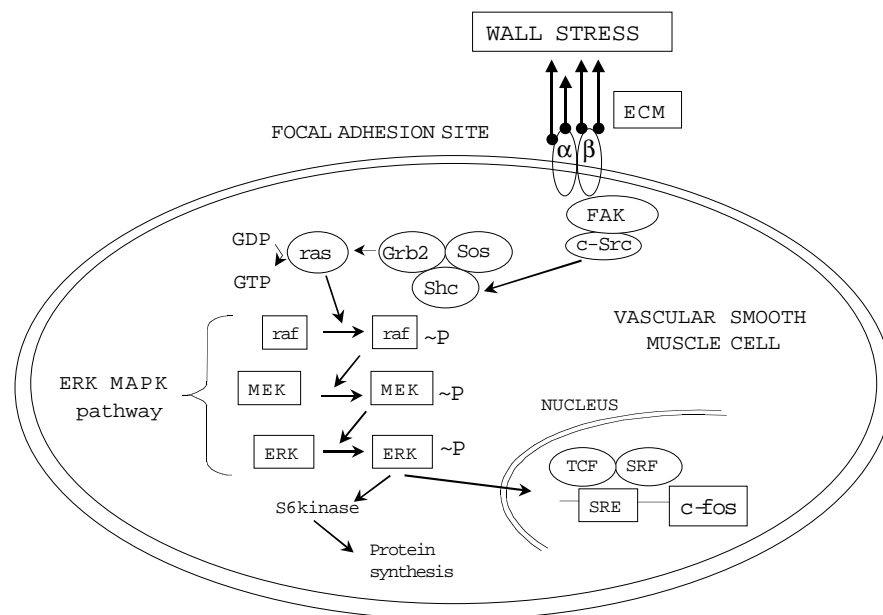


# High Blood Pressure Research

## Council Newsletter

Joey Granger, PhD, Editor  
Daniel Jones, MD, Associate Editor

Vol. 1, No. 2 Spring 2000



Proposed mechanotransduction pathway for a pressure stimulus acting through wall stress on a vascular smooth muscle cell.

# AMERICAN HEART ASSOCIATION HIGH BLOOD PRESSURE RESEARCH

## NEWSLETTER MISSION STATEMENT

The High Blood Pressure Research Newsletter mission is:

1. To promote communication and unity of purpose among the varied members of the High Blood Pressure Research Council,
2. To promote communication between the Executive Committee and council members,
3. To disseminate information regarding research and educational activities, and
4. To promote initiatives for improved funding of research, education, and patient care.

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### EXECUTIVE COMMITTEE 1999-2000

John E. Hall, PhD	Jackson, MS	Chair
Alberto Nasjletti, MD	Valhalla, NY	Vice Chair
Haralambos Gavras, MD	Boston, MA	Immediate Past Chair; Chair, Nominating and Membership Committee
Kathleen H. Berecek, PhD	Birmingham, AL	Member-at-Large; Research Committee Representative
Donald J. DiPette, MD	East Lansing, MI	Member-at-Large; Chair, Publications Committee
Irene Gavras, MD	Boston, MA	Chair, Professional and Public Education Committee
Joey Granger, PhD	Jackson, MS	Member-at-Large; Editor, Newsletter
Willa A. Hsueh, MD	Los Angeles, CA	Member-at-Large
Norman Kaplan, MD	Dallas, TX	Member-at-Large
J. Carlos Romero, MD	Rochester, MN	Member-at-Large
Ernesto L. Schiffrin, MD, PhD	Montreal, Canada	Chair, AHA Scientific Sessions Program Committee
R. Clinton Webb, PhD	Ann Arbor, MI	Member-at-Large
Christopher S. Wilcox, MD, PhD	Washington, DC	Member-at-Large
Daniel W. Jones, MD	Jackson, MS	Liaison, NHBPEP
Theodore A. Kotchen, MD	Milwaukee, WI	Liaison, High Blood Pressure Research
Paul Velletri, MD, PhD	Bethesda, MD	Liaison, NHLBI
Lisa A. Kitterman	Dallas, TX	Council Services Coordinator, AHA
Kathryn A. Taubert, PhD	Dallas, TX	Senior Scientist and Director of Cardiovascular Science, AHA

