

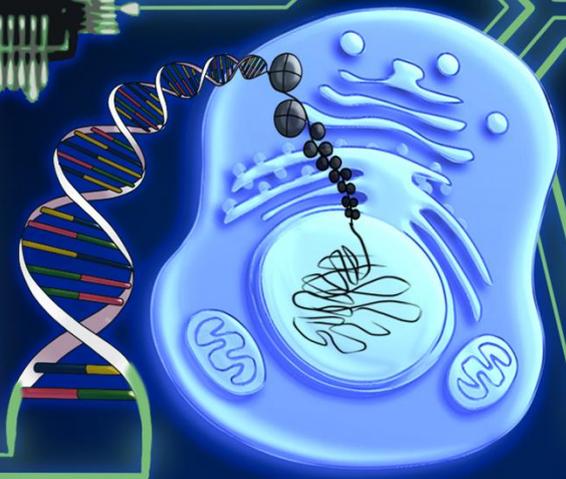
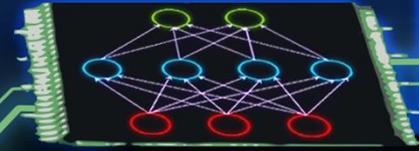


dkfz.

GERMAN
CANCER RESEARCH CENTER
IN THE HELMHOLTZ ASSOCIATION

Research for a Life without Cancer

CAREER WEEK: Bioinformatics & Big Data



26th - 29th May 2020

The DKFZ Career Week goes ONLINE!

26th May	01.00 pm	Bayer Recruiter Room
	02.00 pm	Session I <i>Simone Werner (Bayer AG), Calvin Chan (MHP)</i>
	03.00 pm	Discussion Rounds
27th May	09.00 am	Session II <i>Ivo Buchhalter (DKFZ), Fabian Theis (Helmholtz Munich), Felipe Castro (Roche)</i>
	10.30 am	Discussion Rounds
28th May	10.00 am	Session III <i>Justyna A. Wierzbińska (Bayer AG), Daniel Hübschmann (DKFZ), Andreas Mock (NCT, DKFZ, University Hospital HD)</i>
	11.30 am	Discussion Rounds
29th May	01.00 pm	Session IV <i>Silvia La Porta (Springer Nature), Grainne Kerr (Novartis), Yongsheng Cheng (Pixelbiotech GmbH)</i>
	02.30 pm	Discussion Rounds

NEC Laboratories Europe GmbH



BioMed X
TWO WORLDS - ONE INSTITUTE

Organized by student volunteers with the DKFZ Career Service

In collaboration with EuroSTEMPeers

Further information:
<https://www.dkfz.de/careerday>



EVENT LINK

The Virtual Bioinformatics and Big Data Career Week is an Initiative of the Career Service at the German Cancer Research Center (DKFZ) Heidelberg. It is organized by a team of enthusiastic PhD students in collaboration with EuroSTEMPeers.

CAREER WEEK: Bioinformatics & Big Data

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**NEC Laboratories
Europe GmbH**

CAREER WEEK: Bioinformatics & Big Data

Program

Session I: Tuesday, 26th May

- 01.00 pm Recruiter Room
- 02.00 pm Simone Werner (*Bayer AG*)
- 02.30 pm Calvin Chan (*MHP – A Porsche Company*)
- 03.00 pm Discussion Rounds

Session II: Wednesday, 27th May

- 09.00 am Ivo Buchhalter (*DKFZ – Omics IT and Data Management Core Facility*)
- 09.30 am **Keynote Lecture:** Fabian Theis (*Helmholtz Zentrum Munich*)
- 10.00 am Felipe Castro (*Roche*)
- 10.30 am Discussion Rounds

Session III: Thursday, 28th May

- 10.00 am Justyna Anna Wierzińska (*Bayer AG*)
- 10.30 am Daniel Hübschmann (*DKFZ, HI-STEM*)
- 11.00 am Andreas Mock (*NCT Heidelberg, DKFZ, Heidelberg University Hospital*)
- 11.30 am Discussion Rounds

Session IV: Friday, 29th May

- 01.00 pm Silvia La Porta (*Springer Nature*)
- 01.30 pm Grainne Kerr (*Novartis*)
- 02.00 pm Yong-Sheng Chen (*PixelBiotech GmbH*)
- 02.30 pm Discussion Rounds

CAREER WEEK: Bioinformatics & Big Data

Welcome Message

Dear Participants,

It is our pleasure to present the DKFZ Virtual Bioinformatics and Big Data Career Week 2020!

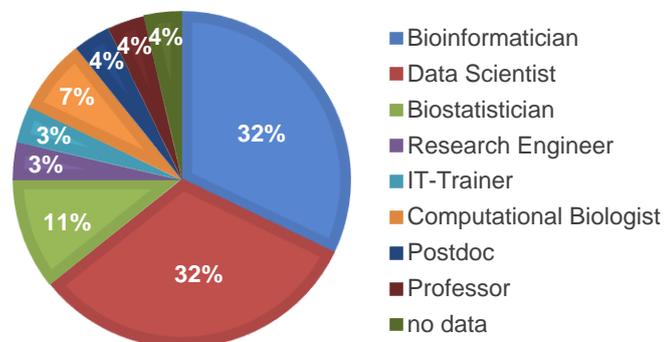
We have all been in the job-hunting boat, scouring through LinkedIn and other job portals. Scouting through company websites to figure out whether we're suitable for a particular advertised job position in our dream company. And it is a tough, competitive world out there!

This event aims to inspire and motivate Master's and PhD students and Postdocs making the next big step in their bioinformatics career. We have an exciting program in this Career Week 2020 which will allow participants to reflect on and evaluate their future career opportunities. DKFZ Alumni now working in different fields of bioinformatics join our event to give you valuable pro-tips and advice by sharing their personal career journeys. We hope that you have a productive and encouraging virtual session with our 11 DKFZ Alumni speakers. We've also set up a Recruiter Room to enable constructive discussion with experts in the pharma industry. Come join us to connect with and extend our network to explore current and future career directions.

