

IEEE Global Humanitarian Technology Conference (GHTC) (<https://ieeeghtc.org/>)

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Technical Paper Presentations Schedule 2026

All times are listed in Boulder local time: Mountain Daylight Time (GMT-6)

Last updated: October 2, 2026

Virtual Session A: Innovations in Education Wednesday, October 7th: 8:00-10:30am

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(ImpatLab, Japan); Tsukasa Yamanaka (Ritsumeikan University, Japan)

- **FaymaKash: An NFC-based Interoperable Payment System for Scholarship Access in Senegalese Universities;** Ousmane William Kebe (Tokyo University, Japan); Manabu Tsukada (the University of Tokyo, Japan); Abel Diatta (Université Assane Seck de Ziguinchor, Sénégal, Senegal)
- **An Adaptive Framework for Carbon Intensity Estimation and Optimisation in Crop-Based Biofuel Supply Chains;** Ruturaj Nivas Patil, Sanket Junagade, Sanat Sarangi and Dineshkumar Singh (Tata Consultancy Services, India)

Virtual Session B: Impactful Technologies Wednesday, October 7th: 8:00-10:30am

Chair: John Ecklu (Virridy, USA)

- **From waste to sanitation infrastructure for underserved communities: an empirical method to determine optimal plastic-sand ratio for construction bricks;** Geert Talsma, Peter Chemweno, Justine Decrozant-Triquenaux and Alberto Martinetti (University of Twente, The Netherlands)
- **Co-Designed Low-Cost Monitoring System for Weather-Driven Water and Wind Hazards in Philippine Rice Farming;** Francesca Jeanne R. Revariz (Ateneo de Manila University, Philippines); Jessica B Bonifacio (National University-Manila, Philippines); Paul M. Cabacungan (Ateneo de Manila University & Ateneo Innovation Center, Philippines); Aivan Virgil G Santos (Ateneo de Manila University, Philippines); Ryleigh C Dougherty (Boston College, USA); Carlos Oppus (Ateneo de Manila University, Philippines); Sofia E Migon and Madison Murray (Boston College, USA)
- **Reframing LPG Monitoring: From Reactive Practices to Proactive Smart Solutions;** Marcus Combalicer and Justine Carl Naig, Mark Aaron Mendoza, Rex Carlo Dayo Nacario, Jes Ivan Damayo, Jaypy Tenerife, Johnvyle O. Mallari (Technological Institute of the Philippines, Philippines)

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Virtual Session C: Health and Climate

Wednesday, October 7th: 8:00-10:30am

Chair: Brita Fladvad Nielsen (Norwegian University of Science and Technology, Norway)

- **“Action speaks louder than Intention”: AI-powered Personalized Sustainability App to Support Actionable Sustainable Practices;** Qiming Sun and I-Han Hsiao (Santa Clara University, USA)
- **Lean engineering and surgical capacity building in Sierra Leone: Two decades of co-designed humanitarian practice with CapaCare;** Alberto Segundo Inzulza Galdames, Ana Maria Gualtero Villate, Maria Camila Marin Alvarez, Carmen Perez Muñoz, Håkon Angell Bolkan and Alex Van Duinen (Norwegian University of Science and Technology, Norway)
- **A Scenario-Based Decision-Support Tool for Climate-Displacement Planning in East Africa: Quantitative Leverage Evidence from Ethiopia and Uganda;** Joshua Alormenu and Aaron Brown (Colorado State University, USA)
- **Towards Carbon Stock Estimation for a Forestry Ecosystem with Mobile Participatory Sensing;** Abhishek Kumar, Swagatam Bose Choudhury, Sanat Sarangi, Mariappan Sakkan, Hemavathy B. and Dineshkumar Singh (Tata Consultancy Services, India)
- **ColorLink: Development and Feasibility Analysis of a Sustainable and Inclusive HIV Awareness Platform for the Philippines;** Isiah Louie Fernandez, Aleeyah Faye Guillermo, Fiel Angelo Martinez, Emmanuel Querubin Ocampo, Ramlex Jay Pizana, Jaypy Tenerife (Technological Institute of the Philippines, Philippines)
- **A Modular Hospital Bed Upgrade Kit for Improving Point-of-Care Delivery in Resource-Constrained Healthcare Facilities;** Hillary Ayeko Addo, Jesimiel Charles Enti, Ruth Arhin, Bryce Nembo Mbun Tangwe, Eleazer Archer and Bernard Osei Adomako (Ashesi University, Ghana)
- **Determinants of Medication Adherence in Type 2 Diabetes and Implications for Digital Health Interventions: A Small-Scale Qualitative Study among the Malayalam-Speaking Community in Kerala. South India;** Shone Surendran (King's College London)

