



**IEEE NEWS FOR APRIL 2011 and late March**

**Jacob Z. Schanker, P.E., Newsletter Chair**  
Rochester IEEE home page at: <http://rochester.r1.ieee.org>

(Always check the web PDF edition for late changes and additions)

**Rochester Section Meeting - Tuesday, April 5, 2010**

The next Rochester Section business meeting is on Tuesday, April 5, 2010 at Noon, at the Shanghai Restaurant, 2920 West Henrietta Road, just south of the intersection with Brighton-Henrietta Town Line Road.

Any IEEE member is welcome to attend and to participate, or just to observe. Lunch is only \$3 for IEEE members. No reservation or RSVP is needed, just show up.

**Annual Joint Chapters Meeting is Tuesday, March 29**

Tuesday, March 29, 2011 at the RIT Inn & Conference Center, 5257 W. Henrietta Road.

Registration and refreshment:	4:30 – 5:30 PM
Chapter Technical Presentations:	5:30 – 6:30 PM
Networking (cash bar):	6:30 – 7:00 PM
Dinner & Keynote Presentation:	7:00 – 9.30 PM

The keynote speaker will be Stephen D. Senturia, Professor of Electrical Engineering, Emeritus, Massachusetts Institute of Technology, Former Chairman and Chief Technology Officer, Polychromix. His presentation will be "*MEMS: Where Everything You Ever Learned Is Relevant.*"

**RIT IEEE Computer Society Speaker at Joint Chapters Meeting**

**Title:** Human in the Loop: Scribble-Based Interactive 3D Reconstruction

**Speaker:** Dr. Tsuhan Chen, David E. Burr Professor of Engineering, Electrical and Computer Engineering, Director Cornell University

**Date:** Tuesday, March 29, 2011

**Time:** 5:30 p.m. to 6:30 p.m.

**Location:** RIT Inn and Conference Center, 5257 West Henrietta Road, West Henrietta, NY 14586

**Computer Society announcements and venue information:**



<http://ewh.ieee.org/r1/rochester/computer>

**Cost:** Free. Open to IEEE members and non-members.

**Note:** This event is part of the [Rochester Section Joint Chapters Meeting](#), which does have a fee associated with the dinner and keynote address.

**Abstract:** Recent development in 3D reconstruction has shown that human interactions can assist computer algorithms where they are unreliable. We present an interactive 3D reconstruction algorithm which renders a planar reconstruction of the scene using simple user interactions in the form of scribbles. In addition, the algorithm can overlay a volumetric rendering of occluding objects. Using simple user interactions in the form of scribbles, the algorithm propagates scene geometry, performs cosegmentation of input images, and renders a complete and pleasing reconstruction of the scene along with volumetric rendering of foreground objects.

**Speaker Biography:** Tsuhan Chen has been with the School of Electrical and Computer Engineering, Cornell University, Ithaca, New York, since January 2009, where he is Professor and Director. From October 1997 to December 2008, he was with the Department of Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, Pennsylvania, as Professor and Associate Department Head. From August 1993 to October 1997, he worked at AT&T Bell Laboratories, Holmdel, New Jersey. He received the M.S. and Ph.D. degrees in electrical engineering from the California Institute of Technology, Pasadena, California, in 1990 and 1993, respectively. He received the B.S. degree in electrical engineering from the National Taiwan University in 1987.

Tsuhuan served as the Editor-in-Chief for IEEE Transactions on Multimedia in 2002-2004. He also served in the Editorial Board of IEEE Signal Processing Magazine and as Associate Editor for IEEE Trans. on Circuits and Systems for Video Technology, IEEE Trans. on Image Processing, IEEE Trans. on Signal Processing, and IEEE Trans. on Multimedia. He co-edited a book titled Multimedia Systems, Standards, and Networks. Tsuhan received the Charles Wilts Prize at the California Institute of Technology in 1993. He was a recipient of the National Science Foundation CAREER Award, from 2000 to 2003. He received the Benjamin Richard Teare Teaching Award in 2006, and the Eta Kappa Nu Award for Outstanding Faculty Teaching in 2007. He was elected to the Board of Governors, IEEE Signal Processing Society, 2007-2009, and a Distinguished Lecturer, IEEE Signal Processing Society, 2007-2008. He is a member of the Phi Tau Phi Scholastic Honor Society, and Fellow of IEEE.

