

# IHTC 2017 Conference Program Summary

Time	Auditorium (ENG103)	ENG101	ENG102
<b>Thursday, July 20</b>			
08:30-09:30	Keynote 1: Thursday morning Ravi Karkara		
09:30-10:00	Break 1: Coffee Break - morning		
10:00-12:00	TM01: Health and Well Being - I	TM02: Disaster Mitigation and Management	
12:00-13:00	Lunch		
13:00-14:00	Keynote 2: Thursday afternoon Dr. Ann Cavoukian		
14:00-15:20	TA01: Health and Well Being - II	TA02: Education and Humanitarian Technology - I	TA03: Standards Workshop 14:00-16:30
15:20-15:40	Break II: Coffee Break - afternoon		
15:40-17:00	TE01: Professional Presentations - I	TE02: Education and Humanitarian Technology - II	
19:00-22:00	<b><u>Young Professional Mixer</u></b> Marche Outdoor Patio Brookfield Place, 181 Bay Street.		
<b>Friday, July 21</b>			
08:30-09:30	Keynote 3: Friday Morning Lee Maracle		SDG Training Session 08:30-17:00 <b><u>Room: LIB72</u></b>
09:30-10:00	Break 1: Coffee Break - morning		
10:00-12:00	FM01: Professional Presentations - II	FM02: Information and Communication Technology for Humanity - I	
12:00-13:00	Lunch		
13:00-14:00	Keynote 4: Friday afternoon Dr. Claudio Canizares		
14:00-15:20	FA01: Energy, Climate, and Sustainable Development Goals	FA02: Information and Communication Technology for Humanity - II	FE03: Student Design Competition 14:00 - 17:00
15:20-15:40	Break II: Coffee Break - afternoon		
15:40-17:00	FE01: Energy, Climate, and Sustainable Development Goals	FE02: Diverse Topics in Humanity	
19:00-22:00		<b><u>Awards Banquet</u></b> Chelsea Hotel, 33 Gerrard Street.	

# 2017 International Humanitarian Conference

## Technical Program

### Thursday, July 20

#### Thursday, July 20, 08:30 - 09:30

##### Keynote1: Thursday morning

Ravi Karkara - Senior Advisor Strategic Partnership and Advocacy To the Assistant Secretary-General/Deputy Executive Director, UN Women, JMI, New York

Room: Auditorium (ENG103)

#### Thursday, July 20, 09:30 - 10:00

##### Break 1: Coffee Break - morning

#### Thursday, July 20, 10:00 - 12:00

##### TM01: Health and Well Being - I

Room: Auditorium (ENG103)

Chair: Maike Luiken (Lambton College, Canada)

##### 10:00 *Towards a Low-cost Point-of-Care Screening Platform for Electronic Auscultation of Vital Body Sounds*

Uzair Mayat, Fayez Qureshi, Saad Ahmed, Yashodhan Athavale and Sridhar Krishnan (Ryerson University, Canada)

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##### 10:20 *Technology for Continuous Long-term Monitoring of Pregnant Women for Safe Childbirth*

George Endo, Ibukun Oluwayomi, Victor Alexandru, Yashodhan Athavale and Sridhar Krishnan (Ryerson University, Canada)

pp. 6-10

##### 10:40 *Technological Aspects of Traumatic Spinal Cord Injury Rehabilitation*

Mariana C. Melo (Federal University of Uberlândia & Universidade de Uberaba, Brazil); Dhainner R Macedo (Federal University of Uberlandia, Brazil); Sridhar Krishnan (Ryerson University, Canada); Alcimar Soares (Universidade Federal de Uberlândia, Brazil)

pp. 11-15

##### 11:00 *An Integrated Biosignals Wearable System for Low-Cost Blood Pressure Monitoring*

Toka Alnaser, Amnyah Almahouzi, Susanne Tiraei, Yashodhan Athavale and Sridhar Krishnan (Ryerson University, Canada)

pp. 16-20

##### 11:20 *A Hybrid Wavelet Based K-Means Clustering Approach to Detect Intracranial Hypertension*

Parisa Naraei, Matyas Kenez and Alireza Sadeghian (Ryerson University, Canada)

pp. 21-25

##### 11:40 *Wireless Body Area Network Development for Remote Patient Health Observing*

Abdul Salam Mahmood (Wasit University, Iraq); Essa Jafer (Princess Sumaya University for Technology, Jordan); Sattar Hussain (Centennial College & School of Engineering Technology and Applied Science, Canada); Xavier N. Fernando (Ryerson University, Canada)

