Connected Health Summer School 2017
Smart Technology for Smarter Living

Professor Chris Nugent, Ulster University
Professor Cristiano Paggetti, I+ S.r.l.

ulster.ac.uk

REMIND

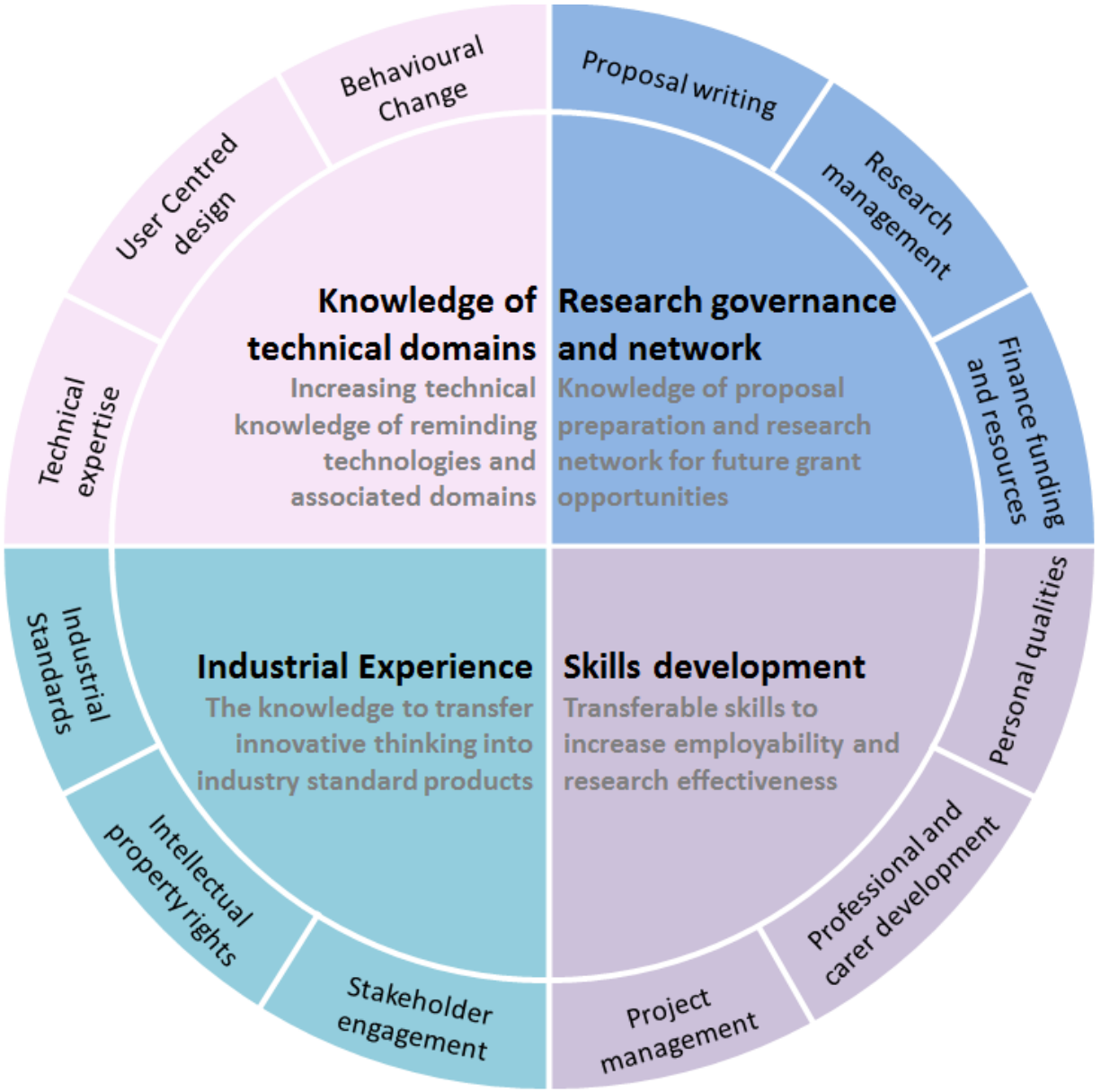
Vision for Summer School

- To establish a reference point for the training of early stage researchers in connected health.
- To address the multi-disciplinary needs of researchers within a complex discipline.
- To begin preparations for future carers.
- To grow network of collaborators from an early stage in the carer.