## **IEEE Geoscience and Remote Sensing Society Meeting at JCM**

**Title:** Remote Sensing of Geohazards in the African Rift Valley

**Speaker:** Dr. Anthony Vodacek, Rochester Institute of Technology Chester F. Carlson Center for Imaging Science, Digital Imaging and Remote Sensing Group

**Abstract:** Earthquakes, volcanoes, landslides, and even a gas-charged lake make the African Rift Valley a region of intense environmental change and many geophysical hazards. This talk describes several of these hazards and how a variety of remote sensing methods operating in the optical, infrared, and microwave spectral regions can be applied to assess and monitor these complex systems.

**Biography:** Anthony Vodacek is an Associate Professor in the Carlson Center for Imaging Science at the Rochester Institute of Technology. Vodacek obtained his B.S. from the University of Wisconsin-Madison and his M.S. and Ph.D. from Cornell University. A member of the Digital Imaging and Remote Sensing Laboratory, his research interests lie across a wide variety of environmental remote sensing topics and application areas. His recent work has focused on feature extraction from multi- and hyperspectral images and remote sensing data assimilation in environmental models. Application areas for his work include monitoring wildland fires, large lake water quality, and long term land cover change.



## **IEEE EMC and PSE Joint Chapter presentation at JCM March 29**

**Title:** EMC Susceptibility: Case Studies On Systemic Performance Verification and Best Design Practices

**Speaker:** Amy Rivera, Principal Engineer, AMR Product Consulting Inc.

**Abstract:** In recent years, Electromagnetic Compatibility (EMC) has been a focus of many regulations in the Medical, Informational Technology, Automotive, Aerospace and Defense industries due to inadvertent product performances. Accurate and timely transmission of digital data and electronic information is essential to the effectiveness and safety of electro-mechanical devices and systems. With the advancement in technology and proliferation of RF-generated wired and wireless devices, the integrity of data and information transmitted and product responses in a coexistent environment may be compromised. It is crucial to examine and demonstrate the immunity of a product from

potential electro-magnetic threats in the environment by definitive systemic performance verification.

**Speaker Biography:** Amy Rivera is principal at AMR Product Consulting Inc., a comprehensive Product Compliance Engineering Consultancy specializing in global compliance to EMC/EMI, Product Safety, and RoHS/WEEE regulations.

Previously, Amy was a Senior Electrical Engineer with Ortho-Clinical Diagnostics, a Johnson & Johnson company. She was responsible for all EMC/EMI and Product Safety Compliance Engineering activities within OCD. As a Subject-Matter-Expert, Amy provided consultancy to other Medical Device & Diagnostics and Consumer groups of J&J. Amy has over 20 years of hands-on product design, development, and testing experience in the Medical Device & Diagnostics, ITE, and Aerospace & Defense industries at several Fortune 100 & 500 companies. She has developed and successfully implemented numerous Design-for-Compliance strategies, training programs, and Quality Processes further advocating product reliability, efficiency, cost-effectiveness, timeliness to market, and sustainability.

Amy is *Process Excellence Six-Sigma* certified. She is an active member of the IEEE and the Society for Women Engineers(SWE).

## **IEEE Communications Society talk at the 2011 JCM March 29**

**Topic:** "Interdisciplinary Research in Networking: A Perspective from NSF"

**Speaker:** NSF program manager Dr. Sajal Das

## **IEEE EDS Chapter talk at Joint Chapters Meeting**

**Title:** Engineering Photovoltaics

**Speaker:** Santosh K. Kurinec

**Abstract:** Over the last several decades, photovoltaics (PV) has been an on again and off again type of technology for engineering community while scientific laboratories and niche industries worldwide have remained diligently committed in achieving higher efficiencies and lower costs. The economic and political will has been deferring photovoltaics as the technology for the future. The attention is on to PV once again and it is the time for engineering community to take the challenge that semiconductor industry took since the development of the first integrated circuit. The growth of innovative techniques that enabled the integrated circuit technology to become efficient in high volume manufacturing of extremely small and complex systems on large substrates sets up a sound base for the PV industry. Between the two, they share a common substrate – silicon and common thin film deposition techniques. Photovoltaic contrasts itself from CMOS in being relatively simpler in device physics, relaxed in lithography and particle contamination controls. However, it differentiates in applications that require large area end products, much larger than the flat panel displays, and at be available at lower costs. Even though the PV industry inherits an experienced workforce trained in defining and

