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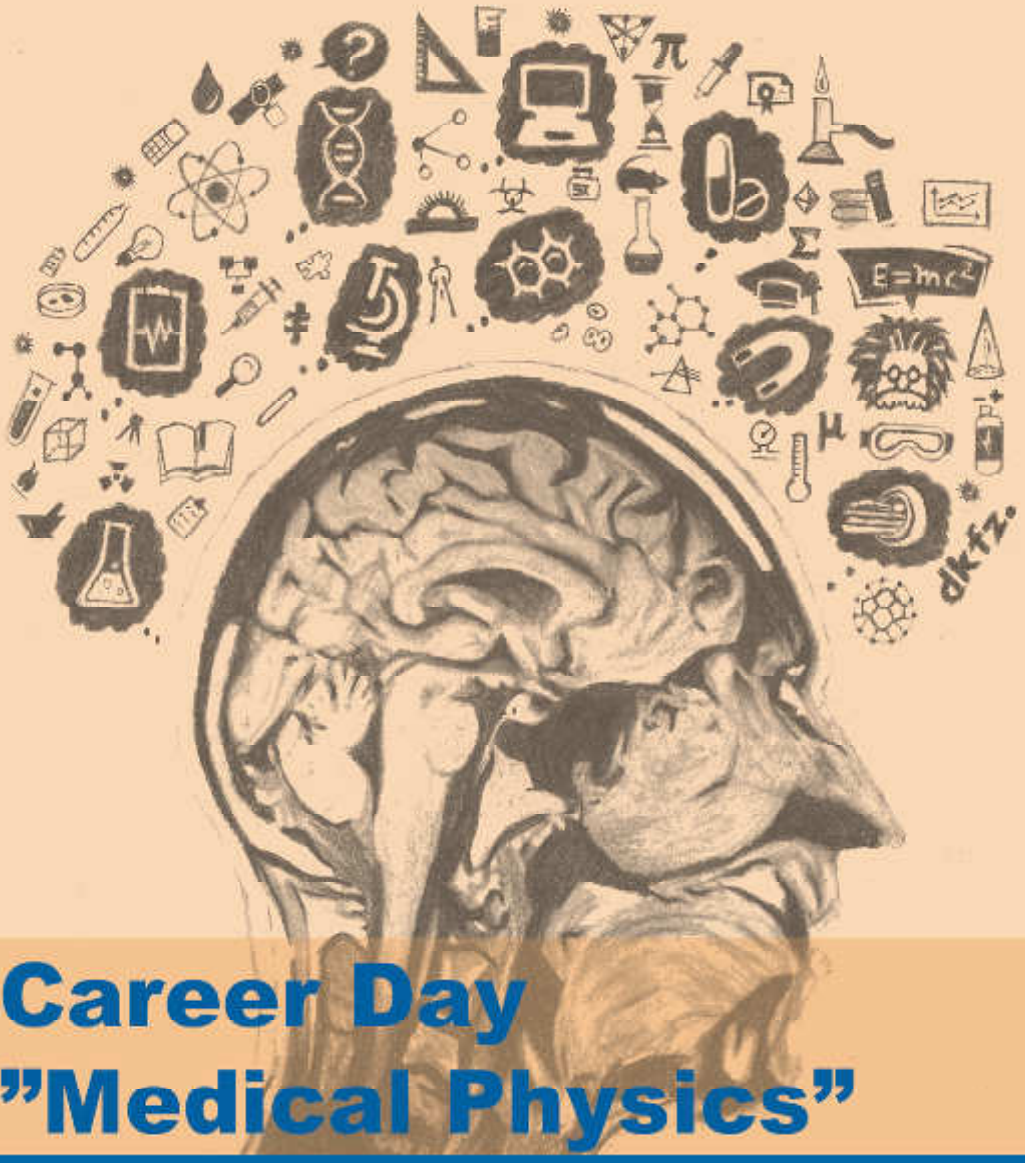
GERMAN CANCER RESEARCH CENTER
IN THE HELMHOLTZ ASSOCIATION

50 Years – Research for A Life Without Cancer



Career Day "Medical Physics"

Monday, May 2nd, 2016

DKFZ, Communication Center

www.dkfz.de/careerday

supported by

Gotthardt Healthgroup AG

08:30 - 09:00	**On-site Registration**
09:00 - 09:15	**Introduction "Careers in Medical Physics"**
09:15 - 10:15	**Careers in Clinics** University Medical Centers and Hospitals
10:45 - 11:45	**Company & Business Careers** Companies, Consulting and Publishing
11:45 - 12:30	**Round Table Discussions**
13:30 - 14:35	**Careers in Industry** Engineering and Medical Device Companies
15:00 - 16:20	**Academic Careers** Universities and Universities of Applied Sciences
16:20 - 16:45	**Closing Remarks**
16:45 - 17:30	**Round Table Discussions**
17:30	**Get-together**

Deutsches Krebsforschungszentrum, Im Neuenheimer Feld 280, 69120 Heidelberg

Post your questions

&

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#MPcareerday

Tweet directly from your mobile devices:

Welcome Address

Dear PhD students and PostDocs,

It is a great pleasure for me to welcome you to the "career day in Medical Physics".

Medical Physics is a fascinating interdisciplinary profession with very good options. Medical Physics in cancer research is represented in several dkfz-departments, focusing on computer science, radiological imaging and radiotherapy. Our institution is considered to be a prominent site for education and research in this field also on an international scale. Several hundred Diploma, Master's and PhD students have started their successful career at the dkfz during the last 20-30 years in academia, clinical environment as well as in industrial companies.

I am very pleased that some of our alumni in Medical Physics followed the invitation to come to this career day in order to inform you on required qualifications, job possibilities, major steps involved in the different career paths and obstacles that you might have to face. You will thus be provided with an insight into a variety of promising career paths open to Medical Physicists.

I would like to thank the board of the dkfz for the support and the Career service and all those who prepared and contributed to this event.

Wishing all participants an interesting and successful day.

With kind regards

Wolfgang Schlegel

Professor in Medical Physics

Editorial

Dear Students and Postdocs,

I would like to cordially welcome you to the DKFZ “Medical Physics” Career Day, where you have the great opportunity to hear about career possibilities directly from experienced professionals. Today will also be an ideal day to enrich your networking circle within Medical Physics and beyond.

It was my pleasure to coordinate the organization of this career day together with 6 excellent PhD students, as part of a “Hands-on Project Management Training”. We were planning this event for several months, managing work packages, deadlines, and working as a team. We took the initiative to invite DKFZ Alumni as speakers, reaching even as far as Harvard in the US to support you in your current or future development. Interested to hear from previous DKFZ members who now work in academia or in industry as project manager, editor, consultant and CEO? Or successful start-up organizations are your future target?

Independently whether your focus is Academia, Industry, Medical technology, Clinics or yet other fields, we are sure there is going to be a lot to learn and motivate you to create your own successful career path.

Please join us for exciting presentations and face-to-face round table discussions with DKFZ Alumni and other experts who are happy to provide you with their know-how and useful information how to enter their professional field, what to focus on and all the other inspiring questions that are coming to your mind.

At last, we want to express our gratitude to our sponsor, the DKFZ Management Board, the DKFZ Career Service and the PostDoc Network who made this Career day possible.