What is Connected Health?

- *We hope that everyone already knows the basic answer to this question!*

The multi-disciplinary demands of connected health



Feedback from previous events

- Group work was well received.
- Speakers should be more interactive and less lecture based.
- Reduce the duration of the working day.
- Increase the amount of time dedicated for:
  - -social interactions
  - -group work

Connected Health Summer School

Artimino, Tuscany, Italy 26 - 29 June 2017

		Monday, June 26	Tuesday, June 27	Wednesday, June 28	Thursday , June 29
Social	7.00	Jogging, Tuscany Walk, Diving, Water Aerobics	Jogging, Tuscany Walk, Diving, Water Aerobics	Jogging, Tuscany Walk, Diving, Water Aerobics	Jogging, Tuscany Walk, Diving, Water Aerobics
Technology Data Analytics	9.00	Welcome and Introduction to summer school. Rapid fire introductions by students Working Group goals. **Chris Nugent, Cristiano Paggetti**	Working with Sensing Technologies: How to acquire data with contemporary platforms. **Ian Cleland (Tutorial)**	Processing Sensor Data: Understanding the development of behavioural and activity models **Oresti Banos (Tutorial)**	Advanced Data processing with both sensor and health related data. **Macarena Espinilla (Tutorial)**
Coffee	9.45				
Health / Social Sciences	10.00	The Future of Health and technology partnership. **Ian Cleland (Lecture)**	Understanding the theory behind behaviour change strategies. **Jane Walsh (Tutorial)**	How to engage with users when design, developing and evaluating connected health solutions. **Cristian Leorin (Lecture)**	Organising for Value-based healthcare across the whole system **Nick Batey (Lecture)**
Group Work	11.00	How to pitch a business in a Connected health Domain - Assessing Market potential and impact indicators	Designing the service model and organisational scenarios	Designing and develop technical solutions	Group work presentation – Feedback from Decision Maker prospective **Andrea Frosini**
Lunch	12:30				
Service deploy-ment	13.30	Intelligent Medical Platform **Prof. Sungyoung Lee (Keynote)**	**REMIND Project Workshop** **Improving User Engagement**	Implementation of innovative service in AHA context, a real pluri annual ongoing service. **Francesco Benvenuti (Tutorial)**	Modelling of care pathways, case studies **Sally McClean (Lecture)**
Group Work	14.30	Group Work		Group Work	Research Ethics: Planning your trial and Securing Ethical Approval. **Bryan Scotney (Tutorial)**
Business Innova-tion	15.15	Tuscany Region Prospecitves and Challenges in Connected Health **Elisa Scopetani (Lecture)**		Deployment of Connected Health innovation worldwide **Olivier Horbowy (Lecture)**	Innovative Care Models - A European perspective **Kare Synnes (Lecture)**
Wrap Up	16:15 16:30	Wrap–up and introduction to next day's sessions.		Wrap–up and introduction to next day's sessions	Group Work Award Ceremony - Summer school wrap – up Feedback and Comments

Ulster University

Associated Events

- Summer School morning coffee break and lunch, Mon-Thurs
- Faculty Board Meeting, Monday 4.30-6.00
- Social dinner, Biagio Pignatta Restaurant Monday 7.30
- Social Reception, Wednesday 6.30-7.30
- Prize Giving, Thursday 4.15

Faculty members

Dr Oresti Banos
University of Twente

Professor Cristiano Paggetti
I+ S.r.l., Florence

Dr Elena Tamburini
I+ S.r.l., Florence

Dr Macarena Espinilla
Lulea Technical University

Dr Josef Hallberg
Lulea Technical University

Professor Bryan Scotney
Ulster University

Faculty members

Professor Sally McClean
Ulster University

Prof. Sungyoung Lee

Department of Computer Engineering,
College of Electonics and Information,
Kyung Hee University, Korea

