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October 6, 2020 12:30pm-7:30pm (GMT-4)

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Elias Bortokan

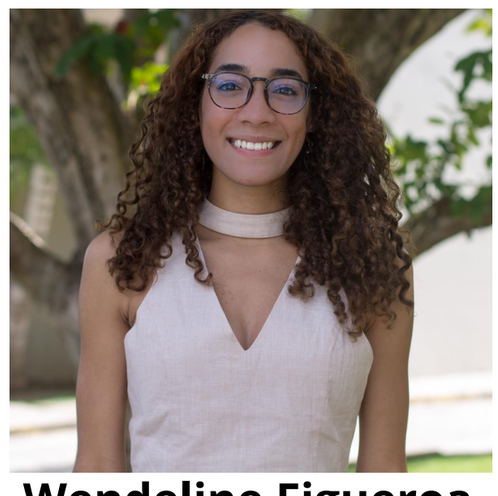
A Testimony of Technological Innovations

12:30

Dr. Mariana Medina Sanchez

Novel Micro- and Nanotechnologies for Biomedical Applications

1:00pm



Wendeline Figueroa

COVID-19:
How is getting managed in Puerto Rico?

3:00pm

Dr. Yahya Masalmah

Big data techniques and Internet of Thing: a look at technical challenges and cybersecurity assessment

5:30pm

Enrique Tejera

Distributed Generation and its Implications in Transmission and Distribution Systems

6:30pm

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A Testimony of Technological Innovations

Elias Bortokan

Abstract

A Testimony of Technological Innovation. A talk based on a documentary from the IEEE History Center, spanning from the IEEEs founding in 1884 to the present day. Highlighting some of the IEEEs innovators and their contributions to humanity. Considering how technology has evolved over time.

About the presenter

Multifaceted professional with more than 20 years of experience, in business, technology, education, volunteering, and as a writer and speaker. Graduated from the Technological Institute of Santo Domingo (Intec) with a degree in Electronic and Communications Engineering (1999) and a Diploma in Project Preparation and Evaluation (Intec, 2000). He has also completed the following diplomas: Diploma in Top Management, Diploma in Teacher Qualification (UCSD, 2016), Diploma in Facilitator of Professional Training (Infotep, 2014), Diploma in Mathematics Teaching (CAEU-OEI, 2019), Diploma in Planning and Evaluation by Competences in the Technical - Professional modality (Inicia, 2019). He is currently finishing a masters degree in Educational Technology and Digital Competences. He has been an entrepreneur and manager of several companies, such as Micropower Electronics. He is a professor at the Mercedes María Mateo Polytechnic in the areas of mathematics and electricity. He is the creator of the radio and television segment "El Expreso Tecnológico", broadcast by 104.7 fm, a radio station and by Telesur, channel 10, in the Dominican Republic. He is the author of the book "Tópicos de Tecnología" (amazon, 2020). He was an ambassador for the IEEE DAY 2018. He was a Mentor of the IEEE R9 Covid Hackathon in 2020. He is a certified Life Coach. He is vice president of the IEEE RD subsection. He is a Senior Member of the IEEE.

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Novel Micro- and Nanotechnologies for Biomedical Applications

Dr. Mariana Medina Sanchez

Abstract

I am going to talk about the main research lines of our research group: i) Lab-in-a-tube and ii) Medical Microrobotics. The first one includes ultrasensitive sensors for the detection of diverse biomolecules towards early diseases diagnosis, and microsystems for the study of cellular processes at the microscale. The second one includes different types of sperm-hybrid microrobots and microcarriers designed for assisting gametes towards in vivo assisted fertilization. We have successfully demonstrated the guidance and transport of motile and immotile sperm by magnetic microcarriers in vitro. These sperm-hybrid microrobots have also been used as drug carriers towards gynecological cancer treatment. Recently we succeeded in the transport and release of multiple viable and mature sperm, being a crucial step to achieve egg fertilization and dose control in the case of cancer therapy by sperm-carriers. We have also evaluated the performance of these bio-hybrid microrobots under blood stream and real oviduct fluid, and exploited their cargo-delivery ability. Recently, we have demonstrated their successful tracking in phantom, ex-vivo and in vivo environments, in real-time, making an important step towards the pre-clinical translation of such medical microrobots.