Kind regards,

On behalf of the organization team:

Agata Rode

(Project Coordinator of the “Medical Physics” Career Day)

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Program

08:30-09:00 **On-site Registration**

09:00-09:15 **Introduction "Careers in Medical Physics"** (Prof. W. Schlegel)

09:15-10:15 **Session I: "Careers in Clinics"**
- University Medical Centers and Hospitals
(N. Chaudhri, G. Ende, A. Schwahofer)

10:15-10:45 **Coffee break**

10:45-11:45 **Session II: "Company and Business Careers"**
- Companies, Consulting and Publishing
(M. Baumhauer, F. Klein, L. Edelhäuser)

11:45-12.30 **Round Table Discussions I**

12.30-13:30 **Lunch**

13:30-14:35 **Session III: "Careers in Industry"**
- Engineering and Medical Device Companies
(B. Breithaupt, G. Glombitza, C. Schulze)

14:35-15:00 **Coffee break**

15:00-16:20 **Session IV: "Academic Careers"**
(A. Knopf, M. Buchgeister, T. Bortfeld, A. Mahr)

16:20-16:45 **Closing remarks**

16:45-17:30 **Round Table Discussions II**
(extra guest: J. Seco)

17:30 **Get-together**

DKFZ Alumni Association

The **aim** of the **Alumni Association of the DKFZ** is to support long-lasting personal and scientific relationships between present and former members of our center and to maintain the exchange of ideas and experiences in this ever growing world-wide community at the national and international level. A particularly important target group of the activities of the association are young scientists, especially those from abroad, currently or previously working at the DKFZ.

© Quelle: DKFZ, Foto: T. Schwerdt

The **activities of the association** include

- Network with current and former DKFZ scientists
- Publication of a Newsletter which is widely distributed
- Scientific meetings at the DKFZ and abroad
- Supportive social and cultural activities for visiting scientists and members of the DKFZ
- A travel grant program for short-term visits of young scientist to the DKFZ
- An Alumni e-mail address for members
- Alumni Club Heidelberg (coordinated by Gerhard van Kaick)

Alumni visiting Roche Mannheim

Contact among members is supported by the recently introduced and password-protected **membership directory**. The **membership fee** is voluntary (but sponsors are welcome).

www.dkfz.de/alumni

Contact information

- Prof. Dr. Manfred Schwab (Chairman of the Board of Alumni DKFZ), phone: +49 (0)6221-424499
- Elfriede Mang (Secretary Alumni DKFZ), phone: +49 (0)6221-424499 e-mail: e.mang@dkfz.de

Join the DKFZ-Alumni group on LinkedIn and stay connected!

The DKFZ Alumni Association

During your time at the DKFZ you will have established contacts with many other scientists working here. These contacts can be helpful to you later both in your scientific career and also personally. The DKFZ Alumni Association was established in 2004 to facilitate members in maintaining these contacts, to keep you up to date with news from the DKFZ and for us to hear about your news.

As a member, or former member of the DKFZ we therefore warmly invite you to join the DKFZ Alumni Association. Membership benefits are:

- continue to **belong** to the international **DKFZ community**
- establish long-lasting personal and scientific relationships between **current and former** scientists and staff of the DKFZ
- apply for a DKFZ Alumni email address **your.name@alumni.dkfz.de**
- be listed in the DKFZ Alumni **membership directory** which will enable you to communicate with the other DKFZ Alumni members around the world
- receive information about the current scientific activities, press releases and publications of the DKFZ through the **Alumni newsletters** and other news
- **Meet** other DKFZ current members and alumni at
  - **biannual Alumni General Meetings** at the DKFZ, including free Welcome Dinner and Social Activities; Travel grants for foreigners, e.g. DAAD
  - smaller groups in the context of large **scientific meetings** e.g. AACR
  - **International get-togethers** in cities like Boston, San Francisco, Zürich, Copenhagen or London
  - regional **Alumni Club Heidelberg** events, where current topics in cancer research are introduced by DKFZ scientists, followed by lively discussions
  - trips to introduce current cultural and economic topics relevant to **living and working in Germany**
- **Career Development**
  - take part and/or receive information on quarterly DKFZ **career days** (www.dkfz.de/careerday)
  - advertise your **job vacancies**
  - support younger researchers in developing their scientific careers
  - find out about careers of other Alumni in our **LinkedIn group** (www.linkedin.com/groups/DKFZ-Alumni-6534913)

For further information about the Alumni Association, please visit www.dkfz.de/alumni or email the administrative coordinator of the Association, Elfriede Mang at alumni@dkfz.de.

There are no formal membership fees, but your tax-deductible financial support for our activities and your benefits is always needed and most welcome.

To join the Alumni Association, please complete the online form under the following link: http://www.dkfz.de/en/alumni/formular/applicationform.php.

I look forward to welcoming you as a member of the DKFZ Alumni Association!

Prof. Dr. Manfred Schwab
Chairman of the DKFZ Alumni Association

Dr. Naved Chaudhri

Position: Medical Physicist

Location/Institution: Ion-Beam Therapy Center

Scientific Background: Engineering Physics

PhD obtained where: Heidelberg University, 2010

Postdoc experience: HIT, Heidelberg Univ. (6 y)

Session 1: Careers in Clinics

Abstract

Naved Chaudhri studied Applied Physics at the Karachi University (Pakistan) (Master Degree in 1999) and subsequently Engineering Physics at the Carl von Ossiettzky University of Oldenburg (Master Degree in 2004). He obtained his PhD in Health and Medical Physics at the University of Heidelberg (2010). He worked for 3 years as Research Assistant at the GSI Helmholtz Center for Heavy Ion Research in Darmstadt. He investigated and developed advanced techniques to be implemented in scanned ion beam radiotherapy. Since 2010 he is working at the HIT in Heidelberg on motion mitigation methods, patient treatment planning, and general routine physics work in proton and carbon ion beam therapy.

What do you do in your current position?

Irradiation methods and techniques for moving organs with scanned ion beams, implementation of the gating irradiation method at HIT, Dose Plan Quality assurance methods using moving phantom and dose recalculation methods,
CBCT integration at HIT, image guided particle therapy, working on X-ray imaging based online motion detection method.

Public profile: www.linkedin.com/in/naved-chaudhri-a2a920b6

Contact via: [redacted]

Dr. Gabriele Ende

Position: Head of Department

Location/Institution: CIMH, ZI Mannheim

Scientific Background: Radio-oncology, Imaging

PhD obtained where: Heidelberg University

Postdoc experience: San Francisco (2 years)

Session 1: Careers in Clinics

Abstract

Apl. Prof. Dr. Gabriele Ende is head of Department of Neuroimaging at the Central Institute of Mental Health (ZI Mannheim) since 2006. She obtained her Diploma in Physics (supervisor Prof. Dr. C. Cremer) and did her PhD in Physics (supervisor Prof. Dr. U. Haeberlen) in 1993, both at Heidelberg University. In 1993 she was Young Investigators Award Finalist, SMRM, New York. After a postdoc in San Francisco she joined the ZI in Mannheim in 1996. Her research interest is magnetic resonance research in psychiatry: MR spectroscopy, spectroscopic imaging, morphometry, functional MRI, diffusion tensor imaging, hyperscanning, and neurofeedback.

Public profile: www.zi-mannheim.de

Contact via: www.researchgate.net/profile/Gabriele_Ende

Speaker Profiles

Dr. Andrea Schwahofer

Position: Medical Physicist

Location/Institution: Vivantes Clinic, Berlin

Scientific Background: Medical Physics

PhD obtained where: Heidelberg University, 2016

Postdoc experience: no

Session 1: Careers in Clinics

Abstract

Andrea Schwahofer studied Medical Physics (Dipl. Ing.) at the University of Applied Science Mittweida (2010). From December 2011 to 2015 she followed a Teacher Training at Heidelberg University. She worked at DKFZ as a staff scientist until 2014 and is about to finish her Dr. Sc. hum (in progress) in 2016 at the Ruprecht-Karls-Universität Heidelberg. Since July 2014 she works at Vivantes Clinic Neukoelln Berlin – Netzwerk für Gesundheit GmbH. She teaches for example *"Kurs zur Aktualisierung der Fachkunde im Strahlenschutz nach der Röntgen- und Strahlenschutzverordnung"*. Her skills and expertise include IMRT, Linac, Intensity-Modulated Radiotherapy, Thermoluminescence, Dosimetry, Radiotherapy Physics, TPS, Radiation Protection, IGRT, and 3DCRT.

