



**The Fifth IEEE/ACM international conference on Connected Health: Applications, Systems and Engineering Technologies (CHASE)**

December 17-18, 2020

**ACM/IEEE CHASE 2020 Program**

**Day 1 (Thursday, December 17, 2020) – Conference**

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|---------------|--|
| 8:00 - 8:30   | <b>Opening Remarks</b>   |
| 8:30 - 9:30   | <b>Keynote Speech 1:</b> Wendy Nilson (NSF)  |
| 9:30 - 9:45   | <b>Virtual Coffee Break</b>  |
| 9:45 - 10:35  | <b>Session 1:</b> Infectious Disease and COVID-19  |
| 10:35 - 11:50 | <b>Session 2:</b> Machine Learning for Smart Health  |
| 11:50 - 13:30 | <b>Lunch Break</b>   |
| 13:30 - 14:40 | <p><b>Panel 1:</b> Societal Efforts in Combating COVID-19</p> <p>Panelists:</p> <ul style="list-style-type: none"> <li>- Arlene Chung (University of North Carolina at Chapel Hill), "Leveraging Emerging Technologies &amp; Informatics Tools to Address the COVID-19 Pandemic"</li> <li>- Sanjay Patel (University of Illinois Urbana-Champaign), "A Technology Driven-Approach to Re-opening a Campus Community"</li> <li>- Neil Sarkar (Rhode Island Quality Institute), "Building a Learning Health System in Real Time: A COVID-19 Tale"</li> <li>- Dongxiao Zhu (Wayne State University), "COVID-MobileXpert: On-Device COVID-19 Patient Triage and Follow-up using Chest X-rays"</li> </ul> <p>Moderator: Jinjun Xiong, IBM Research</p> |
| 14:40 - 14:50 | <b>Virtual Coffee Break</b>  |
| 14:50 - 16:00 | <b>Session 3:</b> Multimedia and Informatics for Smart Health  |
| 16:00 - 17:00 | <b>Poster Session</b>  |

**Day 2 (Friday, December 18, 2020) - Conference**

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| 9:00 - 10:00  | <p><b>Keynote Speech 2:</b> A Vision towards Pervasive Edge Computing</p> <p>Speaker: Yuanyuan Yang (NSF)</p>   |
| 10:00 - 10:15 | <b>Virtual Coffee Break</b>   |
| 10:15 - 11:45 | <b>Session 4:</b> Emerging e-Health Applications  |
| 11:45 - 13:30 | <b>Lunch Break</b>  |
| 13:30 - 14:30 | <p><b>Panel 2:</b> Deep Learning in Smart Healthcare</p> <p>Panelists:</p> <ul style="list-style-type: none"> <li>- Kit August (Industry)</li> <li>- Mooi Choo Chuah (Lehigh University)</li> <li>- Rich Martin (Rutgers University)</li> </ul> |

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|               | - Yan Wang (Temple University)<br>Moderator: Yingying (Jennifer) Chen, Rutgers University |
| 14:30 - 14:45 | <b>Virtual Coffee Break</b>   |
| 14:45 - 16:00 | <b>Session 5: Wearable Computing for Connected Health</b>                                 |

Note: all accepted papers in the main track of CHASE 2020 will be published in a special issue of Smart Health journal, "Connected Health: Applications, Systems and Engineering Technologies (CHASE) 2020".

## Conference Sessions

### Keynote Speech 1

**8:30 – 9:30 (Thursday, December 17, 2020)**

**Speaker:** Wendy Nilson (NSF)

### Session 1: Infectious Disease and COVID-19

**9:45 – 10:35 (Thursday, December 17, 2020)**

1. Smart Homes that Detect Sneeze, Cough, and Face Touching  
Elishiah Miller, Nilanjan Banerjee and Ting Zhu (University of Maryland, Baltimore County, USA)
2. Wi-COVID: A COVID-19 Symptom Detection and Patient Monitoring Framework using WiFi  
Fangyu Li, Maria Valero and Hossain Shahriar (Kennesaw State University, USA); Rumi Khan (Orlando Health, USA); Sheikh Iqbal Ahamed (Marquette University, USA)