Professor Kare Synnes
Lulea Technical University

Professor Chris Nugent
Ulster University

Dr Jane Walsh
National University Ireland

Dr Ian Cleland
Ulster University

Faculty members

Andrea Frosini, Toscana Life Sciences Foundation

Dr Francesco Benvenuti
Tuscany Region

Elisa Scopetani
Directorate of Citizenship and Social Cohesion of the Tuscany Region

Professor Cristian Leorin
Novilunio , Italy

Olivier Horbowy
Alliance for IoT Innovation

Nick Batey
Health and Social Care Department, Wales,

Ulster University

Invited Speaker

Prof. Sungyoung Lee

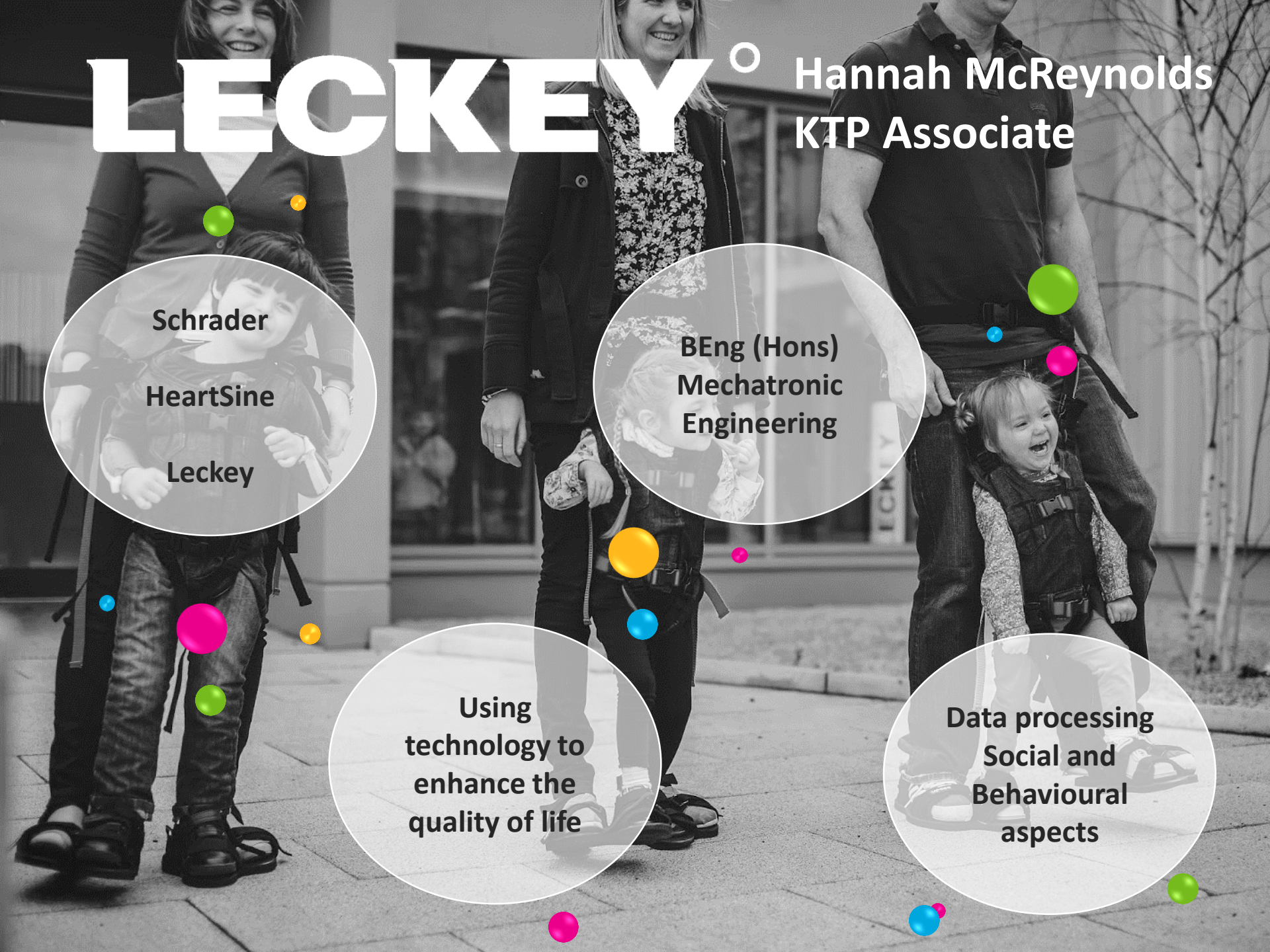
Department of Computer Engineering,
College of Electonics and Information,
Kyung Hee University, Korea