To put together this event we gathered information about the bioinformatics job prospects. Bioinformatics has several applications in biomedical sciences – genomics, proteomics, cheminformatics, drug discovery, clinical studies. With the rapid development of technology and cost-effective production of high amounts of data, the need for specialists who can handle this data and perform analysis producing meaningful output is increasing. Big data are all around and the job prospects for life scientists with an interest in bioinformatics will grow either– in the academia or in the industry.

From our DKFZ Connect Alumni portal we found plenty of interesting career possibilities out there that our Alumni are pursuing in different locations worldwide.

ALUMNI POSITIONS (N=28)

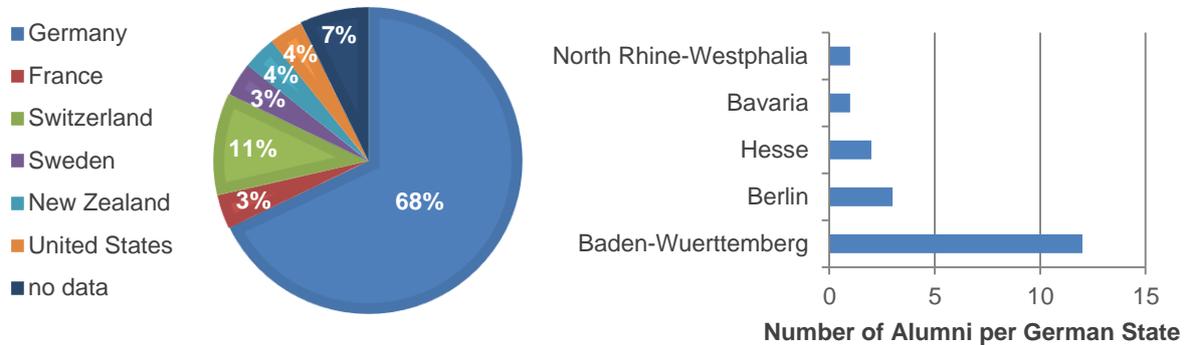


www.dkfz-connect.de

If you are interested in the definitions of the different job positions, more information can be found in the CareerCheck section of this booklet or at <https://careercheck.dkfz.de>.

CAREER WEEK: Bioinformatics & Big Data

ALUMNI LOCATION

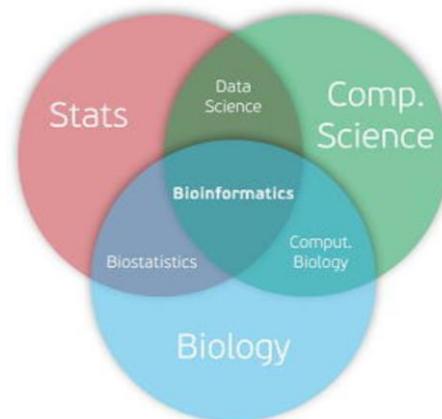


Industry based job profiles:

- Consultants on projects throughout the company in research & development
- Clinical informaticians developing statistical methods for analysis disease patterns
- Data analyst to investigate trends in disease and drug development in cooperation with the marketing team to provide support for business decisions
- Science writers conduct research, write and edit articles on scientific topics for many different kinds of publications

Skillset requirements in industry: „Bioinformaticians are multifaceted“

- Knowledge of life science as domain expertise in industry
- Text mining ontology, data integration, machine learning, information architecture
- Statistical capabilities and computing skills including Java, Python, R
- Experience in data visualization and building effective user interfaces
- Soft Skills: Communication, teamwork, flexibility, patience, learn, grow and adapt



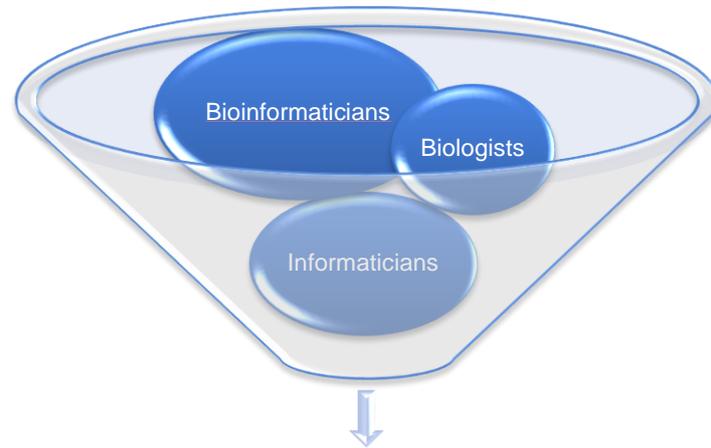
We hope you bring your best questions, good spirits and enthusiasm to our event to foster a fruitful and interesting Career Week!

Thank you and hope you're staying safe,

Kind Regards,

Bioinformatics and Big Data Organization Team

CAREER WEEK: Bioinformatics & Big Data



Possible careers in Bioinformatics & Big Data

Academia	Industry
Artificial Intelligence <i>Fabian Theis</i>	Artificial Intelligence <i>Calvin Chan</i>
OMICS <i>Daniel Hübschmann</i>	OMICS <i>Justyna Anna Wierzbińska</i> <i>Grainne Kerr</i>
Clinical Research <i>Andreas Mock</i>	Consulting and Peer-Review <i>Silvia La Porta</i>
Omics IT and Data Management <i>Ivo Buchhalter</i>	Clinical Research <i>Felipe Castro</i>
	Data mining and analysis <i>Simone Werner</i>
	Start-ups <i>Yong-Sheng Cheng</i>



CAREER WEEK: Bioinformatics & Big Data

Join the Alumni network and get your mentor on
www.dkfz-connect.de

Welcome to
DKFZ Connect

GET STARTED



Connect and sync



Publications, Awards and Press
Releases



DKFZ Alumni Get-togethers



Grant Writer

KU Leuven Cancer Institute (LKI)



Global Biomedicine - Training

Programme Manager

EMBL



Tierschutzbeauftragter /

Tierarzt (m/w/d)

DKFZ, Zentrum für Präklinische
Forschung

VIEW JOBS

CareerCheck

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IN THE HELMHOLTZ ASSOCIATION

Do you already know what to do after your Postdoc/PhD?



Would you like to learn more about...

- Different **career opportunities**?
- The **best options** for you?
- **How to get** your dream position?

Visit our **career tool** for researchers!