What do you do in your current position?

Solid State Physics
Experimental Physics
Medical Physics
Thermoluminescent Dosimetry

Public profile: www.vivantes.de

Contact via: www.linkedin.com/in/andrea-schwahofer-0b022b108

Dr. Matthias Baumhauer

Position: Founder and Chief Executive Officer

Location/Institution: mint medical GmbH, MA

Scientific Background: Medical Informatics

PhD obtained where: Heidelberg University

Postdoc experience: DKFZ

Session 2: Company and Business Careers

Abstract

Matthias Baumhauer studied Technische Informatik, Dipl.-Ing. (FH) at the University of Applied Sciences in Ulm (2005) with the VDI prize for his excellent Diploma Thesis. In 2008 he obtained his PhD in Medical Informatics with summa cum laude at Heidelberg University, and also the Grako Award. In 2009 he was awarded the BVM Award for his PhD Thesis. He cofounded Mint Medical with other researchers from the DKFZ . The company aims at providing leading edge medical image processing to improve medical diagnosis, therapy planning, and computer assisted therapy. Mint Medical GmbH was awarded the Special Prize for Baden-Württemberg for the CyberOne Hightech-Award 2010 and the Ruprecht Karl Prize in Heidelberg (2011).

Public profile: www.mint-medical.com

Contact via: [redacted]

Speaker Profiles

Dr. Felix Klein

Position: Consultant Data Science

Location/Institution: Alexander Thamm GmbH

Scientific Background: Physics, Bioinformatics

PhD obtained where: EMBL, Heidelberg

Postdoc experience: EMBL, Heidelberg (3 month)

Session 2: Company and Business Careers

Abstract

For my diploma thesis in physics I joined the Medical Physics research group of Oliver Jäkel at the DKFZ to characterize a fiber optic based system for dosimetry. To analyze the large amounts of data produced during the measurements I started with scripting and analysis automatization. For my PhD I moved to the EMBL and joined the bioinformatics group of Wolfgang Huber. There I analyzed many biological data sets and developed bioinformatics tools which are published on Bioconductor. With my interest in data analysis I started as a consultant for Data Science at the Alexander Thamm GmbH in Munich.

What do you do in your current position?

In my current position I am working on data science projects of different customers helping them to generate additional value from their data.

What are the advantages/disadvantages of your job?

The great advantage of my job is the variety of projects and that I can work and analyze different types of data.

Public profile: www.linkedin.com/in/felix-klein-451990a6

Contact via: [redacted]

Dr. Lisa Edelhäuser

Position: Editor Physics/Astronomy

Location/Institution: SpringerNature, Heidelberg

Scientific Background: High Energy Physics

PhD obtained where: University Würzburg, 2012

Postdoc experience: RWTH Aachen (3 years)

Session 2: Company and Business Careers

Abstract

I finished my PHD in High Energy Physics in Würzburg in 2012 and went to the RWTH Aachen as a postdoc in the same field. During my work there, I co-supervised Bachelor-, Master- and PhD -students and worked on several scientific projects. I also worked as a mentor for the RWTH mentoring-program. After three years of Postdoc experience, I worked at “Projektträger Jülich” for 2 month. In March 2015 I started as an editor at Springer Spektrum.

What do you do in your current position?

My current position is an editor for the German physics and astronomy textbook program at Springer Spektrum. Together with authors, I design new textbooks and take care of the authors from the first idea until the book is published.

What are the advantages/disadvantages of your job?

Advantage: creative work atmosphere, working together with researchers, close to physics and astronomy.
Disadvantage: Nothing that comes to my mind right now.

Public profile: http://www.springer.com/springer+spektrum/kontakt

Contact via: [redacted]

Dr. Bernadette Breithaupt

Position: Project Manager Hardware Development

Location/Institution: Robert Bosch GmbH

Scientific Background: Medical Physicist

PhD obtained where: DKFZ

Postdoc experience: DKFZ (9 months)

Session 3: Careers in Industry

Abstract

Bernadette studied Medical Physics at Martin-Luther-University Halle-Wittenberg. After a 6 month internship at the University of Canterbury in Christchurch, New Zealand, she joined the DKFZ, where she wrote her Diploma thesis in the Heavy Ion Therapy Group. This was followed up by a PhD and a 9 month postdoc position in the same division. With a strong aptitude to coordination, communication and organizational tasks, Bernadette aimed for a job which allowed her to combine these skills with her technical background. In 2014, she accepted the offer to become a project manager at Robert Bosch GmbH in Reutlingen and thus changed from Medical Physics to the development of inertial sensors for applications in automotive and Internet of Things products.

What do you do in your current position?

As a project manager I coordinate the development process of a product with the aim to bring it from a pre-development status to series production. My responsibility comprises as versatile tasks as managing the engineering team, coordination with the production plant, communication with the customers and stakeholders of the project, time and budget planning, but also troubleshooting whenever technical problems occur.

What are the advantages/disadvantages of your job?

Some of the main advantages are the variety of projects and tasks I deal with, the interaction with people from different professional and cultural background and the possibility to make project related decisions, of course after consulting the project team. The main challenges are the very tight time schedules we usually have to deal with and keeping the team motivated also in stressful and demanding situations.

Public profile: www.xing.com/profile/Bernadette_Breithaupt

Contact via: [redacted]

Dr. Gerald Glombitza

Position: Project Manager

Location/Institution: Heidelberg Engineering

Scientific Background: Medical Image Processing

PhD obtained where: DKFZ/Uni Heidelberg

Postdoc experience: DKFZ (4 years)

Session 3: Careers in Industry

Abstract

After a scientific period at DKFZ in medical image processing and a postdoc period in computer aided surgery my interests focused on real problems in the present.
While working as test manager, quality manager and project manager for 4 years at sd&m (software, design and management) in Frankfurt, I joined several projects for companies like Deutsche Post, Dresdner Bank, Telekom and Hypo Vereinsbank.
During 8 years at Siemens Healthcare I worked as technical project lead or as project manager for several development projects. Since 3 years I am project manager for development projects at Heidelberg Engineering.

What do you do in your current position?

Plan and track development projects, establish and improve project processes. Integrate non-development departments and plan knowledge transfers.

What are the advantages/disadvantages of your job?

As a project manager you know a lot of people in the company and you can be very creative in optimizing the tools and processes. On the other hand you are the single wringable neck.

Public profile: www.xing.com/profile/Gerald_Glombitza

Contact via: [redacted]

Dr. Carsten Schulze

Position: Team manager

Location/Institution: Siemens Healthcare GmbH

Scientific Background: Medical Physics

PhD obtained where: DKFZ, Heidelberg

Postdoc experience: 2 years

Session 3: Careers in Industry

Abstract

1989 – diploma in Physics, Heidelberg University,

1995 – PhD in Physics, Heidelberg University, DKFZ

1997 – SW developer, project manager, MRC Systems GmbH, Heidelberg

2000 – Co-founder, managing board member, Systrion AG, Hamburg

2003 – SW developer, team manager, QIB manager, project manager, collaboration manager, Siemens Healthcare, Heidelberg

What do you do in your current position?

Manage a cross-locational, international team of SW developers, SW architects, project managers to maintain software applications and computer hardware for installed base products.

What are the advantages/disadvantages of your job?

