

PROGRAM



ITESM-ComSIP

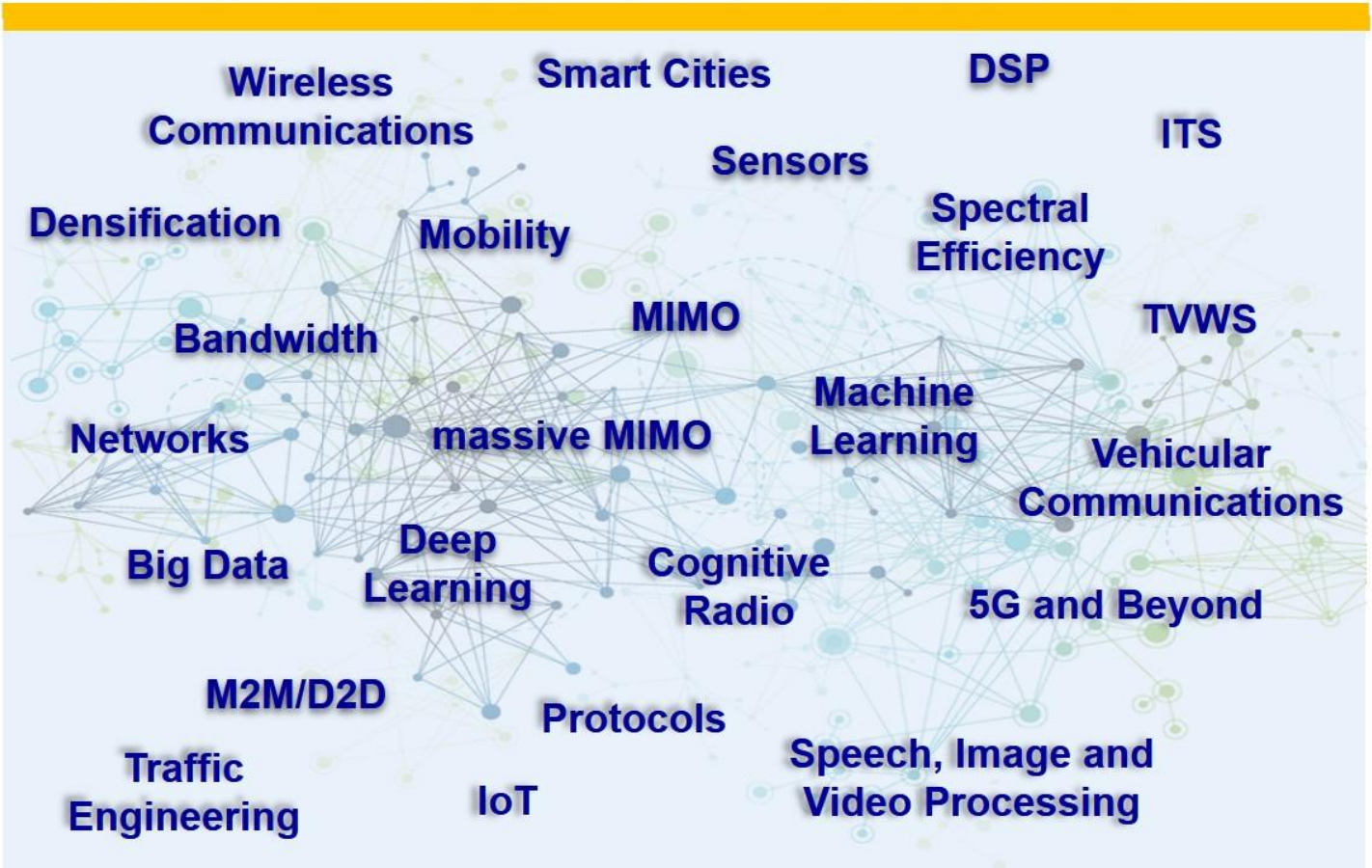
Workshop on Communications, Signals and Information Processing

ComSIP

Communications Signal and
Information Processing
Industry Consortium

Friday April 28th, 2017. (8 - 17:30 hrs)
Tecnológico de Monterrey, Campus Monterrey,
Av. Eugenio Garza Sada 2501, Monterrey,
Nuevo León, 64849
Aulas VI-306

Learn the latest on wireless communications, sensor and reconfigurable networks, digital signal processing, machine learning, multimedia, Internet of Things, and future technologies.



