Electronic Instrumentation and Nucleonics in Medicine

THE Sixth Annual Conference on Electronic Instrumentation and Nucleonics in Medicine being held in New York City on November 19 and 20, brings together engineers, physicians, and biologists to discuss some of the newer developments in instrumentation and nuclear techniques applied to the biological sciences. It is sponsored by the American Institute of Electrical Engineers, the Institute of Radio Engineers, and the Instrument Society of America.

Organized six years ago by a group of engineers and physicians interested in increasing the cooperation between these two professions, these conferences have been held annually to foster better understanding by providing a forum where the latest developments in instrumentation in relation to medical and biological needs can be presented and discussed.

In recent years a number of significant developments in biology and medicine have been made possible through the combined efforts of engineers and medical-biological research workers. This has indicated to leaders in both areas that even more could be accomplished if engineers and medical scientists could be encouraged to cooperate more actively.

The engineer should be brought into contact with the many challenging instrumentation problems facing the research worker in the biological sciences. Conversely, the biologist and physician should be aware of the potential of the latest advances in instrumentation in terms of their own problems. The annual conference, devoted exclusively to developments in the field of instrumentation for biological-medical applications, is one approach to providing the necessary stimulation to both groups. It is the only meeting organized for the specific purpose of bringing together the engineer, physician, and biologist for a discussion of mutual problems.

Although the approaching Conference is being held under the sponsorship of professional engineering societies concerned with instrumentation in a broader sense, many interested individuals from the medical and biological sciences have participated in organizing this year's meeting and formulating the program.

As in previous years, the papers for the coming Conference have been chosen for their emphasis on the problems of instrumentation as applied to medical and biological problems. A session on diagnostic instruments includes papers on electromyography, the application of isotopes to the location of brain tumors, and the use of ultrasonics in the visualization of soft tissue structures. A session on x-ray techniques features papers on recent progress on cineradiography and x-ray microscopy.

The session on instrumentation for biochemistry includes papers on: a quantitative paper electrophoresis apparatus, an instrument for determining freezing point depression, and a CO_2 analyzer for respiratory gases.

The final session covers material on electrophysiology, including cardiac defibrillation, electrical analogues of the heart potential field, and the application of computer techniques to biological problems.

The broad objectives of the Annual Conference are to foster an interchange of ideas in two general areas: one on the very practical level dealing with specific solutions to certain measurement problems; the other, a more general consideration of the philosophy of instrumentation from which the engineer can weigh the biological factors that must be considered in instrument design, and through which the worker in biological research can assess the capabilities and limitations of the instruments he uses. These objectives can only be attained by the Conference with the active support and participation of the medical-biological scientist.

Registration for this Conference is open to all interested individuals. Further information can be obtained by writing to R. S. Gardner, American Institute of Electrical Engineers, 33 West 39th Street, New York City, or to S. R. Gilford, Conf. Chairman, National Bureau of Standards, Washington 25, D. C.

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