following the roadmap driven by the Moore's Law, engineering education needs to address developing the next generation of PV engineers. The talk will discuss the principles and technology of emerging frontiers of PV and how semiconductor manufacturing can offer lessons and solutions.

**Biography:** Santosh K. Kurinec is a Professor of Electrical & Microelectronic Engineering and former Department Head of Microelectronic Engineering at Rochester Institute of Technology (RIT). She is a Visiting Scholar at IBM T.J. Watson Research Center, New York. She received Ph.D degree in Physics from University of Delhi, India. She came to the US to participate in the Alternative Energy Technology program funded by the USAID during the eighties. Prior to joining RIT in 1988, she was Assistant Professor of Electrical Engineering at Florida State University/Florida A & M University College of Engineering in Tallahassee, FL. Her current research activities include photovoltaics, non volatile memory, III-V on Si, tunnel devices, and magnetic thin films. She has been actively engaged in outreach for promoting engineering education. She is Fellow of IEEE, Member, NY Academy of Sciences, APS, Associate Editor of IEEE Transactions on Education and an IEEE EDS Distinguished Lecturer.

### **Congratulations to our three new Senior Members**

**Sean Garner** is a member of the Photonics Society.

**Eugene Saltzberg** is a member of the Product Safety Engineering, Vehicular Technology, and Electromagnetic Compatibility Societies.

**Andres Kwasinski** is a member of the Signal Processing and Communications Societies.

### **Rochester Section IEEE Scholarship Winners**

Congratulations to our 2011 Scholarship Winners, Christopher Decker and Praneeth Pulusani.

Christopher is a Computer Engineering Dual Degree (BS/MS) major at RIT. He is a member of RIT's student chapter of IEEE, and a member of the student branch of the IEEE Computer Society, where he held the position of chairman for two years and is currently serving as vice chairman. Christopher is also actively involved in the RIT Lutheran Campus Ministry where he serves as a peer minister and the Lutheran representative to the interfaith council. Since 2008, Christopher has had internships with GE Transportation, Air Force Research Labs and NavAir, along a current consulting position with Fort Wayne Appraisals. He hopes to return to the Air Force Research Labs upon graduation in 2012.

Praneeth Pulusani is a Computer Engineering major at RIT. Praneeth won the Xerox Award for Innovation and Information Technology, the NJIT Web Design Competition and the RIT Leadership award. He has also been on the dean's list every quarter at RIT.

Praneeth is a member of RIT's student branch of IEEE where he serves as webmaster. He is a member of the cultural organization OASIS and a volunteer for RIT Ambulance. On campus, Praneeth works as a supplemental instruction leader in computer science and was an orientation assistant. His internships include Salesforce.com, AT & T and the Institute of Marine and Coastal Sciences.



# 2011 Rochester Section Joint Chapters Meeting

March 29, 2011

RIT Inn & Conference Center, 5257 W. Henrietta Road

Registration and refreshment: 4:30 – 5:30 PM  
 Chapter Technical Presentations: 5:30 – 6:30 PM (please see presenters/titles below)  
 Networking (cash bar): 6:30 – 7:00 PM  
 Dinner & Keynote Presentation: 7:00 – 9.30 PM



## Keynote Speaker: Stephen D. Senturia

Professor of Electrical Engineering, Emeritus, Massachusetts Institute of Technology  
Former Chairman and Chief Technology Officer, Polychromix

### ***MEMS: Where Everything You Ever Learned Is Relevant***

On October 9, 2009, NASA crashed a rocket engine into the moon and then sent an instrument package into the crash zone to look for water in the plume of debris. On November 13, NASA announced the finding of “buckets of water.” The primary evidence was derived from spectra measured with a MEMS-based near-infrared spectrometer manufactured by Polychromix. The development of this spectrometer has roots dating all the way back to the work of Harvey Nathanson, Kurt Petersen, Henry Guckel, Roger Howe, and countless others. This talk will illustrate how the many threads of knowledge: electromechanical actuator design, material science, fluid mechanics, optical and optomechanical design, low-power electronics, advanced algorithm development, even supply-chain management – all contributed to this singular success. This is just one of many paradigms demonstrating how, when you are dealing with MEMS-enabled products, “everything you ever learned in your life is relevant.”

