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## PROJECT

### Infectious Diseases and Society

The proposed project is based on several assumptions and holds the view that

- infectious diseases are biological in their expression but largely socio-culturally determined
- many biomedical approaches make immodest claims of causality
- new explanatory frameworks need to be developed, featuring not only host-pathogen relationships, i.e., the molecular/immunological level, but also need to incorporate ethnography, social sciences, political economy, and history
- in the past century "contagionist" models were too dominant and a reconciliation with more inclusive explanatory models needs to be encouraged in order to improve understanding of the forces that shape the occurrence of infections and the way societies are responding to and coping with the perceived risks

Aims: Using case studies, the focus at the Wissenschaftskolleg should

- lead the discourse on a novel theoretical framework on the causation of existing and "emerging/re-emerging" infectious diseases
- make an attempt to describe and quantify anthropological, socio-economical, and cultural determinants of the risk levels of infectious diseases such as TB, malaria, AIDS, and multi-resistant bacterial infections and effectively recast purely contagionist explanatory models in a socio-historical context
- describe the socio-cultural and artistic response to AIDS in Africa and dare to appreciate the historical dimensions

## Recommended Reading

Hori, S., R. Sunley, A. Tami, and H. Grundmann. "The Nottingham Staphylococcus Aureus Population Study: Prevalence of MRSA Among Elderly in a University Hospital." *J. Hosp. Infect.* 50 (2002): 25-29.

Grundmann, H., S. Hori, B. Winter, A. Tami, and D. Austin. "Transmission of MRSA in an Adult Intensive Care Unit: Fitting a Model to the Data." *J. Infect Dis.* 185 (2002): 481-488.

Tami, A., H. Grundmann, C. Sutherland, J. S. McBride, D. R. Cavanagh, E. Campos, G. Snounou, M. Tibayrenc, and D. Warhurst. "Restricted Genetic and Antigenic Diversity of Plasmodium Falciparum Under Mesoendemic Transmission in the Venezuelan Amazon." *Parasitology* 124 (2002): 569-581.

# Pathogens and Populations: New Paradigms for the Epidemiology of Infectious Diseases

Interest in infectious diseases can be partly explained by their destructive potential. Events such as the Black Death in the fourteenth century and to a lesser extent the cholera epidemic in the nineteenth century are depicted as incidents of apocalyptic proportion and kept alive in memory through folklore, artwork and numerous accounts and narratives. Surprisingly, most of the fascination with infections does not stem from their mere ability to hurt and kill people, but from their inherent propensity to spread and disseminate through large segments of the population. It is this dynamic process that makes infections so different from any of the other kind of exogenous health threat, physical or chemical.

When in the late nineteenth century scientists understood that epidemics were the result of the damaging interaction between different life forms, miasma theory was crushed and one of the most revealing explanatory models in contemporary science had won the day. As a result, chemotherapy, immunisation and sanitation reduced the impact that infections had on populations to an extent that led the Surgeon General of United States to predict in the 1960s that the book of infectious diseases could be shut. It seems, however, that infectious diseases epidemiology has become a victim of its own success. The current resurgence and emergence of numerous infectious diseases are testimony that the claims to have won the battle were, in fact, overstated. The reason for failure to control infections is the continuous misconception that humanity could be able to dominate the microbial kingdom. In this respect, medically dominated approaches make immodest claims about the causation of infection because they tend to neglect the ecological, evolutionary and societal dimensions involved. A new understanding of the epidemiology of infections calls for more contextual approaches if the livelihood of the majority of people is to be improved worldwide.

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## PUBLICATIONS FROM THE FELLOW LIBRARY

Grundmann, Hajo (Lawrence, Kan., 2006)

Do we need to put society first? The potential for tragedy in antimicrobial resistance

<https://kxp.k1oplus.de/DB=9.663/PPNSET?PPN=168712924X>

Grundmann, Hajo (2006)

Mathematical modelling : a tool for hospital infection control

<https://kxp.k1oplus.de/DB=9.663/PPNSET?PPN=87771620X>