

Matter and Technologies

The Program at DESY

Helmholtz Program: Matter and Technologies

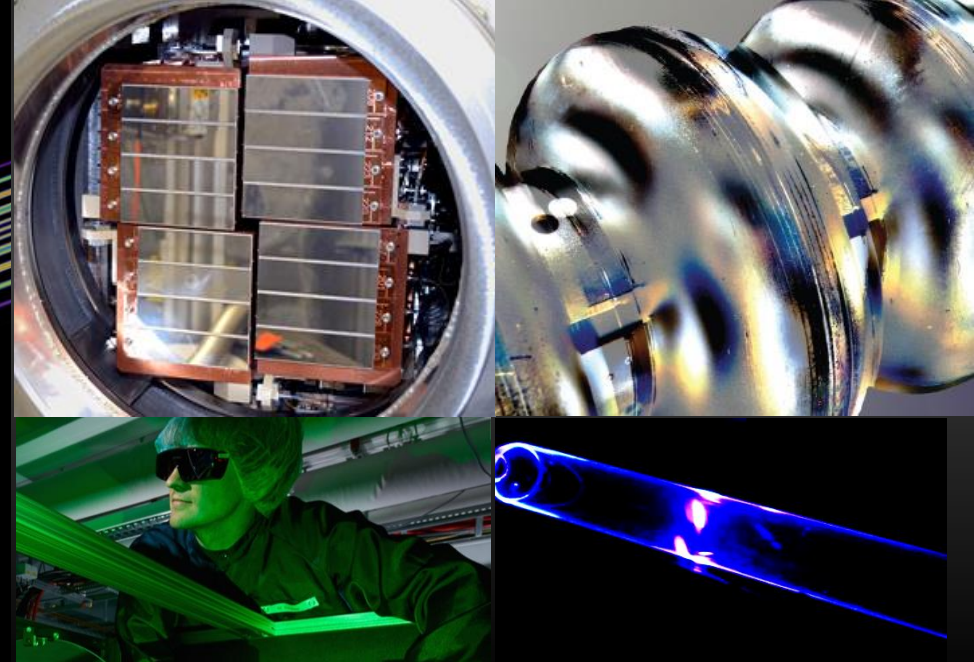
PoF III Topic: Detector Developments and Systems

