



# 心血管系统

THE CARDIOVASCULAR SYSTEM

Volume LXVII 2002  
Symposia on  
Quantitative Biology

世界图书出版公司



# COLD SPRING HARBOR SYMPOSIA ON QUANTITATIVE BIOLOGY

## VOLUME LXVII

### The Cardiovascular System

### 心血管系统

KS4/L000

世界图书出版公司

西安 北京 广州 上海

Meeting Organized by Bruce Stillman and David Stewart  
COLD SPRING HARBOR LABORATORY PRESS  
2002

陕版出图字：25 - 2003 - 054

图书在版编目 (CIP) 数据

心血管系统/美国冷泉港实验室出版社编. —西安：世界图书出版  
西安公司，2004.1

ISBN 7 - 5062 - 4757 - 7

I. 心... II. 美...

III. 心脏血管疾病—研究—英文

IV. R54

中国版本图书馆 CIP 数据核字 (2003) 第 086004 号

COLD SPRING HARBOR SYMPOSIA ON QUANTITATIVE BIOLOGY VOLUME LXVII

© 2002 by Cold Spring Harbor Laboratory Press

Cold Spring Harbor, New York

International Standard Book Number 0-87969-678-8(cloth)

International Standard Book Number 0-87969-678-6(paper)

International Standard Serial Number 0091-7451

Library of Congress Catalog Card Number 34-8174

## 心血管系统

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| 策 划  | 世图医学出版中心 |
| 责任编辑 | 齐 琼      |
| 封面设计 | 高宏超      |

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|----------|------------------------------|
| 出版发行     | 世界图书出版西安公司                   |
| 地 址      | 西安市南大街 17 号 邮编 710001        |
| 电 话      | 029 - 87279676 87233647(发行部) |
| 传 真      | 029 - 87279675               |
| E - mail | wmcxian@public.xa.sn.cn      |
| 经 销      | 各地新华书店                       |
| 印 刷      | 世界图书出版西安公司印刷厂                |
| 开 本      | 850 × 1168 1/16              |
| 印 张      | 39.125                       |
| 字 数      | 1058 千字                      |

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|     |                                   |
|-----|-----------------------------------|
| 版 次 | 2004 年 1 月第 1 版 2004 年 1 月第 1 次印刷 |
| 书 号 | ISBN 7 - 5062 - 4757 - 7/R·510    |
| 定 价 | 386.00 元                          |

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**COLD SPRING HARBOR SYMPOSIA  
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**VOLUME LXVII**

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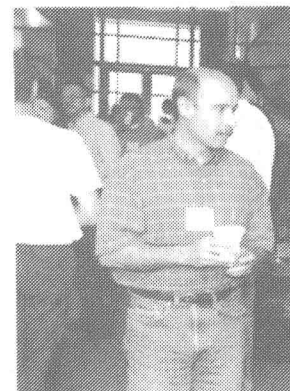
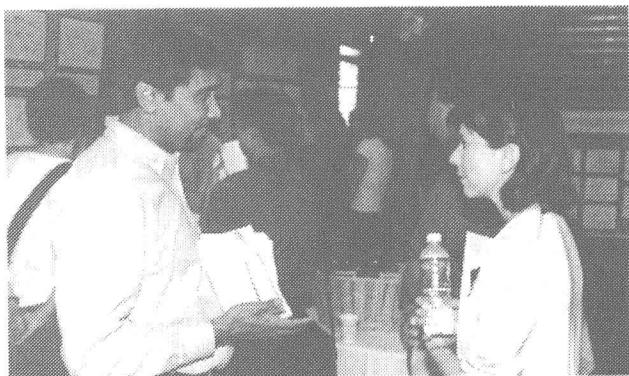
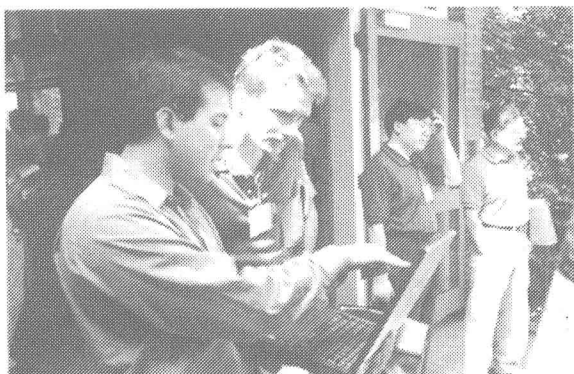
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- WEI, LEI, Dept. of Medicine, Baylor College of Medicine, Houston, Texas
- WEINSTEIN, BRANT, Lab. of Molecular Genetics, National Institute of Child Health and Human Development, National Institutes of Health, Bethesda, Maryland
- WELIKSON, ROBERT, Dept. of Biochemistry, University of Washington, Seattle
- WHITNEY, MARSHA, Dept. of Pathology, University of Washington, Seattle
- WILLIAMS, R. SANDERS, Dept. of Medicine and Pharmacology, Duke University Medical Center, Durham, North Carolina
- WILSON, EMILY, Dept. of Medical Physiology, Texas A&M Health Science Center, College Station, Texas
- WINITSKY, STEVE, Lab. of Molecular Cardiology, National