### Parallel Technical Presentations (5:30 – 6:30 PM)\*

<b><i>Geoscience and Remote Sensing Society</i></b>	Dr. Anthony Vodacek	Rochester Institute of Technology	Remote Sensing of Geohazards in the African Rift Valley
<b><i>Computer Society</i></b>	Prof. Tsuhan Chen,	Dir. SECE, Cornell U	Human in the Loop: Scribble-Based Interactive 3D Reconstruction.
<b><i>Signal Processing Society</i></b>	Prof. Andreas Savakis	Rochester Institute of Technology	Efficient Representations for Human Action Recognition and Tracking
<b><i>EDS</i></b>	Prof. Santosh K. Kurinec	Rochester Institute of Technology	Engineering Photovoltaics
<b><i>EMC/PSE</i></b>	Amy Rivera	AMR Product Consulting	EMC Susceptibility: Case Studies On Systemic Performance Verification and Best Design Practices
<b><i>Microwave Theory &amp; Techniques</i></b>	Donald McPherson	RF Design Manager, SRC, Inc.	Phased Array Radar Antenna Design Considerations
<b><i>Communications Soc.</i></b>	Dr. Sajal Das	NSF program manager	Interdisciplinary Research in Networking
<b><i>Technology Management Council</i></b>	Panelists: Ram Dhurjaty, Sam Ghosh, Steve Senturia, Mark Fiscella, Kerry Van Iseghem		Panel discussion: Mid career Entrepreneurship

\*No charge for attending technical presentations. Reservation / registration not required.

### Dinner Selections

***New York Strip Steak***

Ten Ounces, Peppercorn Rubbed with Roasted Sliced Portabella

***Or Cedar Plank Salmon***

Maple Bourbon Glaze

***Or Vegan Grilled Vegetable Napoleon***

Layers of Peppers, Eggplant and Portabella on Steamed Rice, Chimichurri Drizzle

### Reservations (required for dinner):

Register on-line (pay-pal accepted) or contact [reservation@ieee.rochester.ny.us](mailto:reservation@ieee.rochester.ny.us)

**Dinner:** \$25.00 (IEEE members), \$35.00 (Non-members), and \$10 for Student members.

**Further details and on-line registration at:** <http://rochester.r1.ieee.org/jc11>

*2011 IEEE JCM, Rochester Section*  
**Geoscience and Remote Sensing**

**March 29, 2011, 5.30pm – 6.30pm,**  
**RIT Inn & Conference Center, 5257 W. Henrietta Rd. Rochester, NY 14623**

*Remote Sensing of Geohazards in the  
African Rift Valley*

**By**

**Dr. Anthony Vodacek**  
Rochester Institute of Technology  
Chester F. Carlson Center for Imaging Science  
Digital Imaging and Remote Sensing Group

**Abstract:**

Earthquakes, volcanoes, landslides, and even a gas-charged lake make the African Rift Valley a region of intense environmental change and many geophysical hazards. This talk describes several of these hazards and how a variety of remote sensing methods operating in the optical, infrared, and microwave spectral regions can be applied to assess and monitor these complex systems.

**Biography:**

Anthony Vodacek is an Associate Professor in the Carlson Center for Imaging Science at the Rochester Institute of Technology. Vodacek obtained his B.S. from the University of Wisconsin-Madison and his M.S. and Ph.D. from Cornell University. A member of the Digital Imaging and Remote Sensing Laboratory, his research interests lie across a wide variety of environmental remote sensing topics and application areas. His recent work has focused on feature extraction from multi- and hyperspectral images and remote sensing data assimilation in environmental models. Application areas for his work include monitoring wildland fires, large lake water quality, and long term land cover change.