DESY Research Unit: Detector Developments

Ties Behnke

Center Evaluation DESY, 5 – 9 February 2018

HELMHOLTZ
RESEARCH FOR GRAND CHALLENGES

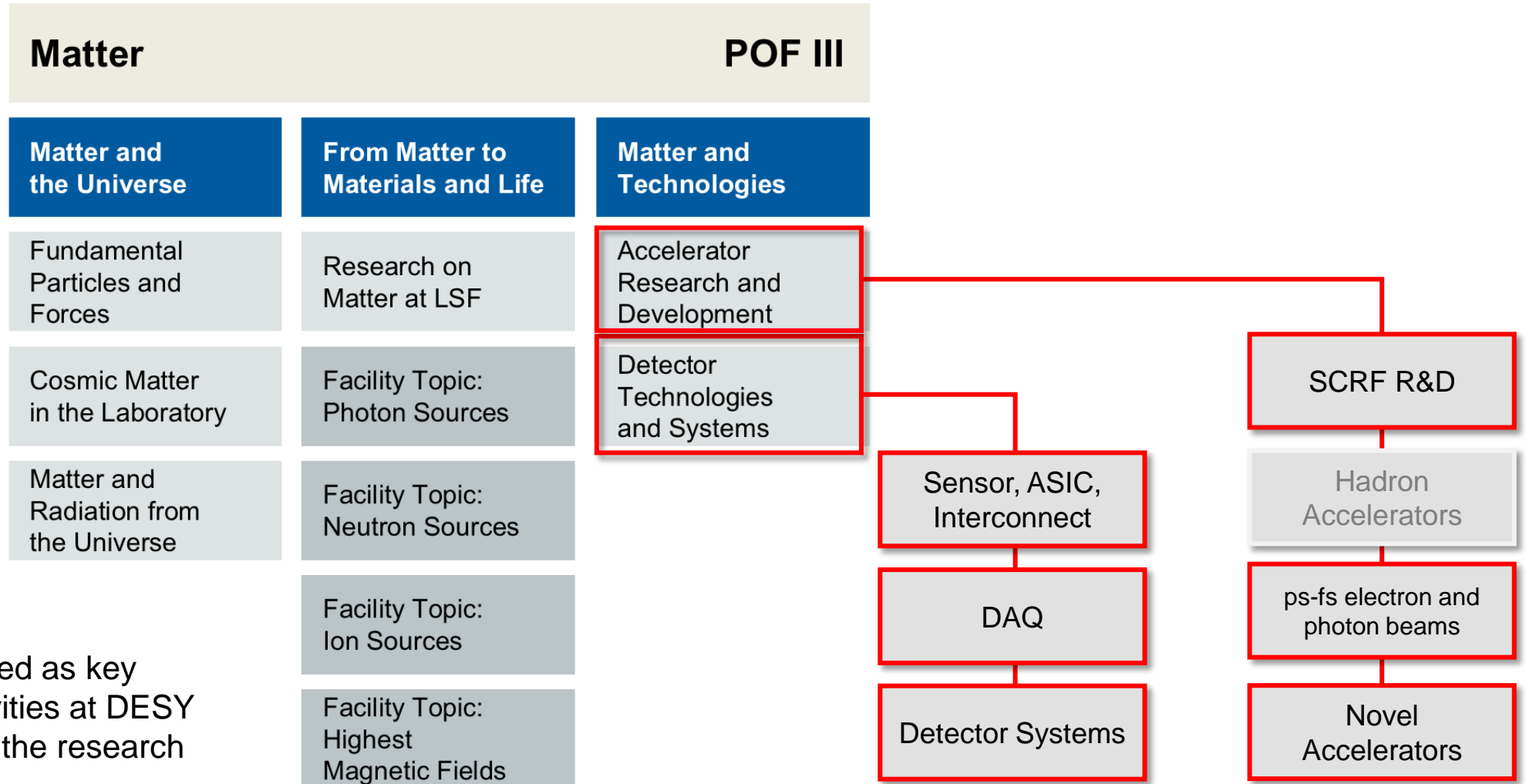


MT
MATTER AND
TECHNOLOGIES



Location within the research field matter

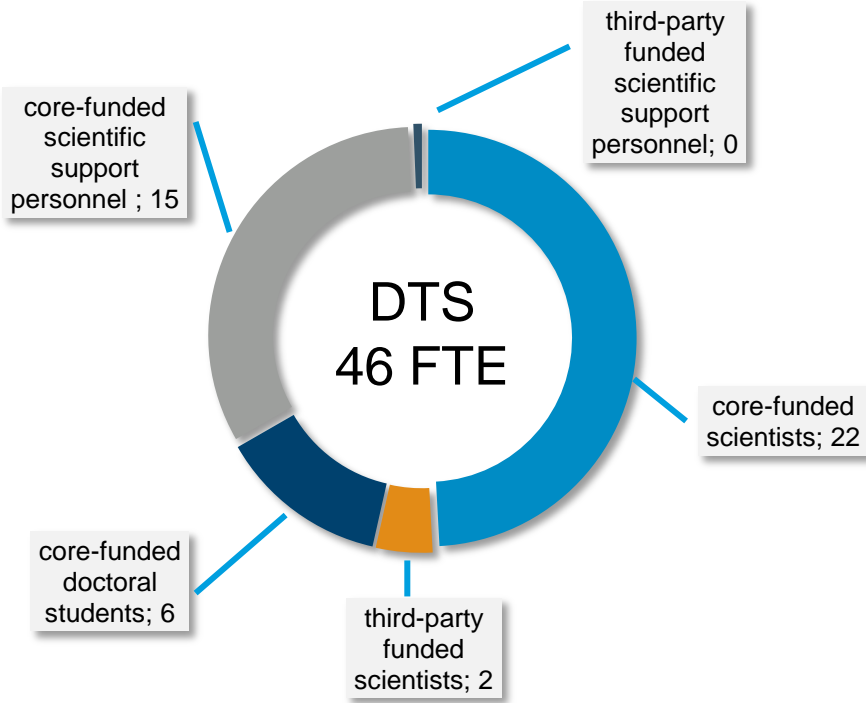
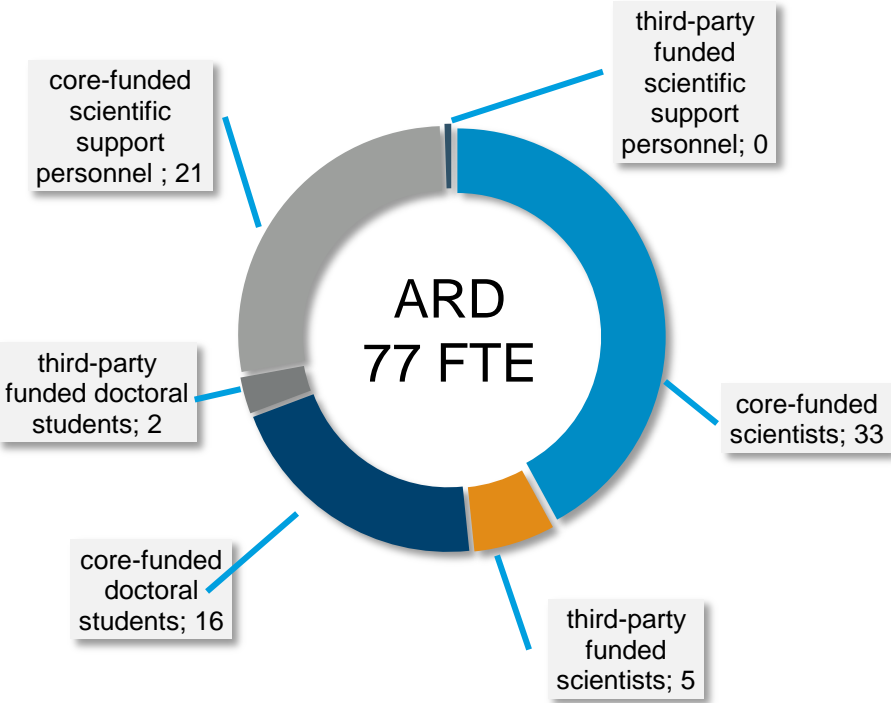
DESY contributions to DTS and ARD