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# ■ CHAIR'S REPORT: Opportunities and Challenges for the Council—Part II

John E. Hall, PhD

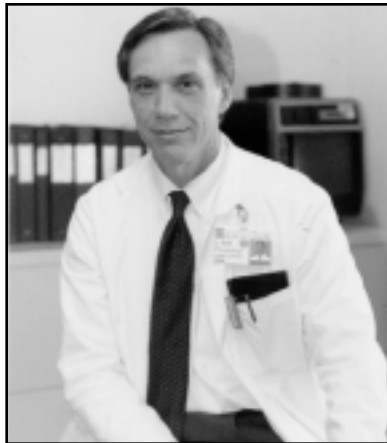
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First, let me express my thanks for your efforts this past year in achieving the Council's mission—to foster excellence in high blood pressure research and education. Many of the successful activities of the Council are outlined in the committee reports in this newsletter and on our newly established web page (<http://www.americanheart.org/Scientific/council/hbp/index.html>).

In the last newsletter, published about 6 months ago, I highlighted the 5-year strategic plan for the Council and pointed out that the plan is intended to be dynamic and updated as the needs of the Council change. Planning is a necessary first step in effectively meeting new challenges and taking advantage of new opportunities. However, plans without appropriate actions accomplish very little. It is now time for Part II of the plan—implementing the strategies that will enable the Council to effectively accomplish its mission. This phase will require the hard work and concerted efforts of many people. Therefore, I urge you to (1) read the strategic plan (posted on the web site) and provide us with your feedback so that the Council can better serve your needs; (2) actively participate in Council governance by volunteering to serve on committees and by nominating new leaders, including yourself; (3) submit your best research for presentation at Council meetings and for publication in *Hypertension*; and (4) recruit bright new investigators to join the Council and actively participate in its meetings.

**Participation in Governance.** The strategic plan resulted in a reorganization of Council committees and a goal of including younger members, greater diversity, and more international representation in Council governance. One strategy for achieving this goal is to ask the entire membership to nominate and vote for key leadership positions, including the Chair-Elect, Executive Committee, and the Nominations Committee. You will soon be receiving a request for nominations and an opportunity to cast your

ballot. Please participate in this process to ensure that Council committees are truly representative of the membership and responsive to your needs.



**Participation in Meetings and Publications.** On October 24-27, 2000, the Council will hold its 54th Annual Fall Conference at the Omni Shoreham Hotel in Washington, DC. Tito Nasjletti, Vice-Chair, and the Program Committee will again depend on you to submit your best work to ensure that the Fall Conference remains the premier hypertension research meeting. However, the large number of hypertension meetings that are planned for the year 2000 will provide increased competition to capture the best

science. Therefore, it is especially important this year for you to submit your best work for the Fall Conference, encourage your colleagues to do the same, and make plans to attend this outstanding meeting.

The Council's journal, *Hypertension*, is the best in its field. Ed Frohlich has done an outstanding job as Editor for the past 7 years, and *Hypertension* has the highest impact factor of all journals in the field of hypertension. The Proceedings of the Annual Fall Conferences, published in *Hypertension*, provide an excellent forum to communicate the research presented at the meeting. Bill Campbell, Don DiPette, and other Guest Editors, as well as many of our Council members serving as reviewers, have worked very hard to make certain that the Proceedings are published within 4 months of the meeting while maintaining a very high quality, fair review process. Thus, rapid publication in *Hypertension* is another major benefit of presenting your best research at the 54th Annual Fall Conference.

**Recruitment of Outstanding New Investigators.** The vitality of the Council critically depends on our ability to continuously attract the brightest new investigators to present their work at our meetings, to publish their research in *Hypertension*, and to become active members of the

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Council. Therefore, the strategic plan outlines new approaches to accomplishing this goal, such as providing additional travel awards for young investigators to attend the Fall Conferences and greater involvement of young investigators in the multiple activities of the Council. Of course, we must continue to make certain that our meetings and publications are the best in the field. The success of these recruiting efforts also depends on current members personally contacting new investigators and inviting them to attend meetings. Therefore, I urge you to invite *at least* one person who is currently not active in the Council to attend the Fall Conference this year, and then to become a member of the Council for High Blood Pressure

Research.