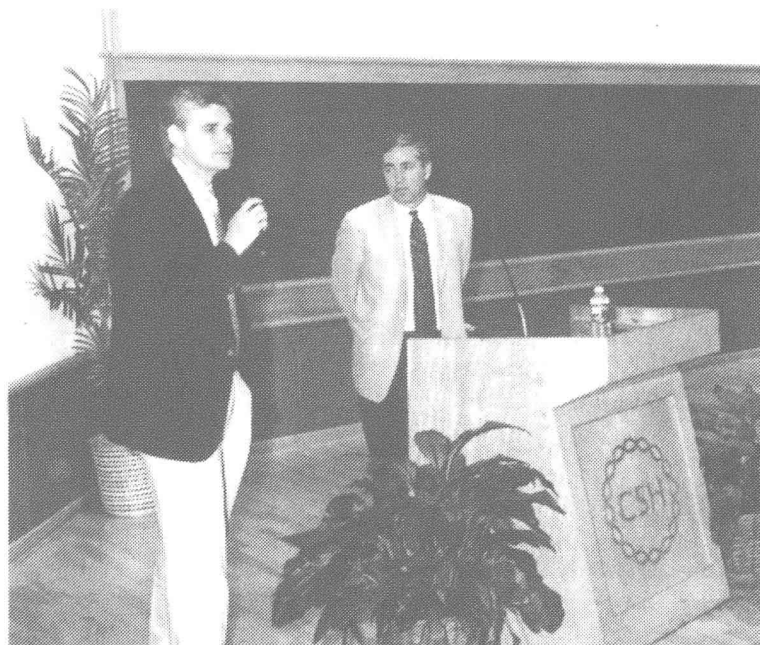
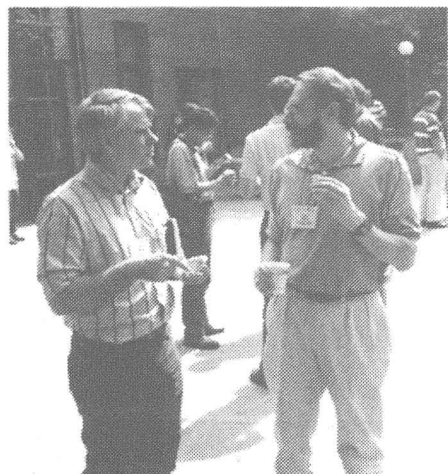
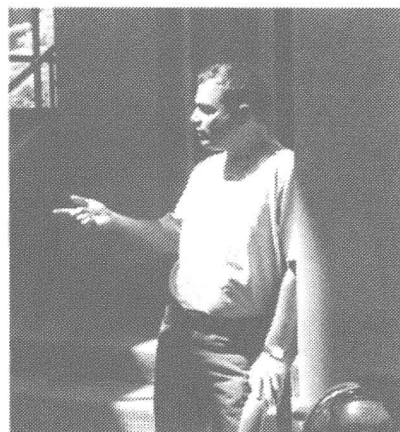
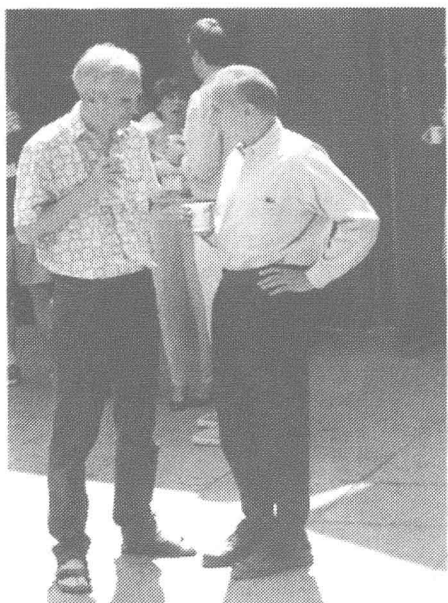
- Heart, Lung, and Blood Institute, National Institutes of Health, Bethesda, Maryland
- YANCOPOULOS, GEORGE, Regeneron Pharmaceuticals, Inc., Tarrytown, New York
- YANG, JING, Dept. of Vascular Research, Centocor, Inc., Malvern, Pennsylvania
- YAO, YIHONG, Dept. of Molecular and Cellular Biology, Abbott Bioresearch Center, Worcester, Massachusetts
- YASHIRO, KENTA, Institute for Molecular and Cellular Biology, Osaka University, Suita, Osaka, Japan
- YASUNO, SHINJI, Dept. of Medicine and Clinical Science, Kyoto Graduate School of Medicine, Kyoto, Japan
- YELON, DEBORAH, Developmental Genetics Program, Skirball Institute, New York University School of Medicine, New York, New York
- YOON, YOUNG-SUP, Dept. of Cardiovascular Research, St. Elizabeth's Medical Center, Boston, Massachusetts
- YOST, H. JOSEPH, Huntsman Cancer Institute, Center for Children, University of Utah, Salt Lake City
- ZHONG, TAO, Dept. of Medicine and Cell Biology, Vanderbilt University Medical Center, Nashville, Tennessee
- ZHOU, MINGDONG, Cardiovascular System Research, Zensun Science and Technology Ltd., Pudong, Shanghai, China