Negative: not involved too much in development of fancy new products

Positive: enjoy the diversity of tasks in this special business situation

Public profile: www.linkedin.com/in/carsten-schulze-bbb19883

Contact via: [redacted]

Prof. Dr. Antje-Christin Knopf

Position: Associate Professor

Location/Institution: UMCG Groningen

Scientific Background: Physics

PhD obtained where: Universität Heidelberg

Postdoc experience: PSI (CH), NIRS (J), UMCU

Session 4: Academic Careers

Abstract

I started my training in physics in the year 2000 at the University in Heidelberg. Early on, medical physics, in particular the use of protons, caught my interest. In parallel to my studies in physics, I completed an MSc in medical physics. My PhD on proton range verifications was carried out at MGH in Boston. For my first postdoc I went to PSI in Switzerland where I worked on approaches to treat moving targets with scanned proton beams. In 2012 I went for a three month research stay to NIRS in Japan. My second postdoc positon was at ICR in London where I worked on the MR-LINAC project. In this context I spent four month at UMC Utrecht. Since April 2016 I am an associated Professor at UMC Groningen.

What do you do in your current position?

At UMC Groningen I coordinate the research that is related our new proton radiotherapy facility. That involves the participation in inter-institutional grant initiatives, the acquisition of institution-specific grants and the supervision of students.

What are the advantages/disadvantages of your job?

Advantages: I meet a lot of bright people; I work with excellent students on radiotherapy approaches of tomorrow; I have the chance to travel to many international conferences
Disadvantages: none, as long as you appreciate a challenging and flexible life style.

Public profile: www.rug.nl

Contact via: [redacted]

Prof. Dr. Markus Buchgeister

Position: Professor

Location/Institution: BHT Berlin

Scientific Background: Medical Physics

PhD obtained where: University Bonn

Postdoc experience: UCSD, USA; IFF Dresden

Session 4: Academic Careers

Abstract

After starting in solid state physics irradiating metal layers to create new phases I jumped on the high temperature superconductivity train end of the 1980s and pursued an academic career in the field of material preparation techniques. Returning from the USA in the beginning of the 1990s (first years of the German reunification) I found a position in East-Germany. Since my wife (a physician) had her position in West-Germany, I took the chance to switch back to my very early subject working with accelerators, but now in the medical field of radiotherapy at a university clinic. This also offered me the possibility to teach and do applied research besides clinical routine duties. Since teaching turned out to be one of my favorites, I finally succeeded in getting a position at a university of applied

What do you do in your current position?

Teaching young students in medical radiation physics; I am also public relation officer of the Deutsche Gesellschaft für Medizinische Physik.

What are the advantages/disadvantages of your job?

Working with young interested people, helping them to get a good basis for their career, flexibility and some freedom to set my own goals.

Public profile: www.beuth-hochschule.de/people/detail/1132/

Contact via: [redacted]

Prof. Dr. Thomas Bortfeld

Position: Professor and Director

Location/Institution: MGH and HMS Boston

Scientific Background: Physics

PhD obtained where: Heidelberg Univ., DKFZ

Postdoc experience: DKFZ, MD Anderson CC

Session 4: Academic Careers

Abstract

I studied physics, geophysics, and medical physics in Hannover, Kiel, and Heidelberg. I got my diploma and PhD in physics in Heidelberg. Wolfgang Schlegel at DKFZ was my PhD thesis supervisor. After the PhD I stayed at DKFZ for a postdoctoral fellowship, and did another shorter postdoc at the MD Anderson Cancer Center in Houston. Then followed my habilitation in physics, and tenure at DKFZ. In 2001 I was simultaneously offered a professorship in medical physics in Hannover and the position as a research director in radiation oncology at the Massachusetts General Hospital (MGH) in Boston. I took the job in Boston because I found it more exciting and perhaps more challenging. In 2008 I became the chief of the biophysics division at MGH.

What do you do in your current position?

I split my time between doing research (mostly guiding others) and administration (50/50).

What are the advantages/disadvantages of your job?

Plus: vibrant environment, outstanding colleagues, satisfaction of helping many patients, salary;
Minus: no direct “access” to students, research in a hospital is different, focus on patient

Public profile: www.gray.mgh.harvard.edu/

Contact via [redacted]

Dr. Andreas Mahr

Position: Vice President and Dean of Engineering

Location/Institution: DHBW Heidenheim

Scientific Background: Med. Information Science

PhD obtained where: DKFZ

Postdoc experience: DKFZ (2 years)

Session 4: Academic Careers

Abstract (short summary of academic and professional career), 100 words)

I participated in the Graduate College Medical Physics at DKFZ from 1996-1999 and stayed on as a postdoc until 2001. Then I joined the Department of Education Management at the DHBW Heidenheim (Duale Hochschule Baden-Württemberg) and in 2005 became Head of Department Medical Information Science. After 15 years of lecturing I still like this part of my job most. It is great to see how my students develop and make their own careers after graduating. Over the last years I had the chance to lead a course in Medical Computer Science and I helped designing study programs in Nursing, Health Care and Medical Science and Technology. I love the opportunities my job offers. I had the chance to visit partner universities in the US, Canada, Mexico, India, Georgia and most European countries. That really opened my mind.

What do you do in your current position?

Lecturing, study program design, management of international cooperations, HR responsibility, research coordination of university, representative tasks, …

What are the advantages/disadvantages of your job?

Advantages: freedom in decisions and possibility to emphasize working fields, job security

The most important hallmarks in my career so far

Decision after graduation from university not to fall for a high paid position in industry and instead pursue a scientific career at DKFZ. When I graduated from DKFZ with a PhD in Medical Physics I never thought that I would end up where I'm now. Things I still want achieve: work at a foreign university and find time to do some research again.

Public profile: /www.dhbw-heidenheim.de/home/Ma

Contact via: [redacted]

Joao Seco, PhD, DABR

Position: Professor of Medical Physics

Location/Institution: DKFZ and HU Berlin

Scientific Background: Medical Physics

PhD obtained where: University of London

Postdoc experience: ICR (UK), HMS (USA)

Round Table Session 3 + 4: Table 14

Abstract

In my PhD I worked in intensity modulated radiation therapy (IMRT), specializing in inverse optimization problems in radiotherapy. During the PhD I understood that the biggest weakness in IMRT optimization was the dose calculation engine, which was inaccurate especially for lung and head & neck tumors. My post-doctoral work focused on developing a Monte Carlo (MC) inverse planning algorithm that generated accurate pencil beams for inverse optimization. The MC inverse planning was further developed to account for tumor motion by allowing input of 4DCT datasets. As Medical Physics faculty at HMS I focused on developing novel imaging technology to resolve the proton range uncertainty problem. I developed prompt gamma spectroscopy that can potentially localize the proton Bragg peak to within 2mm anywhere inside the patient.

What do you do in your current position?

Research and Teaching at DKFZ and Physics Department Heidelberg University.

What are the advantages/disadvantages of your job?

Advantage is the freedom to concentrate on fun research topics. No disadvantages at the moment…

Public profile: www.linkedin.com/in/joao-seco-5428726

Contact via: [redacted]

Important Career Hallmarks

What was the most important hallmark in your career to lead you to your current position?

- **Company and Business Careers**
  - Doing a PHD, working as a researcher and collaborating with others or supervising students (**Lisa Edelhäuser**).
  - My interest in data analysis and big data applications which I developed during my Diploma thesis and PhD (**Felix Klein**).

- **Careers in Industry**
  - The Bosch Women@TechnikVision Career Day in Reutlingen, a fair amount of self-reflection to find out what I really like to do and to realize that for me the way how I work is much more important than the technical field I work in, some courage to leave the well-known world of Medical Physics and try out something completely new (**Bernadette Breithaupt**).
  - There is no single hallmark but the numerous repetitions of project experiences that awakened my passion for project management. Projects being late, projects missing their goals or even projects without clearly defined goals. Projects without a sufficient mechanism to track the progress or to prove the completeness of planned deliverables.
    And successes with projects where good planning is able to manage work load on developer side as well as expectations on sponsor side (**Gerald Glombitza**).
  - Supporting to help patients was the main motivator throughout my whole professional career (**Carsten Schulze**).