The Council for High Blood Pressure Research has a rich tradition of excellence in hypertension research. Maintaining and extending these high standards will require us to continuously plan for the future and work to implement strategies that ensure (1) the highest quality meetings and publications, (2) that the brightest young investigators participate in Council activities, and (3) that the Council effectively partners with other organizations and plays a key role in developing and implementing the mission of the American Heart Association. Thank you for the privilege of serving as chairman of this prestigious Council and for your hard work in achieving these goals.

**Information on the 54th Annual Fall Conference and Scientific Sessions will be posted on the AHA Web Site ([www.americanheart.org](http://www.americanheart.org)) as it is developed.**

**October 24-27, 2000  
Omni Shoreham Hotel  
Washington, DC**

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## ■ EDITORS' REPORT

*Joey P. Granger, PhD, and Daniel Jones, MD*

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**G**reetings from the Newsletter Editors!! We hope that the year 2000 has begun in a prosperous and productive fashion for all members of the Council. This publication represents the second publication of the newsletter under our editorship. We hope that the Newsletter has been and continues to be an important means of communication between the Executive Committee and Council members. The Council for High Blood Pressure Research (CHBPR) is undergoing a number of changes, and we plan to keep the members informed of these important changes.

This newsletter begins with a report from the Chairman of the CHBPR, Dr. John Hall. In his report entitled "Opportunities and Challenges for the Council--Part II," he discusses various mechanisms for implementation of the 5-year strategic plan that was recently developed by the CHBPR Strategic Planning Committee. He discusses the new plan for Council governance and encourages all members of the Council to actively participate in Council committees and functions.

A major goal of the Newsletter is to keep the Council members abreast of current and future research and educational activities of the Council. This issue includes a report from every major standing committee of the Council. The Newsletter also provides pertinent meeting

information on the 2000 fall Council meeting and the AHA Scientific Sessions meeting. In addition, we provide information on the International Society of Hypertension 2000 meeting and the Inter-American Society of Hypertension 2001 meeting.

We also continue to publish Brief Reviews on basic science and clinical topics of interest to the members of the CHBPR. In this issue, Dr. Russell Prewitt provides an excellent review on "Mechanical Factors Inducing Arterial Remodeling in Hypertension or Don't Blame the Blood Vessels." Finally, the Editors have published a recent statement on systolic blood pressure, death, and treatment guidelines that was issued by the National Heart, Lung, and Blood Institute.

In closing, we hope that the Newsletter has been and continues to be an important instrument that provides relevant information on current and future research and educational activities of the CHBPR. This goal cannot be maintained without your assistance. We would like to invite all Council members to provide suggestions on how the Newsletter can more effectively disseminate information regarding the research and educational missions of the CHBPR. Please send your suggestions to us at [jgranger@physiology.umsmed.edu](mailto:jgranger@physiology.umsmed.edu).

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## ■ 1999 IRVINE PAGE-ALVA BRADLEY LIFETIME ACHIEVEMENT AWARDEE: Myron Weinberger, MD

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The American Heart Association Council for High Blood Pressure Research presented the 1999 Irvine Page-Alva Bradley Lifetime Achievement Award to Myron H. Weinberger, M.D. for his outstanding contributions to our understanding of the mechanisms and therapy of human hypertension.

Dr. Weinberger is Professor of Medicine and Director of the Hypertension Research Center at the Indiana University School of Medicine where he earned his Bachelor of Science in zoology in 1959 and his medical degree in 1963. In addition to his outstanding research achievements, Dr. Weinberger also provided exemplary leadership as an American Heart Association volunteer and on the Board of Directors of the Indiana Affiliate. He also played an integral role on the Council for High Blood Pressure Research, the Scientific Sessions Program Committee, the Cardiovascular A Research Study Committee, and many other committees.