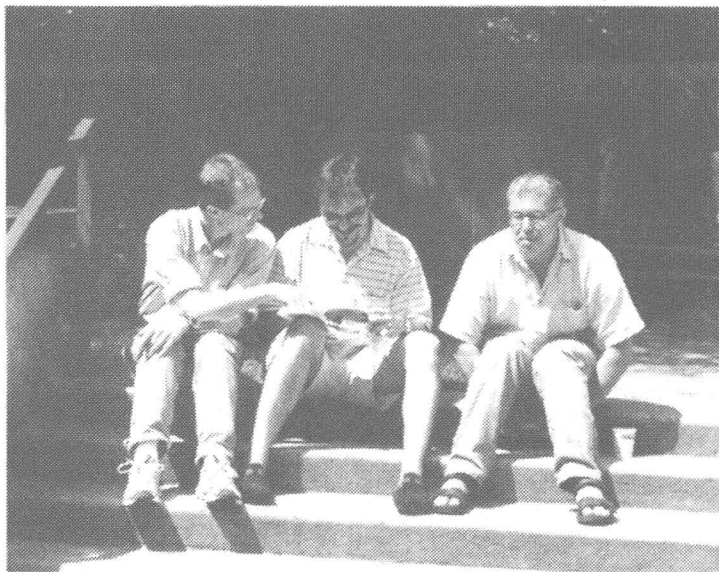
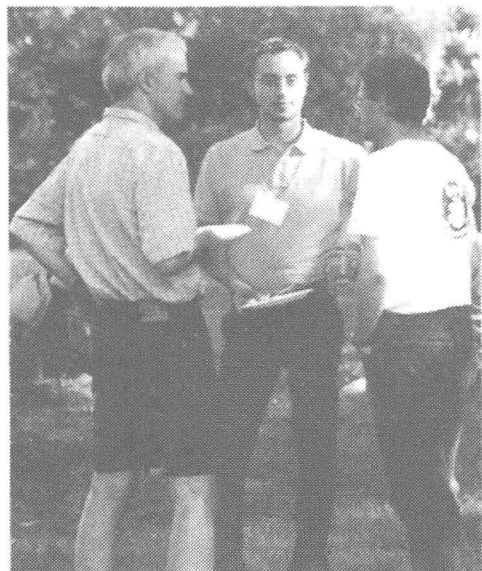
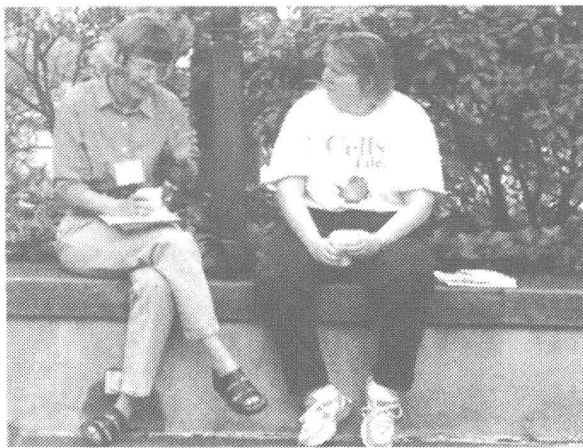
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*Second row: D. Srivastava, E. Delot, J. Epstein; E. Azene, X. Wehrens; M. Frasch, D. Stainier*  
*Third row: R. Jain, U. Savla; S. Mockrin, M. Schneider; R. Benezra, D. Fraidenaich, E. Stillwell*  
*Fourth row: M. Tallquist; G. Yancopoulos; B. Latinkic, F. Conlon*



