

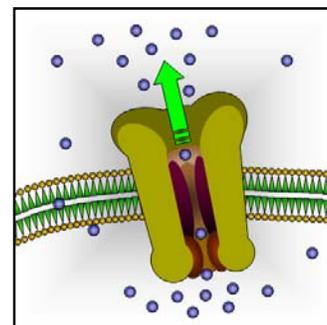


## Transport across membranes: Multiple drug resistance, mechanisms and new tools

### Subject of the Summer School

Nature has created a huge number of membrane transport proteins and channels (collectively the transportome) govern cellular influx and efflux of ions, nutrients, metabolic intermediates, and drugs. Such important functions make the transporter proteins extremely attractive targets for drug development. We will address structure and mechanism as well as the role of these proteins in disease. In particular, the importance of membrane transport proteins in the resistance against the toxic effects of antibiotics and other drugs will be the focus of this Summer school.

Recent advances in membrane protein crystallography have significantly enhanced our knowledge of membrane protein structures. However, to understand the relationship between structures and biological functions, it is necessary to characterize the dynamics of membrane proteins in the complex environment provided by a lipid bilayer.



This summer school will provide state of the art presentations on the molecular architecture and functions of membrane transport proteins, their expression and regulation, on new experimental and bioinformatics approaches, but will also inform on the underlying physics and possible biotechnological applications. The conference will bring together researchers from the fields of channels, primary and secondary transporters.

### Working Program

The core program will include invited general and research talks from experts in the field. Special emphasis will be given on the outline of current developments and the discussion of promising future research directions. Participating students and post-docs will have the opportunity to present and discuss their own research in poster sessions and student seminars. The program includes the following topics: Molecular Biology, Biochemistry, Cell Biology, Physiology, Physics and Chemistry in confined systems, Molecular Modeling, Bioinformatics, and Electrophysiology of membrane transport proteins.

### Speakers

L. Amaral (Lisboa), F. van Bambeke (Brussels), R. Benz (Würzburg), F. Bernhard (Frankfurt), E. Bibi (Rehovot), R. Blunck (Montréal), J. Bohnert (Freiburg), P. Cornelis (Brussels), J. Cove (Leeds), X. Declèves (Paris), S. Fanning (Dublin), K. Fendler (Frankfurt), C. Glaubitz (Frankfurt), T. Gutschmann (Borstel), G.W. Kaatz (Detroit), U. Kleinekathöfer (Bremen), J. Kristiansen (Sønderborg), O. Lomovskaya (San Diego), B. Luisi (Cambridge), J.J.G. Marin (Salamanca), K. Marin (Köln), B. Marquez (Brussels), R. Peters (Münster), L. Piddock (Birmingham), K.M. Pos (Zürich), Q. Ren (Rockville), P. Ruggerone (Cagliari), S. Schuldiner (Jerusalem), S. Schwarz (Neustadt), H.P. Schweizer (Fort Collins), A. Seelig (Basel), G. Szakacs (Budapest), E. Tajkhorshid (Urbana), R. Tampé (Frankfurt), P. Tulkens (Brussels), H.W. van Veen (Cambridge), Q. Zhang (Ames)

### Organizing Committee

M. Page (Basel), J.M. Pagès (Marseille), J. Dreier (Basel), M. Winterhalter (Bremen), H. Weingart (Bremen), M. Ullrich (Bremen), A. Köhler (Bremerhaven)

### Applications

For details see [www.faculty.iu-bremen.de/mwinterhalter/transporters/index.htm](http://www.faculty.iu-bremen.de/mwinterhalter/transporters/index.htm)

Registration by email to [h.weingart@jacobs-university.de](mailto:h.weingart@jacobs-university.de)

