

Committee on Awards
Abbott ASM Lifetime Achievement Award
American Academy of Microbiology
1752 N Street NW
Washington DC 20036

Dear Selection Committee,

It is with great pleasure that I recommend Prof. Dr. Wolfram Zillig for the Abbott-ASM lifetime achievement award. I was a postdoctoral fellow in Wolfram Zillig's lab from 1996 to 1999. When looking for post-doctoral opportunities in archaeal transcription, I was told by many people that Wolfram had retired, nevertheless it was clear to all that he was the "godfather" of the field. However, when I visited him in 1995 in his lab outside of Munich, he was anything but retired or retiring. He was planning a summer sampling and experimental trip to Iceland and spent half an hour explaining why the German system of forced retirement at 68 was a bad idea, I have to agree with him (at the time he was 70). On retirement, the Max-Planck Society offered him either a secretary or a laboratory. There was no doubt about what he would choose, even though he had to learn how to use e-mail.

My three years in Martinsried were far too short, but Wolfram's excitement and the enthusiasm for science I will never forget and can only hope to emulate. Wolfram greatly enjoyed energetic scientific discussions, of which we had many. He always had a very clear opinion, that was generally right but in the very few cases where he was not he was always extremely graceful. His intuition about projects and the interpretation of results is uncanny. Wolfram's scientific love was the hunt for new microbes and their viruses in sulfuric hot springs and mud holes throughout the world. As Wolfram once said: "In Science there are hunters and there are gatherers" he is most definitely one of the former.

After his small laboratory at the Max-Planck Institute in Martinsried was closed at the end of 1999. He continued to do active research by moving first to France then Bozeman, Montana before returning to Munich for health reasons. Despite his ill health and terminal illness, Wolfram continues to be engaged in science, continues to publish, and is a scientific and personal inspiration to his colleagues.

Wolfram Zillig's microbial research began in 1952 studying the structure of Tobacco Mosaic Virus, separation of its components and reconstitution. He personally developed the Phenol method for the extraction of nucleic acids from nucleoprotein complexes, still used by many laboratories, including my own, today. He did pioneering work with many viruses, including Phi-X174, T4 and T7 bacteriophage.

He also studied translation, including the development of a coupled (DNA dependant) cell-free protein biosynthesis system from *E.coli*. His group was the first to show in vitro synthesis of specific proteins using this system.

The main focus of his earlier research was the DNA dependant RNA Polymerase from *E.coli*, particularly its structure and the individual steps of the transcription process. The formation of a specific pre-initiation complex with DNA was demonstrated by the Zillig group, as well as the separation the enzyme into its subunits and its reconstitution.

The role and covalent modifications of these subunits in the function of the enzyme was shown.

His work on DNA-dependent RNA polymerase led to work on Archaea, where he was one of the first, if not the first, to work on their molecular biology. His comparison of the Archaeal transcription machinery to that from Eukarya and Bacteria showed that transcription in Archaea is fundamentally homologous to transcription in Eukarya. This offered strong support for the Archaea as a separate Domain, allowed profound insights into evolution, particularly of the eukaryotic cell, and provided model systems for the study of eukaryotic-like molecular biology. This work was extremely influential in the general acceptance of the Archaea as a separate domain and drives much of current research on Archaea.

In the last 20 years of his career his work on archaeal transcription and the promise of a genetic system in Archaea led to a return to viruses, now viruses of Archaea. He was the first to rigorously study these viruses, from which he and his group discovered and characterized an unprecedented four new virus families, the *Fuselloviridae*, *Rudiviridae*, *Lipothrixviridae* and *Guttaviridae*. To discover these viruses he also had to develop culturing techniques for their hosts. Particularly impressive is that Wolfram did much of this work with his own hands, doing bench work until 2002.

In parallel, and in part as viral hosts, he was involved in the isolation and characterization of many new Archaea, including the founding members of two new orders. Probably his most famous pupil is Karl Stetter, who has also written a letter of support. As all who have had the fortune to collect with him will agree, his enthusiasm for collection and characterization of new organisms and viruses is contagious.

Alumni from his group continue to discover new viruses of thermophilic Archaea, all using techniques developed by him. Many current archaeal researchers have passed at some point through Wolfram Zillig's research group. Even more have directly collaborated with it, and almost all have been profoundly influenced by Wolfram Zillig's pioneering work.

For all of these reasons it is with great pleasure that I nominate Wolfram Zillig for the Abbot laboratories ASM Lifetime Achievement award. I can think of no one more appropriate to be honored for his long-term contribution to microbiology.

Sincerely,

Kenneth Stedman