ARD, DTS: recognised as key cross-divisional activities at DESY with large impact on the research program.

Some key numbers

Core funded resources



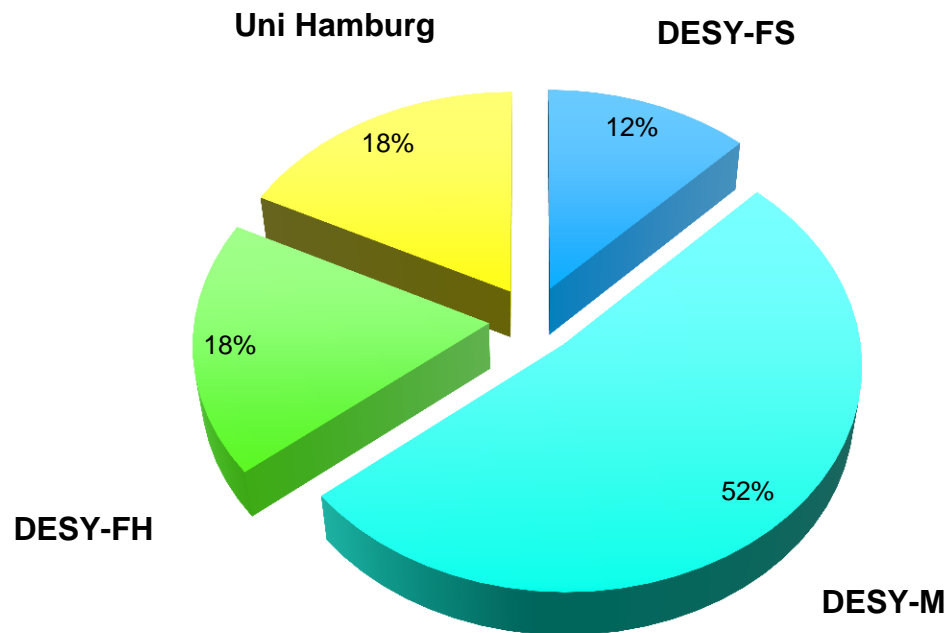
Both ARD and DTS are closely cooperating with a broad range of groups and people and profit from additional resources e.g. from support and technical people and infrastructures.

