

SESSION 5 – IN SILICO MODELS

Chair: Prof. Dr. rer. nat. Peter Behrens

- 11:15 – Keynote Lecture
12:15 “Predictive models of arterial adaptation to chemo-mechano-biological cues in health and disease”
Assist. Prof. Michele Marino, PhD
Department of Civil Engineering and Computer Science
University of Rome Tor Vergata, Italy
- 12:15 – SIIRI Talk
12:35 “Mathematical modeling and FEM-based simulation of bacterial coaggregation in a multi-species system”
Dr.-Ing. Meisam Soleimani
Institute of Continuum Mechanics
Leibniz Universität Hannover (LUH)
- 12:35 – SIIRI Talk
12:55 “A computational model of neural activity elicited by electric and acoustic stimulation of the human auditory system”
Prof. Dr.-Ing. Waldo Nogueira
Department of Otorhinolaryngology
Hannover Medical School (MHH)

12:55 – **Poster Session II & Lunch**
14:00

SESSION 6 – IMPLANT ASSOCIATED INFECTIONS

joint with the International Interdisciplinary Alliance against Implant-related Infections (I4A)

Chair: Prof. Dr. med. dent. Meike Stiesch

- 14:00 – Keynote Lecture
15:00 “Understanding dental peri-implantitis - lessons from integrated multi-omics analyses”
Prof. Dr. med. dent. Moritz Kebschull, MBA
Restorative Dentistry, School of Dentistry
University of Birmingham, United Kingdom
- 15:00 – Keynote Lecture
16:00 “Bactericidal micro-nano-textured surfaces to support osseointegration”
Prof. Elena P. Ivanova, PhD
RMIT School of Science
RMIT University, Melbourne, Australia
- 16:00 – SIIRI Talk
16:20 “Composition and activity of peri-implant biofilms in health and in disease”
Dr. rer. nat. Szymon P. Szafranski
Department of Prosthetic Dentistry and Biomedical Materials Science
Hannover Medical School (MHH)

16:20 – **Summary & Closing Remarks**
16:30

SIIRI Spokesperson:

Prof. Dr. med. dent. Meike Stiesch
Hannover Medical School (MHH)
Department of Prosthetic Dentistry
and Biomedical Materials Science



SIIRI Deputy Spokesperson:

Prof. Dr.-Ing. Hans Jürgen Maier
Leibniz Universität Hannover (LUH)
Institute of Materials Science,
Hannover Centre for Production Technology

Participating institutions:



Contact:

CRC / TRR 298 SIIRI

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1st International SIIRI Symposium

August 31st – September 1st 2022

CRC / TRR 298 SIIRI –
Safety-Integrated and Infection-Reactive
Implants

Venue:

Lower Saxony Centre for Biomedical
Engineering, Implant Research and
Development (NIFE)

Stadtfelddamm 34
30625 Hannover

August 31st 2022

WELCOME

8:30 –
9:00 Registration

9:00 – Official Welcome and
9:45 Welcome Notes

Prof. Dr. med. dent. Meike Stiesch
SIIRI Spokesperson
Hannover Medical School (MHH)

Prof. Dr. med. Michael P. Manns
President
Hannover Medical School (MHH)

Dr. Sabine Johannsen
State Secretary
Lower Saxony Ministry of Science and
Culture, Hannover, Germany

SESSION 1 – MEDICAL IMPLANT COMPLICATIONS

Chair: Prof. Dr. rer. nat. Andrea Hoffmann

9:45 – Keynote Lecture *hybrid*
10:45 “The immune response to
synthetic and biological implant
materials”

Prof. Jennifer H. Elisseeff, PhD
Translational Tissue Engineering Center
John Hopkins University School of Medicine
Baltimore, Maryland, USA

10:45 – SIIRI Talk
11:05 “Dental implant complications”

**Prof. Dr. med. Dr. med. dent.
Nils-Claudius Gellrich**
Department of Oral and Maxillofacial
Surgery
Hannover Medical School (MHH)

11:05 – SIIRI Talk
11:25 “Implant complications in
Orthopaedic surgery”

Dr. med. Nils Becker
Department of Orthopaedic Surgery
Hannover Medical School (MHH)

11:25 –
12:00 Coffee break

SESSION 2 – DETECTION OF IMPLANT COMPLICATIONS

Chair: Prof. Dr.-Ing. Hans Jürgen Maier

12:00 – Keynote Lecture
13:00 “Model-Based Therapy
Planning and Virtual Implant
Insertion”

Prof. Dr.-Ing. Steffen Oeltze-Jafra
Peter L. Reichertz Institute for Medical
Informatics
Technische Universität Braunschweig
(TUBS) and Hannover Medical School
(MHH), Germany

13:00 – SIIRI Talk
13:20 “Acoustic Emission (AE) Analysis
as diagnostic method for the
detection of implant loosening in
hip arthroplasty”

Prof. Dr.-Ing. Bernd-Arno Behrens
Institute of Forming Technology and
Machines
Leibniz Universität Hannover (LUH)

13:20 – SIIRI Talk
13:40 “Implant-based drug delivery
systems and the possibilities of
designing autonomously
responding implants”

Prof. Dr. rer. nat. Henning Menzel
Institute of Technical Chemistry
Technische Universität Braunschweig
(TUBS)

13:40 –
14:45 Lunch break

SESSION 3 – HEALTH COMMUNICATION

Chair: Prof. Dr. phil. Eva Baumann

14:45 – Keynote Lecture *hybrid*
15:45 “The Intricate Role of
Communication Before, During,
and After Successful
Implantation Surgery”

Prof. Gary L. Kreps, PhD
Center for Health and Risk Communication
George Mason University Fairfax, Virginia,
USA

15:45 – SIIRI Talk
16:05 “Informational Needs and
Behaviors of Implant Patients”

Dr. phil. Elena Link
Department of Journalism and
Communication Research
Hanover University of Music, Drama and
Media (HMTMH)

16:05 – SIIRI Talk
16:25 “Attitudes towards Smart
Implants in Germany”

Prof. Dr. phil. Eva Baumann
Department of Journalism and
Communication Research
Hanover University of Music, Drama and
Media (HMTMH)

16:25 –
17:30 Poster Session I & Coffee Break

PANEL DISCUSSION

Chair: Prof. Dr. phil. Christoph Klimmt

17:30 – “Bridging the Valley of Death:
18:30 Industry Takeup of Biomedical (Implant) Innovation”

19:00 **Evening Event and Dinner**

Kunstverein Hannover
Sophienstraße 2
30159 Hannover

September 1st 2022

8:30 –
9:00 Registration

SESSION 4 – PREVENTIVE AND TREATMENT STRATEGIES FOR IMPLANT COMPLICATIONS

Chair: Prof. Dr. rer. nat. Henning Menzel

9:00 – Keynote Lecture
10:00 “Injectable synthetic building
blocks to assemble into
structured regenerative
materials”

Prof. Dr.-Ing. Laura De Laporte
Advanced Materials for Biomedicine
RWTH Aachen University, Germany

10:00 – SIIRI Talk
10:20 “Clinical data on cochlear
implant reliability and failure
analysis: need and areas for
improvement”

**Prof. Prof. h. c. Dr. med.
Thomas Lenarz**
Department of Otorhinolaryngology
Hannover Medical School (MHH)

10:20 – SIIRI Talk
10:40 “Cell based strategies for
controlled drug release on
implants”

Prof. Dr. rer. nat. Dagmar Wirth
Model Systems for Infection and Immunity
(MSYS)
Helmholtz Centre for Infection Research
(HZI)

10:40 –
11:15 Coffee break