**Rochester Chapter of the  
IEEE Computer Society**



*presents*

## **Human in the Loop: Scribble-Based Interactive 3D Reconstruction**

by

**Dr. Tsuhan Chen**

**David E. Burr Professor of Engineering, Electrical and Computer Engineering Director  
Cornell University**

**Date:** Tuesday, March 29, 2011

**Time:** 5:30 p.m. to 6:30 p.m.

**Location:** RIT Inn and Conference Center, 5257 West Henrietta Road, West Henrietta, NY 14586

**Computer Society announcements and venue information:**

<http://ewh.ieee.org/r1/rochester/computer>

**Cost:** Free. Open to IEEE members and non-members.



**Note:** This event is part of the [Rochester Section Joint Chapters Meeting](#), which does have a fee associated with the dinner and keynote address.

### **Abstract**

Recent development in 3D reconstruction has shown that human interactions can assist computer algorithms where they are unreliable. We present an interactive 3D reconstruction algorithm which renders a planar reconstruction of the scene using simple user interactions in the form of scribbles. In addition, the algorithm can overlay a volumetric rendering of occluding objects. Using simple user interactions in the form of scribbles, the algorithm propagates scene geometry, performs cosegmentation of input images, and renders a complete and pleasing reconstruction of the scene along with volumetric rendering of foreground objects.

## **Speaker's Biography**

Tsuhuan Chen has been with the School of Electrical and Computer Engineering, Cornell University, Ithaca, New York, since January 2009, where he is Professor and Director. From October 1997 to December 2008, he was with the Department of Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, Pennsylvania, as Professor and Associate Department Head. From August 1993 to October 1997, he worked at AT&T Bell Laboratories, Holmdel, New Jersey. He received the M.S. and Ph.D. degrees in electrical engineering from the California Institute of Technology, Pasadena, California, in 1990 and 1993, respectively. He received the B.S. degree in electrical engineering from the National Taiwan University in 1987.

Tsuhuan served as the Editor-in-Chief for IEEE Transactions on Multimedia in 2002-2004. He also served in the Editorial Board of IEEE Signal Processing Magazine and as Associate Editor for IEEE Trans. on Circuits and Systems for Video Technology, IEEE Trans. on Image Processing, IEEE Trans. on Signal Processing, and IEEE Trans. on Multimedia. He co-edited a book titled Multimedia Systems, Standards, and Networks.

Tsuhuan received the Charles Wilts Prize at the California Institute of Technology in 1993. He was a recipient of the National Science Foundation CAREER Award, from 2000 to 2003. He received the Benjamin Richard Teare Teaching Award in 2006, and the Eta Kappa Nu Award for Outstanding Faculty Teaching in 2007. He was elected to the Board of Governors, IEEE Signal Processing Society, 2007-2009, and a Distinguished Lecturer, IEEE Signal Processing Society, 2007-2008. He is a member of the Phi Tau Phi Scholastic Honor Society, and Fellow of IEEE.

# Efficient Representations for Human Action Recognition and Tracking

Dr. Andreas Savakis

Department of Computer Engineering  
Rochester Institute of Technology  
Rochester, New York, USA

This talk discusses recent research performed at RIT's Real Time Computer Vision Lab on human action classification, such as face detection, tracking, pose estimation and expression recognition, that can be used to support video analytics applications. Manifold learning and Random Projections are dimensionality reduction techniques that are considered for efficient representation and processing. Manifold learning identifies non-linear structures embedded in the data and may be utilized in a variety of contexts. Random projections allow data-independent transformations that preserve distances and can be effective for classification and tracking. A novel tracking technique based on random projections, hybrid templates and distance metric learning will be discussed. In addition to generating elegant signal representations, such dimensionality reduction techniques offer computational efficiency that allows potential extensions to mobile, resource constrained systems.

