

SOCIETY NEWS**Van Wyk Award Acceptance Speech****May 5, 2008**

Delbert A. Fisher

The Van Wyk Prize is the Lawson Wilkins Pediatric Endocrine Society (LPWES)'s most prestigious award in recognition of outstanding career achievement by a member in the field of pediatric endocrinology. This award, established in honor of Judson J. Van Wyk, M.D., stands in tribute to an outstanding leader who has displayed a career of scientific excellence, leadership and dedication to the health of children. A member of the Society is selected annually by a panel of senior members appointed by the President to select a member whose career achievements in pediatric endocrinology in the opinion of his colleagues comes most close to emulating that of Dr Van Wyk. Dr. Delbert Fisher, the Tenth President of LWPES, was honored with this award for his momentous contributions to the field. Dr. Fisher's acceptance speech of May 5th, 2008, is presented below.



I thank the Society and the Van Wyk Award committee for this honor. Judson Van Wyk was a friend and colleague; and a mentor for all things related to somatomedins and growth. His IGF-I radioimmunoassay was the gold standard for nearly two decades, setting the stage for standardized diagnosis and management of growth hormone

deficiency. He was one of the pioneers whose life work added growth factors to the list of classic hormones constituting the basic science of endocrinology. And to be included in the rare company of the two former recipients of the Van Wyk Award, Drs. Grumbach and Blizzard, is gratifying and humbling at the same time.

I share this honor with Beverly, my partner for the past 57 years. We met at UC Berkeley in 1949 and married in January 1951 during my second year in medical school. Beverly had received her degree and teaching credentials and had been hired by the San Francisco Unified School District. Her

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first role as a wife was family breadwinner. Subsequent roles have included mother of three, homemaker, justice of the peace, editor, managing editor for two medical journals, and grandmother.

I also share this honor with the many fellows, colleagues, and collaborators who provided the brainpower and manpower enabling our work over the past 57 years. There is not time to acknowledge all, but several have been especially important:

- Donald Pickering, my mentor at UCSF during the 1950s;
- Thomas Harold Oddie at the University of Arkansas during the 1960s;
- William Odell, Inder Chopra, and Mark Sperling at Harbor-UCLA during the 1970s;
- Rosemary Leake, Michael Ross, and Jayaraman Lakshmanon in the Division of Perinatal Medicine at Harbor-UCLA during the 1980s;
- Jean Dussault, my newborn screening colleague at Harbor-UCLA and the University of Laval in Quebec City from 1969 until his untimely death in 2003;
- SY (Jimmy) Wu at UC Irvine for our collaborative studies of perinatal thyroid hormone metabolism from 1985 to the present; and
- Albert Nichols at the Nichols Institute during the 1990s.

Beverly and I plan to attend my 55th medical school class reunion at UCSF this month. Looking back on my medical school years with a 55-year retrospective, clinical medicine and endocrinology seem relatively primitive compared with 2008. There were no acute care units or premature nurseries and only a few pediatric subspecialty clinics. I spent a month of my internship on a poliomyelitis ward managing patients in iron lungs. Most children with leukemia died of their disease. New technologies included flame photometers and bacterial antibiotic sensitivity testing. Endocrine tests included PBIs, urinary 17-hydroxy- and 17-keto-steroids, and bioassays for selected pituitary and steroid hormones. Endocrine therapies were limited for the most part to desiccated thyroid, insulin, cortisol, diethylstilbestrol, and testosterone.

Since World War II medical centers have expanded in number and complexity with a

commitment to clinical subspecialty organization and biomedical research. Full-time faculty expanded dramatically. NIH funding for research increased progressively, supplemented by a growing array of private foundations, and pharmaceutical and biotech companies. Basic research has remained the primary focus of the NIH, but translational research and clinical investigation have been strengthened through NIH funded clinical research centers, clinical investigator awards, and multicenter clinical studies.

Scientific advances since World War II have transformed both basic science and clinical medicine. Since 1950, Nobel Prizes have included awards for discoveries relating to:

- Mechanisms of hormone action
- Peptide hormones in the brain
- Growth factors
- Organ and cell transplantation
- The structure of DNA
- Genetic modification using embryonic stem cells
- Computer assisted tomography
- Magnetic resonance imaging, and
- Two transforming laboratory methods: polymerase chain reaction and radioimmunoassay

Advances in genetics fueled the Human Genome Project and cloning of the genes for a growing array of hormone and growth factors and their cell receptors.

All of these advances have contributed to the evolution of endocrinology and metabolism as a major clinical subspecialty; but the first and critical advance was the development of radioimmunoassay by Berson and Yalow in 1959. Immunoassay methods were first introduced in academic centers during the late 1960s and early 1970s. They were a major focus for our work at Harbor-UCLA during that time. Albert Nichols developed the Nichols Institute for Endocrinology in 1971, the first commercial RIA laboratory. This grew rapidly, serving hospital laboratories, research laboratories, and practicing physician offices. In 1975, Dr. Nichols developed a satellite company to produce hormone immunoassay kits for hospitals and research

laboratories. Other laboratory suppliers also began producing assay kits, and by the 1980s hormone immunoassays were widely available.

Since the second generation of pediatric endocrinologists moved out of the several pioneering academic centers in the 1950s, academic pediatric training programs in North America expanded rapidly to a total of 72 by 2002. The growth of these clinical training programs in pediatrics as well as other medical subspecialties has created a growing cadre of clinical investigators translating basic science advances into clinical practice. This 2008 PAS meeting is witness to that. And since the early 1980s, endocrinology has become a major subspecialty in the private physician marketplace. As a result, medicine and clinical endocrinology since 1953 have been transformed.

In 2008 the clinical pediatric endocrinologist has available an unprecedented array of diagnostic and therapeutic tools:

- Immunoassays available cover the spectrum of hormones and growth factors described during the past century and number in the hundreds.
- Tandem mass spectrometry is rapidly becoming the gold standard for measurement of steroid hormones in children providing increased specificity and sensitivity.
- Newborn screening employing immunoassay and tandem mass spectrometry has expanded progressively, now assessing more than 30 congenital endocrine-metabolic disease states. Follow-up confirmation testing provides definitive diagnosis for more than 95% of the affected infants.
- Recent advances in cytogenetics including fluorescent *in situ* hybridization and comparative genomic hybridization now provide major increases in sensitivity and specificity for karyotype testing.

- Imaging technologies, including CT, MRI, and ultrasound scanning, provide unparalleled endocrine gland and other anatomic detail; and functional imaging technologies are being rapidly developed.
- Technologies for assessing biopsy specimens increasingly include immunological and molecular genetic analyses to improve diagnostic specificity and prognostic information.
- PCR and related technologies provide for specific genetic mutation analysis for a limited but growing menu of molecular endocrine disorders. The tests remain labor intensive and expensive. Automating DNA analysis is the challenge for the next decade.
- A growing array of therapeutic drugs for endocrine-metabolic diseases is available and in development. Synthetic and recombinant hormones and growth factors, both agonist and antagonist, are available, as well as small molecule agonist or antagonist drugs focused on critical endocrine-metabolic enzymes or cell receptor systems. Genetic and cell-based therapies hover on the near-term horizon. Progress is summarized in a symposium published in the May 2008 issue of *Pediatric Research*.

I have been privileged to be a participant in this evolution of endocrine science and technology; and especially blessed by the opportunity to work with so many gifted collaborators and team members over the past several decades. I look upon the LWPES as a home base; and thank you all for your friendship and the privilege of participation over the past 36 years. And I thank you again for this signal honor.

Delbert A. Fisher
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