About the presenter

Dr. Mariana Medina Sánchez studied Mechatronics Engineering at the University of San Buenaventura, in Bogotá-Colombia. Then she moved to Spain to pursue her Master and PhD studies, under the supervision of Prof. Arben Merkoçi, at the Catalan Institute of Nanoscience and Nanotechnology, where she worked on the development of nanomaterials-based and inkjet-printed electrochemical biosensors. After finishing her PhD Thesis, she joined the Leibniz Institute in Dresden-Germany, as postdoctoral researcher, where she worked on the development of magnetically-actuated microcarriers for immotile sperm transport, and ultrasensitive rolled-up microsensors. Then, she was promoted as group leader, under the mentoring of Prof. Oliver Schmidt. Since then, she has pushed forward the activities related to medical microrobots in particular toward in vivo assisted fertilization and targeted drug delivery. Recently, she was one of the selected researchers to be granted by the European Research Commission, in the Category of ERC Starting, and since this year she is independent group leader at the same Institute.

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COVID-19:

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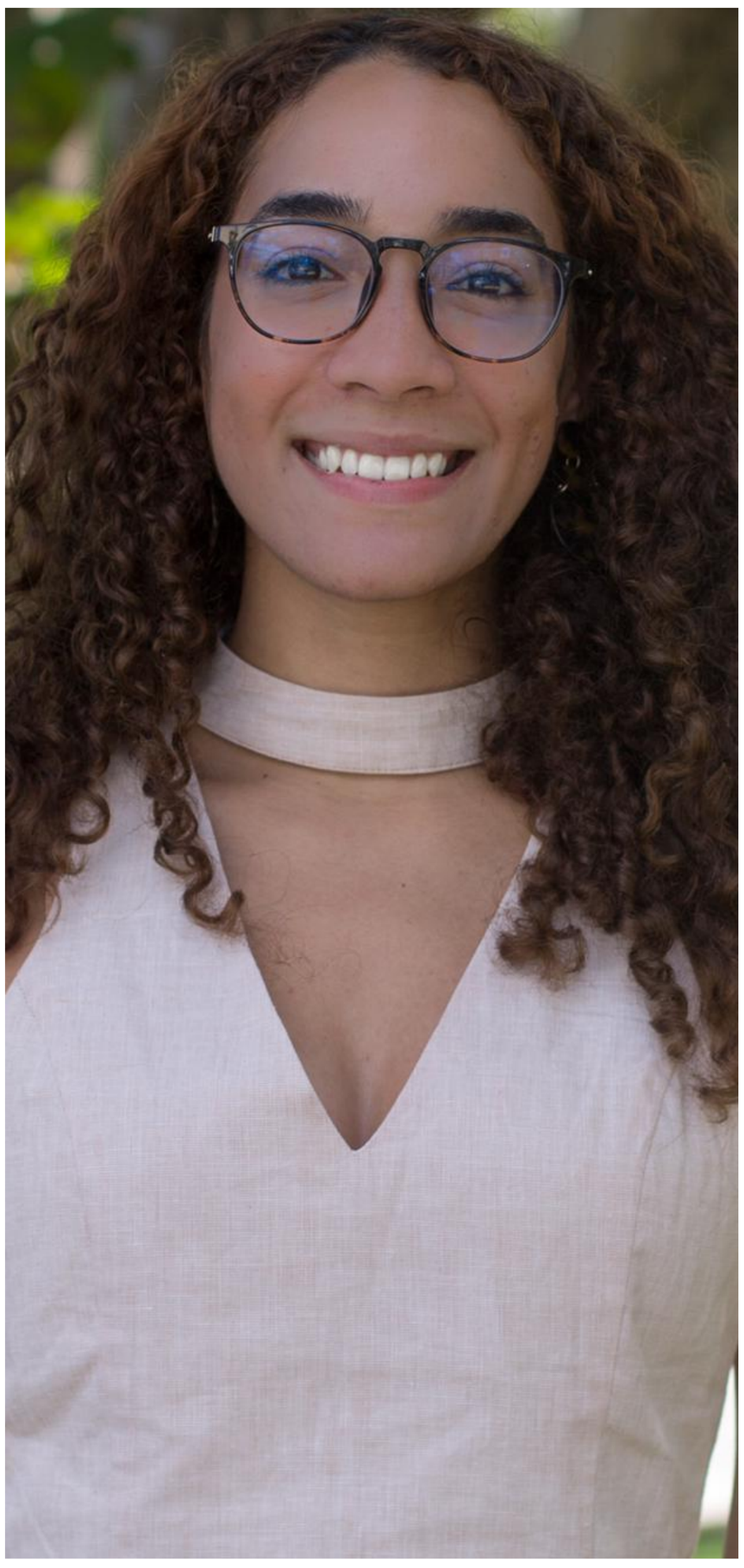

Wendeline Figueroa

Abstract

This presentation will be explaining how the COVID-19 is being addressed in Puerto Rico. The Puerto Rico Department of Health (PRDOH) is the leading authority in the management of diseases in the island. But how the PRDOH is managing the spreading? What processes have been developed and what are the reason for them? What is the meaning of the terminology recently used in the news? Why do we need to follow prevention recommendations? What is the contact tracing process? All these questions and more will be answered and explained from an Epidemiologic perspective.