## *Short Bio*

Dr. Andreas Savakis is Professor and Department Head of Computer Engineering at the Rochester Institute of Technology. He received the B.S. (Summa Cum Laude) and M.S. degrees from Old Dominion University and the Ph.D. from North Carolina State University, all in Electrical Engineering. From 1991-96 he was with the University of Rochester and University of Rochester Medical Center, where he conducted research on pattern recognition, digital radiography, and visual memory. From 1996 to 2000 he was with the Eastman Kodak Company, and worked at the Business Imaging Systems Division, Advanced Development Group and the Kodak Research Labs, Imaging Science Division. Dr. Savakis has been serving as department head of Computer Engineering at RIT since 2000. He also serves as ABET evaluator for Electrical Engineering and Computer Engineering Programs. His current research focuses on novel algorithm development and implementations for object detection and tracking, activity and expression recognition, medical imaging, and processing in multi-camera, resource constrained environments. He has been the primary thesis advisor for 27 students at RIT and has generated 11 patents and over 85 publications in journals, conferences and book chapters. His activities were recognized by the IEEE Third Millennium Medal from the IEEE Rochester Section in 2000, and the NYSTAR Technology Transfer Award for Economic Impact in 2006.

**2011 Rochester Section Joint Chapters Meeting**  
**March 29, 2010**

**RIT Inn & Conference Center, 5257 W. Henrietta Road**

Chapter Technical Presentations: 5:30-6:30 PM

(no registration required)

<http://www.r1.ieee.org/~roch/jc11>

**Electron Devices and Circuits & Systems Joint Chapter Proudly Presents**

**Microelectronics - Silicon Valley to Silicon Watts**

**Prof. Santosh K. Kurinec**

IEEE Fellow, EDS Distinguished Lecturer  
Electrical & Microelectronic Engineering  
Rochester Institute of Technology  
[skkemoc@rit.edu](mailto:skkemoc@rit.edu)



**Abstract:**

Over the last several decades, photovoltaics (PV) has been an on again and off again type of technology for engineering community while scientific laboratories and niche industries worldwide have remained diligently committed in achieving higher efficiencies and lower costs. The economic and political will has been deferring photovoltaics as the technology for the future. The attention is on to PV once again and it is the time for engineering community to take the challenge that semiconductor industry took since the development of the first integrated circuit. The growth of innovative techniques that enabled the integrated circuit technology to become efficient in high volume manufacturing of extremely small and complex systems on large substrates sets up a sound base for the PV industry. Between the two, they share a common substrate – silicon and common thin film deposition techniques. Photovoltaic contrasts itself from CMOS in being relatively simpler in device physics, relaxed in lithography and particle contamination controls. However, it differentiates in applications that require large area end products, much larger than the flat panel displays, and at be available at lower costs. Even though the PV industry inherits an experienced workforce trained in defining and following the roadmap driven by the Moore's Law, engineering education needs to address developing the next generation of PV engineers. The talk will discuss the principles and technology of emerging frontiers of PV and how semiconductor manufacturing can offer lessons and solutions.

**Santosh K. Kurinec** is a Professor of Electrical & Microelectronic Engineering and former Department Head of Microelectronic Engineering at Rochester Institute of Technology (RIT). She is a Visiting Scholar at IBM T.J. Watson Research Center, New York. She received Ph.D degree in Physics from University of Delhi, India. She came to the US to participate in the Alternative Energy Technology program funded by the USAID during the eighties. Prior to joining RIT in 1988, she was Assistant Professor of Electrical Engineering at Florida State University/Florida A & M University College of Engineering in Tallahassee, FL. Her current research activities include photovoltaics, non volatile memory, III-V on Si, tunnel devices, and magnetic thin films. She has been actively engaged in outreach for promoting engineering education. She is Fellow of IEEE, Member, NY Academy of Sciences, APS, Associate Editor of IEEE Transactions on Education and an IEEE EDS Distinguished Lecturer.



## Joint Electromagnetic Compatibility Society and Product Safety Engineering Society Presents

**Title:** EMC Susceptibility: Case Studies On Systemic Performance Verification and Best Design Practices

**Abstract:** In recent years, Electromagnetic Compatibility (EMC) has been a focus of many regulations in the Medical, Informational Technology, Automotive, Aerospace and Defense industries due to inadvertent product performances. Accurate and timely transmission of digital data and electronic information is essential to the effectiveness and safety of electro-mechanical devices and systems. With the advancement in technology and proliferation of RF-generated wired and wireless devices, the integrity of data and information transmitted and product responses in a coexistent environment may be compromised. It is crucial to examine and demonstrate the immunity of a product from potential electro-magnetic threats in the environment by definitive systemic performance verification.