Created based on
DKFZ Alumni insights,
tips and recommendations.

Confidential and free of charge.



Career Service careers@dkfz.de

➔ <https://careercheck.dkfz.de>

CAREER WEEK: Bioinformatics & Big Data

Session I: Tuesday, 26th May

Simone Werner

Current position: Real World Data Analyst

Employer: Bayer AG

Scientific Background:

2012: Diploma in Molecular Medicine, University of Freiburg

2017: PhD in Epidemiology, DKFZ and Heidelberg University

Work Experience:

2017-2018: Postdoc epidemiologist, Bayer AG

Since 2018: Real World Data Analyst, Bayer AG



LinkedIn profile: <https://www.linkedin.com/in/simone-w-9181063a>

DKFZ Connect profile: <https://dkfz-connect.de/user/30087>

What is your function and responsibility in your current position?

As a real world data analyst, I utilize information from medical claims databases and electronic health records to answer questions about prevalence of diseases, medication adherence, positive outcomes and side effects, treatment costs, etc. outside the clinical trial setting.

What skills have been useful to help acquire your current job?

Coding skills (SAS and R), knowledge about diseases and public health.

What are the required skills and knowledge and how can one obtain them?

Machine learning techniques and coding with Python and R is becoming more and more important in the field. There are great free online classes available to acquire these skills.

What is the most important decision that you made in your career?

Leaving the wet lab after my diploma and focusing on my passion to code during my PhD.

What is your number one tip to young scientists?

If you consider a career in the pharma / biotech industry, it is helpful to talk to as many people working there as possible to figure out what options you have and which position fits best to you.

CAREER WEEK: Bioinformatics & Big Data

Calvin Chan

Current position: Senior Consultant and Data Scientist

Employer: MHP Lab, MHP - A Porsche Company

Scientific Background:

2018: PhD in Bioinformatics, DKFZ and Heidelberg University

Work Experience:

2004-2006: I was working as a recruiter long before I started my PhD, this might be useful information for you.

Since 2018: Senior Consultant and Data Scientist at MHP

LinkedIn profile: <https://www.linkedin.com/in/calchan/>

DKFZ Connect profile: <https://dkfz-connect.de/user/1477856>



What is your function and responsibility in your current position?

I am developing a smart factory IoT device to be used in a factory environment. The main responsibility of my role includes developing new A.I. techniques for the smart factory device, analyzing data to address issues to improve product performance and business development.

What skills have been useful to help acquire your current job?

Technical competency, presentation and interpersonal skills.

What are the required skills and knowledge and how can one obtain them?

IT consulting companies are generally open for people with different background depending on the area of project you are applying for. For AI and data science-related topics, it would be suitable for candidates with quant background, this includes: computer science, engineering, mathematics or physics. Most positions require German skill, but my position is more onto the developer side this is why it doesn't require German skill (this is rare).

What is the most important decision that you made in your career?

Every decision is important, because this allows me to acquire more experience and understanding how the real world works and every decision accumulates and brought me to where I am today.

What is your number one tip to young scientists?

Do not draw a conclusion too quickly about what you like and what you don't like. It doesn't harm to keep an open mind and find out more about it by talking to the employer and people working in the area. We pick up multiple skills and experiences along the way, and you wouldn't realize how useful your experience is until you need it someday. Career is about mutual match, instead of having too much of "what I want" as an academic or "what they want" as a job seeker, think about "is it a good match and how?" Convince yourself as well as the employer about this and that's all you need to do.

CAREER WEEK: Bioinformatics & Big Data

Session II: Wednesday, 27th May

Ivo Buchhalter

Current position: Head Omics IT and Data Management Core Facility, DKFZ

Employer: German Cancer Research Center (DKFZ)

Scientific Background:

2011: Diploma in Biology, University of Stuttgart

2017: PhD in Computational Biology, DKFZ and Heidelberg University



Work Experience:

2017-2018: Postdoc in Computational Biology, DKFZ and Heidelberg Institute for Pathology

Since 2018: Head Omics IT and Data Management Core Facility, DKFZ

LinkedIn profile: <https://www.linkedin.com/in/ivo-buchhalter-676014b5/>

DKFZ Connect profile: <https://dkfz-connect.de/user/1478340>

What is your function and responsibility in your current position?

- Providing infrastructure for scientific computing to scientists
- Managing of omics data in the petabyte scale
- Processing and analyzing genomics data for research and precision oncology

What skills have been useful to help acquire your current job?

- Computational biology
- Many collaborations / good network

What are the required skills and knowledge and how can one obtain them?

- General understanding of scientific computing IT (cluster, cloud, new technologies)
- Computational biology and cancer genomics
- Soft skills to lead people

What is the most important decision that you made in your career?

Switching from the bench to computers

What is your number one tip to young scientists?

Follow your instincts and talent and try to collaborate as much as possible

CAREER WEEK: Bioinformatics & Big Data

Fabian Theis

Current positions:

Associate Faculty, Wellcome Trust Sanger Institute, Hinxton, UK
Scientific Director, Helmholtz Artificial Intelligence Cooperation Unit
Director, Institute of Computational Biology,
Helmholtz Zentrum Munich
Chair of Mathematical Modelling of Biological Systems,
Department of Mathematics, TUM



Employer: Helmholtz Zentrum Munich, ICB,
TUM, Dept. of Mathematics

Scientific Background:

2000: Dipl.-Math., University of Regensburg
2000: Dipl.-Phys., University of Regensburg
2002: PhD in Physics, University of Regensburg
2003: PhD in Computer Science, University of Granada, Spain
2008: Habilitation in Biophysics, University of Regensburg

Work Experience:

2003-2006: Postdoc in Biophysics, University of Regensburg, fellowship by DFG Research Training Group 'nonlinearity and nonequilibrium'
2006-2007: Independent researcher (Bernstein fellow), Bernstein Center for Computational Neuroscience Göttingen and Max-Planck-Institute for Dynamics and Self-Organization
2009-2013: Associate professor (W2), Department of Mathematics, TUM
2007-2013: Junior group leader 'Computational Modeling in Biology' (CMB), Institute of Bioinformatics and Systems Biology, Helmholtz Zentrum Munich

LinkedIn profile: <https://www.linkedin.com/in/fabian-theis-4b4b10173/>

What is your function and responsibility in your current position?