About the presenter

Wendeline is the Epidemiologist of the Case Investigation and Contact Tracing System in Gurabo Municipality. She is currently in charge of a group of ten talented women, that are managing the virus spreading in Gurabo. Previously, she worked on the Puerto Rico Department of Health (PRDOH) as COVID-19 Investigation Coordinator in the Fajardo region. Before the pandemic, she was working as Foodborne and Waterborne Diseases Epidemiologist in the regions of Caguas and Fajardo. She earned her master's degree in public health with major in Epidemiology from the School of Public Health and Biosocial Sciences of the Medical Sciences Campus of the University of Puerto Rico on 2019. She has worked across different regions managing the COVID-19 disease since the beginning of the pandemic in Puerto Rico looking for the best and safest processes to help prevent its transmission.

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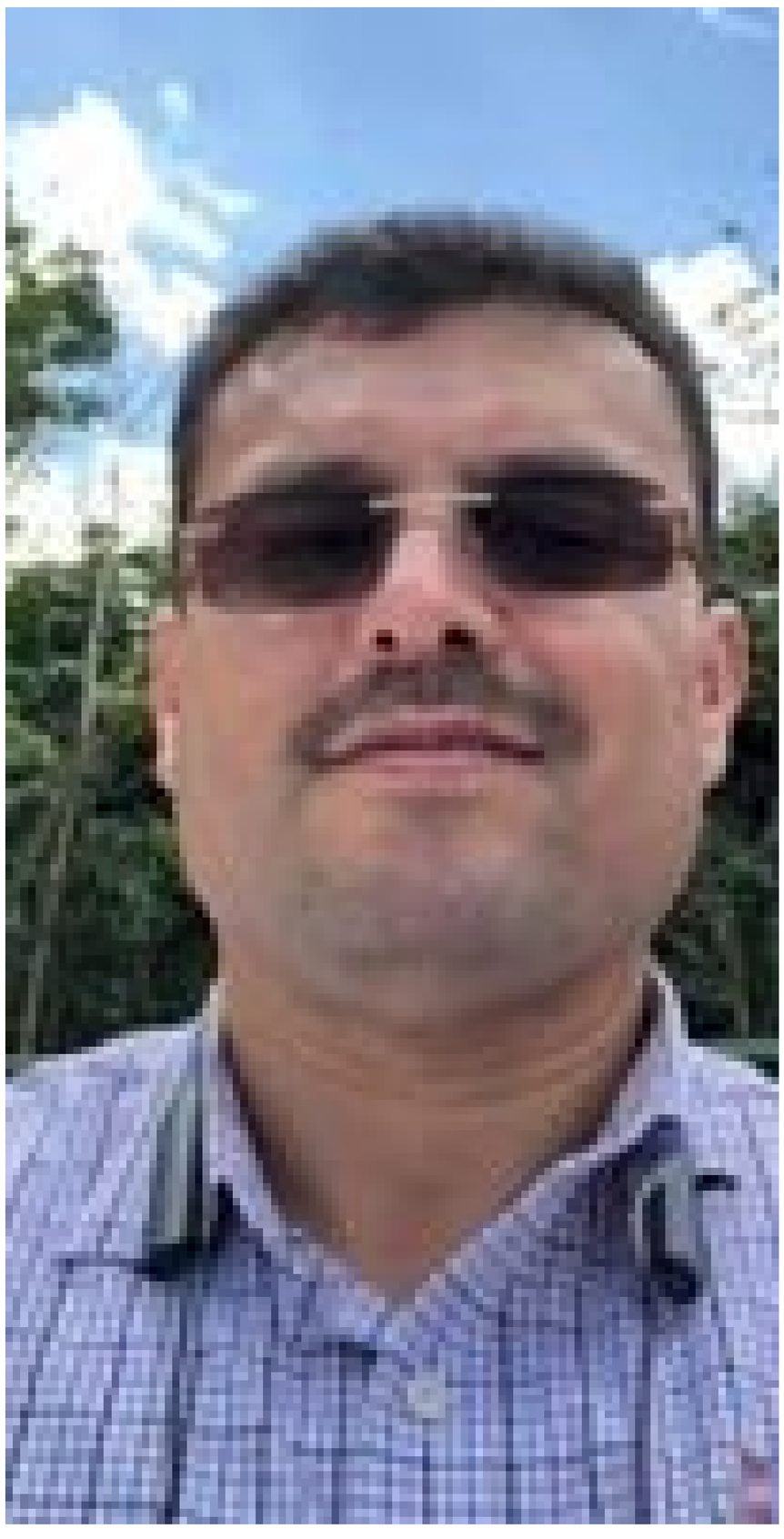
Big data techniques and Internet of Thing: a look at technical challenges and cybersecurity assessment



