


HARVARD ACADEMIC TREE LEADING BACK TO HELMHOLTZ

Salt Lake City ASA Meeting, June 2007

David T. Blackstock

Applied Research Laboratories & Mechanical Engineering Department, The University of Texas at Austin



David T. Blackstock
(1930-)
Harvard, 1960

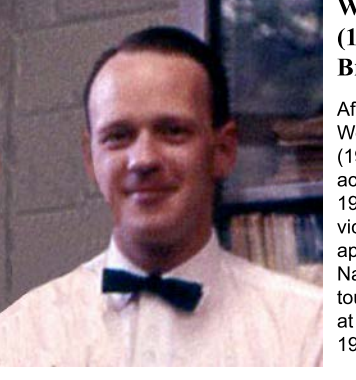
After BS (1952) and MA (1953, under Malcolm Y. Colby) degrees in physics at the University of Texas, Blackstock served in the US Air Force at Wright-Patterson AFB, Ohio, 1954-56, where he began his interest in acoustics. His mentor at Wright Field was Henning E. von Gierke. As a Harvard graduate student in F. V. Hunt's Acoustics Research Lab, he became fascinated with nonlinear acoustics and was supervised by William P. Raney. In 1959 Blackstock attended the Third International Congress on Acoustics, at Stuttgart, Germany, where he gave his first nonlinear acoustics paper, on reflection of finite-amplitude waves. The picture is from that trip. After three years in industry (General Dynamics/Electronics, Rochester, NY), he spent the rest of his career in academia, first at University of Rochester (1963-70) and then at University of Texas at Austin (1969-).



Harvard Acoustics Research Laboratory, 1960
Back Row: D. T. Blackstock, V. C. Maley, W. J. Remillard, G. K. Miller, W. P. Raney
Front Row: H. A. Schenk, C. D. Lowenstein, W. M. Wright, R. A. Walking, R. W. Pyle, J.
Seated: Frederick V. (Ted) Hunt

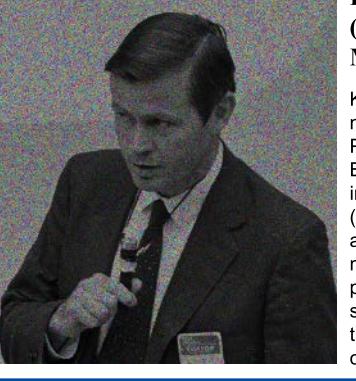


Before a weekly staff meeting in Ted Hunt's office, 1960
Ted Hunt, William P. Raney, and Wilfred J. (Charley) Remillard



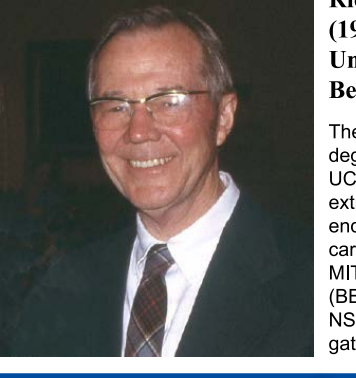
William P. Raney
(1927-)
Brown University, 1955

After a PhD degree under Peter Westervelt at Brown University (1955), Bill Raney had a brief academic career at Harvard. In 1962 he began government service in Washington, DC. Three appointments were in Navy or Navy-related offices, including a tour as Deputy and Chief Scientist at ONR. He finished up at NASA, 1978-1994.



Peter J. Westervelt
(1919-)
MIT, 1951

Known as the father of modern nonlinear acoustics, Peter Westervelt joined the Brown University Physics faculty in 1951 after BS (1947), MS (1949), and PhD (1951) degrees at MIT. His invention of the parametric array, presented by papers in 1960 and 1963, sparked an enormous effort, both theoretical and applied, that continues to this day.



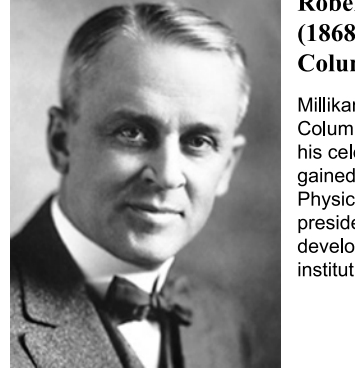
Richard H. Bolt
(1911-2002)
University of California Berkeley, 1939

The research for Dick Bolt's PhD degree at Berkeley was done at UCLA under Knudsen. Bolt was extremely successful in a variety of endeavors, including an acoustical career, teaching and research at MIT, acoustical entrepreneurship (BBN), government service (NIH, NSF, Watergate tapes gap investigation), and international acoustics.