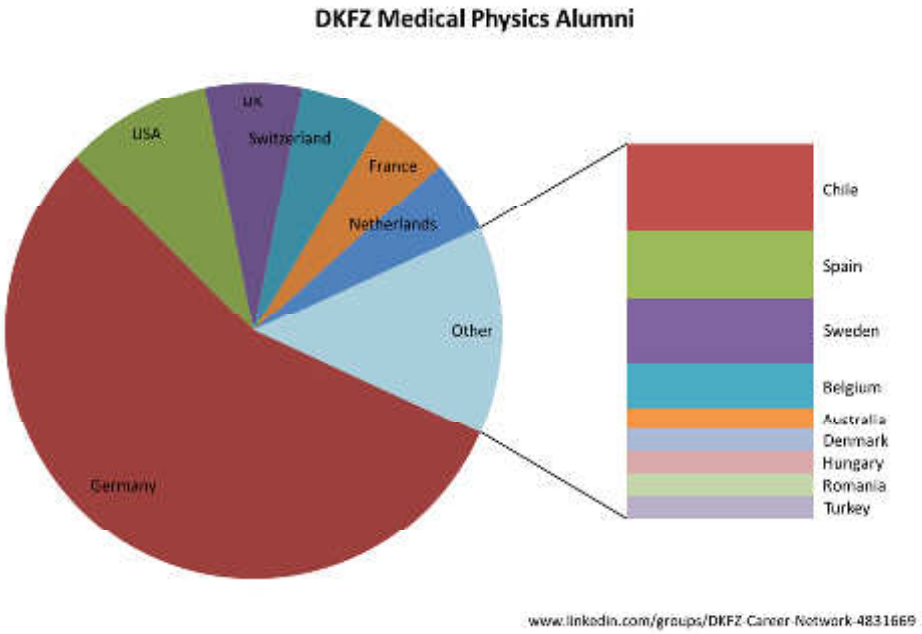
- **Academic Careers**
  - Where I am now is the consequence of a lot of circumstances along my path: studying at a university that offers a brought curriculum and made it possible to find a topic that really fascinates me, get to know many different research groups and to gain international experience, work with inspiring people, be supported by my supervisors, a brought network of colleagues and research friends (**Antje-Christin Knopf**).

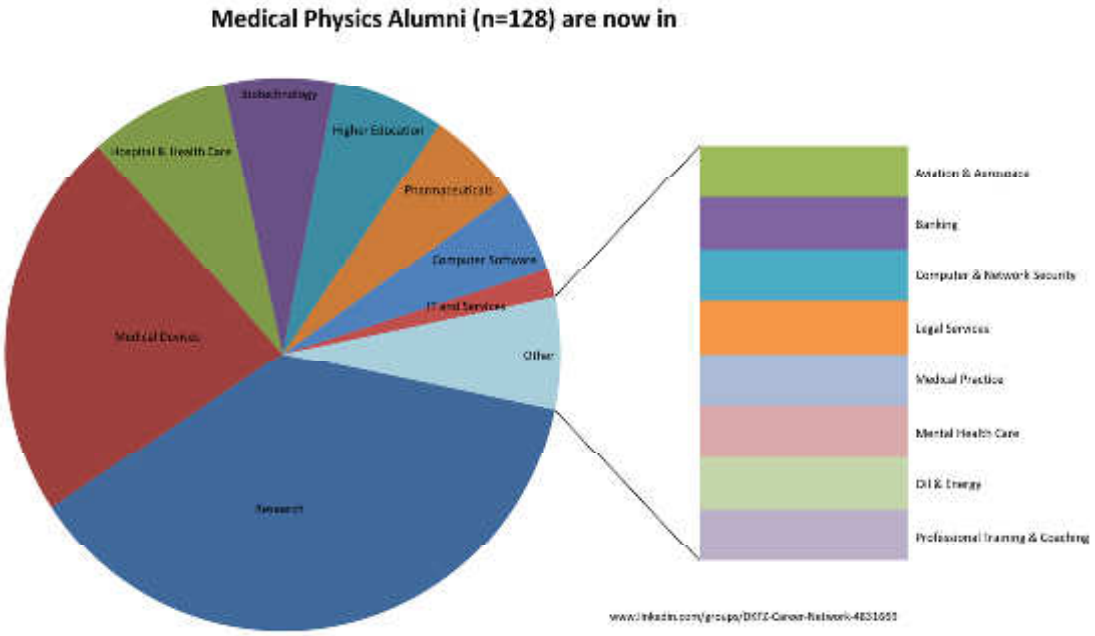
Important Career Hallmarks

- Meet and work with people of great practical knowledge in medical physics, engagement in the German and the European organizations for medical physics, interest in teaching (**Markus Buchgeister**).

- Development of intensity-modulated radiation therapy (IMRT) as a PhD student at DKFZ, postdoc on IMRT delivery at MD Anderson CC. I got a lot of mileage for my career out of that (**Thomas Bortfeld**).

- Decision after graduation from university not to fall for a high paid position in industry and instead pursue a scientific career at DKFZ (**Andreas Mahr**).





Number One Tip for Junior Scientists

What is your number one tip for junior scientists who might be considering a move to your sector?

- **Company and Business Career**
  - Be interested in this field, be motivated and involve yourself in activities that do not directly contribute to your (scientific) career (bad advice for a scientific career!) but could contribute to a career like that. Learn how to deal with different kind of people (**Lisa Edelhäuser**).
  - Sit down and think what you really want to do and imagine how your dream job looks like. What is it that really motivates and inspires you? Once you know this you can start looking for it. The most important thing is to talk to other people especially in the field where you might want to go. I was lucky to join the Mentoring Program of the DPG and had a mentor from industry for one year. With his help I was able to contact a lot of people and interview them about their job. In the first place I found out which jobs I would not want to do which helped me to focus on other career paths. This in the end helped me to find my current position (**Felix Klein**).

- **Careers in Industry**
  - Just give it a try! It's well worth getting to know the world outside academia (**Bernadette Breithaupt**).
  - Besides the remark that Heidelberg Engineering is a good place for young scientists from several disciplines, the number one tip may be: If your heart says you will not be a scientist for the rest of your life, do not hesitate to jump. Just do it.
    If you are interested especially in project management: Try to talk to as many people as possible to understand their problems during a project. And listen. Understand project risks and even failed projects as good advisors. And learn. Find a way to make your project road map understandable for your team (**Gerald Glombitza**).
  - Try both, a startup as well as an established global player, and find out what's best for you (**Carsten Schulze**).

Number One Tip for Junior Scientists

- **Academic Careers**

  - Work on something that fascinates you, on something you believe in, get to know as many people as possible and always be open for novelties, be it new colleagues, a new work location or a new research topic (**Antje-Christin Knopf**).

  - Do not stick to your location. If you have the chance, go, see and work at different places. When working in the clinical field of medical physics, it is important to understand that you are located in a very inter-professional team. Medical doctors, medical nurses and technical assistants all have their own understanding. Everyone in this team has to bring in his/her special competences and respect the ones of all others. Coping with this challenge, medical physics is a very rewarding workplace, either in the clinic or in research/development/service, since your final reward is that you bring in your share in helping patients to recover their health (**Markus Buchgeister**).

  - Think big, set the direction and follow your own compass needle, rather than following the trend. You can come a long way and your work can make a real difference if you keep going. Find a strong mentor to keep you honest and on track (**Thomas Bortfeld**).