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Leonardo Cavalcanti Hernandez and Juliana Andressa Bonito (Pontifical Catholic University of Parana, Brazil)

- **Solar Mini-Grids as Socially Embedded Adaptive Infrastructure: Climate Resilience and Rural Electrification in Northern Uganda;** Nicole Juliana Kawaako (University of Illinois at Urbana-Champaign, USA); Jess Lyons (CECOM, USA); Micheal Ahimbisibwe (Victoria University Kampala, Uganda); Listowell Appiah (UIUC, USA); Justin Eric Chen (University of Illinois Urbana-Champaign, USA); Ann-Perry Witmer (University of Illinois Urbana-Champaign & University of Illinois at Urbana-Champaign, USA)

Session 1B: Design with Communities

Thursday, October 8th: 9:30-10:45am

Chair: Anastasia M Schauer (University of Texas at Austin, USA), Room: C120B

- **Packaging Practices and Sustainability Among Metro Manila's Informal Food Sector;** Maeve Timms, Elizabeth Jenulis, Jing Yan, Nicholas Evaristo, George Jabbour, Alex Azzara, Jeremy Reed, Sophia Boothe, Logan Alexander, Sonali Sharpe, Mikaela Villajoquin, Thomas E Gartner, III, Eric R Obeysekare and Khanjan Mehta (Lehigh University, USA)
- **State-Aware Adaptive Feedback in Virtual Reality for Safety-Critical Infrastructure Training;** Joshua Hatfield, Husnu S Narman, Sudipta Chowdhury and Ammar Alzarrad (Marshall University, USA)
- **Understanding the Digital Divide in India in 2026;** Amber Seniuk, Eyob Abate, Lucy Cottrill, Nandita Ganesan and Eric R Obeysekare (Lehigh University, USA)
- **Sensitization and Pricing of Point-Of-Care Screening In Developing Countries;** Alice Vergani, Nathan Arnett, Amanda Winkler and Schweta Sen (Pennsylvania State University, USA); Sarah Ritter (Penn State University, USA); Eric R Obeysekare and Khanjan Mehta (Lehigh University, USA)
- **T-MEM: Temporal-Aware Memory Management for Agentic Memory Systems;** Rajan Yadav and Privanka Kumar (The University of Texas Permian Basin, USA)

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(University of Minnesota-Twin Cities, USA)

Session 2C: Community-Centered Engineering

Thursday, October 8th: 11:00am-12:00pm

Chair: Greg Rulifson (University of Texas at Austin, USA), Room N126

- **Early Warning System for Food Price Spikes: A Regime-Aware Framework with Social Impact Quantification for Brazil;** Rodrigo Hermont Ozon (Pontifical Catholic University of Parana State, Brazil); Ricardo Alexandre Diogo (PUCPR, Brazil); Anderson Luis Szejka (Pontificia Universidade Católica do Paraná, Brazil); Gilberto Reynoso-Meza (Pontificia Universidade Católica do Paraná (PUCPR), Brazil)
- **A Community-Informed Acoustic Deterrent for Mitigating Human-Elephant Conflict In Tanzania;** James Ray (Boston College, USA)
- **Whose Toilet, Whose Expertise? Renegotiating Authority and Knowledge in a Humanitarian Engineering Co-Design Project;** Pratyusha Kiran (Southern Methodist University (SMU), USA); Jessie Marshall Zarazaga (Southern Methodist University, USA); Max Sherard (University of North Texas (UNT), USA); Anthony Petrosino (Southern Methodist University, USA)
- **Humanitarian Technologies “Thermal comfort, energy autonomy and ecomaterials”;** Carlos Mauricio Bedoya (Universidad Nacional de Colombia, Colombia)

Session 3A: Water, Energy, and Food Nexus

Thursday, October 8th: 1:00-2:30pm

Chair: Denis Muthike (University of Colorado Boulder, USA), Room: C120A

- **Co-Creation and Evaluation of a Low-Cost, DIY Aqua Lens Solar Concentrator in Sudan;** Malek Ibrahim (Massachusetts Institute of Technology, USA); Badraldeen Mustafa (Nuclear Institute, Sudan)

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Session 3B: Humanitarian Engineering Education