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## **IHTC 2017 Technical Program - cont.**

### **TM02: Disaster Mitigation and Management**

Room: ENG101

Chair: A. N. K. Zaman (University of Guelph, Canada)

**10:00 *Welcoming Syrian Refugees to Canada***

Wendy Cukier (Ryerson University, Canada); Samantha Jackson (Research Associate, Diversity Institute, Canada)  
pp. 32-36

**10:20 *Building with Straw in Post-Emergency Conditions: The Case of Haiti***

Cottino Valeria (Architettura Senza Frontiere Piemonte, Italy); Carlo Ferraresi and Walter Franco (Politecnico di Torino, Italy); Annalisa Masetto (Architettura Senza Frontiere Piemonte, Italy); Giuseppe Quaglia (Politecnico di Torino, Italy)  
pp. 37-41

**10:40 *A Practical System for Optimized Assignment of Shelters to Evacuees***

Liang Zhao (Kyoto University, Japan)  
pp. 42-45

**11:00 *Earthquake Disaster Management Analysis in Dhaka***

Md Ahmed and Hiroshi Morita (Osaka University, Japan)  
pp. 46-50

**11:20 *Enhancing Autonomous Access Hole Detection***

Ben Waismark, Alexander Ferworn and Jimmy Tran (Ryerson University, Canada)  
pp. 51-54

**11:40 *Towards Determining Relative Densities for Common Unknown Explosives in Improvised Explosive Devices***

Alexander Ferworn and Christopher Chan (Ryerson University, Canada)  
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### **Thursday, July 20, 12:00 - 13:00**

**Lunch: Lunch**

### **Thursday, July 20, 13:00 - 14:00**

#### **Keynote 2: Keynote 2 - Thursday afternoon**

Ann Cavoukian - Executive Director, Ryerson University Privacy and Big Data Institute  
Room: Auditorium (ENG103)

## IHTC 2017 Technical Program - cont.

Thursday, July 20, 14:00 - 15:20

### TA01: Health and Well Being - II

Room: Auditorium (ENG103)

Chair: Murray Macdonald (Exhibits, Canada)

**14:00 *Benefits of Automatic Human Action Recognition in an Assistive System for People with Dementia***

Emilie Jean-Baptiste and Alex Mihailidis (University of Toronto, Canada)

pp. 61-65

**14:20 *Detection of Heart Abnormalities via Artificial Neural Network: An Application of Self Learning Algorithms***

Maryam Rastgar-Jazi and Xavier N. Fernando (Ryerson University, Canada); Vino Shan (Health care Management Systems Inc, Canada)

pp. 66-69

**14:40 *Device Integration Framework E-Health***

Elankayer Sithirasanen (Griffith University & The Secure Net, Australia); Adee Macdowell and Jake Araullo (Griffith University, Australia)

pp. 70-74

**15:00 *Boosting Physical and Psychological Well-Being in Rehabilitation Through Cognitive Technologies Preliminary Results***

Raffaella Folgieri (Università degli Studi di Milano, Italy); Claudio Lucchiari (Università degli Studi di Milano, Italy)

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### TA02: Education and Humanitarian Technology - I

Room: ENG101

Chair: Rozita Dara (University of Guelph, Canada)

**14:00 *Intercultural Engineering Online: Getting Humanitarian Engineering on the Agenda***

Joyce van de Vegte (Camosun College, Canada)

pp. 80-84

**14:20 *Exploring Anthropogenic Activities and Management Decisions Using a Novel Environmental Agent Based Model***

Devin Rose, Brandon P.M. Edwards, Ross Kett, Michael Yodzis, Justin Angevaare and Daniel Gillis (University of Guelph, Canada)

pp. 85-89

**14:40 *A Novel Method for Assessing Broadband State at K-12 Schools***

Salam Ismaeel and Mirza Kamaludeen (Ryerson University, Canada); Carm Scarfo (Ontario, Canada); Soussan Tabari (Government of Ontario, Canada)

pp. 90-93

**15:00 *The Education of Students About ISO/IEC 29110 Software Engineering Standards and Their Implementations in Very Small Entities***