PROGRAM



PROGRAM – Workshop on Communications, Signals and Information Processing Collaborative ITESM ComSIP - ASU SenSIP Workshop at Tecnológico de Monterrey, Campus Monterrey, Aulas VI-306, April 28, 2017

7:30am to 8:10am	<i>Registration</i>	
8:10am to 8:30am	<i>Welcome, Opening Remarks and Status of ComSIP Center – Cesar Vargas, Tecnológico de Monterrey, ComSIP</i>	
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8:30am to 9:00pm	<u>Plenary Speaker</u> ASU, SenSIP	<i>The SenSIP Industry-University Collaborative Research Center, Andreas Spanias,</i>
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9:00am to 10:40am	<u>Session 1: Intelligent Systems, Learning and Applications</u>	
9:00am to 9:20am	Axtel	<i>Effective Mapping of Signal to Noise Ratio on LTE Mobile Communication Systems, Elsa Yolanda Torres</i>
9:20am to 9:40am	ITESM	<i>Research in Intelligent Systems at Tec de Monterrey, Hugo Terashima</i>
9:40am to 10:00am	Edinburgh-Napier University, Scotland	<i>Introduction to Lifelong Learning for Optimisation, Emma Hart</i>
10:00am to 10:20am	ITESM	<i>Research in Machine Learning Methods at Tec de Monterrey, Raul Monroy</i>
10:20am to 10:40am	ITESM	<i>From Signal Aggregation to Evidence Accumulation: Combining Information about Context, Ramon Brena</i>
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10:40am to 11:00am	<i>Coffee Break</i>	
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11:00am to 12:00pm	<u>Session 2: Sensors and Devices</u>	
11:00am to 11:20am	ITESM	<i>Adaptive Transmission Power for Efficient use of Energy in Sensor Networks, Mahdi Zareei</i>
11:20am to 11:40am	ITESM	<i>Security for Routing in Sensor Networks, Jaime Zuñiga</i>
11:40am to 12:00pm	ITESM	<i>Carbon MEMS/NEMS and Microfluidics: Sensing and Energy Storage Applications, Victor Hugo Pérez</i>
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12:00am to 12:30pm	<u>Plenary Speaker</u> UNC, Charlotte	<i>How Not To Be Seen: The History and Science of Invisibility, Greg Gbur</i>
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12:30pm to 2:00pm	<i>Lunch Break</i>	
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2:00pm to 3:00pm	<u>Session 3: Optics</u>	
2:00pm to 2:20pm	ITESM	<i>Energy Consumption of Optical Communication Systems using Integrated Nanophotonic Devices, Gerardo Castañón</i>
2:20pm to 2:40pm	ITESM	<i>Engineering a Giant Nonlinear Optical Response with Epsilon-Near-Zero Materials, Israel de León</i>
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2:40pm to 3:00pm	<i>Coffee Break</i>	
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3:00am to 3:30pm	<u>Plenary Speaker</u> ASU, SenSIP	<i>Smart and Connected Point of Care/Need Diagnostics, Jennifer Blain Christen,</i>
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3:30pm to 4:30pm	<u>Session 4: IoT, ITS and Smart Cities</u>	
3:30pm to 3:50pm	ITESM	<i>Developing of PCB-MEMS-based sensing nodes for IoT applications, Sergio Camacho</i>
3:50pm to 4:10pm	ITESM	<i>Implementation and Deployment Challenges of Wireless Sensor Networks in Smart Cities, Leyre Azpilicueta</i>
4:10pm to 4:30pm	ITESM	<i>Spatial characterization of radio propagation channel in Urban Vehicle to Infrastructure environments to support WSNs deployment, Fausto Granda</i>
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4:30pm to 5:30pm	<i>Poster Session / Open House / open discussions</i>	