Thursday, October 8th: 1:00-2:30pm

Chair: Joan Tisdale (University of Colorado Boulder, USA), Room: C120B

- **Lessons in Co-Design: Prefabricated Water Treatment Development through the RIDE (Research, Innovate, Design, Empower) Partner Ecosystem;** Margaret D Gottfried, Miranda Marcus, Haddasah Burroughs and Lucas Vieira (The Ohio State University, USA); Patrick J Sours (Ohio State University, USA)
- **Demystifying Empathy in Engineering: Insights from a Perspective-Taking Workshop;** Julianne Attai, Meghan Eliza Liu Stancliff and Grace Burleson (University of Colorado Boulder, USA)
- **Classroom ethics education for engineers in preparation for changeable work environment;** Prasanta Ghosh (Syracuse University, USA)
- **Exploring Pathways for Humanitarian Engineering: Distinguishing Traditional and Aspirational Approaches;** Zachary Schaad (University of Colorado at Boulder, USA); Marie Stettler Kleine (Colorado School of Mines, USA); Grace Burleson (University of Colorado Boulder, USA)
- **Engineering Education, Peacebuilding, and Entrepreneurship: A review of Pedagogies for Equity and Resilience;** Venkat Bakthavatchalam (Cardiff University, United Kingdom (Great Britain)); Ramiro Jordan (University of New Mexico, USA)
- **Applying the EOP Framework Across Engineering Lifelong Learning Pathways;** Erin Peiffer (American Society of Mechanical Engineers (ASME) and Engineering for Change (E4C), USA); Arianna Andino (Engineering for Change, Spain)

Session 3C: Disaster Prevention and Evaluation

Thursday, October 8th: 1:00-2:30pm

Chair: Khanjan Mehta (Lehigh University, USA), Room N126

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Session 4A: Healthcare Technologies

Thursday, October 8th: 2:45-4:00pm

Chair: Cara Welker (University of Colorado Boulder, USA), Room: C120A

- **Smartphone Conjunctival Imaging for Probabilistic Prescreening of Malaria-Associated Anemia in School-Age Children in Resource-Constrained Settings;** Tara R Kim, Sang Mok Park and Shaun G. Hong (Purdue University, USA)
- **Context-Aware On-Device Posture Detection for Improving Wearable Health Interventions;** Tanvir Rahman, Greg Dominick and Keith Decker (University of Delaware, USA)
- **Performance Characterization of a Low-Cost Indoor Air Filter During Short-Term PM2.5 Exposure Events;** Vanessa Elias, Jillian Halm, Andrea Flores, Thawsif Chowdhury, Sydney Hay, Khanjan Mehta and Joseph A Menicucci, Jr (Lehigh University, USA)
- **Analysis of Biosensor Platform with Integrated Plasma Separation for Metabolite Detection;** Ed Boukour (Integrated Medical Sensors, unknown); Muhammad Mujeeb and Abdullah Nadir (Integrated Medical Sensors, USA)
- **A Personalized Heart Rate Variability Based Framework for Wearable Monitoring of Exercise-Induced Cardiovascular Stress;** Myron Lai (Viewpoint School, USA)

Session 5A: Community Collaboration

Friday, October 9th: 9:45-10:45am

Chair: Patrick Sours (Ohio State University, USA), Room: C120A

- **A Sensor-to-Decision Framework for Agro-Industrial Engineering Education: Insights from a Fulbright Specialist Engagement at Universidad Tecnica Nacional, Costa Rica;** Mona El Helbawy (University of Colorado Boulder, USA)
- **AI Literacy, Curriculum Integration, and Assessment Redesign in the Era of Generative AI: Insights from a Fulbright Specialist Engagement at Universidad**

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Champaign, USA); Emily Lawson-Bulten (Duquesne University, USA) and Nicole Juliana Kawaako, Ann-Perry Witmer (University of Illinois Urbana-Champaign, USA); Jess Lyons (CECOM, USA)

- **Participatory Design in Practice: Addressing Power Dynamics through Facilitation;** Ogochukwu K.U. Elisha-Wigwe (The University of Texas at Austin, USA); Iris Zijlstra and Jet Endeman (University of Twente, The Netherlands); Anastasia M Schauer (The University of Texas at Austin, USA); Nina Trauernicht (University of Twente, The Netherlands)
- **Training Community Interviewers to Inform Afghan Resettlement Services;** Carlye Lauff and Natasha C. Wright (University of Minnesota-Twin Cities, USA)

Session 5C: AI, Education, and Digital Inclusion

Friday, October 9th: 9:45-10:45am

Chair: Min Pack (Baylor University, USA), Room: N224

- **Sustainable connectivity-as-a-Service (SCaaS) in Santa Fe: A telco infra and educational program for digital inclusion;** Manuel García, Joel Aragón, Melanie Espinoza, Tessy De La Cruz and Ximena Gil (Internet para Todos, Peru)
- **Proem: A Framework That Teaches Middle-School Students to Plan Before They Prompt;** Panhapiseth Lim and Priyanka Kumar (The University of Texas Permian Basin, USA)
- **Impact of Connected Chromebooks on Tukwila School District Student Achievement;** Esther Han Beol Jang, Swarnya Srivastava and Kurtis Heimerl (University of Washington, USA)
- **Entrepreneur AI Agent: Empowering Small Businesses and Bridging the Digital Divide through Context-Aware Generative AI;** Xue A Dong (Colorado State University, USA)