Claude Laporte (Ecole de Technologie Superieure, Canada); Mirna Muñoz (Centro de Investigación en Matemáticas, Mexico); Bruel Gerançon (Institut Universitaire Quisqueya Amérique, Haiti)

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## **IHTC 2017 Technical Program - cont.**

**Thursday, July 20, 14:00 - 16:00**

**TA03: Standards Workshop 14:00-16:30**

Room: ENG102

**Thursday, July 20, 15:20 - 15:40**

**Break II: Coffee Break - afternoon**

**Thursday, July 20, 15:40 - 17:00**

**TE01: Professional Presentations - I**

Room: Auditorium (ENG103)

Chair: Adrian D.C. Chan (Carleton University, Canada))

**15:40 *Giving Back: Tikkun Olam Makers as an Example and Toronto as a Rich Medium to Implement It.***

Maryam Abdullah - University of Calgary

PP02

**16:00 *Monitor, Control & Forecast onsite energy resources and loads to optimize facilities performance and maximize energy savings***

Pratap Revuru

PP06

**16:20 *Estimating Road and House Density of Refugee Camps from Aerial Imaging***

Hadi Jomaa, Mariette Awad

PP09

**16:40 *Developing a Public-Policy Approach to the use of Social media monitoring during Humanitarian crises***

Agradip Dutta

PP04

**TE02: Education and Humanitarian Technology - II**

Room: ENG101

Chair: SM Kamruzzaman (Ryerson University, Canada)

**15:40 *Data-Driven Technique to Estimate the Required Broadband Speed for K-12 Schools***

Mirza Kamaludeen and Salam Ismaeel (Ryerson University, Canada); Franca Petrocelli, Chris Carrington and Carm Scarfo (Ontario, Canada)

pp. 99-104

**16:00 *A Low-cost Approach for Wide-spread Screening of Periodic Leg Movements Related to Sleep Disorders***

Sharadha Kolappan and Sridhar Krishnan (Ryerson University, Canada); Brian Murray and Mark Boulos (Division of Neurology, Canada)

pp. 105-108

**16:20 *Proposal of an Educational Game for Improvement of Cognitive Performance of Intellectually Disabled People***

Leticia Segatto and Gustavo da Silva (Universidade de Uberaba, Brazil); Mariana C. Melo (Federal University of Uberlândia & Universidade de Uberaba, Brazil)

pp. 109-112

**16:40 *Project Education-based Applied Technologies for Poverty Alleviation, Ending Hunger, Achieving Food Security and Promoting Sustainable Ag***

Reg Pecen (Go-Link Energy & A div of AMLx-Security, Inc., USA); Alan Maclachlan (Go-Link Energy, USA); Nonhlanhla Joye (Umgibe Farming Organics and Training Institute, South Africa)

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## **IHTC 2017 Technical Program - cont.**

**Thursday, July 20, 19:00 - 22:00**

**YP: Young Professional Mixer**

Room: Marche Outdoor Patio, Brookfield Place, 181 Bay St.

## **Friday, July 21**

**Friday, July 21, 08:30 - 09:30**

**Keynote 3: Keynote Friday Morning**

Lee Maracle - ABS Instructor at University of Toronto  
Room: Auditorium (ENG103)

**Friday, July 21, 08:30 - 17:00**

**TS: SDG Training Session**

Room: LIB72

**Friday, July 21, 09:30 - 10:00**

**Break 1: Coffee Break - morning**

**Friday, July 21, 10:00 - 12:00**

**FM01: Professional Presentations - II**

Room: Auditorium (ENG103)  
Chair: John Harris (J. Harris Consulting, USA)

**10:00 *Virtual and Travelling Exhibitions on the History of Technology and Disability: Interdisciplinary Lessons of the Past for the Future***

Beth A. Robertson, Dorothy J. Smith, Sandy Barron, Adrian D.C. Chan, George Duimovich, et al  
PP07

**10:30 *Demonstration of a Wave-powered Desalination System in Cape Verde***

Bill Staby  
PP01

**10:50 *Sustainably Energizing Impoverished Communities***

Lisa Oelke, Tanya Deer  
PP05

**11:10 *Directed Graph Optimization for Improving Fleet Management of Waste Water Removal in Refugee Camps***

Hadi Jomaa, Mariette Awad  
PP10

**11:30 *Sustainable Cities: Towards Enabling Equitable Water Supply through Technology***

M. S. Bhat  
PP03

## IHTC 2017 Technical Program - cont.

### FM02: Information and Communication Technology for Humanity - I

Room: ENG101

Chair: Naimul M Khan (Ryerson University, Canada)