Brief Introductions

- What is your name?
- Which University are you from?
- What is the topic of your research?
- What are your interests in connected health and smart environments?
- What is/are your main skill(s)?

Introducing myself

- **Arianna Poli** from Italy, working and living in Sweden.
- **Short background**:
  - Master degree in Psychology
  - Ph.D. candidate in Ageing and Later Life, Linköping University, Sweden
    - » Thesis working title: "*Challenges for innovations through e-Health – The impact of selective participation in the testing phases on inequality and exclusion in old age*".
- **Main research interests**: role of e-Health in supporting health and wellbeing of older people and family carers, digitalisation of healthcare systems, social exclusion and inequalities in old age.
- **Main area**: e-Health investigated from a social sciences perspective.
- **Why am I here?** To deepen the role of technology for health in a multidisciplinary environment and from the perspective of other disciplines, to get feedback on my thesis work, to get inspired by new topics, other participants' works and interests.


LECKEY
Hannah McReynolds
KTP Associate
Schrader
HeartSine
Leckey
BEng (Hons)
Mechatronic
Engineering
Using
technology to
enhance the
quality of life
Data processing
Social and
Behavioural
aspects

Eimear Morrissey

- Structured PhD in Psychology & Health (NUIG: 2014-2018)
  - Medication non-adherence in hypertension: Are digital interventions a possible solution?
- Degrees
  - BA Applied Psychology (UCC: 2009-2012)
  - MSc Health Psychology (NUIG: 2012-2013)
- Research interests
  - Health behaviour change, cardiovascular disease, adherence behaviour, digital interventions, tech literacy
- Summer school
  - I'm interested in learning about working with sensing technologies and how this could relate to behavioural science.

NUI Galway
OÉ Gaillimh

Emma Carr

- Currently doing a PhD in Psychology and Health at NUIG
  - The development of a digital intervention to reduce the patient interval for breast cancer
- Degrees
  - BA (History & Geography); HDip (Psychology); MSc (Health Psychology)
- Research interests
  - behaviour change, public health, technology and health, participative health research, implementation science
- I'm particularly interested in learning about technology data analytics and how that can enrich health research and facilitate behaviour change

Wendy Oude Nijeweme – d'Hollosy

Researcher

UNIVERSITY OF TWENTE.

Enschede, the Netherlands

Member of:
Telemedicine/Biomedical Signals and Systems Group (BSS)
Research Centre for Monitoring and Coaching (CMC)

Research Institutes:
Centre for Telematics and Information Technology (CTIT)
Research Centre for Biomedical Technology and Technical Medicine (MIRA)