Session 6A: Engineering in Context

Friday, October 9th: 11:00am-12:00pm

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Session 7A: Technologies for Disaster Mitigation

Friday, October 9th: 1:00-2:30pm

Chair: Alberto Martinetti (University of Twente, The Netherlands), Room: C120A

- **Fabrication of an Air-Assisted, "Pelicanized" Lab for Disaster Preparedness and Response;** Kourosh Arasteh, Matt Lyman, K. Wesley Overton and Kristl Adams (Lawrence Livermore National Laboratory, USA)
- **Uncrewed Aircraft-Based Water Sampling Device for Harmful Algal Blooms;** Justin Fratto, Kayla D. Taylor, Marc Compere, Avinash Muthu Krishnan, David A. Zink, Emel Sen-Kilic and Kevin A. Adkins (Embry-Riddle Aeronautical University, USA)
- **SoundShield: Machine Learning Approaches for Smartphone-Based Gunshot Detection Under Realistic Acoustic Conditions;** Hemansh Gupta (The Harker School, USA)
- **Simulation-Driven Optimization of Drone Swarm-Helicopter Coordination in Search and Rescue Operations;** Chin Yong Chung and Chuyang Yang (Embry-Riddle Aeronautical University, USA)
- **ImOK: A Civilian Emergency Messaging Framework;** Vivian Ha and Alan Kaplan (Princeton University, USA); David August (Princeton Univ, USA)

Session 7B: Socio-Technical Approaches in Engineering

Friday, October 9th: 1:00-2:30pm

Chair: Marie Stettler Kleine (Colorado School of Mines, USA), Room: C120B

- **From Building Products to Transforming Systems: End-to-End Ensembles as Drivers of Venture Success;** Nova Afber, Maria Garcia Rodriguez and Khanjan Mehta (Lehigh University, USA)
- **Ergonomic Assessment of LLM-Assisted Work among Bangladeshi Technology Users: A Multi-Instrument Survey Study;** Muntaser Syed, Marius C Silaghi and Sheikh Abujar (Florida Institute of Technology, USA); Sharun Akter Khushbu (Daffodil International

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Session 7C: Innovative Sensing Technologies

Friday, October 9th: 1:00-2:30pm

Chair: Rabia Khan (National Laboratory of the Rockies, USA), Room: N224

- **Wi-Fi Sensing as a Transformative Technology for Healthcare: A Case Study in Vital Signs Monitoring, Hospital Ward Management, and Assisted Living;** Rohan Rajidi (Charter Communications, USA); Saba Fatima (University of Denver, USA)
- **Real-Time Stereo Depth Estimation on Raspberry Pi 5 for Near-Field Assistive Navigation;** Mohammad Al Bataineh, Fitsum Y Mekonnen, Yonathan Demeke, Ali Dahir, Samsom Hadgu and Kena K Tamiru (United Arab Emirates University, United Arab Emirates)
- **Federated Lightweight Intrusion Detection for Community-Health IoT Gateways: A Clinical-Cost-Aware Evaluation Framework on Edge-IIoTset;** Varun Bindra (HCL, USA); Subham Sharma (Bennett University, India)
- **Artificial Intelligence for Breast Cancer Detection in Low-Resource Settings: A Scoping Review and Contextual Framework;** Antonio N Romero and Jessica Liang (Virginia Tech, USA); Ted Mwango and Ida Puliwa Mwango (Malawi); Ashley Taylor (Virginia Tech, USA)
- **Embedding Indigenous Data Sovereignty in Low-Cost Community Air Quality Monitoring;** Leena Shah and Ryan Franco (California State University, Northridge, USA); Alex Modarresi (California State University Northridge, USA)

Session 8C: Innovative Humanitarian Technologies

Friday, October 9th: 2:45-4:00pm

Chair: Arnold Bugingo (University of Colorado Boulder, USA), Room: N224

- **Converting Multilayer Plastic Sachet Waste into 3D Printer Filament;** Piper L Joseph, Arturo Sanchez, David J Jones, Garrett Hyneman, Jayden Altamura, Ethan Beharry, Emily Estayon, Spencer Smith, Khanian Mehta and Eric R. Obayekere (Lohich University, USA)

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