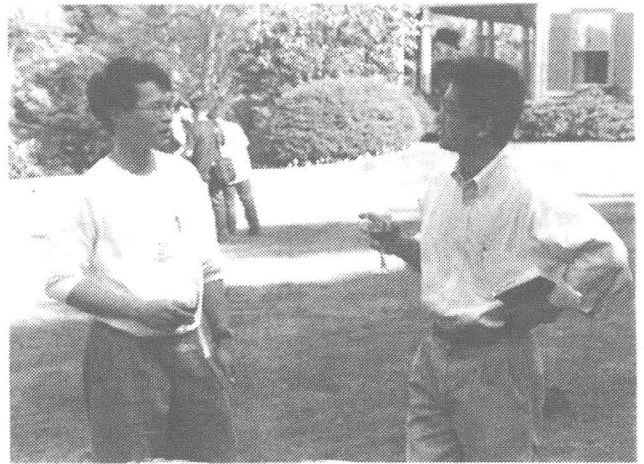
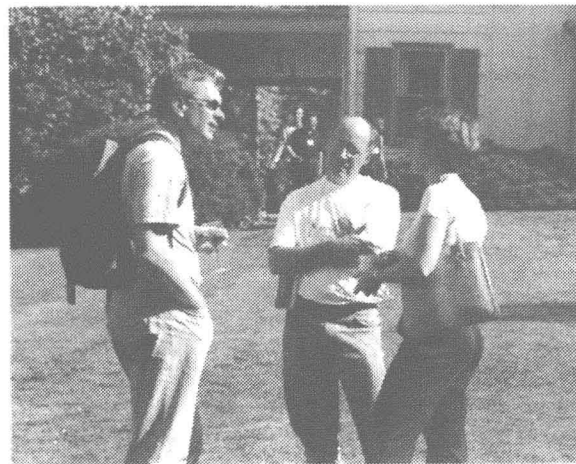
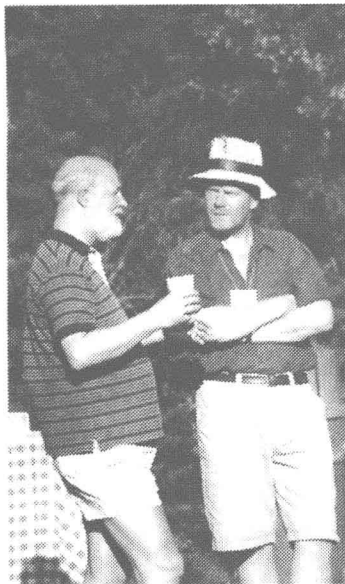
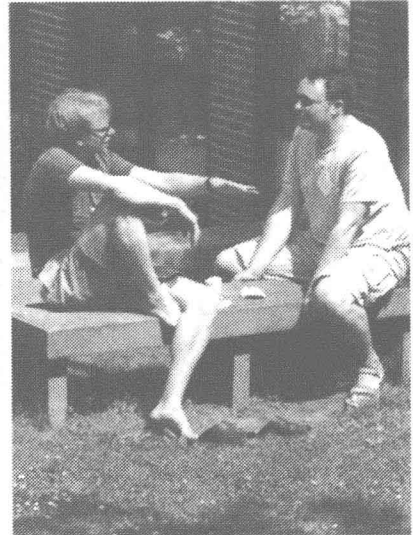
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*Second row: M.C. Simon, A. Lassar; M. Krasnow; J. Dominguez, D. Franco, L. Pabon*  
*Third row: R.S. Williams, E. McNally, M. Schneider; D. McKinnon, B. Rosati, D. Franco*  
*Fourth row: A. Ritter, B. Sundaravivel; Symposium picnic*