He has been active in several other organizations, including the American Association of Clinical Endocrinologists, American Society of Hypertension, and the American Society for Clinical Pharmacology and Therapeutics. Additionally, he has been a member of many editorial boards and has published more than 300 papers and many prestigious journals and books. Among the many achievements during his illustrious career, Dr. Weinberger received the prestigious

Robert Tigerstedt Award from the American Society of Hypertension in 1996.

For these, and many other achievements during his distinguished career, the Council for High Blood Pressure Research honors Myron H. Weinberger as the 1999 Irvine Page-Alva Bradley Lifetime Achievement Award recipient.

*Executive Committee*

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# ■ COMMITTEE REPORTS

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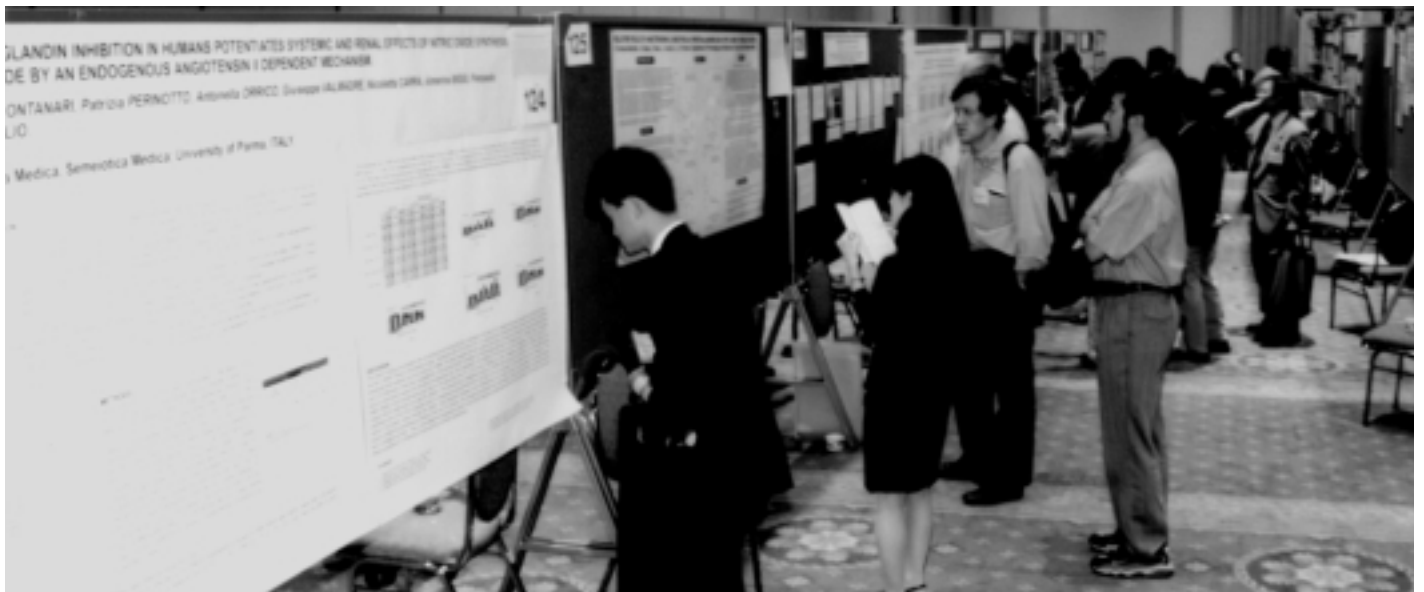
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## Report on the 53rd Annual Fall Conference and Scientific Sessions

The 53rd Annual Fall Conference and Scientific Sessions of the American Heart Association's Council for High Blood Pressure Research was held in Orlando, Florida, September 13-16, 1999. The conference was preceded, on September 13, by a workshop on channels and the mechanisms of hypertension. The workshop included 10 lectures, which provided an overview of ion and water channels as related to the vascular, renal, and neural mechanisms of blood pressure regulation. At the heart of the conference's scientific program there were 247 abstract presentations (74 oral and 173 posters), which were selected from 444 abstracts submitted for consideration to the Program Committee. About 45% of the abstracts selected for presentation originated in institutions outside the United States of America, thus emphasizing the international nature of the conference. The program also included 6 state-of-the-art lectures by invited speakers who presented overviews on topics of high relevance and interest and the 1999 Arthur C.

