1996 GERTRUDE ELION CANCER RESEARCH AWARD

Supported by an Educational Grant from
Glaxo Wellcome Oncology

- This Award was established in honor of Nobel Laureate Dr. Gertrude Elion, Scientist Emeritus at Glaxo Wellcome Co. and Past President and Honorary Member of the AACR.

- The Gertrude Elion Cancer Research Award is a one-year, $30,000 grant for a scientist in the U.S. or Canada engaged in meritorious basic, clinical, or translational research in cancer etiology, diagnosis, treatment, or prevention at the level of non-tenured Assistant Professor.

- The AACR will reimburse the Awardee for travel to the 1996 Annual Meeting in Washington, D.C., where Dr. Elion will personally present this Award.

Eligibility

Candidates must have completed postdoctoral studies or clinical fellowships not later than July 1 of the Award year, and ordinarily not more than five years earlier. Tenured faculty in academia, government employees, and employees of private industry are not eligible for this award. A Candidate need not be a member of the AACR at the time of application, but must be nominated by a Member of the AACR. Associate Members may not be nominators.

Selection Process

Applications are evaluated by a Committee consisting of AACR Members who are experts in basic, clinical, and translational cancer research. Complete applications must be submitted by February 15, 1996, to be considered for the 1996 Award.

For Further Information/Application Forms

AMERICAN ASSOCIATION FOR CANCER RESEARCH
Public Ledger Building, Suite 816
150 South Independence Mall West
Philadelphia, PA 19106-3483
Telephone: (215) 440-9300
FAX: (215) 440-9313
e-mail: aacr@aol.com
ATTN.: Jenny Anne Horst-Martz
Notice to Members of the American Association for Cancer Research

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The annual dues of active members of the American Association for Cancer Research are $160, $80 of which may be applied to a subscription to Cancer Research. Corresponding members of the Association will be charged an appropriate fee to offset postage costs. Payment of dues and changes of address of members of the Association should be sent promptly to: Member Services, American Association for Cancer Research, Inc., Public Ledger Bldg., Suite 816, 150 South Independence Mall West, Philadelphia, PA 19106-3483. Telephone: (215) 440-9300; FAX: (215) 440-9313.

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Copies of back stock of the journal Cancer Research may be ordered from Cancer Research, P.O. Box 3000, Denville, NJ 07834 [Telephone: (800) 875-2997 or (210) 627-2427; FAX: (210) 627-5872]. As long as supplies permit, single copies of Cancer Research will be sold at $30 per copy for regular and Supplement issues, plus $4 shipping for orders outside the U.S. The annual Proceedings of the American Association for Cancer Research is available at $45 per copy, plus $6 shipping for orders outside the U.S.

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Submission of Manuscripts

Manuscripts should be sent to the attention of: Dr. Carlo M. Croce, Editor-in-Chief, AACR Publications Department, American Association for Cancer Research, Public Ledger Bldg., Suite 816, 150 South Independence Mall West, Philadelphia, PA 19106-3483. Telephone: (215) 440-9300. If accepted, they will be listed under one of ten categories in the Table of Contents. Please specify in a covering letter which category applies to your submission: biochemistry and biophysics, carcinogenesis, clinical investigations; endocrinology, epidemiology; experimental therapeutics; immunology, molecular biology and genetics; tumor biology, and virology. (Final categorization in the Table of Contents is at the discretion of the Editor-in-Chief.) Consult the “Instructions for Authors” printed in the January 1 issue of the journal for other submission requirements. Reprints of the “Instructions” are available upon request.

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Cancer Research (ISSN 0008-5472) is published twice a month by the American Association for Cancer Research, Inc., Public Ledger Bldg., Suite 816, 150 South Independence Mall West, Philadelphia, PA 19106-3483 for $80 annually for members and $460 for individual nonmembers. Cancer Research is only available to institutions as a combined subscription with Clinical Cancer Research. The combined 1996 institutional subscription price of $595 includes a subscription to Clinical Cancer Research. Second-class postage paid at Philadelphia, PA and additional mailing offices. POSTMASTER: Send address changes to Cancer Research, P.O. Box 3000, Denville, NJ 07834. Copyright 1996 by the American Association for Cancer Research, Inc. Printed in the U.S.A.
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Send inquiries and current curriculum vitae to Gail Shaw, M.D., Program Leader, Office of Faculty Recruitment, 12902 Magnolia Drive, Tampa, Florida 33612. Applicants must be postmarked by deadline date of January 31, 1996.

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March 29-31, 1996  
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Funded in part by an educational grant from Angen Corporation. Supplemental support provided by Glaxo-Wellcome, Bristol-Myers-Squibb, Astra-Merck, Merck Research Laboratories, and Millenium Pharmaceuticals, Inc.

