

# Japanese and German Cutting Edge Technologies for Patient Care

1<sup>st</sup> NRW-Fukushima Joint Symposium on Advances in Medicine

September 1 and 2, 2016



# N-F JSAM

NRW-Fukushima Joint Symposium on Advances in Medicine

Venue: Deichmann Auditorium University Hospital Essen

## Program

Organized by Medical Faculty of University Duisburg-Essen and  
Southern TOHOKU General Hospital



MEDIZINISCHE FAKULTÄT  
DER UNIVERSITÄT DUISBURG-ESSEN



Message from Svenja Schulze  
Minister for Innovation, Science  
and Research of the State of North Rhine-Westphalia



Ladies and gentlemen

During our visit to Japan last year, my delegation and I were deeply moved by the vast array of impressions. What we learned there reinforced my belief that science and research can form an extraordinary link between people from various cultural backgrounds, traditions and societies. One of the pioneers of this cooperation was Philipp Franz von Siebold, the well-known 19th century German scientist. He is regarded as one of the founders of European academic research on Japan. Siebold made a significant contribution to the situation we have today, namely that Germany and Japan can look back on over 150 years of not only diplomatic but also friendly relations. In this time, many close and trusting collaborations have been developed despite the huge geographical distance between the two countries. Every one of these collaborations shows that there is a great deal that we have in common, despite all the differences in culture and society.

One field of topics that concerns our two countries is demographic change and the consequences of an increasingly ageing society. This development confronts the two countries with major challenges. After all, we do not simply want people to live longer; we want them to live longer and to live good lives. This means, among other things, adequate medical care and social inclusion.

Robotic technology and particle therapy, the two key themes of the First NRW-Fukushima Joint Symposium on Advances in Medicine, go a long way to addressing these fundamental needs.

I wish you a very productive symposium, a lively exchange of information as well as many interesting discussions. Hopefully, this symposium will give rise to an even greater cooperation between Japan and North Rhine-Westphalia.

Svenja Schulze

Message from Garrelt Duin

State Minister for Economics, Energy, Industry  
and Commerce of North Rhine-Westphalia (NRW)



Ladies and gentlemen,

Two years ago, here in Düsseldorf, we signed the memorandum on enhanced cooperation in the medical device industry between North Rhine-Westphalia and the Fukushima Prefecture. It has provided the framework for a wide range of activities carried out since then. Numerous contacts between businesses and scientists have resulted in joint projects – including Cyberdyne’s HAL therapy and QD laser glasses – between university clinics in North Rhine-Westphalia and Japanese medical device manufacturers.

Mutually beneficial visits to the “Medical Creation” and “MEDICA” trade fairs have become firmly established. Companies also cooperate directly with each other and gain their first experiences on the German or Japanese health markets. Such cooperation helps to build on the leading position of both countries in medical technology. This is the economic upside of productive cooperation.

Above all, the symposium brings together scientists who are developing the medical technology of tomorrow on the basis of their expertise and experience in research and health care. New developments in radiotherapy for cancer treatment have been met with great interest.

I am very impressed by the progress that our Japanese partners have achieved with boron neutron capture therapy. It gives good cause for hope that a more successful treatment of cancer patients shall be accompanied by significantly fewer side effects than it has been the case until now.

May this symposium provide an impetus for more intensive cooperation in the development of new approaches to treatments in medicine and health care. I thank all those who are deeply committed to nurturing German-Japanese cooperation in this field and who have made this symposium possible.

Garrelt Duin

Message from Masao Uchibori  
Governor of Fukushima Prefecture



Ladies and Gentlemen,

Two thousand days have passed since the Great East Japan Earthquake.

Since then, Fukushima Prefecture has made steady progress towards revitalization, thanks to our citizens' consistent effort as well as warm support from the rest of the world. In order to ensure that such efforts continue and that we will accomplish reconstruction, the prefecture is proceeding with many projects. The „Fukushima Revitalization Plan“ prioritizes the „clustering of medical industry“, which is considered to be a key future industry.

Also, we are promoting business exchange with organizations from North Rhine-Westphalia in the field of medical devices and have concluded a MOU to strengthen our cooperation in September 2014. The results have been active business negotiations and cooperation on various projects between both sides.

At this time, and against the backdrop of the cooperation between the Southern Tohoku General Hospital and the University Hospital Essen, I'm very pleased to be able to introduce to you select projects and content of cooperation between both sides here in Essen.

Lastly, I would like to ask all participants to become familiar with the progress that has been made towards revitalization in Fukushima after the Great Earthquake, and to ask for your continued support of projects leading towards revitalization specifically as well as other projects and cooperation with North Rhine-Westphalia.

