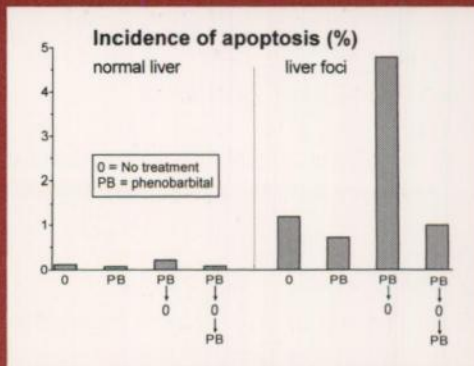
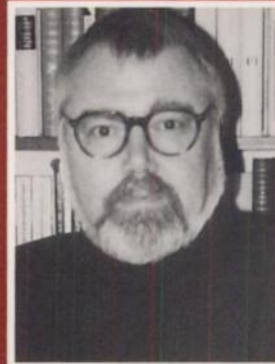


# Cancer Research

AN OFFICIAL JOURNAL OF THE AMERICAN ASSOCIATION FOR CANCER RESEARCH



April 1, 1998  
Volume 58 • Number 7  
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**THE AMERICAN ASSOCIATION FOR CANCER RESEARCH (AACR) PRESENTS**

***Three Outstanding Training Opportunities  
Supported by Major Grants from the National Cancer Institute  
Primarily for Postdoctoral and Oncology Fellows***

Waiver of Registration Fees and Subsidy of Lodging and Subsistence Expenses for Qualified Fellows

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**Molecular Biology in Clinical Oncology**

*A thorough overview of concepts in molecular biology designed for clinical oncologists in training*

July 3-9, 1998, The Given Biomedical Institute, Aspen, CO  
Michael B. Kastan, L. Michael Glodé, and Jennifer A. Pietenpol, Organizers

- Lectures by leading experts on molecular biology concepts and the latest developments in molecular oncology
  - Small group laboratory sessions to demonstrate the important experimental techniques utilized in molecular biology
  - Career development session and scheduled networking opportunities
- 

**Molecular Biology and Pathology of Neoplasia  
(formerly entitled Histopathobiology of Neoplasia)**

The Edward A. Smuckler Memorial Workshop

*Intensive training in the molecular biology and morphology of human cancer for graduate students  
and postdoctoral fellows contemplating careers in basic cancer research*

July 12-19, 1998, Keystone Resort, Keystone, CO  
Frederick M. Waldman, Course Director

- Twenty-eight hours of hands-on laboratory exercises directed by distinguished pathologists
  - An outstanding series of lectures on rapidly developing areas of cancer research by laboratory directors and other prominent investigators
  - Poster presentations by students and faculty to facilitate further scientific exchange
- 

**Methods in Clinical Cancer Research**

Co-Sponsored by the American Society of Clinical Oncology (ASCO)

*The essentials of clinical trials design for researchers at the level of fellow or junior faculty*

July 25-31, 1998, Vail Cascade Resort and Club, Vail, CO  
Daniel D. Von Hoff and Charles A. Coltman, Jr., Chairpersons

- A series of lectures by leaders in the field covering all elements of clinical trials design
  - Small group discussion sessions on important techniques in clinical research
  - Development of a clinical trial protocol by all participants with detailed critiques by faculty members
- 

AACR members will receive brochures for all three workshops as soon as they are available. (The Clinical Methods Workshop brochure is also mailed to all ASCO members.) All others should submit requests to:

American Association for Cancer Research ● Public Ledger Building, Suite 826 ● 150 S. Independence Mall West  
Philadelphia, PA 19106-3483 ● Telephone: (215) 440-9300 ● FAX: (215) 440-9313 ● E-mail: meetings@aacr.org  
Website: <http://www.aacr.org>

**GENERAL MOTORS CANCER RESEARCH FOUNDATION  
ANNUAL SCIENTIFIC CONFERENCE**

**DEVELOPMENTAL BIOLOGY AND CANCER**

**June 9-10, 1998**

**Jack Masur Auditorium**

**Clinical Center**

**National Institutes of Health**

**Bethesda, Maryland**

**June 9**

***Overview: Developmental Biology and Cancer***

Mario R. Capecchi, Ph.D.

***Session 1: PAX Genes***

*Moderator : Phillip A. Sharp, Ph.D.*

**PAX Genes in Development**

Peter Gruss, Ph.D.