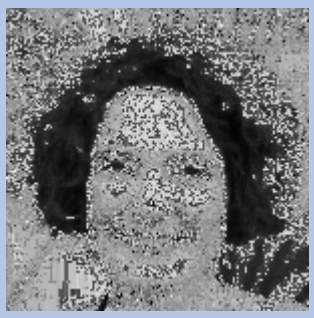
  - Stay authentic and take chances when they are offered to you! (**Andreas Mahr**).

  - A medical physicist sits at the interface of medicine and physics, thus a very good understanding of the key medical problems is vital, it's very important to have ideas and not be scared of making mistakes (**Joao Seco**).

Organizers

CAREER DAY ORGANISING COMMITTEE

STEERING COMMITTEE



Dr. Barbara Janssens
DKFZ Career Service

Dr. Celina Cziepluch
DKFZ Advanced Training

Dr. Timo Kehl
DKFZ Biosafety

Marion Gürth
DKFZ Career Service

ORGANIZING TEAM

Agata Rode **Srinidhi Desikan** **Giulia Arico** **Martin Petkov**

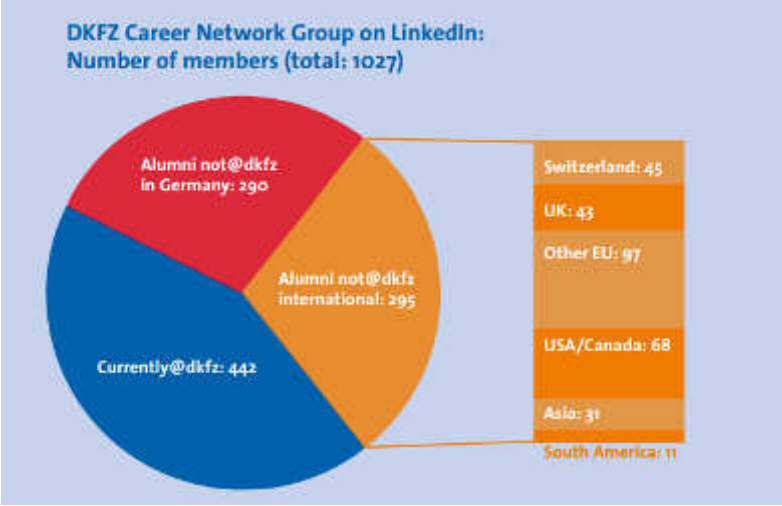
Michael Götz **Gianna Triller** **Xin Gao**

DKFZ Alumni Network – A Treasure Box

A Treasure networking Box for More than Thousand and One Alumni

by Barbara Janssens and Marion Gürth*

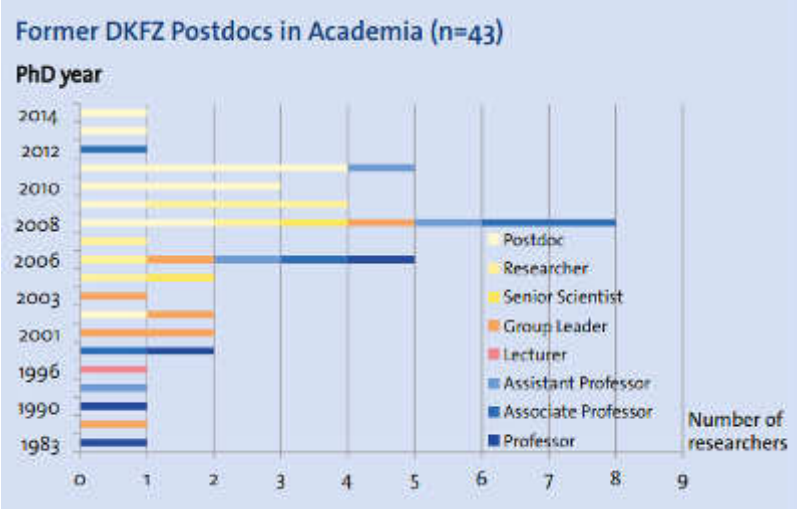
With the aim of actively tracing back DKFZ Alumni and staying in touch with current DKFZ members, a DKFZ Career Network group on the professional social media platform LinkedIn was created two years ago.



The most important advantage of group membership is that one can send messages to other group members without being 1st degree (direct) contacts. Even just browsing career profiles of former DKFZ members may be very inspirational for planning the own future. Also well esteemed is the access of group members to links on vacancies and job ads including the opportunity to post own ads for free! Have a look at current jobs and upload any vacancies you may have. The DKFZ Career Network group has proven to be a treasure box for the recruitment of speakers for the regular DKFZ Career Days. For example, at the Career Day on Publishing 9 out of 15 speakers were Alumni, while 12 out of 20 were hosted on the R&D Career Day. Despite the short runtime, the DKFZ Career Network group has already reached the milestone of 1,000 members in February 2015: of these, 43% are still currently working at the DKFZ, and the majority are Alumni properly speaking – i. e. not working at DKFZ anymore. Half of these DKFZ Alumni have left Germany, and meanwhile hold responsible positions. An exceptionally active subgroup consists of Masters students from the DKFZ Major in Cancer Biology and other Masters programs – many of them continue their career as graduate students, a fact that explains why a relatively high proportion of Alumni are still working in Academia. The growing Career Network group also consists of 43 people who worked as postdocs at the DKFZ and now feature various positions in Academia. Also outside Academia there is a long list of career opportunities as indicated on the personal profiles. Indeed, behind all these web profiles one will find people deeply committed to the networking idea. Many scientists are happy to stay in touch with former DKFZ colleagues. They readily provide information about their recent work experience, how they got into their new position and what is particular about their careers. Just check it out on

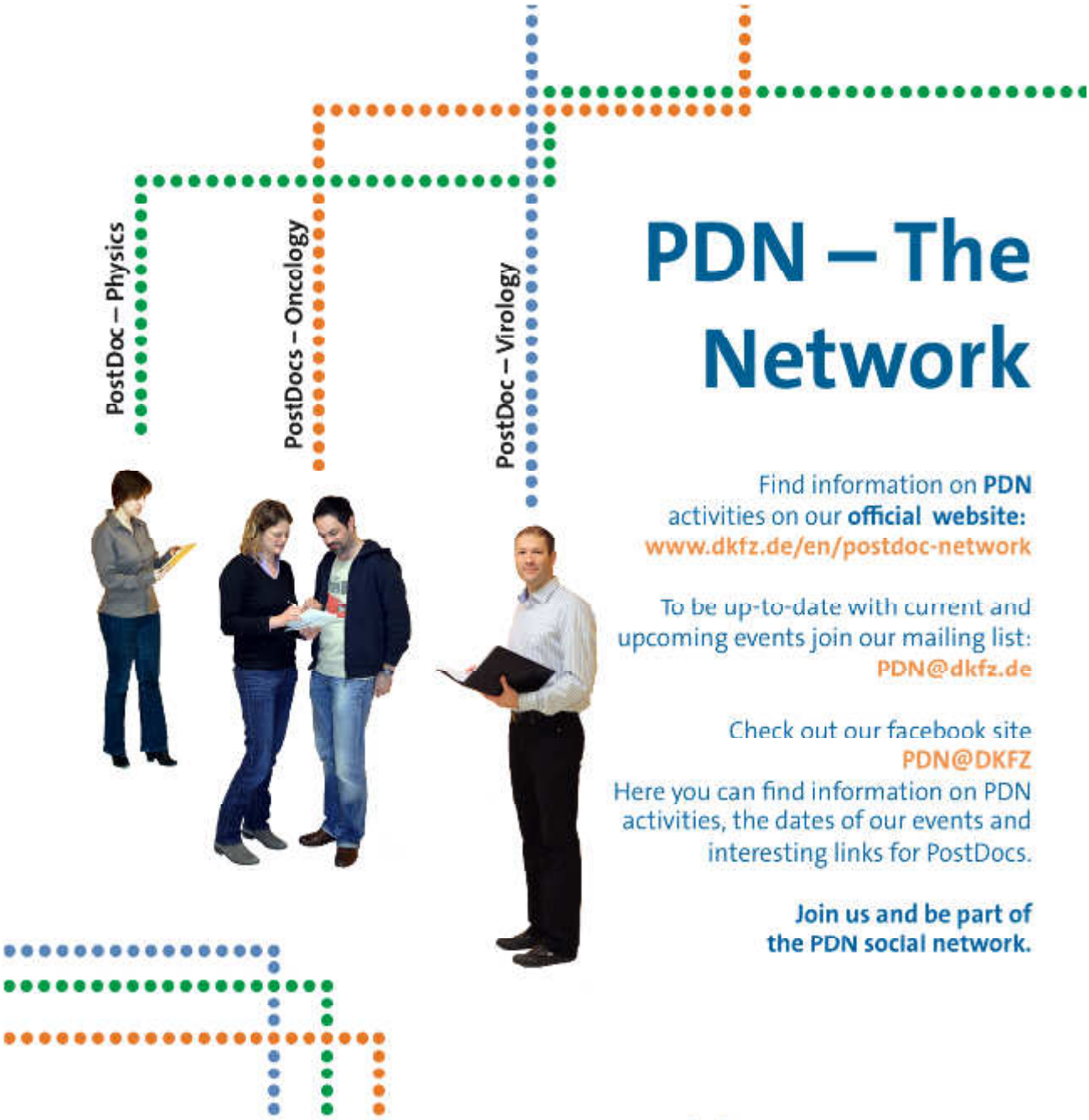
www.linkedin.com/groups/DKFZCareer-Network-4831669

