Robert Plonsey 1924 – 2015

Scientist, teacher, gentleman and friend

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***Abstract*—Professor Robert Plonsey passed away in March 2015. He was a notable contributor to the discipline of bioelectromagnetism. He was founding member and Honorary President of the International Society for Bioelectromagnetism. Therefore this 10th International Conference on Bioelectromagnetism is a proper place to organize a session in his memory. In this session colleagues of Robert Plonsey will give talks to honor his memory. I will shortly summarize his contributions to science and his teaching activities. In addition, I will give personal memories on him and his wife Vivian, whom both I have known for almost 40 years.**

Keywords—Robert Plonsey, bioelectromagnetism, isbem, icbem2015

I. LIFETIME

Professor Robert Plonsey passed away on the 14th of March 2015 in Chapel Hill, NC, in the age of 90 years. He was born in New York City, Bronx on the 17th of June 1924.

Robert Plonsey studied at Cooper Union School of Engineering in New York, graduating with Bachelor's degree in electrical engineering in 1943. After serving in the Navy during World War II, he returned to school and obtained an MEE degree from New York University in 1948. After obtaining his PhD from University of California, Berkeley, in 1957 Robert Plonsey became an assistant professor of electrical engineering at Case Institute of Technology (later to become Case Western Reserve University) in Cleveland. Robert Plonsey also attended the Case Western Reserve University School of Medicine in Cleveland, where he completed a year and a half of MD. During the time when he served as professor at Case Western Reserve University he authored one the first books on applying of electromagnetism to problems in biophysics entitled "*Bioelectric Phenomena*" (1969). In 1983, Robert Plonsey moved to Duke University to join the faculty of Biomedical Engineering, where he continued as the Pfizer Pratt University Professor of Biomedical Engineering until retirement in 1996. [1, 2, 3]

Dr. Plonsey was famous for applying electromagnetic field theory to biology. He researched on bioelectric phenomenon, especially the electrical energy of nerves and muscles. His most influential work was on the electrical properties of the heart. He co-authored very influential books like

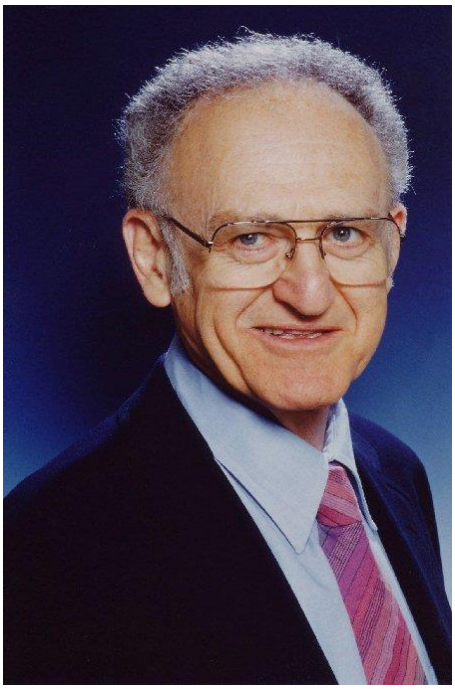

Fig. 1. Robert Plonsey 1924 - 2015

'*Bioelectricity: A Quantitative Approach*' with Roger Barr and '*Bioelectromagnetism: Principles and Applications of Bioelectric and Biomagnetic Fields*' with Jaakko Malmivuo [4].

Dr. Plonsey was a fellow of the American Association for the Advancement of Science and was elected as a member of the National Academy of Engineering in 1986. He has received numerous prestigious awards from the IEEE, notably the Centennial Medal in 1984, the Millennium Medal in 2000 and the 2013 IEEE Biomedical Engineering Award.

Dr. Plonsey served as president of two of important societies in biomedical engineering: the IEEE Engineering in Medicine and Biology Society (EMBS) from 1973-1974 and the Biomedical Engineering Society from 1981-1982. He was founding member of the International Society for Bioelectromagnetism in 1996 and was also appointed as Honorary President of the Society. [5]

In 1948 Bob married Vivian Viola Vucker. Vivian passed away in 2011. Bob and Vivian had son Dan and two grandchildren Cleveland and Mischa.

Bob was great scientist, teacher and a gentleman, and he will be missed by all that were fortunate to know him.

II. Publications

A. Papers

Robert Plonsey published large number of important publications in bioelectromagnetism. The number of his publications on the Duke University website is 136 [6] and in PubMed 103 [7].

B. Books

Robert Plonsey was the author of the following books:

- *Principles and Applications of Electromagnetic Fields*, coauthored with Robert Collin (McGraw-Hill, 1961)

- *Bioelectric Phenomena* (McGraw-Hill, 1969)

- *Engineering Contributions to Biophysical Electrocardiography*, co-edited with Theo Pilkington, (IEEE, 1982)

- *Bioelectricity: A Quantitative Approach*, coauthored with Roger Barr (Springer, 3rd Ed., 2007)

- *Bioelectromagnetism: Principles and Applications of Bioelectric and Biomagnetic Fields*, coauthored with Jaakko Malmivuo (Oxford University Press, 1995)

C. Awards

In 1986 Robert Plonsey was nominated member of the National Academy of Engineering, "*For the application of electromagnetic field theory to biology, and for distinguished leadership in the emerging profession of biomedical engineering*".

TABLE I. Awards

Year	***Award***
1979	William Morlock Award from the IEEE Engineering in Medicine and Biology Society
1984	Centennial Medal from the IEEE Engineering in Medicine and Biology Society
1988	ALZA Distinguished Lecturer from the Biomedical Engineering Society (BMES)
1997	Merit Award from the International Union for Physiological & Engineering Science in Medicine
2000	Millennium Medal from the IEEE Engineering in Medicine and Biology Society
2004	Ragnar Granit Prize from the Ragnar Granit Foundation
2005	Theo Pilkington Outstanding Educator Award from the American Society for Engineering Education
2013	IEEE Biomedical Engineering Award

References

[1] http://www.bme.duke.edu/faculty/robert-plonsey

[2] http://www.pratt.duke.edu/news/bob-plonsey-%E2%80%93-remembrance

[3] http://en.wikipedia.org/wiki/Robert_Plonsey

[4] http://www.bem.fi/book

[5] http://www.isbem.org

[6] http://www.bme.duke.edu/faculty/Robert+Plonsey/publications

[7] http://www.ncbi.nlm.nih.gov/pubmed/?term=Plonsey%20R[Author]&cauthor=true&cauthor_uid=15000385