

THURSDAY, October 28, 2020

Time Slot	Track 1	Track 2	Track 3
9:00-12:00	Workshop-Sustainable Project Design Considering COVID-19 Pandemic	Workshop-Applied Machine Learning for Social Good	Workshop-Fundamentals of Off-Grid Electrical Systems
12:00-1:00 p.m.	Lunch Break		
1:00-1:15 p.m.	Welcome Session		
1:30-3:30 p.m.	Health Session 1: Promoting Health Care Delivery 1:30-1:50 p.m. Data-Centric Operations Design for Disseminating a Biomedical Screening Technology: A Case Study	Affordable and Clean Energy 1: Energy for Cooking & Agriculture 1:30-1:50 p.m. Study on charcoal scarcity and the limitations of existing cooking fuel alternatives	Water and Sanitation 1: Water Quality and Treatment 1:30-1:50 p.m. UV Meter for Testing Quality of Water treated by a Solar Water Disinfection System
	1:50-2:10 p.m. Fulfilling the promise of community-based health navigators	1:50-2:10 p.m. A market assessment for modern cooking in Malawi	1:50-2:10 p.m. A Review of Desalination Technologies for Low-Resource Settings
	2:10-2:30 p.m. Managing Knowledge in Computational Models for Global Food, Nutrition and Health Technologies	2:10-2:30 p.m. Can Modifications Make Electric Pressure Cookers 'Minigrid Friendly?'	2:30-2:50 p.m. Comparison and evaluation of coagulant/disinfectant point-of-use water treatment performance
	2:30-2:50 p.m. Rapidly Deployable Containerized Medical Clinic for Refugee Settings	2:30-2:50 p.m. Using Solar Electric Cooking to Kickstart Universal Energy Access in the Developing World	
	2:50-3:10 p.m. Increasing the impact of Global Health Informatics by improving the sharing of public health data across countries: A call for action	2:50-3:10 p.m. Irrigation Load Optimization for Enhanced Agricultural Productivity in Rural Microgrid Clusters	
	3:10-3:30 p.m. Swoop Aero deploying the future of healthcare through air logistics	3:10-3:30 p.m. How Modeling the Adoption of Household Clean Energy Technologies can Inform Stakeholder Decisions	
3:35-4:45 p.m.	Opening Session with IEEE Presidents		
5:00-7:00 p.m.	Student Poster Competition		