https://nl.linkedin.com/in/wdhollosy
https://twitter.com/wdhollosy

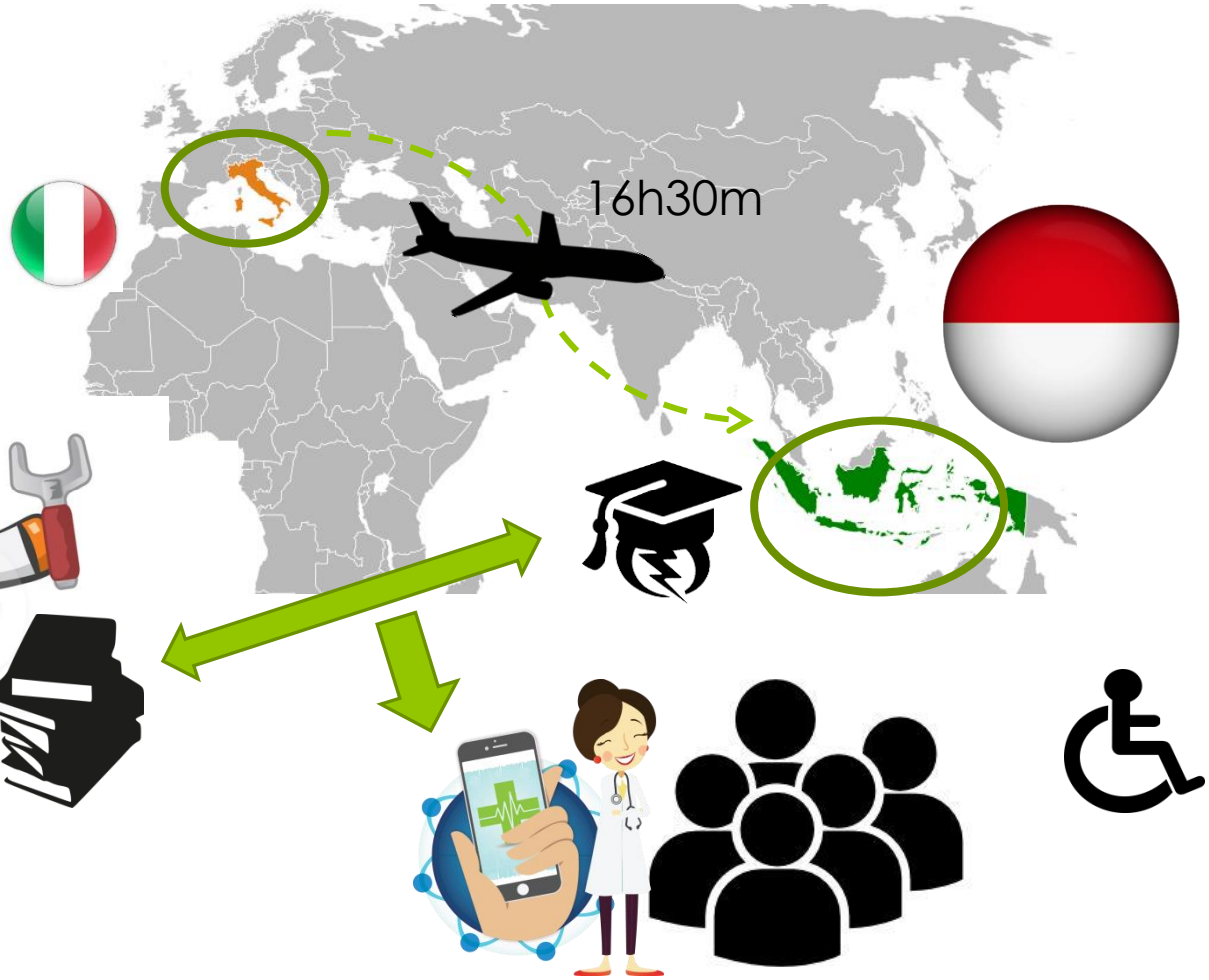
Background	Interests	Skills	Goals
Computer science (*bio-medical note*) Researcher Teacher Web developer Business owner Started PhD research in January 2014 on eHealth and Decision Support in Primary Care and hope to have my defense at the end of 2017	Development of innovative IT solutions to support self-care, coaching, physical exercises, well-being and healthy living Artificial intelligence with the focus on machine learning Data mining on (big) datasets and how to present the found information in a useful way Data exchange and interoperability in health care with HL7 and SNOMED CT	PHP / MySql / CSS Javascript Some experience with: SPSS R / R Studio Data analysis on small datasets	Gaining knowledge and experience on the application of sensing technologies Overview of all aspects needed in the development and implementation of connected health solutions

Hobbies

Spending time with my family and friends, Traveling, Sailing, Sporting, Reading, Playing music (just started with guitar playing ☺)

BUONGIORNO!