**10:00 *Secure and Cost-Effective Remote Monitoring Health-Guard System***

Hussain Fatmi (Centennial College, Canada); Sattar Hussain (Centennial College & School of Engineering Technology and Applied Science, Canada); Ali Al-Rubaie (Centennial College, Canada)  
pp. 119-123

**10:24 *On D2D Communications for Public Safety Applications***

Ali Alnoman and Alagan Anpalagan (Ryerson University, Canada)  
pp. 124-127

**10:48 *Traffic Offloading Problem in Two-Tier Hetnets with D2D Support for Emergency Communication***

Anirudh Ravichandran (Bits Pilani University, India); Ali Alnoman (Ryerson University, Canada); Nitin Sharna (BITS Pilani, India); Alagan Anpalagan (Ryerson University, Canada)  
pp. 128-132

**11:12 *An Improved Differential Privacy Algorithm to Protect Re-identification of Data***

A. N. K. Zaman, Charlie Obimbo and Rozita Dara (University of Guelph, Canada)  
pp. 133-138

**11:36 *Wireless Energy Harvesting from Ambient Sources for Cognitive Networks in Rural Communities***

Arif Obaid and Xavier N. Fernando (Ryerson University, Canada)  
pp. 139-143

### Friday, July 21, 12:00 - 13:00      Lunch

### Friday, July 21, 13:00 - 14:00

#### Keynote 4: Friday afternoon

Claudio Canizares - Hydro One Endowed Chair, Electrical and Computer Engineering (E&CE), University of Waterloo  
Room: Auditorium (ENG103)

### Friday, July 21, 14:00 - 15:20

### FA01: Energy, Climate, and Sustainability - I

Room: Auditorium (ENG103)

Chair: Kyarash Shahriari (Lead Control Systems Engineer & IEEE Senior Member, Canada)

**14:00 *Archimedes Screw Generators for Sustainable Energy Development***

Scott Simmons and William Lubitz (University of Guelph, Canada)  
pp. 144-148

**14:20 *A Comparative Assessment for Algal Biodiesel Production in the Philippines***

Ivan Henderson Gue, Aristotle Ubando and Alvin Culaba (De La Salle University, Philippines); Joel Cuello (University of Arizona, USA)  
pp. 149-153

**14:40 *Maximizing the Energy Harvested from Piezoelectric Materials for Clean Energy Generation***

Yasna Schifferli (University of Toronto, Canada)  
pp. 154-160

**15:00 *Urban Sustainability Through Emerging Technologies***

Bob Singh (Ryerson University, Canada)  
pp. 161-166

## IHTC 2017 Technical Program - cont.

### FA02: Information and Communication Technology for Humanity - II

Room: ENG101

Chair: Vasily Grigorovsky (University of Toronto, Canada)

**14:00 *Management Module Based on SNMP for a Warning Message Receiver Considering DTT and FM***

Marco Aurelio Jara Quispe, Alejandro Jose Llanos Garcia, Ronald Chavez Rojas, Zoser Quenaya Hinojosa, Armando Zaga Tito and Ivan Santos Leon Gavino (INICTEL-UNI, Peru)

pp. 167-171

**14:20 *Ad-Hoc Messaging Infrastructure for P2P Communication in Disaster Management***

Michael Lescisin (UOIT, Canada); Qusay Mahmoud (University of Ontario Institute of Technology, Canada)

pp. 172-176

**14:40 *Recommended Broadband Capacity Estimation System for School Boards***

Mirza Kamaludeen and Salam Ismaeel (Ryerson University, Canada); Carm Scarfo and Chris Carrington (Ontario, Canada)

pp. 177-181

**15:00 *Towards a Robust Rescue Network: Wireless Communication is the Choice***

Sattar Hussain (Centennial College & School of Engineering Technology and Applied Science, Canada); Predrag Pesikan (Centennial College, Canada); Xavier N. Fernando (Ryerson University, Canada)

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### FA03: Student Design Competition (14:00 - 17:00)