Corcoran Memorial Lecture, which was presented by Dr. Norman K. Hollenberg. The conference culminated with the Novartis Award for Hypertension Research Lecture presented by Dr. Richard P. Lifton, the recipient of the 1999 Novartis Award for Outstanding Hypertension Research.

The 53rd Annual Conference took place under the menace posed by hurricane Floyd. Floyd disrupted air traffic on the eastern seaboard of the United States and threatened Orlando with winds in excess of 100 miles per hour. This forced last-minute cancellations by a few session moderators and state-of-the-art lecture speakers. But out of adversity emerged a collective determination, at times surreal, to overcome anything threatening the Conference. Fellows, members, and guests of the Council in attendance contributed to create an invigorating atmosphere full of excitement. They also volunteered to fill the empty slots of session moderators and did so with splendid success. In one notable instance, a Fellow of the Council answered the call to serve by stepping in and delivering on a few hours' notice a state-of-the-art lecture in the closing session of the meeting. Dr. David R. Harder's enlightening lecture on the role of cytochrome P450



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eicosanoids in vasomotor regulation did not suffer a bit from the fact that the only visual aids used were transparencies drawn by hand.

And so the 53rd Annual Fall Conference and Scientific Sessions of the Council for High Blood Pressure Research came to a close. The scientific communications and lectures were of superior quality, as has become a standard for this meeting. The 1999 Council meeting at Orlando will be remembered as the one in which the exceptional commitment and determination displayed by every attendee stood in the face of threat by natural disaster to assure the success of the conference.

*Alberto Nasjletti, MD*

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### **Report on the Proceedings of the Council for HBPR, 1999**

The 53rd Annual Fall Conference and Scientific Sessions of the American Heart Association's Council for High Blood Pressure Research was held in Orlando, Florida, September 13-16, 1999. The conference was preceded by the Workshop on Channels and the Mechanism of Hypertension, which was organized by Alberto Nasjletti, MD. The program for the conference included 74 oral presentations and 173 posters, which were selected from 444 submitted abstracts. These presentations, which were judged the best hypertension research, covered a variety of topics, from genetics, molecular biology, receptors, vascular biology, and signal transduction to clinical hypertension and obesity. All presenters were encouraged to submit a manuscript for consideration for publication in the Proceedings issues of *Hypertension*. There were 115 manuscripts submitted, and 62 were accepted for publication. Manuscripts were reviewed by at least two referees and a Section Editor. Only the manuscripts that were judged to be of outstanding merit and that required minor or no revisions were accepted for publication. Section Editors were members of the Publication Committee of the Council for High Blood Pressure Research, and included George Bakris, MD; Toshiro Fujita, MD; Joseph R. Haywood, PhD; Jose E.

Krieger, MD, PhD; Margot C. LaPointe, PhD; Daniel Levy, MD; Thomas E. Lohmeier, PhD; Hiroko Nishimura, MD; Leopoldo Raij, MD; Mohan K. Raizada, PhD; Donna Wang, MD; and R. Clinton Webb, PhD.

I am grateful to these committee members for the time and diligent efforts that they devoted to the evaluation of the submitted manuscripts. In addition, I would like to express my gratitude to Gregory D. Fink, PhD; Scott Supowit, PhD; and Stephanie Watts, PhD, for their assistance as ad hoc members of the Publication Committee. I am also grateful for all who served as referees for the manuscripts. As in previous years, the timely review of the manuscripts allows the rapid publication of the proceedings. This rapid publication of the proceedings would not have been possible without the experience, hard work, and encouragement of Edward D. Frohlich, MD, Editor-in-Chief of *Hypertension*. This also required the dedicated support of the editorial staff of *Hypertension*: Debby K. Smith and Irene S. Hebert. They provided organization, hard work, advice, diligence, and support, and their efforts are greatly appreciated by the Publication Committee and the authors.

