Membranes allow for the compartmentalization of many different processes in the cell, thus allowing for organizational complexity. Membranes are now known to be direct players in cell physiology, including organelle structure and biogenesis, membrane transport and intracellular trafficking, as well as in dysfunctions leading to disease such as Huntington's disease, chronic inflammation, viral infections and metastatic cell invasion. This symposium will cover emerging topics in membrane trafficking and disease. It will highlight progress in membrane fusion, fission and budding mechanisms as well as the recent expansion of endocytic pathways and their coupling to signaling. There will be an emphasis on the fundamental importance of controlling membrane curvature, beyond its role in shaping organelles looking forward to direct functions in organelle dynamics and organization. This symposium seeks to bring together those at the forefront of different disciplines to address current issues in membrane biology. The overlapping topics should stimulate discussion and cross-fertilization.