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POSTERS

- Poster 1** *Collaboration in Communications, Signals and Information Processing, Cesar Vargas, Andreas Spanias*
- Poster 2** *Bi-National Consortium in Communications Signals and Information Processing, CoBI, Cesar Vargas*
- Poster 3** *Telecommunications and Networks Research Group, Tecnológico de Monterrey, Cesar Vargas*
- Poster 4** *MIMO Channel Capacity Using Antenna Selection and Water Pouring, Jose V. Cuan and Cesar Vargas*
- Poster 5** *3D Position Location in Ad-Hoc Networks: a Manhattanized Space, Rafaela Villalpando, Cesar Vargas*
- Poster 6** *An Unsupervised Approach for Traffic Trace Sanitization Based on the Entropy Spaces, Pablo Velarde and Cesar Vargas*
- Poster 7** *Vertex Projection and Maximum Likelihood Position Location in Reconfigurable Networks, Cesar Vargas*
- Poster 8** *A new propagation prediction approach based on Ray Launching and Neural Network techniques for complex environments, Leyre Azpilicueta*
- Poster 9** *Characterization of temporal variations through deterministic approaches in vehicular environment, Leyre Azpilicueta*
- Poster 10** *Optimization and Design of Wireless Systems for the Implementation of Context Aware Scenarios in Railway Passenger Vehicles, Leyre Azpilicueta*
- Poster 11** *Low SWAP Point-of-Need Diagnostic System, Jennifer Blain Christen*
- Poster 12** *Digital Signal Processing Algorithms for Silicon Ion-Channel Sensors, Sunil Rao*
- Poster 13** *Aim of Fault Detection Using Research Facility containing 104, 18kW Solar Array Panels, Sunil Rao*
- Poster 14** *Human Activity understanding beyond the visual spectrum, Sameeksha Katoch*
- Poster 15** *Sensor and Signal Processing for Mobile Health Monitoring, Uday Sakar*

Organized by



Tecnológico de Monterrey
Escuela de Ingeniería y Ciencias



Sponsored in part by



Organizing Committee

Cesar Vargas-Rosales, ITESM
Andreas Spanias, ASU SenSIP
Rafaela Villalpando, ITESM

Special Guests



Andreas Spanias, Professor in Digital Signal Processing and Director of SenSIP Center, School of Electrical, Computer and Energy Engineering, Arizona State University, Tempe, AZ.

Andreas Spanias is Professor in the School of Electrical, Computer, and Energy Engineering at Arizona State University (ASU). He is also the director of the Sensor Signal and Information Processing (SenSIP) center and the founder of the SenSIP industry consortium (now an NSF I/UCRC site). His research interests are in the areas of adaptive signal processing, speech processing, and sensor systems. He and his student team developed the computer simulation software Java-DSP and its award winning iPhone/iPad and Android versions. He is author of two text books: Audio Processing and Coding by Wiley and DSP; an Interactive Approach (2nd Ed.). He served as Associate Editor of the IEEE

Transactions on Signal Processing and as General Co-chair of IEEE ICASSP-99. He also served as the IEEE Signal Processing Vice-President for Conferences. Andreas Spanias is co-recipient of the 2002 IEEE Donald G. Fink paper prize award and was elected Fellow of the IEEE in 2003. He served as a Distinguished lecturer for the IEEE Signal processing society in 2004. He is a series editor for the Morgan and Claypool lecture series on algorithms and software.



Jennifer Blain Christen, Assistant Professor, School of Electrical, Computer and Energy Engineering, Arizona State University, Tempe, AZ.

Jennifer Blain Christen received a B.S. (1999), M.S. (2001) and Ph.D. (2006) in electrical and computer engineering from Johns Hopkins University. Her dissertation focused on hybrid systems for life science applications exemplified through the development of a micro-incubator for cell culture. Blain Christen held a Graduate Research Fellowship and a G K-12 fellowship both from the National Science Foundation. In her post-doctoral work at the Johns Hopkins School of Medicine in the Immunogenetics Department, she developed a microfluidic platform for homogeneous HLA (human leukocyte antigen) allele detection. Her research interests involve design of analog and mixed-mode integrated electronics for direct interface via

innovative fabrication techniques to aqueous environments with special emphasis on biological materials. Expertise Bio-compatible integration techniques for CMOS electronics; microfluidics and soft lithography; 3D and non-traditional microfabrication techniques and devices; MEMS devices with emphasis on bio-MEMS; analog and mixed-mode VLSI for bio-medical/analytical i Education 2006, Ph.D. in Electrical and Computer Engineering, Johns Hopkins University 2001, M.S. in Electrical and Computer Engineering, Johns Hopkins University 1999, B.S. in Electrical and Computer Engineering, Johns Hopkins University



Emma Hart, Professor at Edinburgh Napier University, Scotland, School of Computing.