The Council meetings were the occasion of several invited lectureships and awards. In 1999, Norman K. Hollenberg, MD, presented the annual Arthur C. Corcoran Memorial Lecture; Myron H. Weinberger, MD, received the Council for High Blood Pressure Research Lifetime Achievement Award; David Geller, MD, PhD, received the 15th Annual Hoechst Marion Roussel Hypertension Research Clinical Fellowship Program Award; Dr. Craig H. Gelband received the Harry Goldblatt Award; and Dr. Richard P. Lifton received the 1999 Novartis Award for outstanding Hypertension Research.

We will continue to strive to make the proceedings issue of *Hypertension* a valuable and comprehensive forum that showcases the latest developments and advances in the field of hypertension research. To this end, we will continue to feature full-length, peer-reviewed research articles that are published in

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a timely manner. Finally, I want to thank all members and guests who attended the Orlando meeting despite the imminent threat of hurricane Floyd. This resilience demonstrates the dedication of our scientific community and the national and international importance placed on our Council meeting.

*Donald J. DiPette, MD*

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### **Report of the AHA Scientific Sessions Program Committee of the HBPR Council**

The Council for HBPR had highly successful activities at the 72nd Scientific Sessions of the American Heart Association, in Atlanta, GA, November 7-10, 1999. There were 110 abstracts accepted from approximately 250 submitted, which were presented in 5 oral sessions and 5 poster sessions. One of the oral sessions was the occasion for the Dahl Lecture, given this year by Dr. William Campbell on endothelium-derived relaxing factors. At the same session, the HBPR Distinguished Achievement Award was given by Dr. John Hall, Chair of the Council, to Dr. John Laragh, for a lifetime of major contributions to the knowledge on the pathogenesis and treatment of hypertension.

The CME activities of the HBPR Council were numerous and very well attended. As activities that were predominantly sponsored by the HBPR Council, there were 2 Sunday Morning Programs, 1 Plenary Session shared with another council, 4 Cardiovascular Seminars, and 7 How-to Sessions. Some of the sessions had standing room only. All received high grades (approximately 4.3/5.0) from attendees, and comments heard were very encouraging.

Preparation of the program for the 73rd Scientific Sessions of the American Heart Association in New Orleans, LA, November 12-15, 2000, is well under way. There will be a Plenary Session that originates exclusively in our Council, on Tuesday morning, and decisions on the Sunday Morning Programs, Cardiovascular Seminars, and How-to Sessions are being made at this time. The deadline for abstract

submissions is May 5, 2000. This year we have separated Experimental Hypertension (category 28) and Clinical Hypertension (category 42), each with its own expert reviewers. We believe this will improve the quality of review of abstracts.

I encourage all members of the HBPR Council to submit abstracts in categories 28 and 42, and others, and attend what is going to be an extremely interesting scientific meeting with ample opportunity for acquisition of the latest knowledge as well as an occasion for cross-fertilization between different areas of expertise in cardiovascular pathophysiology, therapy, and epidemiology.

*Ernesto L. Schiffrin, MD, PhD*

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### **Report from the AHA Research Committee**

There was an overall 6% increase in the number of grants submitted to the American Heart Association this past year. The monetary commitment from the American Heart Association was \$57.4 million dollars. One thousand two hundred and fifty-one research applications were reviewed by 22 national study groups. A total of 272 applications were approved for funding, representing 22% of the reviewed applications.

- 85 of 279 Scientist Development Grants (SDG) at a percentile rank of 29.76
- 73 of 236 Established Investigator grants (EIG) at a percentile rank of 29.55
- 104 of 672 Grants-in-Aid (GIA) at a percentile rank of 19.87
- 10 of 64 American Heart Association-Bugher Stroke Awards
- Research Committee maintained 6.2% of the American Heart Association's research dollars for underrepresented minorities.

Two recommendations for changes in grant requirements were approved by the Research Committee. They were as follows:

1. To broaden citizenship requirements of the SDG and EIG to be equivalent to the GIA. The recommendation was to broaden VISA types for SDG and EIG to U.S. citizens, permanent residents, or foreign nationals holding H1, H1B, J1, TC, TN, or O1 Immigrant status.
2. To allow optional primary investigator (PI) salary and fringe for GIA to include "up to 50% of total award."



William B. Campbell (left) receives the Lewis K. Dahl Memorial Lecture Award from Ernesto Schiffrin, MD.