ARD and DTS are cross divisional activities.

ARD@DESY: 3 divisions and the University Hamburg

Involved Scientists and Students in ARD in Hamburg and Zeuthen

ARD



- DESY and Uni Hamburg are strategic partners in ARD
- DESY-M as the **accelerator division** is the strongest actor in ARD with research infrastructures in Hamburg and Zeuthen.
- The **particle physics division** FH is a traditional and strong actor in DESY accelerator R&D, continuing its role.
- The **photon science division** FS is a new actor in accelerator R&D bringing in world-class expertise in lasers, THz generation and innovative photon science concepts.

Personpower: Status and Evolution

ARD

- ARD is a growing activity at DESY.
- ARD is fully integrated into the laboratory: **In 2017 a total of about 200 DESY scientists/students/staff involved in ARD projects, many part time, from all divisions and both sites.**
- ARD integrated into overall accelerator work – combined expert teams as part of our strategy:
 - Ongoing **build-up of activities and infrastructure** (work in technical groups ramping up)
 - Reassignment of **DESY experts to SRF R&D** work after completion of XFEL construction: strong growth in 2017
 - Start of **new third party funding projects in 2017**: luVF “Plasma Accelerators”, ARIES EU project.
 - **Synergy with operating facility work**, e.g. seeded FLASH beams for users, advanced photo-injectors for FLASH/XFEL, improved timing and synchronization systems for photon science facilities, ...
 - **Synergy with R&D work driven by the needs of FLASH and EuXFEL facilities**
 - Part of personnel funded through **common projects with University Hamburg** (ACHIP program with Gordon&Betty Moore Foundation funding) **and University Strathclyde** (common PhD’s on plasma acceleration).
- University of Hamburg is a key strategic partner: **37 researchers and students in University Hamburg groups**, as core partner in accelerator R&D.

Personpower: Status and Evolution

DTS

- Detector Development is a central activity at DESY
- Strong integration into the FS and FH divisions, strong links into M
 - Close link to the science, and to the application of the technologies
- Many people work part time on DTS, part time on MML/ MU topics:
 - **29 FTE in DTS correspond to 68 heads**
- Technical infrastructure is being improved, synergy on personpower through operations
 - Detector assembly facility
 - Test beam facility
 - Investment in interconnect technologies
 - Plans for a post processing facility

