

## Biophysical Society

9650 Rockville Pike  
Bethesda, Maryland 20814-3998  
Tel: 301-634-7114; Fax: 301-634-7133  
E-mail: [society@biophysics.org](mailto:society@biophysics.org)  
<http://www.biophysics.org/>

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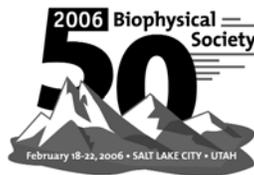
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## Biophysicists in Profile



*Biophysics as a discipline is relatively young, born in the early 1930s. By the late 1950s, it became apparent that a professional society was needed to ensure that the field have international scientific representation and grow as a discipline. Following discussions at several meetings in 1955 and 1956 in connection with the American Physiological Society and the American Institute of Physics, a group of four, forever to be known as the "Group of Four," was nominated during the 1956 Federation of Biological Societies meeting in Atlantic City to undertake the task.*

*The four were Samuel Talbot of Johns Hopkins, Ernest Pollard of Yale, Kenneth Cole of NNRI,*

*and Otto Schmitt of the University of Minnesota. Together with an advisory committee of 13, which they selected, and several other local volunteers, the four organized the first National Biophysics Conference in Columbus, Ohio, March 4-6, 1957. According to the March 15, 1957, issue of the Ohio State University Monthly, "A new scientific organization came into being early this month as 500 doctors and scientists from throughout the United States attended the initial meeting of the National Biophysical Conference."*

*It was at that first meeting in Columbus that the decision was made to organize what is now the Biophysical Society. The Society's Constitution and Bylaws were approved at the second*

*annual conference, held in Cambridge, Massachusetts, in February 1958.*

*This year's Biophysical Society meeting in Salt Lake City, Utah, marks the 50th Annual Meeting. To highlight this special event, each issue of the newsletter this year will profile several of the Society members who were instrumental in the birth and development of this incredible international Society, which now represents nearly 8,000 biophysicists from more than 52 countries.*

## Samuel S. Talbot and Otto Schmitt

At the Johns Hopkins Centennial Sam Talbot Memorial Lecture on October 16, 1975, in Baltimore, Maryland, *Otto Schmitt* recounted an

**"All four of us were considered compromise candidates...and none of us aggressive enough, or power hungry enough, to seek a dictatorship."**

early memory of the start of the Biophysical Society. The time was 1956 in New York City. Referring to Talbot, Cole and Pollard, he said, "We were building the skeleton that was to become the Biophysical Society at Columbus the following year. All four of us were considered compromise candidates, diversified and different in interests, appropriate to represent physical science, biological science, theory and engineering, and none of us aggressive enough, or power hungry enough, to seek a dictatorship. Perhaps that was wise, perhaps not." Schmitt went on to say, "Sam and I were meeting in my room the night before the whole committee meeting, trying to plan a systems-approach to an effective society to represent our several interests mutually in biomathematical theory, in biophysical experimental science, in medical science and in other bio-engineering. We were terribly naïve but not totally devoid of ideas."

*Samuel Talbot's* science was focused on optics, specifically of the human visual system, with electronic displays and with the theory of vector electrocardiography. Talbot built one of the very first spherical polar coordi-

**“Talbot built one of the very first spherical polar coordinate analog spatial resolvers.”**

nate analog spatial resolvers. He is credited with having a strong effect on the development of the field of bioengineering. After attending Harvard University in the 1930s, where he obtained a degree in biophysics, Talbot joined the staff at Johns Hopkins University as a biophysicist in the Department of Medicine. Talbot died in 1967 at the age of 64.

Otto H. Schmitt's science was diversified and multidisciplinary, but contained an element of what is now being called Biomimetic Science and Technology. Schmitt was highly regarded for his teaching and most noted for his inventions. He was an instrumental developer of magneto-cardiography, the sensing of heart functions by their magnetic (vs. electrical) activity. He invented the Navy's magnetic anomaly detector for finding submarines via their effect on the Earth's magnetic fields, and he also helped develop 'de-Gaussing' equipment to reducing the inherent magnetic signa-

**“Schmitt was highly regarded for his teaching and most noted for his inventions.”**

tures of steel ships. Schmitt obtained his AB and PhD in Zoology, Physics and Mathematics from the Washington University. He was on the faculty at the University of Minnesota from 1939 to 1983, as an instructor in Zoology and Physics; he retired in 1983 as a

Professor of Biophysics, Bioengineering, and Electrical Engineering. Schmitt met his wife Viola while attending Washington University. They married in 1937, and she remained his wife and research assistant for 57 years. Four years after

the unexpected death of his wife in 1994, Schmitt died January 6, 1998, four months short of his 85th birthday. Most widely known as the inventor of the Schmitt Trigger, which he developed as a graduate student in the mid-1930s, he remained an active scientist, engineer, and intellectual until the mid-1990s.

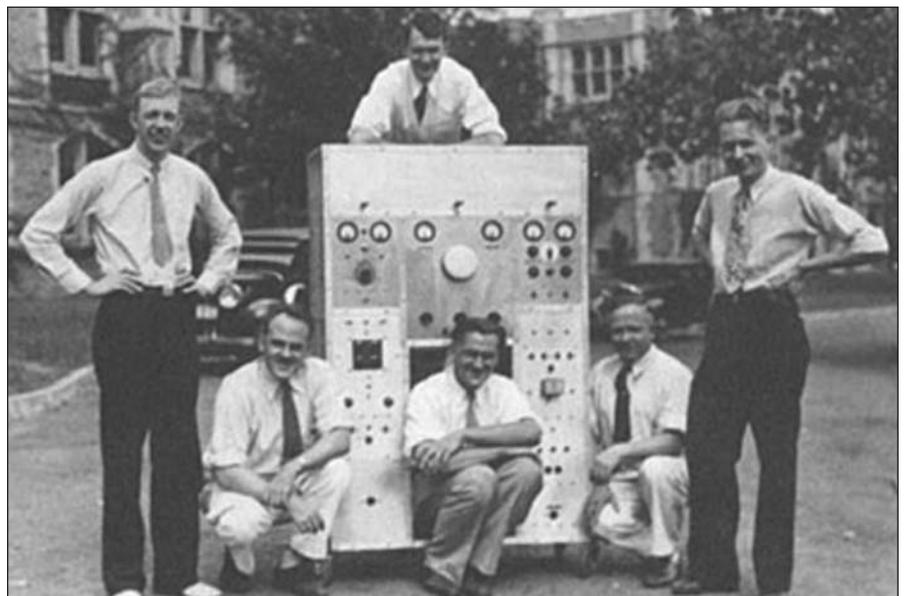
Both Samuel A. Talbot and Otto H. Schmitt were instrumental in organizing

and establishing the Biophysical Society. They are both credited with the work they contributed to educating, bridging the gap and creating a venue, in the late 1950s, that represented emerging Biophysical Sciences. They sought out to create a society that represented their mutual interests with no idea of what it would ultimately become, as echoed by Schmitt during the Talbot Memorial

Lecture, "We were so naïve that not once did we even mention marketing techniques and constraints, not once did we project our society design into the predictable movements of the next decade where its

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growth could have been spectacular, had it had a sense of socio-economic influences on a new science."



*Otto Schmitt* (seated, center) with the relay rack he constructed as a graduate student at Washington University. He is shown with others, including his brother, *Frank*, on his immediate right (reprinted from *Francis O. Schmitt, The Never-Ceasing Search*, p. 96).