My task as head of ICB and head of Helmholtz AI is to ensure the best conditions for excellent research in supervising the Theis lab, the transfer of knowledge, as well as the permanent exchange with other research units and general management tasks.

What skills have been useful to help acquire your current job?

An excellent track record, ERC starting grant as accelerator.

What is the most important decision that you made in your career?

To go from theoretical machine learning/signal processing and broad applications to one domain (molecular biology) with deeper domain understanding - turned out to be more fun for me, and hence increase my impact.

What is your number one tip to young scientists?

Focus on what you like and what you are good at, and *own* your project. Don't wait for your PI, this is your baby; you are the PI of this work :)

CAREER WEEK: Bioinformatics & Big Data

Felipe Castro

Current position: Senior Data Scientist

Employer: F. Hoffmann-La Roche Ltd.

Scientific Background:

2009: PhD in Epidemiology, Heidelberg University

Work Experience:

2009-2010: Postdoc, DKFZ

2010-2013: Postdoctoral Visiting Fellow at the US National Cancer Institute and Data scientist at Roche

2013-2015: Postdoc, DKFZ

Since 2019: Senior Data Scientist, Roche



LinkedIn profile: <https://www.linkedin.com/in/felipe-a-castro-719a1439/>

DKFZ Connect profile: <https://dkfz-connect.de/user/26349>

What is your function and responsibility in your current position?

Collaborate across the organization (e.g. Medical Affairs, Market Access, Drug Safety, Clinical Science, affiliates) to develop evidence generation strategies, identify evidence gaps and data sources, design and execute studies, and implement analyses to address molecule and disease area questions.

What skills have been useful to help acquire your current job?

Enthusiastic, optimistic, scientific interest (curiosity and desire to learn more) and scientific rigor, presentation and communication skills, team player.

What are the required skills and knowledge and how can one obtain them?

Technical skills on epidemiological methods and analytics (trainings, courses and conferences), soft skills are mainly developed by experience (search for opportunities to develop those in your day-to-day work).

What is the most important decision that you made in your career?

Move to a new country (continent) to develop my career and participation in international projects.

What is your number one tip to young scientists?

Be positive, curious and don't give up when applying to industry (many times it is about applying at the correct time).

CAREER WEEK: Bioinformatics & Big Data

Session III: Thursday, 28th May

Justyna Anna Wierzińska

Current position: Research Scientist Bioinformatics

Employer: Bayer AG

Scientific Background:

2013: MSc in Biotechnology, Adam Mickiewicz University in Poznań

2018: PhD in Natural Sciences, DKFZ and University Heidelberg

Work Experience:

2018-2019: Postdoc in Cancer Epigenomics, DKFZ

Since 2020: Research Scientist Bioinformatics (Bayer AG)

LinkedIn profile: <https://www.linkedin.com/in/justyna-anna-wierzińska-810a834a/>

DKFZ Connect profile: <https://dkfz-connect.de/user/26443>



What is your function and responsibility in your current position?

My position is fully research oriented. It is definitely the closest to the academic research as one can be. The projects I am involved in are related to sequencing data analytics, biomarker and novel target discovery. Specifically, I'm looking at various genetic markers and linking them to patient's response data. I'm equally devoted to identification of biological targets that are potentially 'druggable'.

What skills have been useful to help acquire your current job?

Bioinformatics, NGS data analytics and research skills.

What are the required skills and knowledge and how can one obtain them?

As the most important skillset I would consider both, knowledge of cancer biology and a programming background. From my experience, it is crucial to start from the right biological question and then to address it using appropriate analytical tools. I had a chance to work on both of the above-mentioned skillsets during my time at DKFZ. One can easily get insights into cancer biology by reading publications. With respect to the programming part, I could definitely recommend courses organized by a German Network for Bioinformatics Infrastructure, de.NBI, and exploration of online platforms for courses related to R, Python, data science etc. (coursera, udemy, udacity and many others).

What is the most important decision that you made in your career?

Firstly, it would be decision about doing PhD. Secondly, deciding what to do next with my career, whether to pursue academic or industrial track.

What is your number one tip to young scientists?

Hone your communication skills, follow your 'guts' and get involved in non-scientific projects. Especially non-scientific skills should make your transition from academia to industry smoother.

CAREER WEEK: Bioinformatics & Big Data

Daniel Hübschmann

Current position: Clinician scientist, group leader

Employer: German Cancer Research Center (DKFZ) and Heidelberg Institute for Stem cell Technology and Experimental Medicine (HI-STEM)

Scientific Background:

University studies in Physics, Mathematics and Medicine
PhD in Bioinformatics



Work Experience:

2011-2014: Residency in pediatrics, Heidelberg University Hospital

Since 2016: Subject-specific genetic counselor (German “Qualifikation zur fachgebundenen genetischen Beratung, Gendiagnostikgesetz (GenDG)“)

Since 2016: Clinical investigator (German “Allgemeiner Kurs für Prüfer und Mitglieder der Prüfgruppe“)

Since 2018: Junior group leader Pattern Recognition and Digital Medicine (PRDM), Heidelberg Institute for Stem cell Technology and Experimental Medicine (HI-STEM GmbH)

Since 2019: Leader of the research group Computational Oncology (CO), Molecular Diagnostics Program, National Center for Tumor Diseases (NCT) Heidelberg and German Cancer Research Center (DKFZ)

Contact: <http://www.hi-stem.de/research-huebschmann>

What is your function and responsibility in your current position?

Research group leader, responsible for (a) the bioinformatic analyses behind the Molecular Tumor Boards in several precision oncology programs as well as for (b) cohort analyses and unsupervised discovery projects. Furthermore, we focus on cohort analysis tools, supervised and unsupervised pattern recognition, cancer genomics, hematology, multi-omics integration, metabolomics as well as single-cell technology and machine learning.

What skills have been useful to help acquire your current job?

Most important: programming in C at the very beginning of my university education.
Understanding medicine / pathology / anatomy / physiology / biology of the human body.

What are the required skills and knowledge and how can one obtain them?