LINDA ONG



Erika Rovini

PhD Student in BioRobotics at The BioRobotics Institute, Scuola Superiore Sant'Anna (Pisa, Italy)

"Study and validation of novel ICT-based diagnostic and therapeutic approaches in Parkinson's disease for sustainable healthcare"

- **Details of undergraduate degree:**

Master Degree in Biomedical Engineering at University of Pisa (Italy)

- **Research interests:**

wearable sensors, inertial sensors, AAL, data acquisition, physiological signals, biomedical signal processing, data analysis, motion analysis, machine learning, statistics, experimental protocols, Parkinson's disease

- **Area/topic which I would most like to develop:**

Service deployment and Business innovation because these topics are little known to me

- **What I would like to learn during the Summer School:**

How to develop an integrated care system that could be really suitable for concrete and efficient application in National Health System

THE NORTHERNMOST UNIVERSITY
of Technology in Scandinavia

Presentation
Jenni Riekkola Carabante
PhD student in Occupational Therapy
Luleå University of Technology

Area of research:

Participation in everyday life when aging in place
– elderly couples living in shifting contexts

Area I would like to develop:

How smart technology can support elderly couples' participation and everyday togetherness

I would like to learn about:

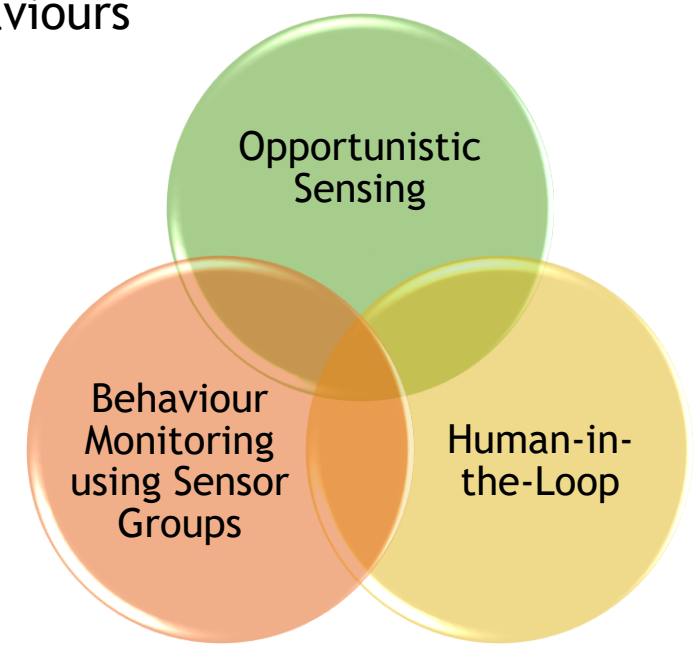
- Smart Technology/environments in general
- How smart Technology can support participation/health/aging in place for elderly persons (challenges and opportunities for users and service providers)

And:

Make new friends for possible future collaborations

LULEÅ
UNIVERSITY
OF TECHNOLOGY

- Undergraduate - Electronics and Computing Systems
- PhD - Computational Monitoring of Social and Communicative Behaviours
- Research interests:



- Gain experience with sensor technologies within smart environments

Ulster University

Veno Bojanovsky

Showoff

BACKGROUND

Responder Technologies / Showoff
Postgraduate student of Business and Management at QUB

Master's degree in ICT at the University of Zagreb
Bachelor's degree in Computing at the University of Zagreb