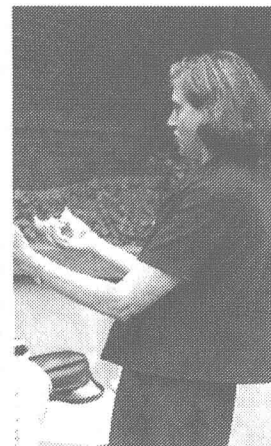
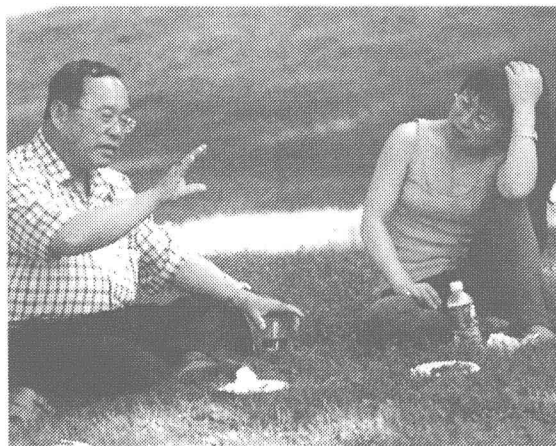
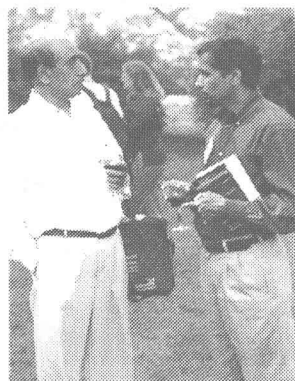
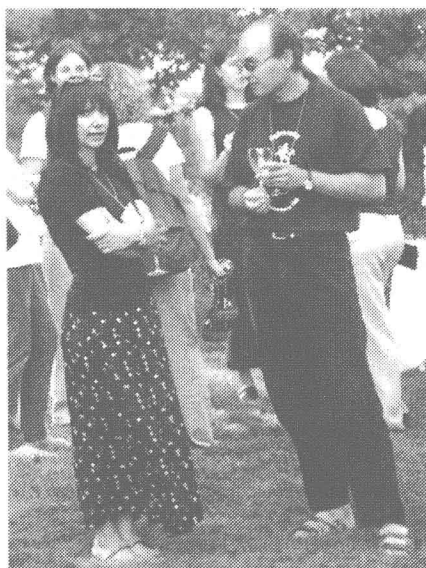
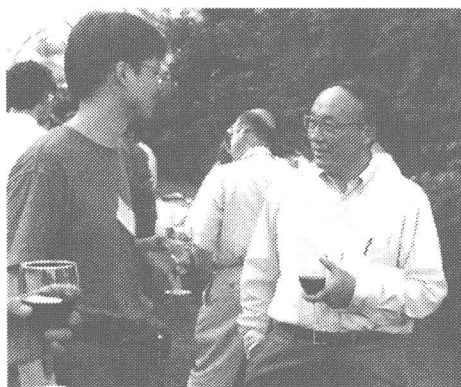
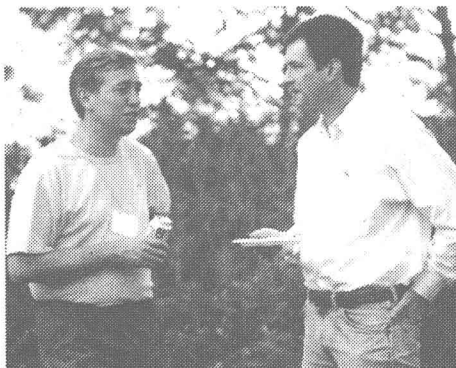
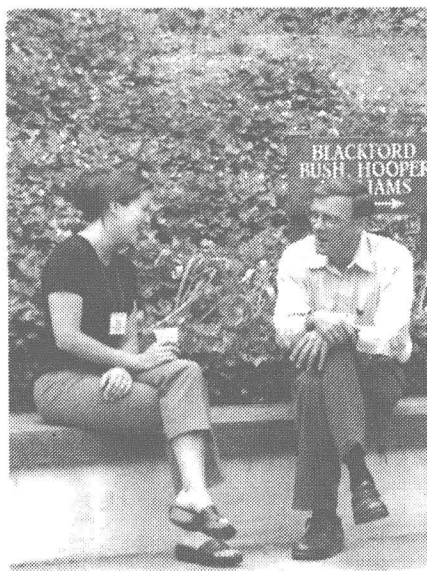
*First row: M. Gessler, M. Fishman; L. Starr, R. Kalluri*  
*Second row: D. McKinnon, N. Epstein; B. Stillman, R. Lifton*  
*Third row: F. Mack, D. Ramirez-Bergen, Y. Pan, K. Mansfield; B. Albrecht, K. Breitschopf*