Programming: code externalization -> write functions and/or code chunks and re-use them!
Data analysis: understand the difference between the tidy world (easy and very generic syntax, but not memory and runtime efficient) and rich world (dedicated and highly specialized objects, very efficient, but less generic) and make educated choices where to use what.

What is the most important decision that you made in your career?

Step out of clinical medicine and into bioinformatics.

What is your number one tip to young scientists?

Consider bioinformatics, where already as a student you can work with the freedom and creativity of a PI.

CAREER WEEK: Bioinformatics & Big Data

Andreas Mock

Current position: Physician-Scientist. Resident in Internal Medicine and Hematology and Oncology at the Department of Medical Oncology (Head Prof. Dr. Dirk Jäger) and PostDoc at the Department of Translational Medical Oncology (Head Prof. Dr. Stefan Fröhling)



Employer: NCT Heidelberg, DKFZ, Heidelberg University Hospital

Scientific Background:

2016-2020 (expected): PhD at DKFZ, Heidelberg University

2008-2017: Medical studies, Heidelberg University

2014-2015: Master in Computational Biology, University of Cambridge

2012-2013: Master in Translational Medical Research, Heidelberg University

Work Experience:

Since 2019: Medical Advisor for HiGHmed & EUCANCan Medical Informatics Consortia with focus on cancer variant annotation, prioritization and creation of a molecular tumor board software.

LinkedIn profile: <https://www.linkedin.com/in/andreas-mock-83391325/>

What is your function and responsibility in your current position?

My position uniquely enables me to balance my clinical work with my translational research efforts. I am an R enthusiast and intrigued by the prospects of data science for Molecular Oncology. My research is concerned with the identification of molecular patterns predictive of therapy response using high-throughput characterizations of cancer on multiple levels of biology ("multi-omics"). It is really rewarding and motivating to analyse a molecular data of a patient that you are treating yourself.

What skills have been useful to help acquire your current job?

Getting a job as a physician at a university hospital does not require the broad skill set that I have obtained. However, it certainly opens more opportunities and career perspectives. Most importantly, the job is more fun!

What are the required skills and knowledge and how can one obtain them?

At first, people should follow their interest. If they do what they really like, they are more prone to find a job that fulfils them.

What is the most important decision that you made in your career?

Pausing my medical studies for one year to study bioinformatics abroad.

What is your number one tip to young scientists?

Step out of your comfort zone and always pursue scientific projects that challenge you to learn new skills.

CAREER WEEK: Bioinformatics & Big Data

Session IV: Friday, 29th May

Silvia La Porta

Current position: Data Engineer

Employer: Springer Nature

Scientific Background:

2010: BSc in Medical and Pharmaceutical Biotechnology

2012: MSc in Medical and Pharmaceutical Biotechnology

2017: PhD in Vascular Biology and Metastasis



Work Experience:

2017-2018: Postdoc, DKFZ

Since 2018: Data Engineer, Springer Nature

LinkedIn profile: <https://www.linkedin.com/in/silvia-la-porta-07616338/>

DKFZ Connect profile: <https://dkfz-connect.de/user/30037>

What is your function and responsibility in your current position?

My team deals with journal peer-review data. We provide different departments with reports, shaped on their specific needs. We extract data and build reports directly from the Springer Nature database, which includes >2000 different journals. The aim is to support the business with accurate data in order to make wise decisions.

We also deliver peer-review data (in a readable and ready-to-use format) to Cloud Platforms, which can be queried from other departments within the company.

Last but not least, a big part of my job includes the creation of online dashboards and reporting platform, which are normally used by user as tracking of their operational work.

What skills have been useful to help acquire your current job?

Scientific and analytic mind set, problem-solving oriented mind, persistence, communication

What are the required skills and knowledge and how can one obtain them?

Programming languages (SQL), knowledge of Google Cloud Platform, time management, knowledge of the peer-review process, being flexible and ductile

What is the most important decision that you made in your career?

Decide to start a job which has not so much to do with research.

What is your number one tip to young scientists?

Never give up. Even though looking for a job is a lengthy and often frustrating process, there is eventually a job out there for you!

CAREER WEEK: Bioinformatics & Big Data

Grainne Kerr

Current position: Team Lead, Oncology Data Science, Novartis
Institute of Biomedical Research

Employer: Novartis

Scientific Background:

2002: BA in Computer Science

2004: MSc in Bioinformatics

2009: PhD in the area of computational methods for the
analysis of microarray gene expression data



Work Experience:

2009-2014: Postdoc, Signalling and Functional Genomics group, DKFZ

Since 2014: Bioinformatician, Oncology Data Science, NIBR

LinkedIn profile: <https://www.linkedin.com/in/grainne-kerr-04758627/>

DKFZ Connect profile: <https://dkfz-connect.de/user/30300>

What is your function and responsibility in your current position?

Working on drug discovery projects which involve planning of experiments, analysis and integration of data, continuous communication with project teams. Specific responsibilities include:

- Bioinformatics (various -omics analyses, experimental design, high performance computing, method development/implementation, large scale data integration)
- Help scientists to codify their knowledge and discover new insights using advanced analytic and information management tools
- Communicate across boundaries (discipline, time zones, personalities)
- Impact projects through pragmatic solutions

What skills have been useful to help acquire your current job?

Curiosity. Experience in working with complex high-throughput genomics data. Experience working on multidisciplinary teams. Data analysis experience/working in a high-performance computing environment.

What are the required skills and knowledge and how can one obtain them?

Curiosity, Communication, Data analysis of complex data sets (Data wrangling, pattern finding, data integration, statistical inference etc), HPC, understanding of Oncology. Do courses, get involved in projects, analyse your own data, join meet-up groups, be curious, practise talking about your work.

What is the most important decision that you made in your career?

Moving to Germany to pursue a post-doc at the DKFZ.

What is your number one tip to young scientists?

Stay curious and enthusiastic about your work and other research taking place around you. Ask questions. Be practical and try things out, however small (programming tasks, analysis snippets, fancy plots ...).

CAREER WEEK: Bioinformatics & Big Data

Yong-Sheng Cheng

Current position: CEO

Employer: PixelBiotech GmbH

Scientific Background:

2015: PhD in Biology, DKFZ

Work Experience:

2015-2019: Postdoc in Molecular Neurogenetics, DKFZ

Since 2018: CEO and Co-Founder of PixelBiotech GmbH, a spinoff from DKFZ



LinkedIn profile: <https://www.linkedin.com/in/chengys/>

What is your function and responsibility in your current position?