FRIDAY, October 29, 2020

Time Slot	Track 1	Track 2	Track 3
8:00-9:00 a.m.	PANEL: "Technology-enabled climb up the demand-driven energy ladder: Interoperability, Growth, All-access"		
9:10-11:30 a.m.	Health Session 2: Supporting Diagnosis and Treatment 9:10-9:30 a.m. A Novel E-Junction Lateral Flow Immunoassay for Widespread Sickle Cell Screening in Low and Middle-Income Countries	Affordable and Clean Energy 2: Wind Energy and Microgrids 9:10-9:30 a.m. Whole systems assessment of current and future wind speed and energy trends in rural Peru	Water and Sanitation 2: Monitoring, Data and Evidence 9:10-9:30 a.m. A Non-Intrusive Water Consumption Monitoring System
	9:30-9:50 a.m. Deep Learning on Edge Device for Early Prescreening of Skin Cancers in Rural Communities	9:30-9:50 a.m. Design and Optimization of a Novel, Low-cost, Compact Wind Power Generator for Autonomous Environmental Sensing	9:30-9:50 a.m. Monitoring and Modeling Glyphosate Transport in the Belize River Watershed
	9:50-10:10 a.m. Target product profiles for devices to diagnose urinary schistosomiasis in Nigeria	9:50-10:10 a.m. Application of Synchronous Condensers for Enhanced Resilience of a Renewable Energy dominated Electric Grid	9:50-10:10 a.m. The Reality of Evidence-based Decision Making in Humanitarian Programming: An Exploratory Study of WASH Programs in Uganda
	10:10-10:30 a.m. Schistoscope: Smartphone versus Raspberry Pi based low cost diagnostic device for urinary Schistosomiasis	10:10-10:30 a.m. In-Band Communications for DC Microgrids	10:10-10:30 a.m. Self-diagnosis and smart maintenance prototype for sustainable and desirable onsite sanitation
	10:30-10:50 a.m. The embodiment of low-field MRI for the diagnosis of infant hydrocephalus in Uganda	10:30-10:50 a.m. Poverty Mapping in Sub Saharan Africa Using Night Time Light Pollution Data	10:30-10:50 a.m. DOxy: Dissolved Oxygen Monitoring
	10:50-11:10 a.m. Remote sensing characterization of shallow lakes and wetlands as potential habitats for malaria vectors - A case study in southern Germany	10:50-11:10 a.m. Time-Efficient Fault Diagnosis of a BLDC Motor Drive Deployed in Electric Vehicle Applications	Networking
	Networking	11:10-11:30 a.m. Prosumer Based Economic Model for Energy Sharing between Microgrids in a Rural Indian Village Scenario	
11:30 a.m.-12:15 p.m.	Lunch Break - Networking Session (Health)	Lunch Break - Networking Session (Energy)	Lunch Break - Networking Session (Water and Sanitation)
12:20-2:40 p.m.	Health Session 3: Diagnosis 12:20-12:40 p.m. Induced Acoustic Resonance for Noninvasive Bone Fracture Detection Using Digital Signal Processing and Machine Learning	Affordable and Clean Energy 3: Field Experiences 12:20-12:40 p.m. Impact Assessment of Solar Home System Rehabilitation in the Rural Community "Cerrito de los Morreños", Ecuador	Connectivity and Connection 1: Remote Connectivity 12:20-12:40 p.m. Implementing Solar-Powered HAPS for Rural broadband Connectivity: Concepts, Challenges & Mitigation
	12:40-1:00 p.m. FPGA-based Edge Inferencing for Fall Detection	12:40-1:00 p.m. Remote Assessment of Battery Degradation-Related Service Interruptions in an Energy Kiosk	12:40-1:00 p.m. Proof-of-Concept Prototype of Wideband VHF-based Video Streaming for e-Health Interventions in Remote Rural Areas
	1:00-1:20 p.m. Utility of a Novel, Combined Biofeedback-Virtual Reality Tool as Add-on Treatment for Chronic Migraine	1:00-1:20 p.m. An Exploratory Study on Renewable Energy at Philippine General Hospital	1:00-1:20 p.m. Experiments on the Smart Village Testbed
	1:20-1:40 p.m. Designing Appropriate Self-Diagnostic Health Interface for Low-income Communities in Nigeria	1:20-1:40 p.m. Performance Analysis of a Community-Based Off-Grid PV System	1:20-1:40 p.m. LokalTE: 600 MHz Community LTE Networks for Rural Areas in the Philippines
	1:40-2:00 p.m. Development of a non-invasive biomedical device for electrostimulation of the tibial nerve in patients with incontinence associated with overactive bladder from central military hospital - Bogota	1:40-2:00 p.m. Lessons Learned - Developing Off-Grid Energy Systems During the COVID-19 Pandemic	1:40-2:00 p.m. Transforming One-Stop E-Services in Iraq: Focusing on perception of Blockchain Technology in Digital Identity System
	2:00 - 2:20 p.m. Expanding eVision's Scope of Influenza Forecasting	2:00 - 2:20 p.m. Sustainable Delivery Models for Achieving SDG7: Lessons from an Energy Services Social Enterprise in Malawi	2:00 - 2:20 GoodBuys (Making Ethical Shopping Decisions)
	2:20 - 2:40 p.m. Stabilizing COVID-19 Infections in US by Feedback Control based Test and Quarantine	2:20 - 2:40 Portable DC Power Monitoring	Networking
2:40-3:20 p.m.	Networking Session (Health)	Networking Session (Energy)	Networking Session (Connectivity)
2:50-3:10 p.m.	EPICS in IEEE - empowering students solve local community problems		