Organisation

Managing cross divisional activities

ARD at DESY



Hans Weise



Ralph Assmann

DTS at DESY



Heinz Graafsma



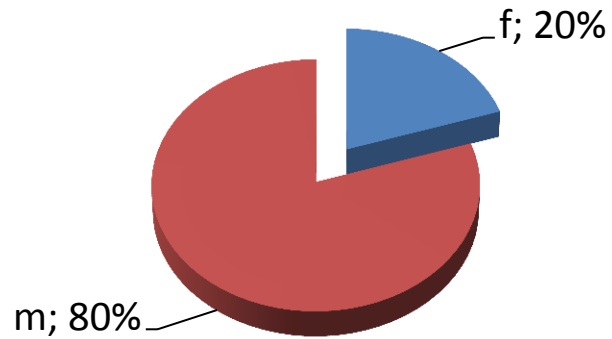
Doris Eckstein

Matter and Technologies at DESY as part
of the overall MT team

Talent Development

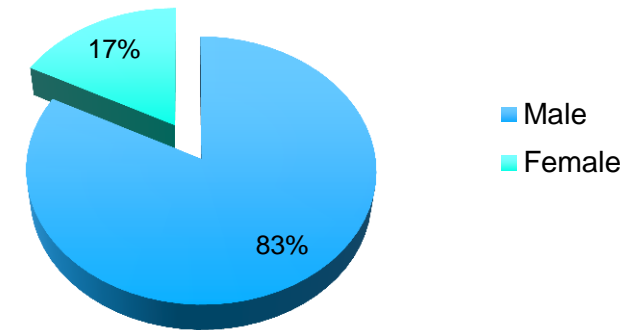
Developing talents and careers

DTS: gender distribution



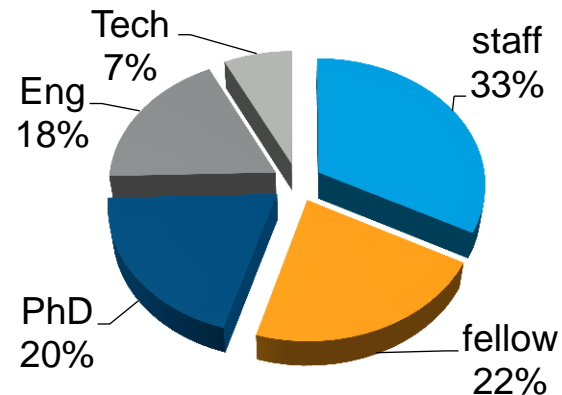
About 20% female researchers

ARD: gender distribution

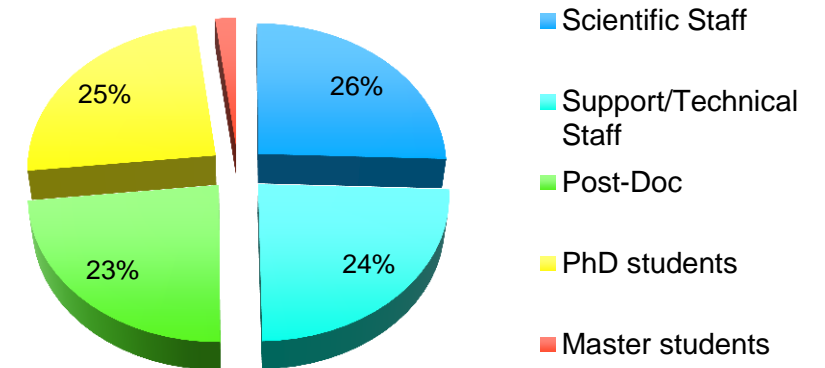


- Male
- Female

Strong participation of young researchers in the program:



About 50% young researchers

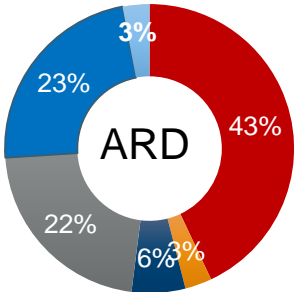


- Scientific Staff
- Support/Technical Staff
- Post-Doc
- PhD students
- Master students

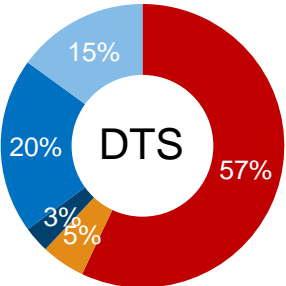
Contribution to center and program

Matter and Technologies are central elements of the DESY 2030 strategy.