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APPLICATION DEADLINE
April 16, 1996

INFORMATION AND APPLICATION FORMS
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AMERICAN ASSOCIATION FOR CANCER RESEARCH
The American Association for Cancer Research (AACR) is a professional society of over 10,600 scientists and physicians involved in all aspects of basic, clinical, and translational cancer research. Members of the AACR enjoy

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Public Ledger Building, Suite 816  
150 S. Independence Mall West  
Philadelphia, PA 19106-3483  
Telephone: (215) 440-9300  
FAX: (215) 440-9313 / E-Mail: aacr@aol.com
Featured on this issue of Cancer Research is Ruth Sager. She is currently Professor of Cellular Genetics (Emeritus) at Harvard Medical School and Chief of the Division of Cancer Genetics at the Dana-Farber Cancer Institute, where she heads an extremely active laboratory. After receiving her Ph.D. from Columbia University in 1948, she held research fellowships and staff appointments at Rockefeller and Columbia Universities. Following a professorship of Biological Sciences at Hunter College from 1966–1975, she was appointed to her current position at Harvard Medical School in 1975.

During the 1950s and 1960s, Dr. Sager established, against enormous opposition, that some inheritance is carried by genes that are not in the nucleus of cells. She created a model system using the alga Chlamydomonas that provided the definitive evidence for “cytoplasmic” genes. She showed that these genes are located in chloroplasts, the photosynthetic organelles. She demonstrated that chloroplasts contain DNA that is distinct in its base composition from nuclear DNA and that encode genetic traits that she identified and mapped. Chloroplast genes do not follow Mendelian rules of segregation. Rather, they are transmitted uniparentally in meiosis, as a result of different methylation patterns of the two parental DNAs. These studies provided the first demonstration of a major biological role of DNA methylation in eukaryotes. In 1961, Dr. Sager and Francis Ryan wrote the first molecular genetics text Cell Heredity, and in 1972, Dr. Sager summarized the subject of cytoplasmic inheritance in the book Cytoplasmic Genes and Organelles.

Dr. Sager’s work with Chlamydomonas was recognized by her election to the National Academy of Sciences in 1977 and to the American Academy of Arts and Sciences in 1978. She was awarded the National Academy’s Gilbert Morgan Smith Medal in 1988.

From the mid-1970s to the present, Dr. Sager totally changed her research focus to investigate the molecular basis of cancer genetics, with special emphasis on breast cancer. She started with a Guggenheim Fellowship at the Imperial Cancer Research Fund Laboratories in London. She first set up a model system with Chinese hamster embryo fibroblasts (CHEF cells) that allowed detailed comparisons between well-matched normal and tumor cells. This system was chosen for investigation of tumor suppressor genes, which even in the late 1970s were the goal of her research. With this system, she and coworkers demonstrated the multigenic basis of tumorigenecity, examined tumor suppression in cell hybrids and cybrids, and showed that methotrexate-induced amplification occurred rapidly in tumor cells but took many times longer with normal diploid cells. They used subtractive hybridization successfully to discover a novel IL-8 related cytokine called GRO.

These studies convinced her that the search for tumor suppressor genes would be arduous and should be done with human cells rather than a rodent model. She was fortunate to obtain a 7-year Outstanding Investigator Grant from the NCI which enabled her to develop a human breast cancer cell culture system. Her hypothesis was (and is) that tumor suppressor genes are most likely to provide successful therapeutic applications. As with her earlier work, she was among the first to champion this unpopular view at a time when all emphasis was on oncogenes.

As a necessary underpinning to selection of tumor suppressor genes at the molecular level (by subtractive hybridization, and later by differential display), she created a growth medium that would support good growth of both normal and tumor-derived mammary epithelial cells at similar rates. She and coworkers have now identified and partially characterized about 40 genes that are down-regulated in mammary carcinoma cells compared to those in normal cells. Several of these genes have properties with clinical potential. At this time, the most studied is MASPIN, a gene encoding a serine protease inhibitor which has both diagnostic and therapeutic potential. Diagnostically, its expression (RNA and protein) is lost during development of primary tumors. The protein inhibits invasion and motility in cell culture, and tumor growth and metastasis in nude mice. Its down-regulation in tumor cells is transcriptional, opening the way for therapy by inducing re-expression of the silenced gene.

Dr. Sager has received many honors worldwide, and she is currently a member of the Advisory Council of the National Institute on Aging, and of the Scientific Advisory Board of the Friedrich Miescher Institute in Basel, Switzerland. She has been an active member of the American Association for Cancer Research since 1982 and served on the Program Committee in 1989–1990.

We are grateful to Dr. Sager for providing the information and photograph for this cover feature.

Sidney Weinhouse