Manuel Nietert

Curriculum Vitae

Group Leader of Applied Bio(chem)informatics and Image Analysis ← link auf die GruppenSeite

(1.1.3 Chemoinformatics and Imaging)

Career progression

Position and employment

- 2019- Project Leader, AutoBuSTeD, Universitätsmedizin Göttingen – UMG, Germany
- 2017- Project Leader, CandActCFTR, UMG, Germany
- 2013-2016 Researcher, MetastaSys, UMG, Germany
- 2010-2013 Researcher, BreastSys, UMG, Germany
- 2007-2009 Research Assist., Inst. of Microbiology and Genetics, TU Darmstadt, Germany
- 2004-2007 Research Assist., Dep. of Chemical and Pharmaceutical Sciences, Goethe
- University, Frankfurt a. M. - Germany

Education

- 08/2008 PhD in Chemistry, Goethe University, Frankfurt a. M. - Germany
- 08/2004 Master Level Degree in Biochemistry, Goethe University, Frankfurt a. M. - Germany

Awards

Christiane Herzog-Foundations "Forschungsförderpreis für wissenschaftliche Nachwuchsförderung 2018", funding the Automatic bubble sweat test diagnostic project – AutoBuSTeD

Research focus

Major Research Interests

For the past years we focus our research in the field of cystic fibrosis (CF), where we still see an unmet demand for IT solutions to help this field. In general our work group aims at providing IT based solutions for biochemical aspects of the systems biology and systems medicine projects, but if necessary can even venture out to help improve the acquisition setup. We thus develop and adapt software solutions to provide the required tools for medical research.

At a first glance, CF is a monocausal disease in which over 2000 putative mutations leading to various forms of phenotypes have been identified. Among these, about 300 variants define the more common types. The CFTR protein is only effective as an integral membrane protein, and as such, it is affected by transcription, translation, folding and degradation, as well as protein traficking processes. Thus, this monogenic disease has multiple sites for potential drug intervention during its life cycle and covers also protein structure variants. This makes it an interesting target for a system medicine approach. The life cycle of the protein offers also multiple modes to obtain information to annotate the system and the existing literature offers various annotations for specific combinations of mutations and read-outs (e.g. protein expression, functional patch clamp measurements, up to structure models and molecular dynamic simulations).

Current projects

Automated Bubble Sweat Test Diagnostics – AutoBuSTeD ← **Link auf 1.2.1 AutoBuSTeD**
AutoBuSteD is an example of the work we do on the automation of image analysis workflows, e.g. the AutoBuSTeD project, and we also cover various other image input sources for other projects as well. E.g. microscopy data in the project *Pulmonary transplantation of macrophages as a cell-based therapy to treat chronic infections in the cystic fibrosis lung* , where we are the collaboration partner to automate the LysoSensor image analysis.

CandActCFTR - Curated database of candidate therapeutics for the activation of CFTR-mediated ion conductance ← Link auf 1.2.2 CandActFTR

CandActCFTR is a curated compound database which annotates the chemical structure library with information on where and how in the protein life cycle a compound likely interacts, thus comprising a good starting point for modelling the disease and enhancing ligand based approaches. In the upcoming extension of CandActCFTR, this ligand-based approach will be complemented by structure-based annotations, including the means to predict the interactions between CandActCFTR substances and CFTR by using existing molecular dynamics trajectories, and by adding more organisation and annotation modules.

Publications

Selected publications:

- Jo P, Kesruek H, **Nietert M**, Sahlmann C, Gaedcke J, Ghadimi M, Sperling J.
  Inzidenz und Praediktive Faktoren des Bilateralen Papillaeren Schilddruesenkarzinoms.
  Zentralblatt für Chirurgie. 2018; 143(04): 361-366 DOI: 10.1055/a-0651-0878

- Lowes M, Kleiss M, Lueck R, Detken S, Koenig A, **Nietert M**, Beissbarth T, Stanek K, Langer C, Ghadimi M, Conradi LC, Homayounfar K.
  The utilization of multidisciplinary tumor boards (MDT) in clinical routine: results of a health care research study focusing on patients with metastasized colorectal cancer.

International journal of colorectal disease. 2017; 32(10):1463-1469. doi: 10.1007/s00384-017-2871-z PMID: 28779354, PMCID: PMC5596058

- Linke F, Harenberg M, **Nietert M M**, Zaunig S, von Bonin F, Arlt A, Szczepanowski M, Weich HA, Lutz S, Dullin C, Janovská P, Kraf?íková M, Trantírek L, Ovesná P, Klapper W, Beissbarth T, Alves F, Bryja V, Truemper L, Wilting J, Kube D.
  Microenvironmental interactions between endothelial and lymphoma cells: a role for the canonical WNT pathway in Hodgkin lymphoma.
  Leukemia. 2017; 31(2):361-372. PMID: 27535218

- Jo P, **Nietert M**, Gusky L, Kitz J, Conradi LC, Mueller-Dornieden A, Schueler P, Wolff HA, Rüschoff J, Stroebel P, Grade M, Liersch T, Beißbarth T, Ghadimi MB, Sax U, Gaedcke J.
  Neoadjuvant Therapy in Rectal Cancer - Biobanking of Preoperative Tumor Biopsies.
  Scientific reports. 2016; 6:35589. PMID: 27752113, PMCID: PMC5067705

- von der Heyde S, Wagner S, Czerny A, **Nietert M**, Ludewig F, Salinas-Riester G, Arlt D, Beißbarth T.
  mRNA profiling reveals determinants of trastuzumab efficiency in HER2-positive breast cancer.
  PloS one. 2015; 10(2):e0117818. PMID: 25710561, PMCID: PMC4339844

Professional activities

Since 2020 Vice-Speaker of the TMF e.V. workgroup Data Quality and Transparency

Member of the societies ECFS, IBS, DHV

Contact information

Phone: +49 - (0)551- 39 14920

Mail: Manuel.Nietert@med.uni-goettingen.de

Room: 2.112 in the Goldschmidtstr. 1. 37077 Göttingen

ORCID iD:**orcid.org/0000-0001-5443-7943**