### Session 2: Machine Learning for Smart Health

**10:35 – 11:50 (Thursday, December 17, 2020)**

1. GaitCode: Gait-based Continuous Authentication Using Multimodal Learning and Wearable Sensors  
Ioannis Papavasileiou (University of Connecticut, USA); Zhi Qiao (Arizona State University, USA); Chenyu Zhang (University of Connecticut, USA); Wenlong Zhang (Arizona State University, USA); Jinbo Bi and Song Han (University of Connecticut, USA)
2. Robustness to Noise for Speech Emotion Classification using CNNs and Attention Mechanisms  
Lahiru Wijayasingha and John Stankovic (University of Virginia, USA)
3. Activity Recognition in Wearables Using Adversarial Multi-source Domain Adaptation  
Avijoy Chakma, Abu Zaher Md Faridee and Nirmalya Roy (University of Maryland Baltimore County, USA); Md Abdullah Al Hafiz Khan (Philips Research North America, USA)

### Session 3: Multimedia and Informatics for Smart Health

**14:50 – 16:00 (Thursday, December 17, 2020)**

1. Real-time Work Environment Optimization using Multimodal Media and Body Sensor Network  
Nan Zhao (MIT, USA); Susanne Seitinger (Massachusetts Institute of Technology, USA); Robert Richer (Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany); Joseph A. Paradiso (MIT, USA)

2. Discovering Intimate Partner Violence from Web Search History  
Anis Zaman, Henry Kautz and Ehsan Hoque (University of Rochester, USA); Vincent M. B. Silenzio (Rutgers University, USA); Corey Nicols (University of Rochester, USA)
3. A Context-adaptive Smoking Cessation System Using Videos  
Golnoush Asaeikheybari, Monica Webb Hooper and Ming-Chun Huang (Case Western Reserve University, USA)

### **Keynote Speech 2**

**9:00 – 10:00 (Friday, December 18, 2020)**

**Title:** A Vision towards Pervasive Edge Computing

**Speaker:** Yuanyuan Yang (IEEE Fellow; Program Director, US National Science Foundation; SUNY Distinguished Professor, Stony Brook University, USA)

### **Session 4: Emerging e-Health Applications**

**10:15 – 11:45 (Friday, December 18, 2020)**

1. A Precise, Parallel and Scalable Measurement System for Ballistocardiographic Research  
Ulf Kulau (DSI Aerospace Technology, Germany); Thiemo Clausen and Tobias Jura (Technische Universität Braunschweig, Germany); Nico Jaehne-Raden (Hannover Medical School & Peter L. Reichertz Institute for Medical Informatics University of Braunschweig - Institute of Technology and Hannover Medical School, Germany); Marie Wolf (Hannover Medical School, Germany); Lars C Wolf (Technische Universität Braunschweig, Germany)
2. Project SMART: A Cooperative Educational Game to Increase Physical Activity in Elementary Schools  
Christine Julien (University of Texas at Austin, USA); Darla Castelli and Dylan Bray (The University of Texas at Austin, USA); Sangsu Lee (University of Texas at Austin, USA); Sheri Burson and Yeonhak Jung (The University of Texas at Austin, USA)
3. Human Gait Identification using Two Dimensional Multi-resolution Analysis  
Omid Dehzangi (West Virginia University, USA); Mojtaba Taherisadr (University of Central Florida, USA)
4. Just Breathe: Towards Real-Time Intervention for Public Speaking Anxiety  
Everlyne N Kimani, Ameneh Shamekhi and Timothy Bickmore (Northeastern University, USA)

### **Session 5: Wearable Computing for Connected Health**

**14:45 – 16:00 (Thursday, December 18, 2020)**

1. MyoMonitor: Evaluating Muscle Fatigue with Commodity Smartphones  
Xingzhe Song, Hongshuai Li and Wei Gao (University of Pittsburgh, USA)
2. iWash: A Smartwatch Handwashing Quality Assessment and Reminder System with Real-time Feedback in the Context of Infectious Disease  
Sirat Samyoun, Sudipta Saha Shubha, Md Abu Sayeed Mondol and John Stankovic (University of Virginia, USA)
3. Inter-Mobile-Device Distance Estimation using Network Localization Algorithms for Digital Contact Logging Applications

Lillian Clark (University of Southern California, USA); Alan Papalia (Massachusetts Institute of Technology, USA); Jonata Tyska Carvalho (Federal University of Santa Catarina, Brazil); Luca Mastrostefano (Covid Community Alert, United Kingdom (Great Britain)); Bhaskar Krishnamachari (University of Southern California, USA)