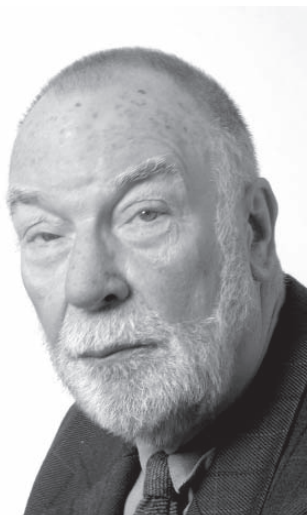




## Emeritus Group General Molecular Genetics



### *Head:*

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## Biographical Notes

In addition to my obligations in Berlin I served as the “Geschäftsführender Direktor” of the MPI für experimentelle Medizin in Göttingen from February 1998 through February 2000.

The Biologisch-Medizinische Sektion elected me in 2001 as their Ombudsmann

I retired in April 2000. I acknowledge that the president of the MPG provided me upon recommendation of the institute until the end of 2003 with an emeritus-laboratory and office plus appropriate staff and funds to wind up work, which had initiated before my retirement. The institute has been generous to also provide access to all general use facilities of the institute. Laboratory work terminated at the end of August 2003.

### *Development of group leaders in the course of my retirement*

It is a pleasure to report that the closing of my department did not lead to a break of the careers of the various leaders of groups, which had been established during my active duty. Almost all group leaders found respectable positions at other institutions. At the same time, virtually all positions of scientists of the department became vacant around 2000 and hence available for new appointments now or in the foreseeable future.

*Dr. Mark Achtman* together with *Dr. Giovanna Morelli* joined in 2000 the MPI of Infection Biology as a permanent group leader (C 3) continuing his remarkable studies on epidemiology of bacterial diseases and of bacterial evolution.

*Dr. Juan Alonso* left the department already in 1994 to obtain one of the tenured group leader positions at the Centro Nacional de Biotecnología, CSIC, in Madrid. Experimental co-operation between his and my group here in Berlin on bacteriophage DNA packaging continued after his departure.

*Dr. Regine Hakenbeck* accepted a C4 chair for microbiology at the University of Kaiserslautern, where she has expanded studies on penicillin resistance of *Pneumococci* into bacterial immunology and evolution.

*Dr. Walter Messer*, an internationally recognized authority on DNA replication, retired in 2000.

*Dr. Enzo Russo* joined the Department Lehrach.

*Dr. Paulo Tavares* with whom my group had co-operated very intensively has now a permanent group leader position with the CNRS at Gif-s-Y, where work on morphogenesis of bacterial and animal virus morphogenesis is continuing.

*Dr. Jörn Walter's* work is characterized by a switch already performed here in Berlin from studies on enzymology of DNA – methyltransferases, which were performed in association with my group, to studies on DNA-methylation during mammalian embryogenesis. He has now the chair for Genetics(C4) at the University of Saarbrücken.

### Recent work performed in my group

Following up the characterization of DNA, not representing housekeeping-genes, in dispensable regions of some 25 different *Bacillus subtilis* strains ( see “Present Work”, pg 61 of Scientific Report 1999/2000) we have completed the DNA sequencing of such DNA. Using “blast” analyses of the material with the most recent data bases, we realized that contrary to our previous interpretations, we do not find eukaryotic genes in such DNA. We have realized furthermore that insert DNA frequently contains previously identified elements known to be associated with illegitimate recombination in *B. subtilis*, derived from prophages like SPbeta, 6, or SKIN. All fragments which we have analyzed show irrespective of their size very sharp (within 10 bps) transitions from resident to insert DNA.

Future work will be to write up several papers on work performed during the last years by my laboratory.

## General information

### Selected Publications 1999-2003

Orlova EV, Gowen B, Dröge A, Stiege A, **Lurz R**, Weise F, van Heel M & **Tavares P** (2003). *Structure of a viral DNA gatekeeper at 10 angstrom resolution by cryo-electron microscopy*. EMBO J 22:1255-1262

Markmann-Mulisch U, Masood Z, Hadi MZ, Koepchen K, Alonso J, **Russo VE**, Schell J & Reiss B (2002). *The organisation of Physcomitrella patens rad51 genes is unique among eukaryotic organisms*. PNAS USA 99:2959-2964

Glinkowska M, Konopa G, Wegrzyn A, Herman-Antosiewicz A, Weigel C, **Seitz H**, **Messer W** & Wegrzyn G (2001). *The double mechanism of incompatibility between I plasmids and Escherichia coli dnaA(ts) host cells*. Microbiology 147:1923-1928

**Seitz H**, Welzeck M & **Messer W** (2001). *A hybrid bacterial replication origin*. EMBO Reports 2:1003-1006

**Achtman M** & Suerbaum S (2000). *Sequence variation in Helicobacter pylori*. Trends Microbiol 8:57-58

Dröge A, Santos MA, Stiege AC, Alonso JC, **Lurz R**, **Trautner TA** & **Tavares P** (2000). *Shape and DNA packaging activity of bacteriophage SPP1 procapsid: protein components and interactions during assembly*. J Mol Biol 296:117-132

Oswald J, **Engemann S**, Lane N, Mayer W, Olek A, Fundele R, Dean W, Reik W & **Walter J** (2000). *Active demethylation of the paternal genome in the mouse zygote*. Curr Biol 10:475-478

Paulsen M, El-Maarri O, **Engemann S**, Strodicke M, Franck O, Davies K, Reinhardt R, Reik W & **Walter J** (2000). *Sequence conservation and variability of imprinting in the Beckwith-Wiedemann syndrome gene cluster in human and mouse*. Hum Mol Genetics 9: 1829- 1841

**Achtman M**, Azuma T, Berg D. E., Ito Y, Morelli G, Pan Z.-J., Suerbaum S., Thompson S, van derEnde A. and van Doorn L. J. (1999). *Recombination and clonal groupings within Helicobacter pylori from different geographical regions*. Mol Microbiol 32:459-470

Orlova E, Dube P, Beckmann E, Zemlin F, **Lurz R**, **Trautner TA**, **Tavares P** & van Heel M (1999). *Structure of the 13-fold symmetric portal protein of bacteriophage SPP1*. Nature Struct Biol 6:842-846

Reik W, Kelsey G & **Walter J** (1999). *Dissecting de novo methylation*. Nature Genetics 23:380-382



Sethmann S, Ceglowski P, Willert J, Iwanicka-Nowicka R, **Trautner TA & Walter J** (1999). *M(phi)BssHII, a novel cytosine-C 5-DNA-methyltransferase with target recognizing domains at separated locations of the enzyme.* EMBO J 18:3502–3508

### *PhD Theses*

Seitz H, *Interaktionen des E. coli Initiator-proteins DnaA mit der replikativen Helikase DnaB.* Freie Universität Berlin, 2000

Speck C, *ATP- und ADP-DnaA Protein: Neue Modelle und Mechanismen zur Regulation der dnaA Transkription und zur Initiation der DNA-Replikation.* Freie Universität Berlin, 2000

Bläsing F, *Analyse der DNA-Bindungsdomäne des DnaA Proteins von E. coli.* Freie Universität Berlin, 1999

Engemann S, *Stammspezifische Untersuchungen zu transgenen Insertionen in der Maus.* Freie Universität Berlin, 1999

Schenker M, *Mikroevolution in Neisseria meningitidis am Beispiel der 25kb Region zwischen tbpAB und opaA.* Freie Universität Berlin, 1999

Zhu P, *The opc gene region in Neisseria.* Freie Universität Berlin, 1999

