The statistical analysis of high-dimensional data containing large numbers of features has been addressed by classical boosting techniques. Gefeller, Dr. B. Hofner, Dr. A. Mayer with the help of computational methods and epidemiological research. Moreover, research projects prompt special analyses, for instance sensitization to common biocides and fragrances. Moreover, the network European Surveillance System on Contact Allergies – Data Centre (ESSCA-DC) has been collecting and analyzing such data on a European level since 2002, with the data center located at the Chair of Medical Biometry and Epidemiology. The epidemiology of malignant melanoma and acquired melanocytic nevi is a further research interest: Acquired melanocytic nevi, surrogate or potential precursor of malignant melanoma, are addressed by the current MONA-study which includes standardized assessment of student cohorts. In 2014, a survey ("Erling Sun 2014") addressing knowledge on prevention of UV exposure in kindergarten staff, and actual protective measures (shading etc.) in the institution was conducted with the aim of identifying targets of improvement of primary prevention.

Cooperative epidemiological and clinical studies

This area of activity comprises diverse research topics addressed in cooperation with different departments and institutes. Usually, biometrical aspects of study design and statistical analysis have been performed by our Institute in these cooperative projects. The most important projects in the reporting period include:

- A cross-sectional study in the field of occupational medicine addressing the association between exposure to CS2 in the viscose industry and a number of neurological and cardiovascular endpoints;
- A study coordinated by the Institute of Biomedical Aging regarding risk factors of frailty and sarcopenia;
- A multi-centric European studying on “Accelerated Partial Breast Irradiation”, a controlled clinical trial on the multimodal therapy of rectal cancer (CAO/ARO/AIO-04), and a controlled clinical trial on radiochemotherapy in patients with locally advanced head/neck tumors stage III and IVA-B (PACCIS) and radiochemotherapy after induction chemotherapy with gemcitabine and FOLFRINOX, resp. (CONKO-007 study), all chaired by the Department of Radiation Oncology of the UK Erlangen;
- The multi-centric “German Chronic Kidney Disease Study” (GCDD; see own report) funded by the BMBF and the “Kuratorium für Heimdialyse”;
- The implementation of the “German Weight Maintenance” registry and biostatistical support of a multi-center study on the therapy of eating disorders (INTERBED), chaired by the Department of Psychiatry and Psychotherapy of the UK Erlangen;
- The multicenter POLYPROBE Study examines the expression of 61 marker genes in patients with carcinoma of the colon, using PCR. The association with UICC stages, survival, and response to (radio-)chemotherapy will be analyzed.

Teaching

In the context of curricular teaching, the Chair of Medical Biometry and Epidemiology contributes to the “Querschnittsbereich I” (medical informatics, biometry, and epidemiology) for
medical students (lecture and seminars in small groups, one contact hour each). Moreover, this introduction to biometry and epidemiology (lecture and seminars in small groups, one contact hour each) is part of the bachelor phase of the degree program Molecular Medicine togeth-

er with a seminar on the practice of data analysis (two contact hours) which teaches basic program-

ning knowledge in the statistical program “R”. Regarding the M.Sc.-degree program Medical Process Management, the Chair of Medical Biometry and Epidemiology is responsible for a part of module 2.2 “health care management II”, namely “public health and evidence-based medicine” (seminar, three contact hours). For students of medicine and dental medicine, a seminar on “design and data analysis in clinical and experimental studies” is being offered. This seminar can be used by the students to discuss any statistical issues they encounter when working at their medical thesis. As compulsory elective seminar in the master part of the degree program Life Science Engineering of the Faculty of Engineering, the Chair of Medical Biometry and Epidemiology offers a module in epidemiology. Moreover, biometry and epidemiology are part of an introductory seminar for students of information science specializing in medical informatics.

Selected Publications


International Cooperations

Prof. J. Duus Johansen, Gentofte Hospital, Copenhagen: Denmark

Prof. G.E. Eide, Haukeland Hospital, Bergen: Norway

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