Her research focuses on Evolutionary Computing and Artificial Immune Systems, mainly in the domain of combinatorial optimisation. From January 2017, she has taken over as Editor-in-Chief of Evolutionary Computation (MIT Press). In 2016, she was General Chair of PPSN 2016, and has acted as a Track Chair at GECCO for several years. She has given keynotes at EURO 2016 and UKCI 2015, as well as invited talks and tutorials at many Universities and international conferences. She is an elected member of the ACM SIGEVO Executive Board and also edits the SIGEVO newsletter. She is currently a member of the UK Operations Research Society newly formed Research Panel.



Gregory J. Gbur, Professor, Department of Physics and Optical Science, University of North Carolina, Charlotte.

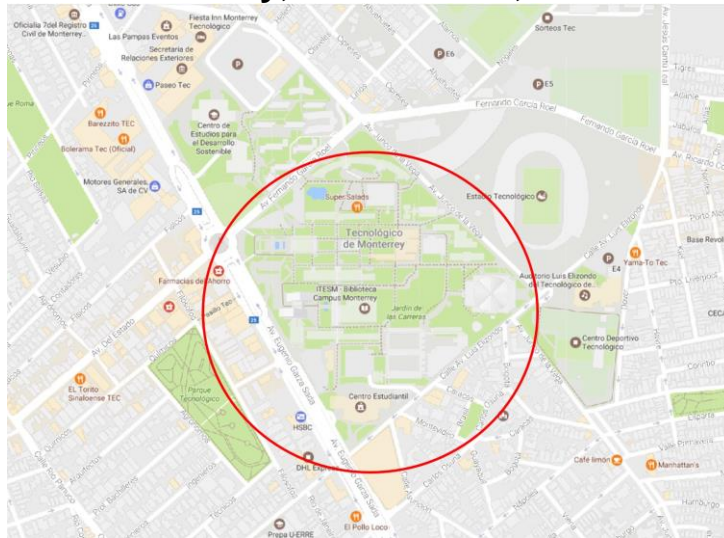
Gregory J. Gbur received a B.A. with honors from the University of Chicago in 1993 and his M.A. and Ph.D. from the University of Rochester in 1996 and 2001. Since 2005, he has been a faculty member at the University of North Carolina at Charlotte, becoming a Full Professor in 2016. His research is in classical theoretical optics, focusing on singular optics, coherence theory, plasmonics and invisibility/cloaking. He has written or coauthored over 80 journal papers to date, including three reviews for Progress in Optics. He also wrote the textbook Mathematical Methods for Optical Physics and Engineering (Cambridge University Press, Cambridge, 2011), and is currently finishing a textbook

on Singular Optics, due in 2016. He has an active interest in science communication, writing the personal science blog Skulls in the Stars since 2007, and has written popular articles for a number of magazines, including La Recherche, American Scientist, and Optics and Photonics News.

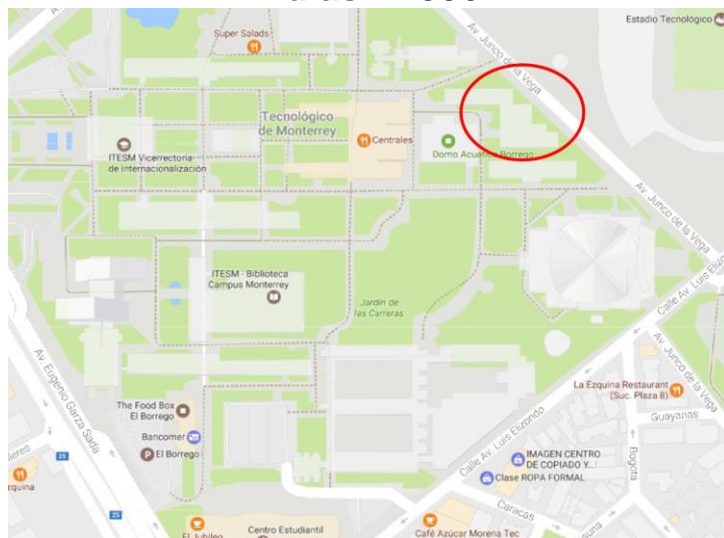
Location

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Information

For further information, send an email to Dr. Cesar Vargas, cvargas@itesm.mx