**Speaker Biography:** Amy Rivera is principal at AMR Product Consulting Inc., a comprehensive Product Compliance Engineering Consultancy specializing in global compliance to EMC/EMI, Product Safety, and RoHS/WEEE regulations.



Previously, Amy was a Senior Electrical Engineer with Ortho-Clinical Diagnostics, a Johnson & Johnson company. She was responsible for all EMC/EMI and Product Safety Compliance Engineering activities within OCD. As a Subject-Matter-Expert, Amy provided consultancy to other Medical Device & Diagnostics and Consumer groups of J&J. Amy has over 20 years of hands-on product design, development, and testing experience in the Medical Device & Diagnostics, ITE, and Aerospace & Defense industries at several Fortune 100 & 500 companies. She has developed and successfully implemented numerous Design-for-Compliance strategies, training programs, and Quality Processes further advocating product reliability, efficiency, cost-effectiveness, timeliness to market, and sustainability.

Amy is *Process Excellence Six-Sigma* certified. She is an active member of Institute of Electrical and Electronics Engineers(IEEE) and Society for Women Engineers(SWE).

*2011 IEEE JCM, Rochester Section*  
**Microwave Theory and Techniques,**

**March 29, 2011, 5.30pm – 6.30pm,**  
**RIT Inn & Conference Center, 5257 W. Henrietta Rd. Rochester, NY 14623**

*Phased Array Radar Antenna*  
*Design Considerations*

By

**Donald McPherson**  
**RF Design Manager**  
**SRC, Inc.**  
**Syracuse, NY**



**Abstract:**

Phased array antennas are in widespread use for radar systems and other applications. This presentation will briefly review the fundamentals of radar operation and present some example radar systems. The presentation will then highlight some of the fundamental design trades involved in applying phased arrays to radar systems. Topics will include element and array design, architecture trades, beamformer options, active element impedance, excitation error budgets and their effect on array pattern performance, power handling and power distribution.

**Biography:**

Donald McPherson is currently manager of RF Design at SRC, Inc. in Syracuse, NY. He has more than 25 years experience in RF, microwave and antenna engineering from 400 MHz to 94 GHz. He has been a contributor to several phased array radars including an S-Band multi mission radar, an L-Band counter mortar radar and a UHF foliage penetration radar. He further led the design of an X-Band multi-beam phased array and implemented calibration of a 94 GHz active phased array. Prior to joining SRC, Mr. McPherson was a Sr. Microwave Engineer at the Lockheed Martin (General Electric) Electronics Laboratory. He was engaged in phased array antennas at 20, 44, 60 and 94 GHz. He contributed to T/R module developments at C-Band and L-band for ground and space applications. In addition, he designed MMIC amplifiers at X and Ku-band. He was previously employed at Anaren Microwave as a Co-op Engineer. Mr. McPherson received an AAS from SUNY Alfred in 1980, a BSEE from Rochester Institute of Technology in 1984 and an MSEE from Syracuse University in 1989. He is a member of the IEEE and served as the Syracuse MTT/AP Chapter Chairman from 1985-1986. He is a registered Professional Engineer in New York State.

# **Interdisciplinary Research in Networking: A Perspective from NSF**

Dr. Sajal K. Das

Program Director, CISE/CNS Division, NSF Director,  
Center for Research in Wireless Mobility and Networking (CReWMaN)  
The University of Texas at Arlington

The first part of this talk will present the networking research scope and funding opportunities in the core and cross-cutting programs within three divisions of Computer and Information Science and Engineering (CISE) directorate at NSF, namely Computing and Communication Foundations (CCF), Computer and Network Systems (CNS), and Information and Intelligent Systems (IIS). The second part of the talk will brief on various inter-disciplinary research programs in networking between CISE and other directorates such as Engineering, Mathematical and Physical Sciences, Biological Science, as well as Social, Behavioral and Economic Sciences. The last part of the talk will summarize future research directions and trends in these areas.