**The Role of Chimeric Paired Box Transcription Factors in the Pathogenesis of Pediatric Rhabdomyosarcoma**

Frederic G. Barr, M.D., Ph.D.

**PAX Genes in B Cell Development and Disease**

Meinrad Busslinger, Ph.D.

***Session 2: Embryonal Tumors***

*Moderator: Sharon B. Murphy, M.D.*

**Id Gene Expression as a Key Mediator of Tumor Cell Biology**

Mark A. Israel, M.D.

**Developmental Basis of Retinal-Specific Induction of Cancer by RB1 Mutation**

Brenda L. Gallie, M.D.

**RET: Developmental and Tumor Syndromes**

Bruce A. J. Ponder, Ph.D.

***Session 3: Embryonal Tumors and Breast Cancer***

*Moderator: Ray L. White, Ph.D.*

**Genomic Imprinting and Cancer**

Andrew P. Feinberg, M.D.

**Multiple Roles for the Wilms' Tumor Suppressor, WT1**

Nicholas D. Hastie, Ph.D., B.Sc.

**Functional Analysis of the BRCA1 Gene Product**

**Reversion of the Malignant Phenotype in Human Breast Cancer Epithelial Cells: Structure is the Message**

Mina J. Bissell, Ph.D.

**Mammary Gland Development and Carcinogenesis: Molecules at the Crossroads**

Lewis A. Chodosh, M.D., Ph.D.

**June 10**

***Session 4-A : Leukemia and Developmental Genes***

*Moderator: Louise C. Strong, M.D.*

**Identification and Characterization of Collaborating Oncogenes in Lymphomagenesis**

Anton Berns, Ph.D.

**BCL-2 Family Death Regulators in Development and Homeostasis**

Stanley J. Korsmeyer, M.D.

**ALL-1 and TCL1 Role in Human Leukemias and Mammalian Development**

Carlo M. Croce, M.D.

***Session 4-B: Leukemia and Developmental Genes: Functional Genes***

*Moderator: Günter Schütz, M.D.*

**Intersections Between Blood Cell Development and Leukemia Genes**

Stuart H. Orkin, M.D.

**CBF: A Central Player in Hematopoiesis and Leukemia**

Nancy A. Speck, Ph.D.

**Chromosomal Translocations and What They Do in Leukemias**

Terry H. Rabbitts, Ph.D., F.R.S.

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**For further information contact:**

**General Motors Cancer Research Foundation  
c/o Campbell, Peachey & Associates**

**111 Quincy Place, N.E.**

**Washington, D.C. 20002**

**Telephone: (202) 636-8745**

**Fax: (202) 636-8755**

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POSTDOCTORAL STUDIES IN BREAST CANCER RESEARCH



THE MAYO CLINIC  
ANNOUNCES THE

## REGIS FOUNDATION FOR BREAST CANCER RESEARCH SCHOLARS PROGRAM

A Career Development Program Providing  
OUTSTANDING YOUNG INVESTIGATORS with the opportunity to:

- pursue postdoctoral studies and research training in the field of breast cancer.
- work with established breast cancer investigators at the Mayo Clinic where research facilities and clinical resources are exceptional.
- and participate in the academic and training activities of Mayo's Tumor Biology Program.

Qualified applicants are eligible to receive up to 3 years of postdoctoral support from the Regis Foundation for Breast Cancer Research through the Mayo Cancer Center. Individuals with a strong commitment to research and training in basic and/or translational breast cancer research, and who plan to pursue careers in the study of breast cancer are invited to apply. Deadline for receipt of applications is May 1, 1998.

To apply, send a statement of research interests, curriculum vitae, and the names of three references to: Dr. Nita J. Maihle, Mayo Clinic, Rochester, MN 55905 (regis\_scholars@mayo.edu).

### CHAIR OF THE DEPARTMENT OF IMMUNOLOGY

#### Roswell Park Cancer Institute

Applications and nominations are being accepted for the Chair of the Department of Immunology. At this time the Department's roster includes 18 Research Scientists, 11 postdoctoral fellows and 16 predoctoral and a supporting staff of 21 individuals. Substantial resources for recruitment of new faculty are available. Major Institutional shared resources offer unique additional opportunities for research.

