universitätbonn

JÜLICH
FORSCHUNGSZENTRUM

# The FZJ Model to join Universities & Laboratories

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# Short introduction

# Introductory remarks

- Research & education in Germany

  *Universities* are in charge of BSc, MSc and PhD education, bestow titles

  *Universities* also provide fore-front research, some have large/mid-scale facilities

  *Universities* are funded by the local states (§ 91 of the Grundgesetz)

  *Research centers* are in charge of basic & applied research, funded by federal state

  *Research centers* provide large scale facilities & some MSc, PhD education

  *Research centers* are organized in 4 associations:

  Max Planck, Helmholtz*, Fraunhofer, Leibniz

  * The HGF is in charge of providing large-scale facilities (DESY, FAIR, ...)

- Earliest attempt to combine these assets: **The Jülich model**

  ↪ these connections have become more visible within the *Excellence Initiative*

# Forschungszentrum Jülich (FZJ)



- Member of the Helmholtz Association (HGF)
- Large multidisciplinary research center
- 9 Institutes, approx. 5500 employees
- Foci: Information technologies,
  energy and environment, health
- Institute directors with connection to Bonn University:
  M. Bai (IKP-4), UGM* (IKP-3/IAS-4), H. Merkel (ICS-7), D. Sturma* (INM-8)
  and various W2 professors, apl. profs and privat-docents (lecturers)
- common projects/networks:

  Bonn-Cologne Graduate School in Physics and Astronomy (BCGS)
  Transregio 32 “Patterns in Soil-Vegetation-Atmosphere Systems” (ABCJ)
  Transregio 110 “Symmetries and the Emergence of Structure in QCD” (BJ+)
  and quite a number of other projects in various fields

# My relation to the Jülich model



- Appointed as C3 (associate) professor **within the Jülich model** in 10/1996
  - Professor in Theoretical Physics, Helmholtz Institut für Strahlen- und Kernphysik, Bonn University, on leave
  - Group leader, Institut für Kernphysik 3 (IKP-3), FZJ: work place
- Appointed as C4 (full) professor at Bonn University 01/2003
- Appointed at Institute director of IKP-3 at FZJ **within the inverse Jülich model** in 10/2003
- Dean of the Faculty of Mathematics and Natural Sciences at Bonn University from 10/2008 until 09/2016
  - about 100 offers to/ negotiations with professors, $\sim 15\%$ connected to research centers

# The Jülich model

# Basics of the Jülich Model



- The FZJ (KFA[1]) has a **long** history of collaborations w/ close-by universities:
  Aachen, Bonn, Düsseldorf, Köln, ...

- Why?
  - better science / big projects / large infrastructures
  - better education / more possibilities for students / extended curriculae
  - better use of human and financial resources

$\Longrightarrow$ not a one-way street: Both sides profit !

- Well-known by now:
  Important pillar in the excellence initiative (gaining importance)

[1] The FZJ was formerly called **K**ern**F**orschungs**A**nlage Jülich

# The Jülich Model: How does it work?

- Basic idea: Common appointment of professors at the FZJ with a university (W2/W3)
- Common search committee (in fact, two separate ones that act together)
- The professor is appointed to the University and is immediately set on leave to work as a group leader (W2) or director (W3) at the FZJ
  - salary paid by the FZJ, but Univ. must have a “Leerstelle” (pension funds etc.)
  - personal & equipment is entirely provided by the Forschungszentrum
  - reduced teaching duties (2 SWS instead of 9 SWS for a regular Univ. prof)
  - Prof. can supervise MSc/PhD students but a second advisor from the University (full-time prof.) is mandatory $\rightarrow$ epic battle

# The Jülich Model: One example



- IKP-4: Large-Scale Nuclear Physics Equipment
- Director: Prof. Mei Bai (from BNL, since 12/2014)
- IKP-4 operates the COoler SYnchrotron **COSY**
  - polarized protons and deuterons
  - stochastic and electron cooling
  - hadron physics experiments (up to 2014)
  - recently: the SPIN machine
    (preparations for EDM storage ring & polarized $\bar{p}$)

- IKP-4 is in charge of developing and setting up the
  High-Energy Storage Ring (**HESR**) for the FAIR facility
- Prof. Bai teaches accelerator physics at Bonn University

# The inverse Jülich Model

- More recently, the **inverse Jülich model** has also been installed
- Basic idea: A university professor (W3) takes over an Institute in the FZJ
  as secondary employment ("Nebenbeschäftigung")
- Conditions:

  Feasibility (location/distance, field of research)

  Necessity (additional profit for both institutions & persons involved)

  Suitability (requires some person to fit the profile)
- Examples from Bonn:

  Ulf-G. Meißner (Theoretical Nuclear/Hadron Physics)

  Dieter Sturma (Philosopher, Ethics in Life Sciences)

  $\hookrightarrow$ much more restrictive, should be more the exception than the rule

# Outlook

# Summary & Perspectives



- Jülich model is a success story [not only in the Bonn-Jülich context]
  - ↪ many successfull collaborations, like e.g. the sino-german collaborative research center CRC 110
  - ↪ new HGF center in Bonn: DZNE (German Center for Neurodegenerative Diseases)
  - ↪ very well connected to and working with the University (upcoming lighthouse)
- Research in the natural sciences profits considerably
  - ↪ good connection between accelerator physicists in Bonn and Jülich
  - ↪ however: not exploited to its full potential (electron vs hadron comm.)
  - ↪ chance for a common next big accelerator project strongly reduced
- New ideas neccessary
  - ↪ inclusion of external scientists requires **new measures**
  - ↪ build up more common platforms for natural sciences