

Ideas

1. Living Tissue Phantoms for Ablation
2. Interventional MRI / CT / PET / US
3. <Your Idea>

Richard Wages

STIMULATE Research Campus (DE)

STIMULATE Research Campus (PPP)

- Partners: Magdeburg University + SIEMENS + 15 SMEs
- Location: ‘Science Harbour’ in Magdeburg, Germany
- ~ 150 People
- Academia & Industry
at Eye Level
- Focus:
Medical Technology



STIMULATE Research Campus

RESEARCH
CAMPUS
Public-Private Partnership
for Innovation

Clinical Foci:

- Oncology
 - Liver
 - Lung
 - Neuro
- Cardiovascular Diseases
- Multimorbidity



STIMULATE Research Campus

Expertise:

- R&D Medical Imaging (MRI, CT, ..)
- Design of Novel Imaging Hardware & Workflows
- Building Novel Hardware
- **Minimally Invasive Image-Guided Intervention**
- Creation of Operation Theatre Environments
- Knowledge Transfer, Commercialisation

Idea 1: Living Tissue Phantoms for Ablation

- Key Problem: Affected area visible after a few days only

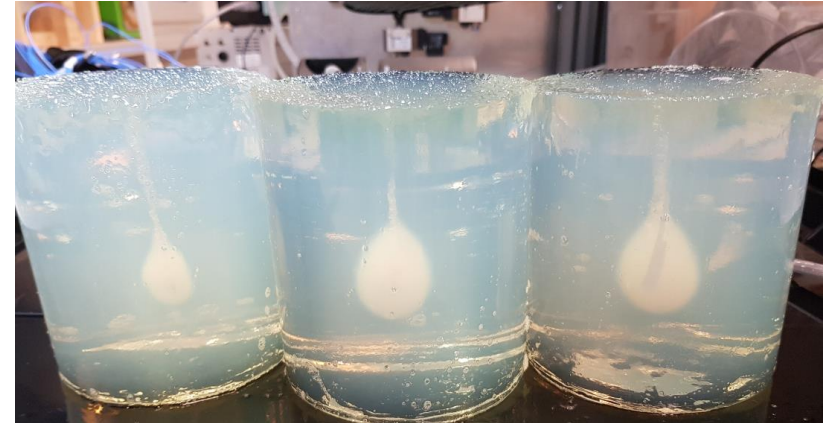
Current Pre-Surgery Simulation:

- Acrylamide Gel
- Pig, Rat, ...

- Future Solution:

Simulation with Human Tissue

- Need: Tissue in Sufficient Size
- Need: Heterogenous Tissues



We believe that for fundamentally improved (personalised) therapeutic prediction and intervention results living tissue phantoms will play a key role in the future.

Idea 1: Living Tissue Phantoms for Ablation

Relevant H2020 Topics Addressed:

– BETTER HEALTH AND CARE

Personalised medicine: Digital diagnostics – Clinical **decisions tools**

Innovative health: Methodology research – Clinical trials

– DIGITAL TRANSFORMATION - **Personalised risk prediction**

– TRANSFORMING EUROPEAN INDUSTRY - Custom-made biological scaffolds for specific tissue regeneration and repair

Looking for PARTNERS:

– Tissue/Bio Engineering

– Patient Trials, Clinical Studies

– EU project coordination

Idea 2: Interventional MRI / CT / PET / US

- Key Problems:
 - No Simultaneous Intervention & Imaging (Delay)
 - Space (Cannot reach Patient)
 - Radiation (Personnel Exposed)
- Solutions:
 - ‘Make Room’ (Novel Hardware Designs)
 - Remote Control Procedures (cf. Idea 1)



We put a strong focus on the development of methods and also respective hardware for future utilisation of high-precision imaging techniques DURING medical procedures/surgery.

Idea 2: Interventional MRI / CT / PET / US

Relevant H2020 Topics Addressed:

- BETTER HEALTH AND CARE

Personalised medicine: Digital diagnostics – Clinical decisions tools

Innovative health: Methodology research – Clinical trials. European Reference Networks

- DIGITISING AND TRANSFORMING EUROPEAN INDUSTRY - Platforms and Pilots: AI for the smart hospital - Pilot demonstration

Looking for PARTNERS:

- Design/construction of MRI-compatible therapy devices
- Patient trials, clinical studies
- EU project coordination

Idea 3: <Your Idea>

Possible *STIMULATE* Partner Roles:

- The Research Campus owns (solely for research usage)
 - SIEMENS MAGNETOM Skyra 3T MRI
 - metria MPT High Field, Moiré Phase Tracking System
 - SIEMENS Artis zeego, Combined X-Ray-/CT system with a robot-mounted flat-panel X-ray C-arm type (unique in Germany)
 - Abbott OPTIS Mobile System, Intravascular Diagnostics & Imaging System (OCT + FFR)
 - 3D/4D Ultrasound System
 - ⇒ **Extensive Test Batteries for Validation etc.**
 - ⇒ **Realistic Clinical Workflow Simulations**
- Numerous SMEs within our Cluster
 - ⇒ **Translation, Knowledge Transfer, Commercialisation/Exploitation**

Idea 3: <Your Idea>

Possible *STIMULATE* Partner Roles e.g. in:

- SC1-HCO-01-2020
- SC1-BHC-06-2020
- SC1-BHC-08-2020
- SC1-BHC-24-2020
- ...

Contact details

- **Contact Person: Richard Wages**
Head of Unit 'Transfer Services'
- Organisation: *STIMULATE* Research Campus
- Address: Magdeburg, Germany
- Phone: +49-179-135 1406
- E-mail: richard.wages@ovgu.de
- <https://www.forschungscampus-stimulate.de/>