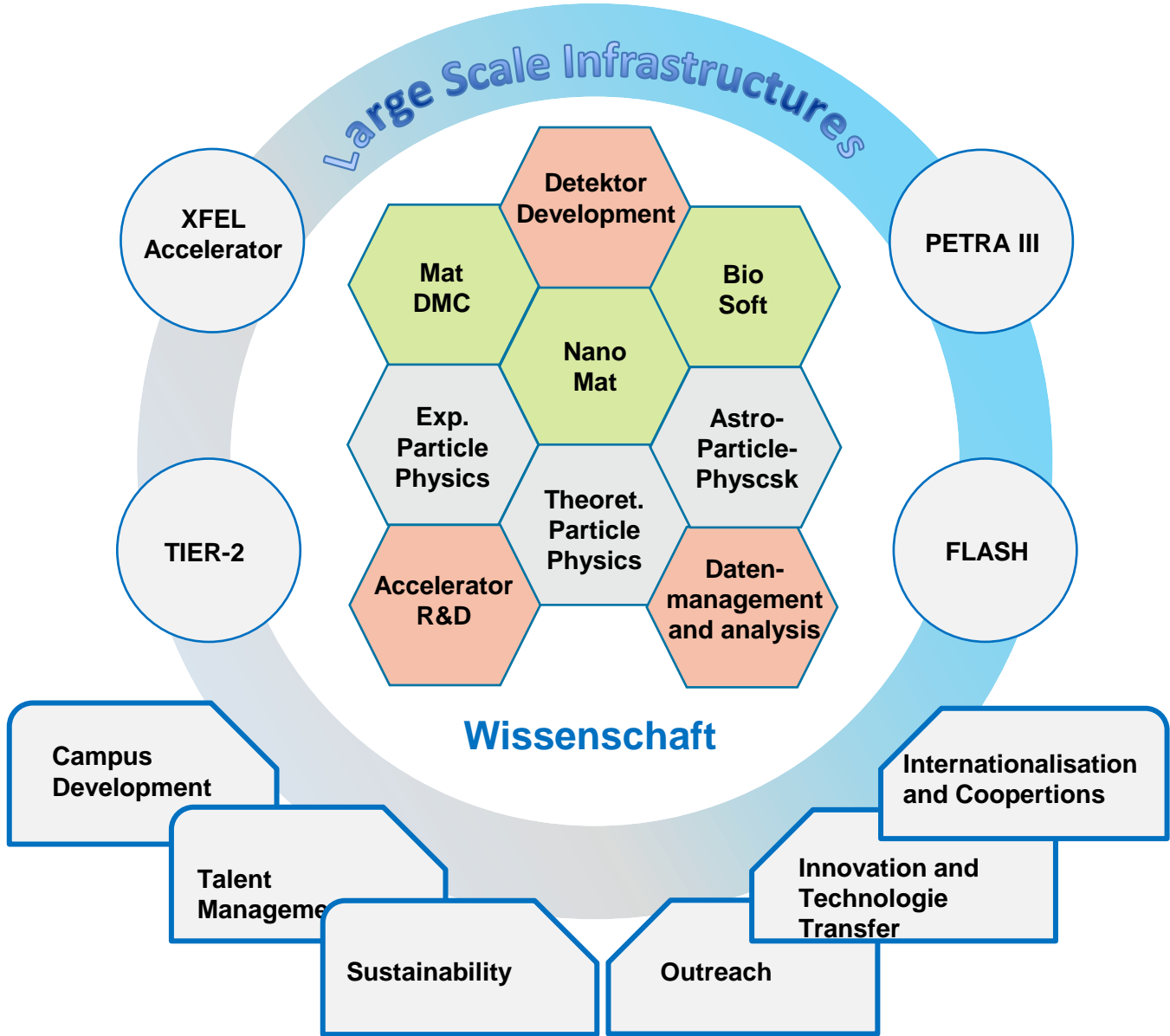
DESY plays a central role in the overall Matter and Technologies program



- DESY
- FZJ
- GSI
- HZB
- HZDR
- KIT



- DESY
- FZJ
- GSI
- HZDR
- KIT



Matter and Technologies

Accelerator Research and Development:

Ralph Assmann

Detector Technologies and Systems

Heinz Graafsma

Infrastructures in ARD

Hans Weise

Infrastructures in DTS

Doris Eckstein