The Circulation Council asked the Research Committee to reconsider the addition of medical student fellowships (institutional) into national program offerings. This fellowship program represented 974 fellows, 49 institutions, and 121 institutional awards over 15 years. The program was terminated 6/30/99. This motion was not approved by the Research Committee.

The Research Symposium held in the spring in Dallas for EIs, Clinical Scientists, and Minority Scientists was attended by 50 investigators. The Research Symposium to be held in the spring of 2000 will also include 3rd year SDG and EIG awardees and will be the largest symposium ever held.

Kathleen H. Berecek, PhD

### Lewis K. Dahl Memorial Lecture

The Lewis K. Dahl Memorial Lecture was established in 1988. The Chairman of the Program Committee solicits nominations from the Executive Committee, Program Committee, and Postgraduate Education Committee. The Program Committee Chair announces the name of the lecturer at the spring HBPR Executive Committee meeting.

#### RECIPIENTS

1988	Gerald F. DiBona, MD	1994	Haralambos Gavras, MD
1989	Ervin G. Erdos	1995	Celso E. Gomez-Sanchez, MD
1990	John H. Laragh, MD	1996	Alberto Nasjletti, MD
1991	Juan Carlos Romero, MD	1997	L. Gabriel Navar, PhD
1992	John E. Hall, MD	1998	Richard J. Roman, PhD
1993	Suzanne Oparil, MD	1999	William B. Campbell, PhD

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## Nutrition Committee Report

*AHA Diet-Heart Statement.* The Nutrition Committee is currently preparing an updated revision of the "Rationale of the Diet-Heart Statement of the American Heart Association." The previous rationale was published in 1993 with a subsequent statement of the "Dietary Guidelines for Healthy American Adults" published in 1996. In 1993, it was recommended that the general population not consume more than 7.5 gm of NaCl (3.0 g sodium) per day, and in 1996 this recommendation was changed to not more than 6.0 g NaCl (2.4 g sodium) per day. The primary rationale for this change was to maintain consistency with guidelines of a number of other agencies in the U.S. and abroad. In addition, it was emphasized that a reduced sodium intake should be only one component of a comprehensive nutritional approach to lowering blood pressure. Other important strategies that were mentioned include prevention and treatment of obesity, limitation of alcohol intake, and adequate intake of potassium, magnesium, and calcium.

Newer evidence from clinical trials continues to support these recommendations, which will again appear in the updated statement. In addition, based in part on results of the DASH trial,<sup>1</sup> the new statement will recommend that the general population consume a dietary pattern that emphasizes fruits, vegetables, and low-fat dairy products. In the DASH trial, systolic and diastolic blood pressures were reduced by 5.5 mmHg and 3.0 mmHg, respectively, by this dietary pattern; the blood pressure reductions were more pronounced in hypertensive persons. Although not designed to identify the effective nutrients of the diets, the DASH trial convincingly reaffirms the importance of multiple factors in the diet for blood pressure control. The new AHA dietary recommendations will emphasize that adequate mineral intake (potassium, calcium, magnesium) can be achieved through diets similar to those in the DASH trial. In the initial trial, NaCl intake was constant on the various diets (7.5 g NaCl/d), and a follow-up trial is currently in progress

to evaluate the effects of the DASH diets on blood pressure at three different levels of sodium intake. The results should be available later this spring.

*INAP.* In 1995, the American Heart Association, through the Nutrition Committee, formed a coalition with representatives from the food industry, the "Industry Nutrition Advisory Panel" (INAP). This coalition provides a platform for open dialogue, sharing of information, and planning cooperative programs in the areas of mutual interest in diet/nutrition and cardiovascular disease. Joint meetings of the INAP with the Nutrition Committee are held 1 to 2 times per year.

