The Mars Atmospheric Chemistry and Astrobiology (MACA) Workshop was held on the California Institute of Technology campus December 17-18, 2001. The prime objective of the workshop was to consider whether extant life beneath the surface, if it exists, would be in contact with the atmosphere and introduce a detectable signature in the atmosphere. To answer this question, the workshop also explored how well we understood the abiotic chemistry of the current atmosphere and other drivers of atmospheric composition (volcanoes, surface-atmosphere interactions, escape). The conclusions from this workshop will be presented.