Room: ENG102

Chair: Salam Ismaeel

**15:40 *An Integrated Biosignals Wearable System for Low-Cost Blood Pressure Monitoring***

Susanne Tiraei, Toka Alnaser, Amnyah Almahouzi

SD-06

**16:00 *eStethoscope – Towards a Low-cost Screening Platform***

Uzair Mayat, Fayeze Qureshi, Saad Ahmed

SD-09

**16:20 *Intelligent Bin-Learn to sort-Sort to learn***

Thibisan Balachandran, Reza Mahzari, Kajen Rajasegaram

SD-10

**16:40 *UAV System for Fire Assessment Using Custom Sensor Fusion***

Alok Deshpande, Erik Johnson, Ann Gunaratnam, Calla McClelland, Mohamed Jaber, Fizza Ahmad Sheikh

SD-12

### Friday, July 21, 15:20 - 15:40

### Break II: Coffee Break - afternoon

### Friday, July 21, 15:40 - 17:00

### FE01: Energy, Climate, and Sustainability - II

Room: Auditorium (ENG103)

Chair: Emanuel Istrate (University of Toronto, Canada)

**15:40 *Microgrid Islanding and Grid Restoration with Off-the-Shelf Utility Protection Equipment***

William Edwards, Jr., Scott Manson and Jakov Vico (Schweitzer Engineering Laboratories, Inc., USA)

pp. 188-192



## IHTC 2017 Technical Program - cont.

### **16:00 *Solar-powered Drip-Irrigation for Rural Bangladesh***

Dewan Ishtiaque Ahmed and Xavier N. Fernando (Ryerson University, Canada)

pp. 193-196

### **16:20 *IEEE Standard Review - Ethically Aligned Design: A Vision for Prioritizing Human Wellbeing with Artificial Intelligence and Autonomous Systems***

Kyarash Shahriari (Lead Control Systems Engineer & IEEE Senior Member, Canada); Mana Shahriari (Laval University, Canada)

pp. 197-201

### **16:00 *Promoting access to grid electricity for communities by using energy efficient transformer components within the Clean Development Mechanism***

Sizwe Dhlamini, Innocent Davidson and Zijun Gong

PP07

## **FE02: Diverse Topics in Humanity**

Room: ENG101

Chair: Hugo Sanchez-Reategui (Consultant, Canada)

### **15:40 *A Virtual Marketplace for Goods and Services for People with Social Needs***

Daniela Rosu, Dionne Aleman, J. Christopher Beck, Mark Chignell, Mariano Consens, Mark Fox, Michael Gruninger, Chang Liu, Yi Ru and Scott Sanner (University of Toronto, Canada)

pp. 202-206

### **16:00 *Technologies in the Planning of Refugees' Camps***

Elie Daher (Luxembourg Institute of Science and Technology, Luxembourg); Sylvain Kubicki (LIST, Luxembourg)

pp. 207-212

### **16:20 *A New Alarming System for an Underground Mining Environment Using Visible Light Communications***

Hasan Farahneh, Fatima Hussain and Xavier N. Fernando (Ryerson University, Canada)

pp. 213-217

### **16:40 *Energy Harvesting Wireless Sensors for Smart Cities***

SM Kamruzzaman, Xavier N. Fernando and Muhammad Jaseemuddin (Ryerson University, Canada)

pp. 218-222

## **FE03: Student Design Competition (14:00 - 17:00)**

Room: ENG102

Chair: Salam Ismaeel

### **15:40 *An Integrated Biosignals Wearable System for Low-Cost Blood Pressure Monitoring***

Susanne Tiraei, Toka Alnaser, Amnyah Almahouzi

SD-06

### **16:00 *eStethoscope – Towards a Low-cost Screening Platform***

Uzair Mayat, Fayeze Qureshi, Saad Ahmed

SD-09

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Thibisan Balachandran, Reza Mahzari, Kajen Rajasegaram

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### **16:40 *UAV System for Fire Assessment Using Custom Sensor Fusion***

Alok Deshpande, Erik Johnson, Ann Gunaratnam, Calla McClelland, Mohamed Jaber, Fizza Ahmad Sheikh

SD-12

## **Friday, July 21, 19:00 - 22:00**

### **Banquet: Awards Banquet**

Room: Chelsea Hotel - 33 Gerrard St.

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