*First row: T. Arrhenius, L. Starr; L. Johnson, E. Wilson  
 Second row: M. Gessler, A. Fischer, A. Gossler; P. Kiberstis; G. Bergers, L. Komuves  
 Third row: R. Harvey, N. Rosenthal; T. Mohun, B. Latinkic, F. Conlon*



*First row: H.-L. Chen, M.-Y. Chou; D. Cheres, R.S. Williams; P. Norby, P. Spee  
Second row: R. Hynes, D. Stewart; Outside Grace, meeting for dinner parties  
Third row: R. Harvey, P. Krieg, M. Nemer; C. Phoon, P. Hwang*



*First row:* R. Deaton, R. Purdy; R. Lifton, J. Cohen; L. Goyal, E. Olson  
*Second row:* I. Struman, A. Nasevicius; K. Fujiwara, N. Takeda; U. Savla, N. Rosenthal  
*Third row:* B. Stillman, R. Hynes, C. Seidman, R. Benezra; R. Belagaje, J.P. Singh  
*Fourth row:* R. Kalluri, L. Goyal; T. Chen, X. Li; C. Seidman

## Foreword

The Cold Spring Harbor Symposium on Quantitative Biology has rarely been devoted to a single organ. One notable exception was the successful Symposium in 1990 on the brain, which marked in part President Bush's proclamation of the 1990s as the decade of the brain, and also the beginning of the current Cold Spring Harbor initiative in neuroscience. There has been no presidential pronouncement about the heart, and Cold Spring Harbor has not focused research on it, but there have been remarkable developments in molecular understanding of the cardiovascular system over the last decade. It seemed fitting, therefore, that this year's Symposium should focus on such an important biological topic.

Development of the cardiovascular system during embryogenesis is a major area of research, particularly the patterning that forms the branches of the peripheral blood and lymphatic systems and development of the heart itself. The Symposium made clear that there is now a good general understanding of how the system develops. An equally important area of inquiry was the signaling pathways that permit the cardiovascular system to maintain its function. And cardiovascular disease, the western world's most common cause of death, also received appropriate attention.

Help in organizing this Symposium came from many sources, particularly my co-organizer Dr. David Stewart, Executive Director of our Meetings and Courses program, who played a key role in identifying speakers and topics. I thank Shaun Coughlin, Richard Lifton, Eric Olson, Christine Seidman, Celeste Simon, and Sandy Williams for their generous advice about a field with details that were rather foreign to me.

The meeting ran for five days and included 257 participants with 68 oral presentations and 108 poster presentations. I thank Dr. Richard Lifton for his superb presentation at the Dorcas Cummings Memorial public lecture on the genetics of hypertension providing a clear example of how the Human Genome Project is having a large impact on understanding human disease. I also thank the first-night speakers, Drs. Richard Harvey, Mark Fishman, Jonathan Seidman, and Rakesh Jain for their superb overview presentations. I am particularly grateful to Dr. Christine Seidman for agreeing to summarize the meeting.

As always, I greatly appreciate the efficiency of the Meetings and Courses staff under the leadership of David Stewart and Terri Grodzicker. I thank Joan Ebert, Patricia Barker, and Danny deBruin in the Cold Spring Harbor Laboratory Press for again putting together an important volume in the Cold Spring Harbor Symposium series. Finally, I am pleased to acknowledge the funding from companies, foundations, and the federal government, listed on the following page, without which the meeting would not have been possible.

Bruce Stillman  
March 2003