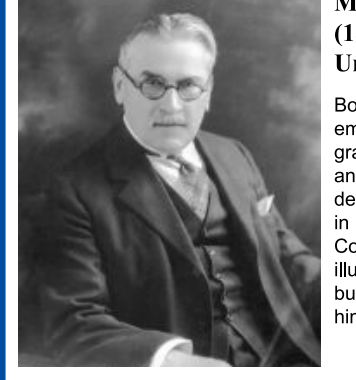
Vern O. Knudsen
(1893-1974)
University of Chicago, 1922

Besides Millikan, his nominal PhD supervisor at Chicago, Knudsen had another famous mentor, Harvey Fletcher. In 1922 Knudsen began a lengthy and distinguished career at UCLA, culminating as Chancellor in 1959-60. A founding member of ASA, he made fundamental contributions to hearing, architectural acoustics, and physical acoustics.



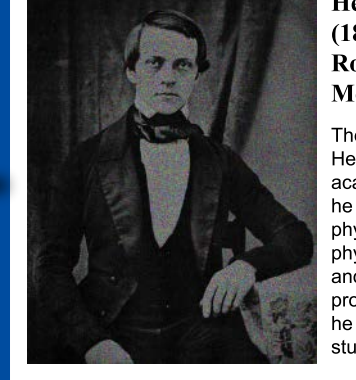
Robert A. Millikan
(1868-1953)
Columbia University, 1895

Millikan's doctorate in physics was Columbia University's first. At Chicago, his celebrated "oil drop experiment" gained him the 1923 Nobel Prize in Physics. He moved to Caltech as its president in 1921 and oversaw its development into the prestigious institution it is today.



Mihajlo (Michael) I. Pupin
(1858-1935)
University of Berlin, 1887

Born in what is now Serbia, Pupin emigrated to New York in 1874, graduated from Columbia in 1883, and went back to Europe for a PhD degree under Helmholtz at Berlin in 1887. He then returned to Columbia where he had an illustrious career. The physics building at Columbia is named for him.



Hermann von Helmholtz
(1821-1894)
Royal Friedrich-Wilhelm Inst. Med. Surg. Berlin, 1842

The pinnacle of this genealogy is Helmholtz. Although his formal academic training was in medicine, he considered himself a "born physicist." After appointments in physiology at Koenigsberg, Bonn, and Heidelberg, in 1871 he became professor of physics in Berlin, where he attracted a generation of gifted students.

MS Degrees

University of Rochester		
Thomas L. Szabo	Electrical Engineering	1968
University of Texas at Austin		
Edward P. Cornet	Physics	1971
Mary B. Bennett	Electrical Engineering	1973
Mark O. Anderson	Mechanical Engineering	1974
Mark E. Schaffer	Mechanical Engineering	1975
David R. Kleeman	Electrical Engineering	1976
Donald A. Webster	Electrical Engineering	1976
Mark A. Theobald	Mechanical Engineering	1977
William L. Willshire	Mechanical Engineering	1977
Wesley N. Cobb	Mechanical Engineering	1977
Robert D. Essert	Mechanical Engineering	1980
Lori B. Orenstein	Mechanical Engineering	1982
James A. Ten Cate	Mechanical Engineering	1983
Thomas L. Riley	Mechanical Engineering	1983
David A. Nelson	Mechanical Engineering	1984
Frederick D. Cotaras	Electrical & Computer Engineering	1985
James A. Hawkins	Physics	1987
Charles E. Bradley	Mechanical Engineering	1990
Daniel E. Hester	Mechanical Engineering	1992
Michael R. Bailey	Mechanical Engineering	1994
Lawrence J. Gelin	Mechanical Engineering	1995
Won-Suk Ohm	Mechanical Engineering	1997
Chris E. Peterson	Mechanical Engineering	2000

PhD Degrees

University of Rochester		
Donald B. Cruikshank	Electrical Engineering	1968
James C. Lockwood	Mechanical Engineering	1971
University of Texas at Austin		
F. Michael Pistorius	Electrical Engineering	1973
Herbert L. Kuntz	Mechanical Engineering	1982
Frederick D. Cotaras	Electrical & Computer Engineering	1989
James A. Ten Cate	Mechanical Engineering	1992
Charles E. Bradley	Mechanical Engineering	1993
Bart Lipkens	Mechanical Engineering	1993
Pingwah Li	Physics	1993
Robin O. Cleveland	Mechanical Engineering	1995
Michael R. Bailey	Mechanical Engineering	1997
Penelope Menounou	Mechanical Engineering	1998
Pennsylvania State University		
Mark F. Hamilton	Acoustics	1983
(joint with Francis H. Fenlon)		