2022 IEEE Healthcare Innovations and Point of Care Technologies (HI-POCT 2022)

Houston, Texas, USA
10 – 11 March 2022

IEEE Catalog Number: CFP22AMA-POD
ISBN (Print-On-Demand):   978-1-6654-9616-2
ISBN (Online):   978-1-6654-9615-5

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Day 1: Thursday, March 10, 2022

8:00-8:10am	**Welcome**	
		Roderic I. Pettigrew, PhD/MD. Texas A &M University. EnMED
		Metin Akay, PhD. – University of Houston- IEEE EMBS
8:10-9:10 am	**Keynote Lecture – Rebecca Richards-Kurtum, PhD- Rice University**	
	Chair: John Criscione, PhD. – Texas A&M University	
9:10- 9:20 am	BREAK	

Session 1 – Global and Precision Health

Chair: Eon Soo Lee

9:20- 9:40 am	**1.1**	Bharath Babu Nunna, Yudong Wang, Niladri Talukder**, Eon Soo Lee***
		Capillary Flow Dynamics of Blood with Varied Hematocrit in Microfluidic Platforms...1
9:40- 10:00 am	**1.2**	Ran An, Qiaochu Zhang, Zoe Sekyonda, M Lind, D Bledsoe, Umut A. **Gurkan***
		First Integrated Point-Of-Care Test for Malaria and Anemia...5
10:00- 10:20 am	**1.3**	**Emilie Newsham*,** M Chang, … E Baker, K Schmeler, Richards-Kortum
		Clinical Evaluation of a Paper HPV DNA Test in Mozambique...N/A
10:20- 10:40 am	**1.4**	**Qingxue Zhang***
		S2Edge: Mobile Edge for Smart and Secure Interaction of Precision Health Big Data...N/A
10:40- 10:50 am	BREAK	

Session 2 – Community Medicine Technology/ Telemedicine and Health Informatics

Chair: Tiffani Lash**,** PhD. NIH/NIBIB

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		A Novel Smartphone-Based & Personalized Atrial Fibrillation Detection: A Preliminary Study...18
11:30- 11:50 pm	**2.3**	Ridhi Deo, **Suranjan Panigrahi***
		Explainability Analysis of Black Box SVM Models for Hepatic Steatosis Screening...22
11:50-12:10 pm	**2.4**	**Regina Merine*,** J Pinnamraju, D Singh, Judy Gichoya, Saptarshi Purkayastha
		LibreHealth Cost-Of-Care Explorer: Mobile Application for Patient-Friendly Access to Hospital Chargemasters...26
12:10-1:00 pm	**LUNCH (on your own)**	
1:00-2:00 pm	**Keynote Lecture – Bijan Najafi, PhD. Baylor College of Medicine**	
	Chair: Mario Romero-Ortega PhD. – University of Houston	

Session 3 – Mobile and Personalized Health

Chair: Rose Faghih, PhD., New York University
Co-Chair: Tinoosh Mohsenin, PhD. University of Maryland

2:00- 2:20 pm	**3.1**	Rafiul Amin, Dilranjan Wickramasuriya, **Rose T. Faghih***

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2:40- 3:00 pm   **3.3**   **Mishra*, M Skubic, …,** M Rantz, C Abbott, M Enayati, S Shalini, S Miller

Explainable Fall Risk Prediction in Older Adults...N/A

3:00- 3:20 pm   **3.4**   **Ritika Jain*,** Ramakrishnan A. G.

Classifying Sleep-Wake States of Patients by Training on Single EEG or EOG ..from Normal Subjects...N/A

3:20- 3:30 pm   BREAK

Session 4 – Machine and Deep learning / Big data

Chair: Baowei Fei, PhD, EngD. UT Dallas

Co-Chair: Qingxue Zhang, PhD Purdue University

3:30- 3:50 pm   **4.1**   **Hanqing Cao***, Joshua Finer, Murad Megjhani, ……, Sarah Rossetti, Soojin Park
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4:30- 4:50 pm   **4.4**   David Lloyd, Maria Gonzalez-Gonzalez, Carlos Ordonez, **Mario Romero-Ortega***

          Inter-Organ Neuronal Network Features Revealed by High Throughput Data Analysis...N/A

5:00- 6:00 pm   **Poster Session/Reception**

Chair: Charlotte Waits, PhD- University of Houston

Co-Chair: Alejandra Gonzalez-Gonzalez, PhD. – University of Houston

Poster presenters:

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          Dulce Citlalli Martinez-Peon* EEG-Based Drivers Mental Fatigue Detection Using ERD/ERS and Hurst Exponent...N/A
          Huber Nieto Chaupis* Universal Estimation of an Intercity Social Distancing in Covid-19 Epochs...63
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          Samuel Razmi* Intraoperative Tumor Margin Evaluation: Point of Care Precision Cancer Surgery...N/A
          Jesse Fine*Examining Effects of Signal Filtering on Photoplethysmography Feature Extraction with Synthetic Waveforms...N/A
          Umut A. Gurkan* First Point-Of-Care Diagnostic Test for Beta-Thalassemia...N/A
          Zhenpeng Qin* Single-Molecule Detection of SARS-CoV-2 By Plasmonic Sensing Of Isothermally Amplified Nucleic Acids...N/A
          Imanuel Lerman* Measurement of Neuronal Signal Pre-To-Post Intravenous Lipopolysaccharide (LPS) Injection...N/A
          Alberto Morales* Nanodot Blot: An Alternative Technique to Measure Putative Biomarkers in Serum...N/A
          Sunny Niu* Development of a Lateral Flow Assay for Detection of TBI Biomarkers...N/A
          Jo Woon Chong* Smartphone PPG-Based Feature Importance Estimation for Biometric...N/A
          Jayne Wu* A Reusable Universal Sensor Platform for Sensitive and Specific Detection of Bacteria in Complex Media...N/A
          Andrew D. Nordin* Mobile Technologies for Monitoring Real World Human Ambulatory Brain, Muscle, and Body...N/A

6:00 pm   Adjourn Day 1

Day 2: Friday, March 11, 2022

8:00-8:10 am	**Welcome**
	John Criscione, PhD. – Texas A&M University
	Mario Romero-Ortega PhD. – University of Houston

8:10-9:10 am	**Keynote Lecture – John Rogers, PhD – Northwestern University**
	Chair: Mario Romero-Ortega PhD. – University of Houston

9:10-9:20 am	BREAK

<u>**Session 5**</u> – **Molecular and Microfluidic diagnostics**
Chair: Yin-Ting Yeh, PhD. Case Western University

9:20- 9:40 am	**5.1**	Tofighi Zavareh*, Cody Lewis, Richard Horner, Brian Ko, Mike McShane
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9:40- 10:00 am	**5.2**	u-Hsuan Cheng, C Chande, Z Li, S Kaaliveetil, S**agnik Basuray***
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10:00- 10:20 am	**5.3**	**Megan Chang***, Natoli, K Kundrod, V Tubman, G Airewele, R Richards-Kortum
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10:20- 10:40 am	**5.4**	Hasibul Hasan, **Christopher Slaughter***, Lynn Wong, Xudong Ge, Govind Rao
		Automatic Glucose Monitoring System by Periplasmic Binding Protein-based Biosensor...N/A

10:40- 10:50 am	BREAK

<u>**Session 6**</u> – **Biosensors and Biomarkers**
Chair: May Elebeoba, PhD. U. of Houston

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11:50-12:10 pm	**6.4**	Yu Jiang, **Jayne Wu***, Shigetoshi eda
		A Rapid and Ultra-Sensitive Sensing Strategy Based on Tunable Dielectrophoresis for Robust POC Detection...103

12:10-1:00 pm	**LUNCH (on your own)**

1:00-2:00 pm	**Keynote Lecture – Roderic I. Pettigrew, Ph.D. Texas A &M University**
	Chair: John Criscione, PhD. – Texas A&M University

<u>**Session 7**</u> – **Wearable technologies and Commercialization**
Chair: Philipp Gutruf, PhD. University of Arizona

2:00- 2:20 pm	**7.1**	**Sarnab Bhattacharya***, Phillip Tan, Charles Block, Nanshu Lu
		Real-Time Tracking of Cardiac Time Intervals with Chest-Laminated Wireless E-Tattoos...N/A
2:20- 2:40 pm	**7.2**	Tanzila Noushin, Nafize I. Hossain, and Shawana Tabassum
		Kirigami-Patterned Highly Stable and Strain Insensitive Sweat pH and Temperature Sensors for Long-term Wearable Applications...108
2:40- 3:00 pm	**7.3**	MinGin Kim, **Victor Ugaz***
		Affordable PCR Platform Based on Rayleigh-Bénard Convection for Rapid Detection at Point-Of-Care...N/A

3:00- 3:30 pm	BREAK	

Session 8 – Breakthrough technologies

Chair: Amir Zavareh, – Texas A&M University

3:30- 3:50 pm **8.1** Harshitha Govindaraju, Muhammad Ahsan Sami, Umer Hassan*
Particle Quantification from a Smartphone-based Biosensor using Deep Convolutional Neural Network for Clinical Diagnosis...113

3:50- 4:10 pm **8.2** **Yin-Ting Yeh*,** Mauricio Terrones
A Portable Platform for Label-Free Virus Enrichment and Real-Time Virus Surveillance Using Raman Spectroscopy...N/A

4:10- 4:30 pm **8.3** Yaning Liu, Haihang Ye, **Zhenpeng Qin***
DIgitAl PlasMONic Nanobubble Detection (DIAMOND) for Rapid and Ultrasensitive Diagnostics of Viruses...N/A

4:30- 5:00 pm **Panel** - **Challenges and Opportunities in POC technologies**

Chair: Mario Romero-Ortega PhD. – University of Houston

Panelists: Tiffani Lash, PhD. NIH/NIBIB

Victor Ugaz*,PhD. Texas A&M University

Philipp Gutruf, PhD. University of Arizona

Rose Faghih, PhD., New York University

Umut A. Gurkan, PhD. Case Western Reserve University

5:00- 5:30 pm **Summary and Next year meeting**

John Criscione, PhD. – Texas A&M University

Mario Romero-Ortega PhD. – University of Houston

5:30 pm **Adjourn Conference**