Operation, fundraising, research and development, business development.

What skills have been useful to help acquire your current job?

Technology development, business development, tactic negotiation, resourceful.

What are the required skills and knowledge and how can one obtain them?

Communication with non-scientific world, aligning technology with market needs, know how and what to focus.

What is the most important decision that you made in your career?

Founding PixelBiotech with right partners, at the right time, the right place.

What is your number one tip to young scientists?

If you are looking for a career out of academia, develop your skillsets toward business, communication as early as possible. And think big; with your knowledge you can do more beautiful things for the society than treating cancer in mouse.

CAREER WEEK: Bioinformatics & Big Data

DKFZ Career Service

www.dkfz.de/careers

The DKFZ Career Service aims to support all Masters, Doctoral Researchers and Postdocs at the DKFZ in planning their professional future by providing



Career Guidance

- 1-to-1 [Career Guidance appointments](#)
- CV and Cover Letter review



Career Information & Training

- Career info events (Career Days, Career Coffee/Lunch, ...) dkfz.de/careerday
- Seminars/Trainings (Job Applications/Interviews, Business Skills, ...)



Career Network

- Platform: dkfz-connect.de for current and former DKFZ scientists
- Group: [linkedin.com/groups/DKFZ-Career-Network-4831669](https://www.linkedin.com/groups/DKFZ-Career-Network-4831669)
- Page: [facebook.com/phdcareers](https://www.facebook.com/phdcareers)

Career Guidance for DKFZ Researchers

DKFZ Researchers can book an appointment with a Career Advisor for a personal and confidential guidance interview of 25min or 50min. **Postdocs** with Barbara Janssens or Esther Mills and **Doctoral Researchers** and Master's Students with Marion Gürth or Karin Greulich-Bode. For booking please use the specific contact forms for [Postdocs](#) or [Doctoral Researchers & MSc Students](#) (please receive the link via sending an email to careers@dkfz.de).

There are different modules:

A. Career Development Plan (CDP)

The DKFZ [Career Center for Postdocs](#) offers competence assessment and support in creating and reviewing an individual Career Development Plan. In addition, for Doctoral Researchers a CDP can be useful and we recommend doing the self-assessment on careercheck.dkfz.de before your appointment.

B. Career Transition Plan (CTP)

How and where to look for professional possibilities, application and interview preparation. You already have a career plan A (and B!) and would like to discuss how to get there, how to contact people/networking and/or receive feedback on your application.

If you have a specific question/something good to know to prepare the meeting, please email us. It is useful if you check availability of your preferred Advisor and make a suggestion for time and date via the Outlook Calendar App.



We are looking forward to hearing from you!

Career Service Office
DKFZ main building (8th floor) H828 and H832

Email careers@dkfz.de | phone: +49 6221 42 2146 and -1762

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CareerCheck

RESOURCES SELF-CHECK MY PLAN FAQs

Resources

Data Science/Engineering

Excerpt from: <https://careercheck.dkfz.de/Resources/Bioinformatician>

Data Science/Engineering

For Bioinformatics and Application Engineers (also called Scientific Engineers), the supportive role for research in academia and industry is the common theme.

Bioinformatics is an interdisciplinary field that applies computer science on biology, medicine, and health-related studies and analyses highly variable data collections. Bioinformaticians create mathematical models, develop dynamic simulations and perform pattern analyses of biological systems. They are also known as biostatisticians, biometricians and computational biologists. Scientists in this field work within different medical science and health fields, including biology, genetics, proteomics and pharmaceuticals. The tasks vary accordingly. Biostatisticians in clinical research, for example, work in a highly regulated environment. They analyse and interpret study data. Regulatory authorities will approve a product only if the data meets certain statistical criteria, so this position is very important in a trial's success. Sponsor drug companies also use biostatisticians before a trial begins to help set the parameters for data collection and review. Bioinformatics also work in consultancies that support biotechnology and pharmaceutical companies in analysis and statistics. Check the job profile [Consultant](#) for more info.



Job titles: Biostatistician, Bioinformatics Data Scientist, Computational Biologist, Biometrician, Application Specialist

Annual Salary Range: 50.000-80.000 € salaries vary with industry and company size.

Personality Traits required based on DKFZ Alumni Survey

- Flexibility: quick adjustment to new developments, tolerating unclear circumstances
- Ambition to achieve: aiming for a high quality standard, competitiveness
- High attention to detail, self-discipline, meticulous
- Self-confidence: emotional independence from other people's judgment

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Most important skills

- Strong programming skills in Python and R, etc. for data analysis
- Knowledge and experience in analysing and interpreting large NGS datasets
- Conceptual skills: manage processes and develop concepts
- Proficiency in working with bioinformatics tools like workflow engines (e.g., KNIME, Galaxy, Snakemake)
- Research skills, like experimental design and effective search strategies (literature)
- Advanced communication skills (active listening, confident speaking to groups and presentation techniques)
- Coaching others and providing feedback
- Being well-organised

Most bioinformaticians work in interdisciplinary teams, where translating your colleagues needs into work assignments and the ability to explain what you do is crucial.