Masao Uchibori



1<sup>st</sup> September 2016  
**Day 1 “Robotics in Medicine”**

9:00 Welcome notes

Medical Director University Hospital Essen Jochen A. Werner

Some organizational issues Wolfgang Sauerwein  
Kanichi Seto

## Basics

*Chair: Stefan Mattheis*

|              |   |                    |
|--------------|---|--------------------|
| 9:20 – 10:00 | Introduction to Robotics: From theory to industrial and medical applications (and vice versa) | Andrés Kecskeméthy |
|--------------|---|--------------------|

## Applications

*Chairs: Christian Dierks, Yujiro Handa*

|               |   |  |
|---------------|---|--|
| 10:00 – 10:20 | Building up a high-definition robotic "da Vinci" surgical program in gynecologic oncology | Rainer Kimmig<br>P. Rusch, P. Buderath,<br>B. Aktas, |
|---------------|---|--|

|               |   |  |
|---------------|---|--|
| 10:20 – 10:40 | New Perspectives of transoral robotic surgery in head and neck cancer | Stefan Mattheis<br>Pia Haßkamp<br>Laura Holtmann<br>Stephan Lang |
|---------------|---|--|

|               |   |                    |
|---------------|---|--------------------|
| 10:40 – 11:00 | Robotics and computerization in orthopedics | Yoshinobu Watanabe |
|---------------|---|--------------------|

**11:00 – 11:30      Coffee break**

### *Transfer of knowledge and Innovations*

*Chairs: Kanichi Seto, A. Kecs keméthy*

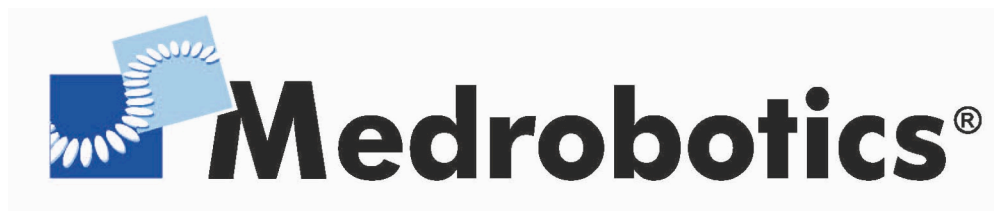
|               |  |   |
|---------------|--|---|
| 11:30 – 11:50 | Social innovations with robotics in eldercare in Japan and Germany | Karen Shire<br>Vitali Heidt,<br>Benjamin Rabe |
|---------------|--|---|

|               |  |                                       |
|---------------|--|---------------------------------------|
| 11:50 – 12:10 | NRW. INVEST GmbH: International Collaboration in R&D – An important element of economic development on an advanced level                       | Astrid Becker                         |
| 12:10 – 12:35 | Cyberdyne®: Innovation transfer – How to implement Robotics in the German Health Care System. Business set up, certification and reimbursement | Christian Dierks                      |
| 12:35 – 12:55 | How to teach Robotics to medical students  | Lorenzo Brualla<br>Wolfgang Sauerwein |
| 12:55 – 13:15 | Discussion   |                                       |

**13:15 – 14:15**

**Lunchtime**

**We thank Medrobotics for supporting this meeting**



## ***Focus Fukushima***

*Chair: Masahiro Ookoshi,*

This part of the program will be given in Japanese and German language, to underline the excellent relationship between NRW and Fukushima (Germany/Japan). There will be a simultaneous translation and English slides.

|                      |  |   |
|----------------------|--|---|
| 14:30 – 15:00        | Welcome notes  |   |
|                      | Jan Buer<br>Ryuta Mizuuchi<br>Karl-Uwe Bütof   | Dean<br>Consul General of Japan, Düsseldorf<br>Ministerialdirigent<br>Ministerium für Wirtschaft, Energie, Industrie,<br>Mittelstand und Handwerk des Landes NRW<br>JETRO, Düsseldorf |
|                      | Masayoshi Watanabe   |   |
| 15:00 - 15:30        | Present condition of Fukushima<br>and the creation of new industry                                 | Toshiyuki Hata<br>Vice-Governor<br>Fukushima Prefecture   |
| 15:30 – 15:40        | Collaboration between the Southern<br>Tohoku General Hospital and University<br>Hospital Essen     | Wolfgang Sauerwein  |
| 15:40 – 16:00        | Robots at the Southern Tohoku<br>General Hospital  | Kanichi Seto  |
| <b>16:00 – 16:30</b> | <b>Coffee break</b>  |   |
| 16:30 – 16:50        | Improve walking and quality of life<br>of Parkinson's disease patients using<br>Walk-Mate Robot    | Uwe Seidel<br>Corinna Weber   |
| 16:50 – 17:10        | Life support robots  | Ken Ichiryu   |
| <b>17:30 – 19:00</b> | <b>Reception by the Vice-Governor of Fukushima Prefecture<br/>Mr. Toshiyuki Hata at "Lerncafé"</b> |   |