A solid record of research and academic experience in basic and/or clinical immunology, demonstrated skills and willingness to lead a scientific and related graduate studies department, and an interest in developing a strong translational research component in collaboration with clinical departments is required. Send Curriculum Vitae to: Enrico Mihich, M.D., Chair, Department of Experimental Therapeutics, Roswell Park Cancer Institute, Elm and Carlton Streets, Buffalo, NY 14263. Roswell Park is an M/F/H/V Affirmative Action Employer.

**ROSWELL  
PARK**  
CANCER INSTITUTE

### AMERICAN ASSOCIATION FOR CANCER RESEARCH

The American Association for Cancer Research (AACR) is a professional society of over 11,000 scientists and physicians involved in all aspects of basic, clinical, and translational cancer research. Members of the AACR enjoy

- subscriptions to *Cancer Research*, *Cell Growth & Differentiation (CG&D)*, *Cancer Epidemiology, Biomarkers & Prevention*, and *Clinical Cancer Research* at reduced member rates
- reduced registration rates at the AACR Annual Meeting, Special Conferences, and International Meetings
- Employment Register, Directory of Members, public education activities, and many other benefits

Special programs to provide enhanced career development opportunities for minority scientists include

- Session on Career Development at Annual Meeting
- Mentorship Program
- Travel Awards to Scientific Meetings

#### American Association for Cancer Research

Public Ledger Building, Suite 826  
150 S. Independence Mall West  
Philadelphia, PA 19106-3483  
Telephone: (215) 440-9300  
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## THE AMERICAN ASSOCIATION FOR CANCER RESEARCH PRESENTS



*An Important Educational Opportunity Primarily for  
Predoctoral Students and Postdoctoral Fellows  
Pursuing Careers in Basic Cancer Research*

### **MOLECULAR BIOLOGY AND PATHOLOGY OF NEOPLASIA**

(A Workshop Formerly Entitled Histopathobiology of Neoplasia)

*The Edward A. Smuckler Memorial Workshop  
Supported by a Generous Grant from the National Cancer Institute*

Keystone Resort  
Keystone, Colorado  
July 12-19, 1998

- Intensive training in the histopathology and molecular biology of neoplasia.
- Twenty-eight hours of hands-on laboratory exercises directed by distinguished pathologists.
- An outstanding series of lectures on rapidly developing areas of cancer research by laboratory directors and other prominent investigators.
- Extensive written course materials that will serve as valuable references in the future.
- For trainees: Waiver of registration fee and full funding of lodging and subsistence expenses during the workshop.

#### **LABORATORY AND LECTURING FACULTY**

Frederic M. Waldman\*, Course Director, University of California, San Francisco, CA  
Stephen Baird, Veterans Administration Medical Center, San Diego, CA  
Betty DeMasters, University of Colorado School of Medicine, Denver, CO  
Lora A. Hedrick, Johns Hopkins University School of Medicine, Baltimore, MD  
Roy A. Jensen, Vanderbilt University, Nashville, TN  
John M. Lehman, Albany Medical College, Albany, NY  
Michael W. Lieberman, Baylor College of Medicine, Houston, TX  
Lawrence A. Loeb, University of Washington, Seattle, WA

Robert Low\*, University of Colorado School of Medicine, Denver, CO  
Frank McCormick, University of California, San Francisco, CA  
Gary J. Miller\*, University of Colorado School of Medicine, Denver, CO  
Harold L. Moses, Vanderbilt University School of Medicine, Nashville, TN  
Stewart Sell, Albany Medical College, Albany, NY  
Patricia A. Thomas, Kansas University Medical Center, Kansas City, KS  
Ann D. Thor, Northwestern University, Chicago, IL

**Additional Faculty to be Announced.**

*\*Member of the Workshop Executive Committee*

#### **APPLICATION DEADLINE: APRIL 30, 1998**

Further Information:

American Association for Cancer Research  
Public Ledger Building, Suite 826  
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Philadelphia, PA 19106-3483  
Telephone: (215) 440-9300 • FAX: (215) 440-9313  
E-mail: AACR@aacr.org

# The American Association for Cancer Research Presents

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## Molecular Biology in Clinical Oncology: A Workshop Supported by a Generous Grant from the National Cancer Institute

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An intensive, one-week summer workshop on molecular biology designed for clinical oncologists in training or in their early academic careers.