...in the words of our Alumni:

- "You are expected to be part of meetings, talk and present."
- "It is really communicating, managing expectations how much realistically they [R&D] can interpret from the data." - Bioinformatician in large company

What Our Alumni Say

Upside

- "Pay. Long-term perspective. I can stay on the same level without the pressure to make a career." - Senior Scientist Bioinformatics in a large pharma company
- "I really like working in multi-disciplinary teams, with other people, you learn an awful lot, and you see things from different aspects, I've learned a lot about the drug development process and I like at the end of the day to get a product that is going to help people and improve their situation." - Bioinformatician in a large pharma company
- "You start your own projects, I have more freedom here than at university; how I do things is my own choice entirely; but I have to talk to other groups and people to gain support." - Senior Scientist Bioinformatics in a large pharma company

Downside

- "You can't publish papers anymore." - Senior Scientist Bioinformatics in a large pharma company
- "When data is generated and it is not looked at afterwards. This is costing a lot of money." - Bioinformatician in a large pharma company

Career involves*



research (50% of positions), or supporting research (50%)



no lab work



medium level of autonomy ¹



leading or supervising (50 to 75% of positions)



mostly no teaching (in 80% of positions)



20 to 80% project management



little travel

* based on DKFZ Alumni Survey

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Challenges

- "Try to keep pace with all of the data, avoid getting caught up in the immediate excitement of the projects, because a lot of people come to you with a great idea, and then they don't do anything with a data, so make sure there is a goal, so you don't waste your time with superficial analyses." - Bioinformatician in a large company
- "Most challenging part is that you have to work with varied knowledge, also getting back into chemistry and biology, methods vary a bit." - Senior Scientist Bioinformatics in a large pharma company

Career Advice

- "Be enthusiastic about data as well as about interacting and communicating with clients from pharma, including presenting the data... in a consultative way with speaking titles." - Bioinformatician in a company
- "Be flexible to adjust to a company environment. Sometimes 120% accuracy is needed, but sometimes 80% must be enough. You need to learn to stay tuned on timelines, not to lose yourself in details and to learn when a lot and when less accuracy is needed." - Bioinformatician in a company

More Information

Please go to the [DKFZ Training Portal](#) (Intranet only) to check out internal trainings for relevant skills.

More Training

- Learn data science techniques online - Use [Datacamp](#), [Kaggle](#) or [scikit-learn](#) to train your skills.
- European Bioinformatics Institute: Start crunching [data](#) with "the world's most comprehensive range of freely available and up-to-date molecular data" and sign up for online courses or training events.

Resources

Simulation: Data Analytics: Making Predictions - Try out your data science skills in this [exercise](#).

Article AI: Not just for bots: The changing career landscape in AI - This [article](#) in ScienceMag.org informs you about new opportunities that grow from the expansion of AI.

Newsletter: Receive weekly updates on data science - [Data Science weekly](#)

Analysis Labor Market: Growing need for Data Scientists is disrupting the Job Market - a US-Industry [view](#) on the changing labor market

Article on Bioinformatics: [Clarifying](#) the term "bioinformatician" in contrast to a biologist using bioinformatics tools.

Article on Career Paths in Bioinformatics: Learn what job titles are out there and [how to get started](#).

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The PostDoc Network – from PostDocs for PostDocs

OUR MISSION

The **PostDoc Network (PDN)** was formed to represent the PostDocs' interests and to achieve the **best conditions for career perspectives and scientific output**. Our main goals are to raise the **visibility of PostDocs** in and outside the DKFZ, to support **career development** and to increase **social and scientific networking** among PostDocs.

Newsletter

VISIBILITY

Our **website and mailing list** provide general information about the PDN and offer a platform for PostDocs to communicate with each other and to discuss issues important to them.

The quarterly **Newsletter** contains information about upcoming events and personal accounts of PostDoc experiences at DKFZ.

Career Development

CAREER DEVELOPMENT

In collaboration with the DKFZ Advanced Training Center, the PDN organises **seminars and workshops** tailored for PostDocs' needs, as well as **Career Days** where invited speakers provide expert perspectives on how to pursue careers in industry, academia and elsewhere. **Alumni** and current DKFZ researchers are invited to share their personal career paths. The participants are given ample time to join round table discussions and to network with invited guests.

Get Together

NETWORKING

The annual **Retreat** aims to encourage scientific and social interactions between PostDocs, in order to improve the research and personal experience of scientists.

The monthly **Lunch Talk Series** was started by the PDN and the BioMed X Innovation Center to provide a platform for intellectual exchange between researchers working in diverse fields of life science research in Heidelberg.

The "**Research Lounge – let's talk science**" encourages scientific collaboration and discussion within the DKFZ. At monthly **Get-Together events** PostDocs can get useful information about life in Heidelberg and work at the DKFZ.

Expertise Exchange

Alumni Network

Find more information on PDN activities on our official website:

www.dkfz.de/en/postdoc-network/

To be up-to-date with current and upcoming events join our mailing list:

pdn@dkfz.de



PDN Committee 2018 © PDN



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PhD Council

There are around 550 German and international Doctoral Researchers who work at the DKFZ in Heidelberg. Amongst them, six are annually elected to form the PhD 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 Doctoral Researchers. Doctoral Researcher networking is facilitated through involvement in the PhD Teams coordinated by the PhD Council members, of which approximately 1 out of 10 Doctoral Researchers join annually.

One of the aims of the PhD Council is to improve the life of Doctoral Researchers at the DKFZ. An important part of this task is organizing social events as an escape from the daily routine, giving Doctoral Researchers the chance to meet their peers and colleagues, make friends, exchange experiences and expertise or simply relax. For example, the PhD Happy Hours are an excellent opportunity to get in touch not only with other Doctoral Researchers, but also Postdocs and Master's students in a relaxed and enjoyable atmosphere to discuss science and personal interests. In addition, the Social Events and Networking Team plan and organize movie nights, sports tournaments and several parties all year round.

The PhD Council also plays a role in welcoming new Doctoral Researchers to the DKFZ through the 'Welcome Lunch', which takes place once every month and is aimed to better integrate the new Doctoral Researchers into the DKFZ community. Furthermore, the Council establishes connections between people with shared interests and support language tandems and hobby clubs.

Besides creating networks and providing opportunities to forge social connections, the PhD council is also involved in other tasks. The Welcome Team makes the two PhD selection rounds per year a pleasant and informative experience for the applicants and provides further help for newcomers once they have joined the DKFZ. The Retreat Team organizes the two PhD Retreats, which take place in Weil der Stadt each year. The Communication Team keeps the PhD Council website updated and keeps Doctoral Researchers informed with the PhD newsletter. And, of course, all teams cooperate closely with the Graduate Office.

PhD life can also bring its problems with it. Therefore, the PhD Support Team aims to steadily review and improve the working conditions of Doctoral Researchers.

Finally, the PhD Council also serves as a liaison between the Doctoral Researchers and the DKFZ Management Board and represents your interests on a Helmholtz Association-wide level in the Helmholtz Juniors (HeJus).

