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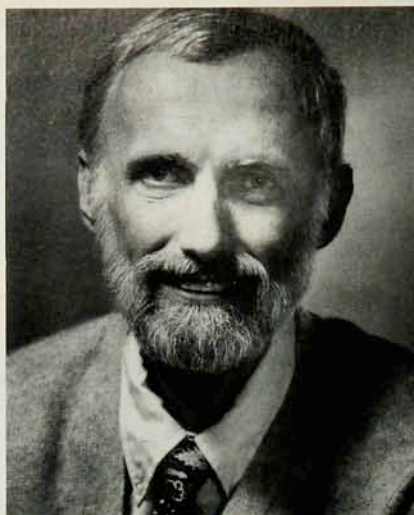
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140 PHYSICS TODAY / OCTOBER 1987



KLATT

cal theory of optical bistability that took into account the effects of light propagation through the nonlinear medium, of atomic saturation, and of the frequency mismatch between the incident light and the atomic resonance of the medium. In addition, they predicted the existence of spontaneous instabilities, leading to self-pulsing, in optically bistable systems—a prediction that led to a widespread resurgence in the subject of laser and optical instabilities.

William A. Nierenberg (Scripps Institution of Oceanography, La Jolla, California) received the Delmer S. Fahrney Medal "for his leadership in science administration, research and education, especially his major contributions to science in building and directing scientific institutions, and for the formulation and execution of national policies in science and technology." After receiving his PhD from Columbia University in 1947, Nierenberg taught physics at Columbia (1947-48) and at the University of Michigan (1948-50) before becoming an associate professor of physics at the University of California at Berkeley in 1950. He became a full professor there in 1954; in 1965 he became director of Scripps, overseeing many of the institution's major programs. Nierenberg retired as director in 1986 (see PHYSICS TODAY, December, page 91).

Dennis H. Klatt (MIT) received the John Price Wetherill Medal "for his fundamental contributions to research on speech production and perception, and for his practical implementations of text-to-speech synthesis." Klatt received his BS in electrical engineering (1960) and his MS (1961) from Purdue University, and his PhD (1964) from the University of Michigan. In 1965 he became an assistant professor in electrical engineering at MIT. He became a research associate in 1969 and a



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senior research scientist in 1978. He served as editor of the speech section of the *Journal of the Acoustical Society of America* from 1975 to 1979. In addition to developing DECTALK, a software system that turns text into speech using an extensive dictionary and a sophisticated set of pronunciation rules, Klatt has studied the sound processing systems of the human auditory and central nervous systems.

Joseph LeConte Smith Jr (MIT) received the Edward Longstreth Medal "for his contributions to the application of cryogenic techniques to rotating electrical machinery." Smith received his BME (1952) and MS (1954) from the Georgia Institute of Technology, and his ScD (1959) from MIT. After serving in the US Army Signal Corps and teaching at Georgia Tech, he went to MIT, where he has been a professor of mechanical engineering since 1969. Smith holds ten US patents on applications of cryogenic cooling in rotating electrical machinery, and he has studied such cryogenic phenomena as the effects of high-speed rotation on liquid helium.

Gravity Research Foundation presents 1987 awards

The Gravity Research Foundation in May presented its 1987 awards for short essays on topics in gravitation. Tanmay Vachaspati (Bartol Research Foundation, University of Delaware) received the first prize of \$1500 for "The gravity of cosmic loops," in which Vachaspati shows that the gravitational field of a looped cosmic string can repel particles. A. Krolak and Bernard F. Schutz (both of University College Cardiff, Wales) received the second prize of \$500 for "Coalescing binaries—

Red Winner



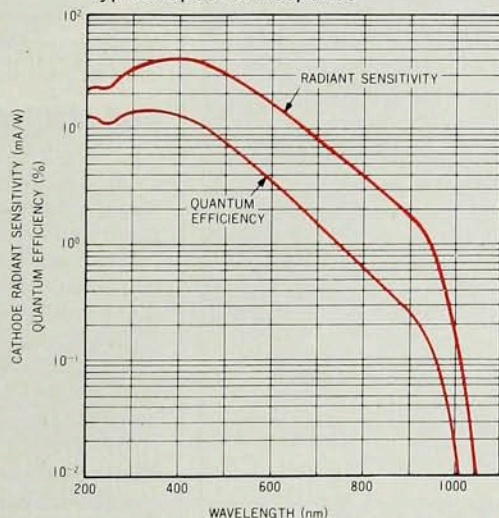
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