Hopefully, the Network group will grow with at least a few hundred members every year – so don't hesitate to invite your friends and colleagues from the DKFZ to join the network, too.



In the LinkedIn Network Group 43 members did a postdoc at DKFZ and now occupy various functions in Academia. In this figure the number of researchers (x axis) is plotted against the year they did their PhD (y-axis), resulting in a typical age pyramid. Most professors did their PhD in 2006 or before, but one is still very young (PhD 2012).

* With special thanks to our student assistant Jana Fehr for extensive data analysis and crunching.



Our mission

The **PostDoc Network (PDN)** is a focus point of **PostDoc interests** at the DKFZ creating a community for the exchange of ideas, dissemination of information and providing networking opportunities.
The **PDN thereby fosters scientific and individual development** to enrich the **DKFZ PostDoc experience**.

PostDoc at the DKFZ

dkfz.

GERMAN CANCER RESEARCH CENTER
IN THE HELMHOLTZ ASSOCIATION

50 Years – Research for A Life Without Cancer

The Welcome & Get-Together group encourages networking & exchange of ideas by organizing **Get-Together**-events for PostDocs from the DKFZ and other Heidelberg institutes. Additionally, the group provides newcomers useful information about life in Heidelberg & work at DKFZ.

We offer **PostDocs at DKFZ and DKTK** a variety of seminars and a regular PDN retreat which is an excellent opportunity for networking and scientific exchange.

The **PDN Committee Meetings** allow proposing new advanced training possibilities, discussing PostDocs' requests and needs, and initiating new projects.

The **PDN Career Day Series** provides insights into career options in academia and beyond. During these series you receive first-hand information and advices from DKFZ **Alumni, Group Leaders, Researchers and Experts** from non-academic environments: e.g. R&D, marketing and sales, science management, communication and consulting or patenting.

Trip to Erlangen

Visit to Siemens Erlangen and to the ancient City of Nürnberg

Monday, May 30, 2016

Kindly offered by Prof. Dr. Wolfgang Schlegel on behalf of the DKFZ *Alumni Association*

The group will be invited for Lunch by Siemens, the Coffee break in the afternoon will be at your own expense. There is a limit of participants (50 persons), therefore, please send your reply as soon as possible on dkfz-connect.de or per email to e.mang@dkfz.de

Participation will be free of charge (except coffee break) for members of Alumni DKFZ Heidelberg. Eligible for membership are former and current DKFZ co-workers. If you are not a member yet, please join on www.dkfz.de/alumni

We are looking forward to your participation in the excursion.

Program:

07.30	Meeting point: Main entrance DKFZ (INF 280)
10.30	Arrival in Erlangen, Welcome at Siemens
10.30	Talks at Siemens (sightseeing factory)
13.00	Lunch invited by Siemens
14.00	Departure for Nürnberg
15.00	Guided Tour through Nürnberg
16.00	Coffee Break (at your own expense)
17.00	Departure from Nürnberg
19.30	Arrival in Heidelberg

Some background information

Siemens is a German company and the largest electronics company in Europe. The company has activities in industry, energy and healthcare. Siemens Healthcare with head-quarter in Erlangen is one of the world's largest suppliers of technology to the healthcare industry and a leader in medical imaging, laboratory diagnostics and healthcare IT. Medical imaging provided by Siemens includes X-Ray imaging, Ultrasound, Computed Tomography, PET and MRI. In fiscal 2015, Siemens Healthcare had around 44,000 employees worldwide and is operating in 120 countries.

Trip to Erlangen

The research program “Imaging and Radiooncology” is equipped with CT, PET and MRI units from Siemens. The center entered into a strategic alliance with Siemens in early 2006. The collaboration has the goal to improve and optimize imaging technologies in cancer diagnostics and therapy planning. DKFZ and Siemens have committed themselves to utilizing and further developing existing possibilities of radiation physics in order to enable clinicians to determine the location, size and spread of a tumor (staging) more precisely and to better assess its biological agressiveness, i.e. growth and tendency to metastasize (grading). More precise findings obtained by imaging technologies serve as a basis for individualized treatments which maximize benefits for the patient while minimizing side effects.

The 7 Tesla magnetic resonance imaging (7T MRI) system contributed by Siemens promises a whole new dimension of temporal and spatial resolution down to the single-molecule level. This offers new possibilities of capturing a tumor’s location, size, structure, blood vessel supply and metabolism in great detail. This information gain can be used for better image quality, shorter measuring times or more images per unit of time. A big asset of the collaboration is the fact, that DKFZ scientists have access to the latest instrument generations and are thus able to further develop the software and hardware components of these instruments in a continuous process. During our Siemens visit we will be informed about the latest medical imaging developments with a focus on MR-Imaging. We will furthermore have the opportunity to see the factory hall, where the MR units are assembled.

Nürnberg

Nürnberg is a City in Bavaria with 517.498 inhabitants. The urban area also includes Fürth, Erlangen and Schwabach with a total population of 763.853. The first documentary mention of the city was in 1050, namely as location of an Imperial castle between the East Franks and the Bavarian March of the Nordgau. In its past the city was well known for its Craftsmen. Nürnberg is also well known for Nürnberger Bratwurst (grilled sausage) which is shorten and thinner than other bratwurst sausages.
Another Nürnberg speciality is Nürnberger Lebkuchen, a kind of ginger bread eaten mainly around Christmas and offered at the famous Nürnberger Christkindlmarkt.

Today Nürnberg is a dynamic High Tech Center in the middle of Europe. It is also innovative in Research and Development.
www.dkfz-connect.de

DKFZ PhD Student Council

There are over 600 German and international PhD students who work at the DKFZ in Heidelberg. Amongst them, six people are annually elected to form the PhD Student Council. The members of the Council serve as representatives of the student body, coordinate scientific and non-scientific student life in various ways and foster exchange and networking between PhD students. The PhD Teams are an integral part. One in ten PhD students volunteers to help in one of the teams, which are coordinated by the Student Council.