July 3-9, 1998  
Given Biomedical Institute  
Aspen, Colorado

### ORGANIZERS

**MICHAEL B. KASTAN**  
The Johns Hopkins  
Oncology Center  
Baltimore, MD

**L. MICHAEL GLODÉ**  
University of Colorado  
School of Medicine  
Denver, CO

**JENNIFER A. PIETENPOL**  
Vanderbilt University  
School of Medicine  
Nashville, TN

- Lectures by leading experts on molecular biology concepts and the latest developments in molecular oncology. Topics include gene therapy, oncogenes and growth factors, tumor suppressor genes, molecular genetics, metastasis genes, and drug design.
- Small group laboratory sessions to demonstrate the important experimental techniques utilized in molecular biology.
- A workshop syllabus containing relevant published papers, references to key articles in the literature, and details on important laboratory procedures.
- Financial support for participants who are physicians in training or oncology fellows.

### Faculty

#### Lectures

**KATHLEEN R. CHO/** Baltimore, MD

**CHI VAN DANG/** Baltimore, MD

**ERIC R. FEARON/** Ann Arbor, MI

**TYLER JACKS/** Cambridge, MA

**MICHAEL B. KASTAN/** Baltimore, MD

**ROBERT S. KERBEL/** Toronto, ON, Canada

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**FRANK J. RAUSCHER, III/** Philadelphia, PA

**NADIA ROSENTHAL/** Charlestown, MA

**ERIC J. STANBRIDGE/** Irvine, CA

#### Laboratory Rotations

**MARK S. BOGUSKI/** Bethesda, MD. "Computer Searching in Molecular Biology."

**LAB DIRECTOR TO BE ANNOUNCED/** "Specialized Techniques in PCR."

**JAMES P. HOEFFLER/** San Diego, CA. "Protein Expression."

**ROBERT A. SCLAFANI/** Denver, CO. "Transcript Array Analysis."

**LAB DIRECTOR TO BE ANNOUNCED** "Inducible Gene Expression Systems."

### **Application Deadline March 30, 1998**

For further information, contact

American Association for Cancer Research

Public Ledger Building, Suite 826

150 S. Independence Mall West

Philadelphia, PA 19106-3483

Telephone: (215) 440-9300 • FAX: (215) 440-9313

Email: [meetings@aacr.org](mailto:meetings@aacr.org)





This issue's cover features the Institute for Tumor Biology-Cancer Research of the University of Vienna, Austria (*top*), and three of its scientists, Rolf Schulte-Hermann, Director (*center*), Bettina Grasl-Kraupp (*left*), and Wilfried Felix Bursch (*right*). The Institute was founded in 1953 by the Austrian Cancer Society, and it was donated to the University of Vienna on the occasion of its 600th anniversary in 1966, becoming part of its Medical School. It is devoted to basic and applied experimental cancer research, including epidemiology, and it serves as a national cancer center giving information and advice to the government and to the public. There are 5 research departments and several working groups in the Institute, with a total of about 100 professionals, including technical staff and doctoral students.

Apoptosis and its regulation and quantitative role in carcinogenesis is the major scientific focus in the Department of Oncological Toxicology, directed by Dr. Schulte-Hermann. In the early 1980s, Drs. Bursch and Schulte-Hermann, then at the University of Marburg, Germany, recognized the importance of apoptosis for the action on nongenotoxic carcinogens. They were the first to describe the suppression of apoptosis by tumor promoters in preneoplastic tissue, which thereby accelerated cancer formation. The figure on the cover (*bottom*), from their original publication (*Carcinogenesis*, 5: 453, 1984),\* shows that the incidence of apoptosis is much higher in altered, preneoplastic foci of rat liver than in normal liver, and that apoptosis of target cells is suppressed by the tumor promoter phenobarbital, particularly after a period of promotion. Hormonal control of apoptosis even in malignant, estrogen-dependent tumors was demonstrated subsequently (*Carcinogenesis*, 12: 855, 1991). As an endogenous death signal for hepatocytes, transforming growth factor  $\beta 1$  (TGF $\beta 1$ ) was identified; it was found that these cells might produce TGF $\beta 1$  themselves to commit "autocrine suicide" (*Proc. Natl. Acad. Sci. USA*, 89: 540, 1992; *Br. J. Cancer*, 67: 531, 1993). Further studies dealt with modulation of apoptosis by nutrition, a major determinant of human cancer. While feeding exerted a permissive effect on cell birth during mid-G<sub>1</sub> (*Cancer Res.*, 37: 166, 1977), fasting released death signals to cells. Dr. Grasl-Kraupp demonstrated that preneoplastic cells are much more sensitive to these death signals than normal hepatocytes and were selectively eliminated by dietary restriction, a new explanation for the long-known protection from cancer by fasting (*Proc. Natl. Acad. Sci. USA*, 91: 9995, 1994). In Dr.