If you would like to learn more, have any questions, or wish to help, please do not hesitate to contact us or check out our Facebook page:

Phd-council@dkfz.de

www.facebook.com/groups/DKFZphd



The PhD Council 2019/2020 members

(From left to right: Catarina Pechincha, Isabela Paredes Cisneros, Paula Argos Vélez, Pavle Boskovic, Pengbo Sun, Damian Carvajal Ibanez)

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Our Sponsors

NEC Laboratories Europe GmbH

NEC Laboratories Europe located in Heidelberg, Germany was established in 1997 with special emphasis on meeting the needs of NEC Group's European customers. It dedicates research, development, and standardization on cutting-edge information and communication technologies for creating innovative social solutions.

Our major research areas are including 5G networks, data science, artificial intelligence, IoT platforms as well as IoT security, and blockchain. These technologies will promote NEC Group's Solutions for a better Society in fields of digital health, lifeline and communication infrastructures, safer cities and public services.

Digital Health is a rapidly growing business for the NEC Group. In the Biomedical AI group, we consider challenges from prevention, diagnosis, and through treatment. We have particularly focused our efforts in the areas of infectious disease and immuno-oncology.

We have developed computational pipelines combining bioinformatics and machine learning approaches for developing personalized cancer vaccines that have been validated with wet-lab collaborators and currently being tested in clinical trials. We also recently worked on prophylactic vaccines that can maximally protect the global population from SARS-CoV-2 responsible for COVID-19.

Due to the interconnected nature of the biomedical work, we particularly focus on graph-based AI methods that reveal the hidden relationship of the underlying data. We work with multi-modal data, such as high throughput 'omics data in association with patient demographics, free text from clinical notes, radiological images, time series observations from patient vital signs, gene regulatory networks, and more. We have built an in-house biomedical knowledge graph, which we use both as a knowledge base for storing public data, such as gene annotations, and as an input for graph-based AI methods, such as predicting adverse events from drug combinations.

For additional information, please visit our website at: <http://www.neclab.eu>



The BioMed X Institute is an exciting collaboration model at the interface between academia and industry.

At our institute, distinguished early-career scientists recruited from all over the world work jointly on novel pre-clinical research projects in the fields of biomedicine, molecular biology, cell biology and diagnostics.

These interdisciplinary project teams conduct outstanding biomedical research in an open-innovation lab facility on the campus of the University of Heidelberg, under the guidance of experienced mentors from academia and industry, while expanding their scientific network and receiving training in entrepreneurship and leadership.

Each team is typically sponsored by a corporate pharmaceutical or biotech partner of BioMed X. After a fully funded project term, successful projects are internalized into the development pipeline of the respective pharma partner.

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Our Sponsors



Our Purpose: “Science for a better life”

The Bayer Group is managed as a life science company with three divisions – Crop Science, Pharmaceuticals and Consumer Health. We are a global leader in health care and nutrition. Our innovative products support efforts to overcome the major challenges presented by a growing and aging global population. We help prevent, alleviate and treat diseases. We also aim to ensure the world has a reliable supply of high-quality food, feed and plant-based raw materials. As part of this endeavor, the responsible use of natural resources is always a top priority.

Bayer’s business success is based to a large extent on the knowledge and commitment of our employees. As an employer, we offer our employees attractive conditions and wide-ranging individual development opportunities. Alongside professional training, we focus on our corporate values (LIFE) and on establishing a dialogue- and feedback-oriented culture based on trust, intentional inclusion, respect for diversity and equality of opportunity, which is also summarized in our corporate policy entitled “Fairness and Respect at Work.” Our employees worldwide are trained to comply with these guidelines. We measure the engagement and satisfaction of our employees by means of institutionalized feedback discussions and regular employee surveys.

More information: <http://www.bayer.com/en/working-at-bayer.aspx>

CAREER WEEK: Bioinformatics & Big Data

Thank you

The organizing team of the Bioinformatics & Big Data Virtual Career Week would like to thank everyone who made this event a success:

- The DKFZ Career Service for their enthusiasm, support and constructive ideas
- The DKFZ Management for their support of the Career Days
- Karin Greulich-Bode and Julita Mikulec for their help with different tasks
- Dr. Franziska W. Schwarz from SciVisTo (<https://scivisto.com/en/>) for illustrating our sessions!
- Our speakers for their time, great contributions and valuable advice
- Our sponsors for their support to make this all possible
- And last but not least, to you for joining today!

Yours sincerely,

The organization team



From left to right:

Upper row: Apurva Gopisetty, Jagoda Mika, Megan Druce, Anne Wursthorn

Lower row: Jonas Bohn, Elham Fakhr, Olatunji Gege, Sandra Kiehlmeier

CAREER WEEK: Bioinformatics & Big Data

Thank you for joining this event!

**YOUR FEEDBACK
is important to us!!**

Please briefly answer a few questions in our online survey.

The e-mail to the survey will be sent to you after the event.

Contact us:

careerday1@dkfz.de

CAREER WEEK: Bioinformatics & Big Data

Program

Session I: Tuesday, 26th May

- 01.00 pm Recruiter Room
- 02.00 pm Simone Werner (*Bayer AG*)
- 02.30 pm Calvin Chan (*MHP – A Porsche Company*)
- 03.00 pm Discussion Rounds

Session II: Wednesday, 27th May

- 09.00 am Ivo Buchhalter (*DKFZ – Omics IT and Data Management Core Facility*)
- 09.30 am **Keynote Lecture:** Fabian Theis (*Helmholtz Zentrum Munich*)
- 10.00 am Felipe Castro (*Roche*)
- 10.30 am Discussion Rounds

Session III: Thursday, 28th May

- 10.00 am Justyna Anna Wierzbińska (*Bayer AG*)
- 10.30 am Daniel Hübschmann (*DKFZ, HI-STEM*)
- 11.00 am Andreas Mock (*NCT Heidelberg, DKFZ, Heidelberg University Hospital*)
- 11.30 am Discussion Rounds

Session IV: Friday, 29th May

- 01.00 pm Silvia La Porta (*Springer Nature*)
- 01.30 pm Grainne Kerr (*Novartis*)
- 02.00 pm Yong-Sheng Chen (*PixelBiotech GmbH*)
- 02.30 pm Discussion Rounds