One of our aims is to make PhD life better for all students. An important part of this task is organising social events as an escape from the daily routine, where you can meet your peers and colleagues, make friends, exchange experiences and expertise or simply relax for a bit. The PhD Happy Hours, for example, are an excellent opportunity to get in touch not just with other PhD students, but also postdocs and master students in a relaxed and enjoyable atmosphere to discuss science and everything else. In addition, the Social Events Team and Party Team plan and organise movie nights, sports tournaments, two walks in spring and autumn and several parties around the year.

Furthermore, we would like to extend our repertoire: we plan to establish connections between people with shared interests and support hobby clubs. You want to play chess, act in a play or practice martial arts, and are looking for others who want to join you? You can almost certainly find someone who is just as enthusiastic about your hobby right here at the DKFZ.
Besides creating networks and providing opportunities to forge social connections, we also have some other tasks. The

The PhD Student Council 2015/2016 members (Front: left to right: Azer Aylin Açikgöz, Juliane Hafermann, Sara Ciprut; Back: left to right: Antonino Pane, Sebastian Kruse, Mahak Singhal)

Welcome Team makes the two PhD selection rounds per year as pleasant and informative for the applicants as possible, and provides further help for newcomers once they have joined the DKFZ. The Retreat Team organises the two PhD Retreats that take place in Weil der Stadt each year. Both these teams cooperate closely with the Graduate Office. Together with other teams from various different institutes in Heidelberg, the Conference Team helps to organise the Heidelberg Forum for Young Life Scientists. The Communication Team keeps the website updated, conducts an annual survey among the PhD students and keeps everyone updated on upcoming events.

Finally, the Student Council also serves as a liaison between the PhD students and the DKFZ Management Board, and represents your interests on a Helmholtz-wide level in the Helmholtz Juniors.

If you want to learn more and stay informed, have any questions, or wish to help, do not hesitate to contact us or check out our Facebook page:

Phd-student-council@dkfz.de

www.facebook.co/groups/DKFZphd

DKFZ Career Service

For Masters/PhD students/PostDocs

www.dkfz.de/careers

INTRANET http://intracoop/sites/phd-careers

CALENDAR of all events in Heidelberg http://tinyurl.com/5wuerfx

INFO on FACEBOOK

To receive updates with links to interesting events and pages (about 3 per week) please LIKE the page DKFZ PhD Careers. To join groups become a FRIEND www.facebook.com/phdcareers

NETWORK on LinkedIn

For optimal career development **connect** to scientists with interesting jobs. Current and former DKFZ scientists are warmly invited to join, as well as collaborators and other interested scientists.

www.linkedin.com/groups/DKFZ-Career-Network-4831669

E-MAIL DISTRIBUTION LIST jobs-for-PhD: To receive relevant job ads, information and events register on intranet http://listhost/jobs-for-PhD (externals can be added on request)

WORKSHOPS AND COURSES: DKFZ PhD students and postdocs can participate in workshops on e.g. application skills, CV writing, "Career Plan B/Life Work Planning", soft skills, business for scientists etc. Register on http://logaportal/maportal or per email.

THURSDAY 1 pm – OPEN CAREER LUNCH

For all interested scientists to discuss with a guest about his/her career moves we have "career lunch" (see calendar)

SCIENCE & SOCIETY: Discuss your role as a Scientist, Science & Ethics, Talking to the Public, and Volunteering -> Interest – Engagement – Experience on your CV

JOIN http://www.facebook.com/groups/scisoc.dkfz

APPOINTMENTS for Coaching (45 min) and CV checks after Workshop (20 min)

Wednesdays in DKFZ main building and Fridays in TP4 (request doodle link per email). You can schedule a career service appointment.

DKFZ Career Manager since 2011: **Dr. Barbara Janssens.** She is Belgian (PhD in molecular and cell biology from Ghent University), and after a postdoc in Paris she worked for five years as an Editor at Wiley-Blackwell.

DKFZ Career Project Coordinator since 2013: **Marion Gürth** studied Biology at the TU Darmstadt and did her Diploma in Heidelberg in 2005. Marion supports Career Service projects and focusses on building up the DKFZ Career Network.

E-mail: careers@dkfz.de Tel: +496221 42-2146 and 1762

Office H1.06.015b (15b 6th floor main building west)

at the Graduate Program Office

Next Career Days

Sponsor

Gotthardt Healthgroup AG

„Medical evidence to action“ is the leading theme behind Gotthardt Healthgroup AG and its digital health solutions and services. Our mission is to have a positive, measurable impact on professional workflows, processes and everyday habits, across all players in healthcare and to generate meaningful insights into the realities of today’s healthcare processes. Payers, care givers, patients and families will benefit from new approaches.

Application areas include the improved detection and management of diseases with a heavy burden on individuals or society, medication optimization, better and faster clinical trials, real-world value and evidence, as well as increased well-being for consumers.

To unravel complex multi-dimensional relationships in medical data we utilize state-of-the-

art data mining and machine learning algorithms. Amongst others, this allows to determine probabilities for presence and future occurrence of diseases. Further, it supports health care providers to identify patients that qualify for novel treatment options, building more and more bridges to precision medicine. Our medical intelligence expertise allows us to deliver high quality, up-to-date medical evidence to all players in health care.

Gotthardt Healthgroup AG observes highest ethical standards and the demanding German and European data privacy regulations. Gotthardt Healthgroup AG strives for excellence in execution in order to achieve a seamless integration of evidence in the respective workflows and thought processes for maximum impact.

We sincerely thank our sponsor for his support!

Impressum

The organizing team of the Career Day "Medical Physics" says THANK YOU to everyone who helped us to make this day a success…

…thanks to the Management Board of DKFZ and the Career Day Steering Committee for all their support

… thanks to Prof. Schlegel who helped to make this career day possible

… thanks to the DKFZ Alumni Association which generously supported us

… thanks to Herrn Harbarth and his colleagues for technical support

… thanks to Herrn Hauschild who took care that everyone was well fed

... thanks to the staff unit of safety for supporting our Career Day

… thanks to the Press and Public Relations department supporting our Career Day

… thanks to the Core Facility Information Technology and especially Frau Kurek for their great help and printing the booklet.

Notes

Notes

YOUR FEEDBACK

is important for us!

Please answer a few questions at:

https://www.surveymonkey.com/r/W89K8N9

Scan the QR code to access the survey!

Contact us:

Careers@dkfz.de

Career Day Program "Medical Physics"

08:30-09:00 **On-site Registration**

09:00-09:15 **Introduction "Careers in Medical Physics"** (Prof. W. Schlegel)

09:15-10:15 **Session I: "Careers in Clinics"**
- University Medical Centers and Hospitals
(N. Chaudhri, G. Ende, A. Schwahofer)

10:15-10:45 **Coffee break**

10:45-11:45 **Session II: "Company and Business Careers"**
- Companies, Consulting and Publishing
(M. Baumhauer, F. Klein, L. Edelhäuser)

11:45-12.30 **Round Table Discussions I**

12.30-13:30 **Lunch**

13:30-14:35 **Session III: "Careers in Industry"**
- Engineering and Medical Device Companies
(B. Breithaupt, G. Glombitza, C. Schulze)

14:35-15:00 **Coffee break**

15:00-16:20 **Session IV: "Academic Careers"**
A. Knopf, M. Buchgeister, T. Bortfeld, A. Mahr)

16:20-16:45 **Closing remarks**

16:45-17:30 **Round Table Discussions II**
(extra guest: J. Seco)

17:30 **Get-together**