RESEARCH INTERESTS

MedTech
Machine Learning

Ulster University

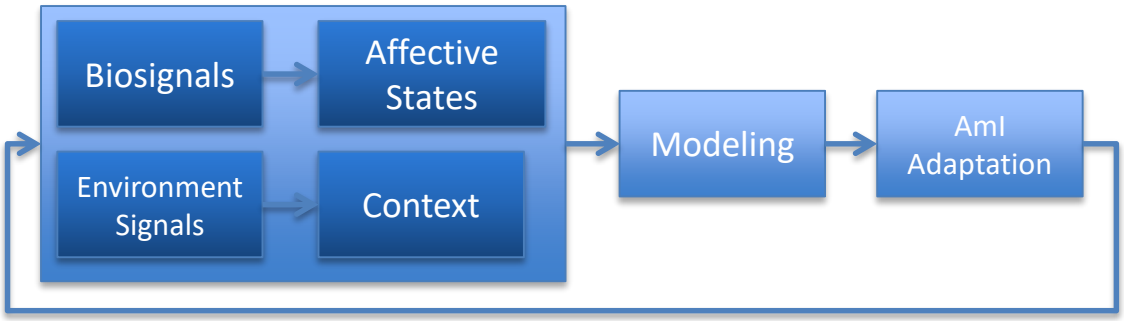
HALMSTAD UNIVERSITY

- Combining physiological sensors and environment sensors
- Modeling user's emotions, intentions, and profile
- Adapting the system to user's needs

Maria Luiza Recena Menezes,
Doctoral Student

Msc Electrical Eng., UFRGS, Brazil
Bachelor Electrical Eng. and Physiotherapy

My thesis is focused on incorporating basic psychological processes into the automation of ambient intelligence. The goal of my research is to study ways to achieve Passive Control and Implicit Interaction through a combination of bio-signals and environmental sensors.



What do you hope to benefit from attending this summer school?

10 Reasons why you are here

1. To fully appreciate the multi-disciplinary nature of undertaking research in connected health.
2. To discuss your research with international experts in the field.
3. To widen your network of colleagues.
4. To make an investment in your carer after your Phd.
5. To hear about the state of the art in Connected Health.
6. To develop new technical skills.
7. To learn about the development of producing a roadmap for implementation.
8. To have the experience of putting into practice new concepts from technical, health and business perspectives.
9. To develop personal leadership skills in a professional working environment.
10. To have fun and enjoy Tuscany!

Group Work

- Each group has 3 or 4 persons and a dedicated Tutor.
- The end point is to deliver a competitive pitch on Thursday afternoon as a team.
- Each day will help prepare for the discussions during the Group Work and to reflect on the content delivered that day.
  - The requirement is to produce one slide per day, with a further slide as an introduction to the Group work.
- Discussions should have a focus on smart technology.
- Faculty members will be available to assist with discussions and provide expert input.

Group structure

- Your first task as a Group is to assign the following roles:
- Group lead – someone to organise the discussions, collect all materials and introduce the presentation on Thursday.
- One person for each of the following roles:
  - Market assessment
  - Technical Development
  - Evaluation and Business plan

Group Work

Group1 – Assistive technologies for carers of people with dementia.
Ali, Emma, Bronagh, Pietro **Macarena**

Group 2 – Mobile based Self-management medications in relation to anti-biotic resistance.
Edna, Hannah, Erika, Laura, **Josef**

Group 3 – Reducing sedentary behaviour in the elderly.
Veno, Taeho, Linda, Malu, **Bryan**

Group 4 – Digital technologies for improved lifestyle within a 40-65 year old cohort.
Sixto, Dohyung, Arianna, **Ian**

Group 5 – Improving the early discharge from hospitals though intelligent ICT systems
Federico, Eimear, Wendy, Jenni, **Sally**

Session 1

- By the end of this session you should:
  - have identified individual roles
  - have identified a new solution for your problem domain.
  - have produced 1 slide to outline the competitive advantage of your proposed solution.

Session 2

- By the end of this session you should:
  - have elaborated upon your specific solution for your group
  - design your solution, from a technical perspective
  - demonstrate evidence in your work of the past 2 days
  - have engaged with the Faculty in your work

Session 3

- By the end of this session you should:
  - defined your pathway for user engagement, evaluation and commercial strategies.

Enjoy the Summer School!