

Central Institute of Medical Engineering (ZiMT)

Speaker

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Aims and structure

Medical engineering is one of the scientific focuses of FAU. More than 100 scientists, medical doctors, and lecturers from the field of medical engineering are connected through the Central Institute of Medical Engineering (ZiMT). The core tasks of the ZiMT include the coordination of the numerous cooperation partners' competences as well as enhancing the national and international visibility. ZiMT strengthens the medical engineering profile of FAU and UK Erlangen and improves the framework of the interdisciplinary collaboration in the diversified research area of medical engineering.

ZiMT is directed by an interdisciplinary executive committee, consisting of Prof. Dr. B. Eskofier (Faculty of Engineering), Prof. Dr. J. Schüttler (Faculty of Medicine), and Prof. Dr. B. Fabry (Faculty of Sciences). On an operative level, ZiMT is managed by the administrative office under the direction of H. Leutheuser.

Research

ZiMT acts in close interaction with Medical Valley EMN which was assigned as a German cluster of excellence in medical engineering in 2010. Within the internationalization of clusters of excellence - again funded by the BMBF -, ZiMT and Medical Valley EMN e.V. reach out to Brazil, China, and the USA. Another milestone for the regional research infrastructure in medical engineering is the participation in the consortium EIT Health: As part of the 8th European Union Research Program Horizon2020, the European Institute of Innovation and Technology (EIT) has extended its focus to "Together for healthy lives in Europe". During the consortium's founding phase, ZiMT has been representing the interests of FAU, UK Erlangen, and Medical Valley EMN e.V. in numerous Europe

wide work groups. Thanks to this initiative, FAU and UK Erlangen have established themselves as core partners of EIT Health and are eligible for all comprehensive EIT Health funding measures. ZiMT represents FAU and UK Erlangen in projects and applications for EIT Health as a representative and offers advisory services and networking platforms.

Entrepreneurship

Entrepreneurship and innovation are fundamental aspects of local and economic environments, especially in the sphere of medical technology and healthcare engineering. From this perspective, ZiMT serves companies as key contact in the FAU community and nationwide. ZiMT's responsibility is to support promising ideas from our partners and tailor cooperation between industrial and research players. The common goal will be to establish scientifically innovative products that meet real requirements of the market and to develop a strong innovative force in the Medical Valley. By means of multiple activities like startup consulting and hosting the EIT Health MedTech Bootcamp, ZiMT encourages networking of international partners and entrepreneurs at FAU. Simultaneously, ZiMT supports the ongoing innovation process in the fields of MedTech and Digital Health on a regional and national base, but also transnational.

Grant consulting

The ZiMT office assists in the development of complex proposals that may represent a multi-departmental and inter-institutional collaboration. We also consult individually with faculty and postdocs at FAU and other Bavarian universities, and enterprises and startups who are writing grant proposals for external funding.

Teaching

At FAU, the relevance of medical engineering as a scientific focus is not only visible in the research sector, but also in the educational sector. The Bachelor and Master degree programs Medical Engineering have received high numbers of applications from the very beginning and have a steady enrollment of about 800 students, establishing itself as one of the largest degree programs at the Faculty of Engineering. The consistently high number of enrolled students and the goal of keeping the percentage of students dropping out as low as possible were the reasons for the introduction of qualification assessment processes. Despite the ele-

vated workload, this procedure enables ZiMT to offer a valuable individual advisory service before the start of a degree program. Another outstanding feature about the Medical Engineering degree program is the high percentage of female students (50%).

In particular, courses such as Computer Science, Electrical Engineering, Electronic Engineering, Information Technology, Mechanical Engineering, Material Engineering, as well as Chemical and Biological Engineering are embedded in the B.Sc. degree program of Medical Engineering. The M.Sc. degree program Medical Engineering offers three different specialization possibilities: Medical Electronics (focus on electrical engineering), Medical Imaging and Data Processing (focus on computer sciences), and Medical Production Technology, Device Engineering, and Prosthetics (focus on mechanical engineering/material sciences). The M.Sc. in "Health & Medical Data Analytics", funded by EIT Health, will be offered beginning in the winter semester 2019/2020 and will support additional education in entrepreneurship with the possibility of studying abroad for one semester.

ZiMT offers separate lectures and seminars and therefore provides an early interfaculty exchange for students. Offers like the Innovation Research Laboratory (IRL), which is funded by Siemens Innovation Think Tank, the colloquium for research and industry, and various other seminars allow the Medical Engineering students to realize their own ideas at an early stage and analyze their topics considering entrepreneurial aspects.



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