Dr. Yahya Masalmah

Abstract

The huge amount of data generated on a daily base due to the exaggeration usage of technology requires efficient processing techniques for information recovery. Big data analytics provide some efficient technique for this purpose. No doubt that a lot of challenges are facing technology with each advance. Security breaches are major issues that requires assessments and counter measures for data protection. In this talk, I will be addressing major advances in big data analytics, Internet of things (IoT) and cybersecurity best practices .

About the presenter

Dr. Yahya M. Masalmah is a full Professor in the Computer and Electrical Engineering program in the Department of Engineering at the Universidad Ana G. Mendez - Recinto de Gurabo. He joined the department since 2007. Dr. Masalmah completed his MS in computer Engineering and his Ph.D in Computing and Information Science and Engineering (CISE) from University of Puerto Rico at Mayaguez in 2002 and 2007 respectively.

Dr Masalmah's area of expertise includes Image processing, Remote Sensing, Machine Learning, High Performance computing, Software Engineering Cybersecurity and Big Data, ranging from theory to design to implementation. He has served as Co-PI of Department of Energy funded project (MASSIE CHAIR of EXCELLENCE) for five years. He served as a mentor for one PHD student in information science and Several MS thesis and Network Design Projects at the Universidad Ana G Mendez - Recinto de Gurabo. Dr. Masalmah has published peer reviewed research papers in conferences in his area of expertise.

Dr Masalmah served as a reviewer for different conferences and Journals in the area of remote sensing and machine learning.
Dr. Masalmah participated twice in faculty summer internships at Oak Ridge National Laboratory in 2010 and 2011, respectively, where he worked on High Performance Computing and big data research Project. Dr Masalmah is a member of Association for Computing Machinery (ACM) and Information Audit and Control Association, Inc. (ISACA).

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Distributed Generation and its Implications in Transmission and Distribution Systems

Enrique Tejera

About the presenter

In 1981 he obtained the B.S. in the career of Electromechanical Engineering from the University of Panama and in 1983 the master's degree in the career of Electrical Engineering from the University of Texas at Arlington. During his career he has participated in numerous conferences, professional development programs, technical activities, seminars and courses.

The Tejera engineer is a professional with extensive experience in the design of Power Systems, planning, operation and maintenance, including generation, transmission and distribution systems. Electromechanical engineer with proven track record of success in managing large-scale electromechanical engineering projects, consulting services in power system development plans, behavior analysis of electrical power systems, project management, budgets, contracts and preparation and review of technical specifications.

Experience of more than 12 years in the electric utility company from 1979 to 1991 (IRHE) in the area of planning of electrical systems and since 1991 in the Canal de Panama responsible for the renewal, planning, operation and maintenance of the Panama Canal Power system, including generation, transmission, distribution and protection systems, He has provided consulting and design services for transmission, distribution and generation projects, industrial, residential and commercial facilities and has also served as a part-time professor at the Technological University of Panama.

He has presented papers at technical conferences in Latin America and the U.S.A. published in technical journals and conference proceedings. Currently, he works as a reviewer for technical documents that are presented at annual conferences, congresses, awards and international publications. He currently participates as Distinguished Lecturer of the IEEE Power and Energy Society and Editor-in-Chief of the Power & Energy Magazine Spanish version of the Power & Energy Society.

Member of the IEEE since 1979, Senior Member (1992) and has held volunteer positions at the local, regional and global levels including the period 2010-2011 where he served as Director of Division VII on the IEEE Board of Directors and from 2017-2019 on the IEEE-HKN Board of Governors representing Regions 7 (Canada), 8 (Europe and Africa), 9 (Latin America) and 10 (Asia and Oceania). Currently Elected Director of Region 9, Latin America, for the period 2020-2021.
He is an active member of the Panamanian Society of Engineers and Architects (SPIA) since 1989.

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