing Remarks - END OF SESSION

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**Session SSA-2**

**Wireless Communication - II**

**Chair:** Dr. Paul Crilly

**Team Meeting Room 1 - Magnus Wahlstrom Library**

- **11:15**
  - **11:30** 206 Breno Fabrício Lira Melo Sousa, Raimundo Pereira da Cunha Neto - CEUT

- **11:30**
  - **11:45** 228 Kishan Gutta, Madhav Pati - University of Bridgeport

- **11:45**
  - **12:00** 263 Samuel Erskine, Hassan Bajwa - University of Bridgeport

**12:00**

- **12:15** 199 Ashenafi Lambebo, Sasan Haghani

**12:15** Closing Remarks - END OF SESSION

---

**Session SSA-3**

**Hardware Design**

**Chair:** Dr. Linfeng Zhang

**500A - Magnus Wahlstrom Library**

- **11:15**
  - **11:30** 246 Borui Li, Xiaowei Yu, Bo Zhang, Xingguo Xiong, Lawrence Hmurck - University of Bridgeport

- **11:30**
  - **11:45** 189 Fabio Casagrande, Jingyi Wang, Thomas Marzec - New York Institute of Technology

**11:45**

- **12:00** 232 Ziyao Qi, Xingguo Xiong, Linfeng Zhang, Md Tauseef Rasat - University of Bridgeport

**12:00**

- **12:15** 247 Hao Dong, Xingguo Xiong, Xuan Zhang - University of Bridgeport

**12:15** Closing Remarks - END OF SESSION

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**Session SSA-4**

**Robotics - III**

**Chair:** Dr. Tooran Emami

**500B - Magnus Wahlstrom Library**

- **11:15**
  - **11:30** 260 Abdulla Fawzi Almomani, Faisal Miqdadi, Mustafa Hassanin, Mustafa Samy, Mohammed Awadallah - The Petroleum Institute, Abu Dhabi, UAE

- **11:30**
  - **11:45** 102 Jordan Cox, Derek Burdette, Christopher Shaffer, Farshid Zabihian - West Virginia Institute of Technology

- **11:45**
  - **12:00** 188 Shanique Jiles - University of Hartford

**12:00**

- **12:15** 205 Andrew Thaxton, Farshid Zabihian - West Virginia Institute of Technology

**12:15** Closing Remarks - END OF SESSION

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**Session SSA-5**

**Big Data**

**Chair:** Dr. Miad Faezipour

**500C - Magnus Wahlstrom Library**

- **11:15**
  - **11:30** 210 Gautam Siwach, Amir Esmailpour - University of New Haven

- **11:30**
  - **11:45** 212 Mohammad Naimur Rahman, Amir Esmailpour - University of New Haven

- **11:45**
  - **12:00** 215 Ye Zhou, Amir Esmailpour - University of New Haven

**12:00**

- **12:15** 216 Santoshi Kalyani Balasubramanian, Amir Esmailpour - University of New Haven

**12:15** Closing Remarks - END OF SESSION
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<tbody>
<tr>
<td>SSA-6</td>
<td>5-Apr</td>
<td>11:15-12:30 pm</td>
<td>Team Meeting Room 6 - Magnus Wahlstrom Library</td>
<td>Dr. Kai-tak Wan</td>
<td>Team Building: Early Detection of Cancer Utilizing Antigen Concentrations in the Saliva</td>
<td>Andrew Martin, Christian Bach - University of Bridgeport</td>
</tr>
<tr>
<td>SSA-7</td>
<td>5-Apr</td>
<td>11:15-12:30 pm</td>
<td>College Education</td>
<td>Dr. Orla Smyth LoPiccolo</td>
<td>How Do Academic Issues Affect College Students' Performance?</td>
<td>Mohammad H. Hashem, Ahmed A. Al Khawaja, Saleh O. Edhah, Usman I. Hashmi and Al Hareth S. Al Akil - The Petroleum Institute, Abu Dhabi, UAE</td>
</tr>
<tr>
<td>SSA-8</td>
<td>5-Apr</td>
<td>11:15-12:30 pm</td>
<td>Marketing</td>
<td>Dr. Christian Bach</td>
<td>Building a Strong Brand and Managing Brand</td>
<td>Nan Feng - University of Bridgeport</td>
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<tr>
<td>SSA-9</td>
<td>5-Apr</td>
<td>11:15-12:30 pm</td>
<td>Computer Science Survey</td>
<td>Dr. Junling Hu</td>
<td>Technological Factors to Improve the Performance of Marketing Strategy</td>
<td>Sultan Alghamdi, Christian Bach - University of Bridgeport</td>
</tr>
<tr>
<td>SSA-10</td>
<td>5-Apr</td>
<td>11:15-12:30 pm</td>
<td>Technology Management - II</td>
<td>Dr. Buket Barkana</td>
<td>ERP Systems and its Effects on Organizations: A Proposed Scheme for ERP Success</td>
<td>Abdalraouf Hassan, Christian Bach - University of Bridgeport</td>
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<tr>
<td>SSA-11</td>
<td>5-Apr</td>
<td>11:15-12:30 pm</td>
<td>Technology Management - III</td>
<td>Teresa Piliouras</td>
<td>Improvement in the performance of Design-Science research in Information Systems</td>
<td>Remah Alshinina, Christian Bach - University of Bridgeport</td>
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</tbody>
</table>
11:30 11:45 109 May Alzawawi – University of Bridgeport  
Drivers and Obstacles for Creating Sustainable Supply Chain Management and Operations

