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To Whom it May concern:

Wolfram Zillig is a superb choice for the ASM Lifetime Achievement Award. Zillig is one of the pivotal figures in the transformation in microbiology that has taken place over the last two or so decades. When the phylogenetic revolution in bacteriology began 20 or more years ago, Zillig was one of the few to immediately grasp its significance; and he just as immediately changed the course of his long-established research program to reflect that. Prior to becoming a major force in the archaeal movement, Zillig had spent almost his entire career studying the DNA-dependent RNA polymerases, in which field he was considered one of the better researchers -- something attested to by the fact that he was appointed at a rather young age to head an Abteilung at the Max Planck Institute in Martinsreid Germany.

Upon hearing of the discovery of the Archaea (at that time called "Archaeobacteria") Zillig (like very few at the time) understood that the unique phylogenetic position of these organisms meant that there would be uniqueness throughout their phenotypes (at the molecular level). He, of course, began by examining the DNA-dependent RNA polymerases of these unusual organisms. And as he had expected, these RNA polymerases were like not others he had seen in his extensive experience with bacterial RNA polymerases. Indeed the archaea were unique!

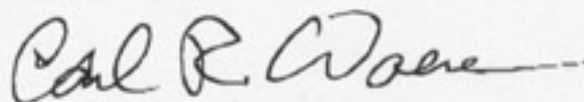
In those days cultures of archaea were not all that common in (and so available from) the laboratories of bacteriologists. This forced Zillig to isolate his own cultures of archaea (and figure out how to grow them). At the time this required going to hot springs. These "archae hunting" expeditions he undertook with zeal; and soon had the world's best collection of thermoacidophiles (later named as Crenarchaeota). Zillig's postdoctoral student at the time, Karl Stetter, accompanied him on the forays and in characterizing the RNA polymers of the organisms they induced to grow in pure culture. [Stetter later went on to make a very successful career of finding and characterizing new isolates of archaea]. The RNA polymerases of the archaee were studied in molecular detail, soon in molecular sequencing detail. And with this, Zillig, showed with certainty that in addition to being very dissimilar from their bacterial counterparts, the archaeal RNA polymerases were remarkably similar to the corresponding polymerases found in eukaryotes -- an astounding discovery at the time, one that strongly implied that the world of organisms may not be so simply separated into eukaryote and "prokaryotes" as everything previously had thought. The uniqueness of the archaee had been clear from the initial phylogenetic work (using rRNA sequence as a phylogenetic barometer). But

Zillig had made two important additions to this understanding: one was for the first time to put molecular flesh on the phylogenetic skeleton; the other that, not only were the archaea distinct from the bacteria, but they might in certain ways be specifically related to eukaryotes.

Always with a serendipitous eye, Zillig noted, during his RNA polymerase studies on the archaea, interesting features in archaeal cells, which suggested viruses, and he rapidly developed a second front to his research opening up wide the field of archaeal virology. Archaeal viruses are as unique as their archacal hosts, being neither typically bacteria nor typically eukaryotic. And there were a great variety of different virus types. Moreover, their relationship to their hosts seemed to be more intimate, more important than is typical of the bacterial world. Even in his (mandatory) retirement, Zillig maintains a very active interest in the area of archaeal viruses, and has brought a number of archaeal viral workers onto the scene.

Wolfram Zillig's career stands as one of the bright lights in the history of late 20th century microbiology (and evolution). There can be no doubt that Zillig is well worthy of this high honor accorded by the American Society of Microbiology.

Sincerely,



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