

William L. Kehl of the Gulf Research and Development Company and Robinson D. Burbank of Bell Telephone Laboratories will serve as ACA secretary and treasurer, respectively. The Association's Council now consists of the above officers and the last past president, Howard T. Evans, Jr., of the US Geological Survey.

New officers for the Physical Society of Pittsburgh, an Affiliated Society of the American Institute of Physics, include W. J. Choyke, *president*; Walter Goldberg, *vice president*; and C. W. Hand, *secretary-treasurer*.

Japan Academy honor

Leo Esaki of the International Business Machines Corporation has been named one of the winners of this year's Japan Academy award. Comprising a bronze medal and a 200 000 yen cash prize (approximately \$555), the award was presented on May 18 at the Academy's offices in Ueno, Tokyo. Dr. Esaki was honored for his invention and subsequent development of the tunnel diode, which utilizes quantum-mechanical tunneling to surmount a potential barrier in its electric field. The device can exhibit gain at very high frequencies with great stability against temperature and other ambient variations. Its principle of operation has led to new understanding in semiconductor physics.

Dr. Esaki, who was born in Osaka in 1925 and received his doctorate in physics from Tokyo University, made

his discovery of the tunnel or "Esaki" diode while working for the Sony Corporation in Japan. It was first reported in the United States in the January 15, 1958, number of the *Physical Review*. He came to America as a resident consultant in physics for IBM in 1960 and now leads a small group studying semimetals and junction properties of semiconductors. Most recently, he discovered that a strong electron-phonon interaction could be produced in bismuth under certain conditions, resulting in a sharply nonlinear current-voltage characteristic. A fellow of the American Physical Society and member of the Physical Society of Japan, Dr. Esaki's honors include the Ballantine Award of the Franklin Institute and the Morris Liebmann Prize of the Institute of Radio Engineers.

Gravity prizes

On June 1, the Gravity Research Foundation announced the winners of its sixteenth series of annual awards for essays on gravity. Kurt Just of the University of Arizona won the first award of \$1000 for his essay on "Multi-baryons and Very Massive Stars". The second award (\$300) was given to Stephen Hawking of Cambridge University for "The Gravitational Collapse of the Universe", and Joseph Silk of the Harvard College Observatory received \$200 (third prize) for "Local Irregularities in a Gödel Universe and Mach's Principle". Robert L. Forward, Curtis C. Bell, and J. Roger Morris of Hughes Research Laboratories won \$150 for "Rotating Gravitational Sensors" and Chi-yuen Wang of the Smithsonian Astrophysical Observatory received \$100 for the "Origin of the Undulations in the Earth's Satellite Gravitational Potential".

Bowie Medal

The American Geophysical Union's highest honor, its William Bowie Medal, has been presented to Hugo Benioff, retired professor of seismology at the California Institute of Technology. The award, which recognizes "unselfish cooperation in research", was given to Dr. Benioff at a special honors ceremony at the National

Academy of Sciences in conjunction with the forty-sixth annual meeting of the AGU.

Dr. Benioff is an authority on the design of seismological instruments, and he has also made many contributions to the understanding of earthquakes. His variable-reluctance seismometer, developed over thirty years ago, has with minor modifications, formed the basis of the detection system recommended by the Geneva Conference of Experts for the detection of nuclear tests. One of his later devices was the linear-strain seismometer which in its present form can monitor propagating mantle surface waves, free oscillations of the earth, and secular strain variations. Dr. Benioff was also the first to propose that the acceleration spectrum was the most important parameter in antiseismic design, and he has demonstrated that the geographic distribution of aftershocks is related to the dimension of the primary fault.

Godlove Award

On April 27, during the Inter-Society Color Council's 34th annual meeting in New York City, the Council's 1965 Godlove Award was presented to Isay Balinkin of the University of Cincinnati. The award was established in memory of the late Isaac H. Godlove, a leader in the field of color and its application to human psychology, and is given biennially for contributions to the subject of color.

Dr. Balinkin's researches began with his interest in uniform color scales and the expression of color tolerances, sparked by his study of the control of color uniformity in ceramic tile. However, he is perhaps best known for his development of teaching aids and for his skill as a lecturer. Born in Odessa, Russia, he received his doctorate in physics from the University of Cincinnati in 1929 and in subsequent years rose from instructor to his present rank of professor of experimental physics. Since 1936, he has also served as director of research for the Cambridge Tile Company of Cincinnati and most recently was a color consultant for the Inter-Chemical Color Center exhibit at the New York World's Fair.



Leo Esaki