SATURDAY, October 30, 2020

Time Slot	Track 1	Track 2	Track 3
8:00-10:00 a.m.	Health Session 4: Medical Technology 8:00-8:20 a.m. Design research for medical devices in low resource environments	Agriculture 1: Irrigation and Water Management 8:00-8:20 a.m. Addressing water insecurity with a greywater hydroponics system in South Africa	Connectivity and Communication 2: Behavioral Pattern Recognition 8:00-8:20 a.m. Internet and Happiness in West Africa: The Next Billion Users are Not a Single Entity
	8:20-8:40 a.m. Development of a control system for a prosthetic hand assisted by electromyographic signals	8:20-8:40 a.m. Algorithms to predict moisture content of grain using relative humidity time series	8:20-8:40 a.m. A study of spot recommendation personalization by considering personality traits
	8:40-9:00 a.m. The OpenFlexure Project. The technical challenges of Co-Developing a microscope in the UK and Tanzania	8:40-9:00 a.m. A fuzzy irrigation control system	8:40-9:00 a.m. An approach to human iris recognition using quantitative analysis of image features and machine learning
	9:00-9:20 a.m. Key Factors of Design: 3D Printed Occupational Therapy Products in Developing Communities	9:00-9:20 a.m. Irrigation detection by car: computer vision and sensing for the detection and geolocation of irrigated and non-irrigated farmland	9:00-9:20 a.m. A Practical Method for Iris segmentation in challenging conditions
	9:20-9:40 a.m. Medical Device Spare Part Pricing Strategy Analysis for Developing Nations	9:20-9:40 a.m. Assessment of solar aided agriculture in Rwanda	9:20-9:40 a.m. The Buschfunk Project: Offline Communication for Everyone
	9:40-10:00 a.m. Development of smartband to monitor from home the vital signs for patients with sars cov 2 through a mobile application from the central military hospital (HOMIL) Bogota 2020	Networking	Networking
10:10 a.m.-11:10 a.m.	PANEL: IEEE HAC COVID Response		
11:10-noon	Lunch Break - Networking Session (Health)	Lunch Break - Networking Session (Agriculture)	Lunch Break - Networking Session (Connectivity and Communication)
Noon-1:30 p.m.	GHTC 10th Anniversary Celebration		
1:40-3:20 p.m.	Health Session 5: Assistive Solutions 1:40-2:00 p.m. Developing a Deep Learning-enabled Guide for the Visually Impaired	Agriculture 2: Context Appropriate Technology 1:40-2:00 p.m. Design and fabrication of a bicycle powered maize sheller for Ghanaian farmers	Connectivity and Communication 3: Image Enhancement Techniques 1:40-2:00 p.m. Low-Cost Implementation of Bilinear and Bicubic Image Interpolation for Real-Time Image Super-Resolution
	2:00-2:20 p.m. Camera-Based Indoor Navigation in Known Environments with ORB for the Visually Impaired	2:00-2:20 p.m. Mushroom mycellium regeneration in tropical environments	2:00-2:20 p.m. Image quality enhancement in wireless capsule endoscopy with Adaptive Fraction Gamma Transformation and Unsharp Masking filter
	2:20-2:40 p.m. Designing a Single Speaker-based Ultra Low-Cost Otoacoustic Emission Hearing Screening Probe	2:20-2:40 p.m. Effective plantation management with crowd-sensing and data-driven insights: A case study on tea	2:20-2:40 p.m. PIMOD: A Tool for Configuring Single-Board Computer Operating System Images
	2:40-3:00 p.m. Use of response channels to augment and evaluate progress of speech and language therapy in children with hearing impairment	2:40-3:00 p.m. Variable surface area capacitive sensors for use in beehives	2:40-3:00 p.m. LoRAgent: A DTN-based Location-aware Communication System using LoRa
	Networking	3:00-3:20 p.m. Investigating cash flow in the Agricultural supply chain within Kenya	Networking