Grasl-Kraupp's most recent work, even malignant liver tumors appear more sensitive to induction of apoptosis than normal liver, suggesting that selective elimination of tumors by "physiological" inducers of apoptosis may be feasible.

Other successful research projects are under way at the Institute. The Department of Molecular Genetics, under Ulrike Wintersberger, is studying the control of cell division in yeast. New genes required for DNA replication and exact chromosome transmission during mitosis have been isolated (*Mol. Biol. Cell*, 6: 1263, 1995; *Yeast*, 11: 929, 1995). The Department of Oncological Biochemistry, under Georg Saueremann, is investigating nuclear matrix proteins, their tissue specificity and changes during apoptosis. Christa Cerni and Jozefa Gadek-Wesierski are studying the cooperation and interaction among different oncogenes and tumor suppressor genes such as *myc*, *mad*, *max*, and *p53* during cell transformation (*Oncogene*, 11: 587, 1995; *J. Cell. Biochem.* 62: 90, 1996). Growth control by growth factors and protein kinase C during carcinogenesis in human colon is the target of Brigitte Marian's work (*Gastroenterology*, 110: 1753, 1996). The Department of Applied Oncology, under Michael Micksche, collaborates with clinical oncologists on cytokine effects in malignant cells (*J. Natl. Cancer Inst.*, 87: 935, 1995). Furthermore, the multidrug resistance protein (*mdr*) in melanoma cells was extensively studied (*Cancer*, 59: 717, 1994) and was found by Leonilla Elbling to protect the zygote and early embryo from chemical insults (*FASEB J.*, 7: 1499, 1993). Walter Paukovits has discovered a pentapeptide that reversibly inhibits proliferation of early stem cells in bone marrow. The peptide may protect stem cells from toxic and mutagenic effects of cytostatic drugs (*Blood*, 81: 1755, 1993). Karl Mazzucco and Siegfried Knasmüller monitor carcinogens in the environment, including textiles, vegetables, and water (*Chemosphere*, 28: 1525, 1994; *Mutat. Res.*, 346: 181, 1995). The Epidemiology Department, under Christian Vutuc, is concerned with various descriptive and cross-sectional studies on cancer in Austria, and the quantitative studies on cigarette tar and lung cancer (*J. Natl. Cancer Inst.*, 71: 435, 1983) emanating from there are highly regarded.

Dr. Schulte-Hermann has been the Director of the Institute since 1985. He trained in Pharmacy and in Medicine in Bonn, Berlin, and Marburg, Germany, and earned a Ph.D. in 1968 at the Pharmacological Institute of the Free University, Berlin. From 1968–1985, he served as Assistant Professor and Professor of Toxicology and Pharmacology at the University of Marburg, Germany. His specialization is toxicology and chemical carcinogenesis, in which area he has published 150 experimental papers, reviews, and book chapters. He and his coworkers have developed a 3-year postgraduate course in toxicology, the first training program in toxicology in Austria. Dr. Schulte-Hermann has been a member of the American Association for Cancer Research since 1988. He is a recognized expert on hepatocarcinogenesis and nongenotoxic carcinogens, and he serves on several advisory committees of the Austrian government.

Dr. Bursch was trained in Biology and Chemistry at the University of Bonn, Germany. In 1979, he earned a Ph.D. in Biology at the Institute for Applied Zoology, University of Bonn. He subsequently joined Dr. Schulte-Hermann's group in Marburg and transferred with him to Vienna in 1986. His major research concerns apoptosis and its relevance in chemical carcinogenesis. He has published approximately 60 papers, reviews, and book chapters. He is a member of the Advisory Board of *Cell Death and Differentiation*, and he serves as an expert in ecotoxicology for the Austrian government.

Dr. Grasl-Kraupp received her M.D. at the University of Vienna and joined Dr. Schulte-Hermann's group in 1985. Her research interests have been in experimental hepatocarcinogenesis, with emphasis on nongenotoxic carcinogens and on apoptosis. She found that peroxisome proliferators induce tumors by promotion of spontaneously appearing preneoplastic lesions. She has published over 40 papers and reviews, and like Drs. Schulte-Hermann and Bursch, she serves as an expert to the Austrian government on matters dealing with cancer research.

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