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Current opportunities for Bioinformaticians at the German Cancer Research Center

Name of DKFZ research division/group:

NCT/UCC Dresden Core Unit for Molecular Tumor Diagnostics

Contact person:

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Koordinator

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Group homepage:

<https://www.nct-dresden.de/forschung/core-units/nctucc-core-unit-for-molecular-tumor-diagnostics.html>

Please visit our web page for further information on our research and recent publications.

RESEARCH PROFILE AND PROJECT TOPICS:

The CMTD is a central research infrastructure providing NGS-based molecular characterization of sporadic tumors and hereditary tumor syndromes within translational research projects and clinical studies. Our goal is the rapid translation of molecular information into the clinic by applying dedicated multi-gene panels for all NCT-patients at the partner site Dresden.

The CMTD services include

- (1) complete processing from tumor samples and liquid biopsies, wet laboratory work, bioinformatics, scientific and medical evaluation to clinical report,
- (2) support for project planning and grant applications as well as



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(3) establishment of new methodologies such as sequencing of single cells, cell free tumor DNA, circulating tumor cells, and large gene panels for combined somatic and germline data interpretation aimed at therapy stratification.

In detail:

- Project planning and support by pathologists, clinical geneticists and CMTD personnel for translational research projects and clinical studies at the NCT partner site Dresden in close collaboration with the NCT site Heidelberg.
- Continuous quality assessment of all methods and instruments as well as all workflow process steps including bioinformatics software and tools run on a dedicated Linux server.
- Increased use of lab automation.
- Preparation of DAkKS accreditation (Din EN ISO 15189).
- Detailed planning of the building and equipment of future laboratories, which should become available in October 2020.
- Contribution to more than 30 translational research projects by:
 - o Consultation and support for project planning, selection and establishment of methods and technologies and for related grant applications.
 - o Evaluation of each tumor sample by a pathologist (including assessment of tumor cell content and microdissection).
 - o DNA/RNA preparation with quality assessment.
 - o Enrichment and DNA/RNA-Sequencing using NextSeq as well as MiSeq technology.
 - o Quality assessment of all sequencing data.
 - o Data evaluation and extensive database comparison based on international guidelines such as ACMG guidelines.
 - o Final data interpretation by board certified human geneticists (Prof. Dr. med Evelin Schröck) and board-certified molecular pathologists (Prof. Dr. med. Daniela Aust).
 - o Additional molecular genetic analyses as well as immunohistochemistry and Fluorescence-in situ-Hybridization (FISH).
- Development of customized but overarching multi-gene panels for user specific applications.
- Planning, application for funding and execution of translational research projects for further development of the CMTD as the central unit for NGS and related methods in Dresden.
- Strategic evaluation and establishment of current and future pipelines for translational research, selection and customization of panels and technologies.

If you're interested in this project please get in touch with the respective contact person.



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