APL's Science and Technology Vision spans the full spectrum of the Laboratory’s activities and interests. A sampling of the topics encompassed by the APL S&T Vision is depicted from the top: Effective fusion of heterogeneous information from multiple sources will enable the efficient and timely execution of human or automated responses to national security events; The Lunar Precursor Robotic Program will consist of several missions to characterize potential landing sites, map resources (such as water, oxygen, hydrogen and metals) and demonstrate technologies for use by humans on the Moon as part of future space exploration objectives; The defense against biological weapons will be based on the detection of unique biomolecular markers (such as proteins shown in structural representation here) that are specific for a particular microorganism in a sample to indicate whether the sample is a bio-threat or not; The Global Information Grid (GIG) will provide a seamless, secure, and interconnected information environment, meeting real-time and near real-time needs of the C4ISR community. Articles in this issue of the Technical Digest explore APL's potential role in shaping the future of these and other critical challenges.