SUNDAY, November 1, 2020

Time Slot	Track 1	Track 2	Track 3
8:00-9:30 a.m.	Other UN SDGs 1: Decent Work and Economic Growth 8:00-8:20 a.m. The Entrepreneurship Intention Questionnaire Applied to Students in Perú	Agriculture 3: Gender Equity and Nutrition 8:00-8:20 a.m. Designing for women: Considerations to Address the Needs of Widowed Female Farmers In India	Disaster Mitigation 1: Innovating Service Delivery in Crisis 8:00-8:20 a.m. Innovating Medical Devices in the Midst of a Crisis: Lessons from an Intravenous Electronic Drop Counter in the 2014-2016 Ebola Outbreak
	8:20-8:40 a.m. Comparing the Properties of Polyethylene Terephthalate (PET) Plastic Bricks to Conventional Concrete Masonry Units	8:20-8:40 a.m. The dimensions of food insecurity in Sierra Leone: Cues for technology innovation	8:20-8:40 a.m. Low Cost Design of Non-Contact Thermometry for Diagnosis and Monitoring
	8:40-9:00 a.m. Client-Driven Project on Sustainability within First-Year Cornerstone Design	8:40-9:00 a.m. An evaluation of micronutrient losses in the diets of mothers and children in Sierra Leone	8:40-9:00 a.m. A Methodology of Building Workflow for Search and Rescue Operation with UAV
	9:00-9:20 a.m. Winning the Heart Model to Improve Life of Socially Deprived in Kano, Nigeria	9:00-9:20 a.m. Mainstreaming Gender Equity for Agriculture Ventures: A Case Study	9:00-9:20 a.m. Remote Design of Spare Parts for Local Manufacturing in Rural Kenya
	Session Break	Session Break	Session Break
9:40-11:00 a.m.	Other UN SDGs 2: Technology and Development 9:40-10:00 a.m. The use of technology for the growth of the sustainability concept inside community	Connectivity and Communication 4: Technologies for Human Sciences 9:40-10:00 a.m. Gamayun - language technology for humanitarian response	Disaster Mitigation 2: Communications and Remote Sensing 9:40-10:00 a.m. Flomosys: A Flood Monitoring System
	10:00-10:20 a.m. Empowerment of Women Self Help Groups: Human Centered Design of a Participatory IoT solution	10:00-10:20 a.m. Deep learning denoising for EOG artifacts removal from EEG signals	10:00-10:20 a.m. Caching Strategies with Mobile Cloud Wireless Mesh: A Study in Disaster Risk and Resilience
	10:20-10:40 a.m. A Taxonomy of Smart City Innovations	10:20-10:40 a.m. Inclusion and Independence: The impact of Mobile Technology on the Lives of Persons with Disabilities in Kenya and Bangladesh	10:20-10:40 a.m. LoRa-based Mesh Network for Off-grid Emergency Communications
	10:40-11:00 a.m. What are the benefits of open data and data mining for indigenous tribes in Colombia?		10:40-11:00 p.m. Rubble-penetrating S-band Life Detector using a Software-Defined Radio
11:00 a.m.-noon	Lunch Break - Networking Session (UN SDGs)	Lunch Break - Networking Session (Gender, Connectivity, Education)	Lunch Break - Networking Session (Disaster Mitigation)
Noon-1:00 p.m.	Closing Session		
1:10-3:30 p.m.	Other UN SDGs 3: Crisis Response 1:10-1:30 p.m. Capacity Maintenance During Global Disruptions: Security, resilience and incentives matter	Quality Education: 1:10-1:30 p.m. Lessons Learned from Delivering Programming Courses Online for Retraining Serbian Workforce through UNDP Programs - A Joint Project between UCSDX and MISANU	Disaster Mitigation 3: Data-Oriented Interventions 1:10-1:30 p.m. Pin&Post - App-Based Reporting of Electrical Fire Hazards to Prevent Wildfires
	1:30-1:50 p.m. Identifying and Mitigating Humanitarian Challenges to COVID-19 Contact Tracing	1:30-1:50 p.m. Laying the Foundations for a Digital Literacy Program in the Galapagos Islands	1:30-1:50 p.m. Mapping Disasters & Tracking Recovery in Conflict Zones Using Nighttime Lights
	1:50-2:10 p.m. Humanitarian Response Without Humans: How can we help, when we can't get there?	1:50-2:10 p.m. STEM Outreach in Underserved Communities through the Lens of Play, Creativity, and Movement	1:50-2:10 p.m. Machine Learning based Classification of Online News Data for Disaster Management
	2:10-2:30 p.m. S4: Simple, Secure, Survivable Systems Human-first crisis technology design principles	2:10-2:30 p.m. Bridging the Academic Chasm Between Institutions: The Role of Professional Bodies Case Study - IEEE/HP Telecenter, University of Ibadan	2:10-2:30 p.m. A Privacy-Preserving and Overhead-Free Protocol for Direct Donations to People Impacted by COVID-19 Lock-downs
	2:30-2:50 p.m. The Four Internets of COVID-19: the digital-political responses to COVID-19 and what this means for the post-crisis Internet	2:30-2:50 p.m. Augmented Reality for Teaching Data Structures in Computer Science	Networking
	Networking	2:50-3:10 p.m. Impact of high school curriculum on student performance at university	
		3:10-3:30 p.m. Promoting Sustainability through Virtual Reality: A Case Study of Climate Change Understanding with College Students	