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## GUEST EDITOR'S INTRODUCTION

This is the third issue of the *Johns Hopkins APL Technical Digest* devoted to a sampling of the Applied Physics Laboratory's activities in the biomedical area. Earlier issues were Volume 2, Number 3 (1982) and Volume 4, Number 2 (1983).

An interesting and significant difference between the contents of the present issue and those of its predecessors is in the sponsorship of the projects reported. In the first issue of *Science and Technology in Biomedicine*, two-thirds of the articles reported on work supported by the National Institutes of Health (NIH); the proportion was 60% in the second issue. In this volume, only one project can claim such support.

This shift from NIH to other sources of funding is reflected in the nature of the projects reported in the pages that follow. The work presented here is more developmental than that in the preceding issues. The articles by Valdes et al. and Charles et al. describe work, supported and participated in by the Army Chemical Research and Development Center, in which receptor biology and thin-film technology are employed to develop sensors that can be used to identify a host of biological compounds. The use of state-of-the-art technology in physiological data ac-

quisition is illustrated in the articles by Cutchis et al. and Eberhart et al.; both efforts were supported by NASA. The Center for Devices and Radiological Health of the Food and Drug Administration and the Tri-Services Medical Information Systems Office supported the development of the computer-based diagnostic reporting system whose evolution is reviewed in the article by Starcken.

The remaining articles in this issue have a somewhat more biological bent, but they are still largely oriented toward the development end of the R&D spectrum. Wozniak describes a clever design using a heat-shrinkable plastic to rejoin severed blood vessels without sutures; this project was supported initially by APL Independent Research and Development (IR&D) funds and subsequently by the Naval Medical R&D Command. In the lone report of NIH-supported work, Schneider describes the development of a research device to investigate the response of neurons in animal experiments at the Johns Hopkins Medical Institutions. The issue concludes with Reilly's exposition of the use of mathematical modeling to explore the response of myelinated nerve to electrical stimulation, work supported by the APL IR&D Program.