**We thank the Fukushima Prefectural Government for initiating and  
supporting this symposium**



2<sup>nd</sup> September 2016  
**Day 2 “Particle Therapy”**

*Introduction*

|               |  |                    |
|---------------|--|--------------------|
| 09:00 – 09:10 | Particle Therapy at the University<br>Hospital Essen | Wolfgang Sauerwein |
|---------------|--|--------------------|

*Charged particles for Radiotherapy*

*Chairs: Martin Stuschke, Jun Itami*

|                      |   |  |
|----------------------|---|--|
| 09:10 – 09:30        | Proton therapy for children   | Beate Timmermann   |
| 09:30 – 09:50        | Treatment of eye tumors with<br>protons, a challenging task                     | Joël Herault<br>Juliette Thariat<br>Wolfgang Sauerwein                   |
| 09:50 – 10:10        | Carbon-ion or proton radiotherapy for<br>patients with hepatocellular carcinoma | Masao Murakami<br>Tatsuya Nakamura<br>Yasuhiro Kikuchi<br>Kazuo Watanabe |
| 10:10 – 10:30        | Carbon Ion Therapy  | Piero Fossati  |
| <b>10:30 – 11:00</b> | <b>Coffee break</b>   |  |
| 11:00 – 11:20        | The need for translational research<br>in particle therapy                      | Andrea Wittig  |
| 11:20 – 12:00        | Discussion: Radiotherapy with charged particles                                 |  |

**12:00– 13:20**

**Lunchtime**

*Neutrons for Radiotherapy*

*Chairs: Piero Fossati, Kazuyo Igawa*

|                |   |                     |
|----------------|---|---------------------|
| 13: 20 – 13:30 | Neutrons in Radiation Oncology  | Wolfgang Sauerwein  |
| 13:40 – 14:00  | Present status of a BNCT System<br>based on a 30MeV Cyclotron           | Toshinori Mitsumoto |
| 14:00 – 14:30  | Developments for BNCT at Kyoto<br>University Research Reactor Institute | Koji Ono            |
| 14:30 – 14:50  | BNCT at the Southern TOHOKU<br>General Hospital                         | Yoshihiro Takai     |
| 14:50 – 15:10  | The BNCT facility at the National<br>Cancer Center Hospital Tokyo       | Jun Itami           |



**15:10 – 15:40**

**Coffee break**

15:40 – 16:00

An innovative design for a BNCT facility

Kazuki Tsuchida  
Yoshiaki Kiyanagi  
Yasuaki Ichikawa

16:00 – 16:20

An European effort to develop an  
accelerator based BNCT facility

Daniel Santos

*Drugs for BNCT*

*Chairs: Andrea Wittig, Koji Ono*

16:20 – 16:40

Boron compounds suitable for BNCT

Hiroyuki Nakamura

16:45 – 17:05

Drugs for BNCT from the perspective  
of the pharmaceutical industry

Tomoyuki Asano

17:05 – 17:25

An innovative approach to solve the  
BNCT drug problem

Hideki Matsui

17:25 – 17:45

Shotgun proteomics to support clinical  
trials. Results from the EORTC  
trials on BNCT and outlook for the future

Pierluigi Mauri

17:45 – 18:15

Discussion: Drugs for BNCT

**We thank Sumitomo HI for supporting this symposium**



## **Zertifizierung / Accreditation**

Die Kongressteilnahme wird von der Ärztekammer Nordrhein zertifiziert.

Zur Erlangung der Zertifizierungspunkte ist ein Anwesenheitsnachweis 2 Mal pro Tag erforderlich. Bitte melden Sie sich morgens und nachmittags am Zertifizierungs-Counter des Tagungsbüros im Foyer.

Ein Zertifikat mit Ausweis der Gesamtpunktzahl wird Ihnen im Anschluss an die Tagung zugesandt.

Teilnehmer, die nicht in Deutschland tätig sind, bekommen im Zuge einer Einzelbewertung nach „Einheitlichen Bewertungskriterien“ Fortbildungspunkte in ihren jeweiligen Ländern für die Veranstaltung angerechnet. Dazu sind eine Teilnahmebescheinigung des Veranstalters sowie das Veranstaltungsprogramm bei den jeweiligen Landesärztekammern vorzulegen.

The Medical Association of North-Rhine has accredited the First NRW-Fukushima Joint Symposium on Advances in Medicine to provide the CME activities for medical specialists.

The symposium has been designated for a maximum of (or 'for up to') 16 hours or 12 Credit Points. Each medical specialist needs to register twice a day for obtaining the full number of credits.

Participants who are not working in Germany should submit the certificate together with the program to the national authority for converting the credit points into the national equivalence.

## **Scientific Committee**

### *Chairs*

Prof. Wolfgang Sauerwein (Essen)

Prof. Kanichi Seto (Koriyama)

Prof. Yujiro Handa (Koriyama)

Dr. Kazuyo Igawa (Koriyama)

Prof. Marcus Jäger (Essen)

Prof. Beate Timmermann(Essen)

## **Local Organizing Committee**

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