## ***Short Bio***

Dr. Sajal K. Das is currently a Program Director at the National Science Foundation in the Computer Networks and Systems (CNS) Division under the Directorate of Computer and Information Science and Information Engineering (CISE). He is also a University Distinguished Scholar Professor of Computer Science and Engineering and the Founding Director of the Center for Research in Wireless Mobility and Networking (CReWMaN) at the University of Texas at Arlington. His current research interests include wireless and sensor networks, mobile and pervasive computing, smart environments and situation awareness, security and privacy, biological and social networking, applied graph theory and game theory. He has published over 400 papers and over 35 invited book chapters, and holds five US patents in wireless networks and mobile Internet. He has coauthored three books: "Smart Environments: Technology, Protocols, and Applications" (Wiley, 2005); "Mobile Agents in Distributed Computing and Networking" (Wiley, 2011) and "Handbook on Cyber-Physical Security" (2011). Dr. Das is a recipient of the 2009 IEEE Computer Society Technical Achievement Award for pioneering contributions in sensor networks and mobile computing; 2008 IEEE Region 5 Outstanding Engineering Educator Award; and 6 Best Paper Awards in such conferences as IEEE PerCom, ACM MobiCom. At UTA, he is a recipient of the Lockheed Martin Teaching Excellence Award, UTA Academy of Distinguished Scholars Award, University Award for Distinguished Record of Research, College of Engineering Research Excellence Award, and Outstanding Faculty Research Award in Computer Science. Dr. Das is the Founding Editor-in-Chief of Pervasive and Mobile Computing (PMC) journal, and an Associate Editor of IEEE Transactions on Mobile Computing, ACM/Springer Wireless Networks, Journal of Parallel and Distributed Computing, and Journal of Peer-to-Peer Networking. He is the founder of IEEE PerCom and WoWMoM conferences, and has served as General and Technical Program Chair or TPC member of numerous IEEE and ACM conferences. He is the past Vice Chair of IEEE Computer Society Technical Committee on Computer Communications (TCCC) and Technical Committee on Parallel Processing (TCPP).



## Mid Career Entrepreneurship: Experiences and Stories

IEEE Technology Management Council

Panel Discussion Session

5:30-6:30pm Tuesday March 29, 2011

RIT Inn and Conference Center

5257 W. Henrietta Road, Rochester NY

The IEEE Technology Management Council (TMC) offers you another in a continuing series of presentations on Innovation and Entrepreneurship in our upstate New York home. Join us for a panel discussion with 5 accomplished entrepreneurs, who share their experiences on “Mid-Career Entrepreneurship” they have learned along the way. This TMC session is part of the IEEE Rochester Section Joint Chapters Meeting, with a dinner and keynote speech by Steve Senturia to follow (separate cost and registration)

**Registration : 4:30-5:30pm**

**Panel Discussion: 5:30-6:30pm**

**Networking and Cash Bar: 6:30-7:00pm**

**Dinner and keynote: 7:00-9:00pm (additional registration and cost)**

Sam Ghosh	Founder and CEO, Roccera, LLC
Ram Dhurjaty	Founder and Principal, Dhurjaty Electronics Consulting LLC
Kerry van Iseghem	Co-founder, Imaging Systems Group
Mark Fiscella	President, Advis
Steve Senturia	Keynote Speaker, Founder and CTO, Polychromix

General remarks from each panelist and Q&A.

**Registration:** Please register by March 26, 2011

[http://meetings.vtools.ieee.org/meeting\\_view/list\\_meeting/5193](http://meetings.vtools.ieee.org/meeting_view/list_meeting/5193) Registration for TMC. No charge for Panel Discussion.

Please join us for Rochester Section IEEE Joint Chapter Meeting and dinner discussion 7pm-9:00pm at RIT Inn and Conference Center (dinner charge applies)

[http://meetings.vtools.ieee.org/meeting\\_view/list\\_meeting/5173](http://meetings.vtools.ieee.org/meeting_view/list_meeting/5173) Registration for dinner and keynote (charge applies)