11:45 12:00 120 Aziz Obaid Alotaibi, Christian Bach – University of Bridgeport  
Consumer Awareness and Potential Market for e-Commerce in Saudi Arabia: Challenges and Solutions

12:00 12:15 108 Amer H. Daggag – University of Bridgeport  
Greening Information Communication Technologies in Small-Medium Sized Companies

12:15 12:30 Closing Remarks - END OF SESSION

Saturday 5-Apr 11:15am -12:30 pm

Session SSA-12 Technology Management-IV  253 – Carlson Hall
Chair Arven Saunders asaunders@SIKORSKY.com Sikorsky Aircraft

11:15 11:30 38 Longyin Sun, Christian Bach – University of Bridgeport  
Influencing Factors in the Decision and Management Sciences

11:30 11:45 48 Mohamed Ben Haj Frej, Christian Bach – University of Bridgeport  
Robust Prediction for Intra and Inter Handoff (RPIH) Process over CDMA2000

11:45 12:00 54 Ruzanna Davtyan – University of Bridgeport  
Decision Making Analysis on Parking Meters

12:00 12:15 56 Ruzanna Davtyan – University of Bridgeport  
Contextual Learning

12:15 12:30 Closing Remarks - END OF SESSION

Saturday 5-Apr 11:15am -12:30 pm

Session SSA-13 Technology Management-V  108 – Carlson Hall
Chair Dr. Nelson Ngoh ngoh@bridgeport.edu University of Bridgeport

11:15 11:30 146 Faria Afroz, Christian Bach – University of Bridgeport  
Improvement in Drug Delivery System for Parkinson's Disease

11:30 11:45 142 Muhammad Hashim, Israr Khan Yousafza – Government College of Management Sciences Peshawar, Pakistan  
The Impact of Time Flexibility on Employees Performance

11:45 12:00 158 M. Ali-ud-din Khan, Israr Ahmad – University of Peshawar  
An Empirical Study into the Relation of Income and Consumption Using Cross-Sectional Data

12:00 12:15 159 Muhammad Aliuddin Khan, Muhammad Hashim – University of Peshawar  
Organizational Change Case Study of General Motors

12:15 12:30 Closing Remarks - END OF SESSION

End of Schedule.
Abrar Alajlan, Khaled Elleithy, Varun Pande
University of Bridgeport

14 G Reconfigurable Multi-Input Multi-Output (MIMO) Micropump for Micro Drug Delivery Application
Sk Hasan Hafizul Haque, Xingguo Xiong
University of Bridgeport

15 G A Thermopneumatic Micropump with Double-Membrane Structure for Improved Pumping Rate
Kai Liu, Xingguo Xiong
University of Bridgeport

16 G Novel Steganography over HTML Code
Ammar Odeh, Khaled Elleithy, Miad Faezipour, Eman Abdel Fattah
University of Bridgeport

17 G A Complete BioMEMS Lab-on-a-Chip for Disease Diagnosis
Jungyi Zou, Xingguo Xiong, Prabir Patra
University of Bridgeport

18 G COMSOL Simulation of MEMS Piezoelectrically Actuated Micropump
Wei Zhan, Xingguo Xiong, Prabir Patra, Junling Hu, Chengsi Li
University of Bridgeport

19 G Adaptive Equalization: LMS, RLS and CMA
Badr Alshehry, Ammar Odeh, Eman Abdelfattah
University of Bridgeport

20 G Enhanced Eye Gaze Direction Classification Using a Combination of Face Detection, CHT and SVM
Arshey Alhayafah, Miad Faezipour
University of Bridgeport

21 G Robust Prediction For Intra and Inter Handoff (Rpihl) Process Over CDMA2000
Mohamed Ben Haj Frej, Christian Bach
University of Bridgeport

22 G Environmentally Powered Atmospheric Probe
Jayanta Paul, Varun Pande, Manuel Curillo, Ephraim Joseph, Jani Marcarli Pullus
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