*New Council.* The American Heart Association has formed a new Scientific Council on Nutrition, Physical Activity, and Metabolism. The Council's mission is to promote the expansion and exchange of scientific knowledge of nutrition, metabolic regulation, and physical activity in relation to cardiovascular disease and stroke. A major objective of the Council will be to foster relationships within AHA and with other professional organizations whose members have scientific and clinical expertise in nutrition, intermediary metabolism, obesity, diabetes, and physical activity. This will enable planning of joint scientific conferences and working groups to address issues of mutual interest and to prepare advisory statements that may be endorsed by multiple organizations. For example, dietary guidelines have been developed for prevention of a number of disorders related to cardiovascular disease and stroke, including obesity, hypertension, and diabetes. Better understanding of metabolic and genetic factors contributing to these disorders, and the ways these factors are influenced by diet and physical activity, can lead to more appropriate preventive and therapeutic approaches.

Standing committees will be formed to represent the major areas of science and clinical practice comprised by the Council. An annual spring scientific meeting is planned for the Council with the goal of linking this meeting to the spring meetings of other councils (eg, the Councils on Epidemiology and Prevention, and Arteriosclerosis, Thrombosis, and Vascular Biology).

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The Council on Nutrition, Physical Activity, and Metabolism was approved on February 17, 2000. The membership at that time exceeded 400, most of whom were new to American Heart Association councils. During the month after its approval, over 900 new members have joined the Council. The new council provides an exciting new opportunity to share and expand scientific knowledge of nutritional and metabolic factors involved in cardiovascular disease.

To become a member of this council, please contact the American Heart Association, Council Services, 7272 Greenville Ave., Dallas, TX 75231, Fax (214) 691-6342, or Tel. (214) 706-1371.

### Reference

1. Appel LJ, Moore TJ, Obarzanek E, Vollmer WM, Svetkey LP, Sacks FM, Bray GA, Vogt TM, Cutler JA, Windhauser MM, Lin P-H, Karanja N, for the DASH Collaborative Research Group. A clinical trial of the effects of dietary patterns on blood pressure. *N Engl J Med.* 1997;336:1117-1124.

*Theodore A. Kotchen, MD*

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## Report from American Heart Association Liaison to the National High Blood Pressure Education Program Coordinating Committee

The National High Blood Pressure Education Program Coordinating Committee met in Reston, Virginia, on January 21, 2000. A full report on the Committee's activities will be available within a few weeks on the National Heart, Lung, and Blood Institute (NHLBI) National High Blood Pressure Education Program Coordinating Committee web site ([www.nih.gov](http://www.nih.gov)).

The meeting, as usual, was chaired by Dr. Claude Lenfant, Director of the NHLBI and Chairman of the Coordinating Committee. In his opening remarks, Dr. Lenfant noted the good funding for the National Institutes of Health (NIH) during the immediate past funding cycle. He cautioned the Committee about uncertainties in the future, espe-

cially in the next funding cycle, related to a change in leadership at NIH and because 2000 is an election year. In his remarks, Dr. Lenfant emphasized the purpose of the National High Blood Pressure Education Program Coordinating Committee. He stressed that our emphasis was appropriately on education (i.e., putting to use what we know). Trends in cardiovascular disease mortality over the last 50 years were reviewed. Dr. Lenfant noted that the decline in coronary heart disease and stroke rates was less in the last decade than in the two preceding decades. Although substantial progress has been made toward achieving the Year 2000 goals in some areas of cardiovascular disease risk, hypertension control rates (now at 27%) have not nearly achieved the 50% control rates that were targeted for the Year 2000. These rates have been worsening over the last few years. Also, goals for overweight, obesity, and physical activity are not nearly achieved. Dr. Lenfant challenged the Committee to use what we have in applying education to improve these rates in the years to come.

Related to using what we have, there were several presentations on implementation of the knowledge base. The first of these was a presentation by Dan Jones on implementation of JNC VI in the southeastern United States. Data on higher cardiovascular disease mortality rates in the southeast, as well as higher rates of risk factors, were reviewed. In a program led by the Consortium For Southeastern Hypertension Control, the National High Blood Pressure Education Program Coordinating Committee has worked with other organizations, including the American Heart Association, the Association of Black Cardiologists, the International Society on Hypertension in Blacks, and the Southern Medical Association to promote implementation of the JNC VI guidelines in this area of the country with high needs. This implementation plan is outlined in an article in the *American Journal of the Medical Sciences* 1999;318(6):357-64.

Dr. Joseph Izzo presented for the Committee's consideration a clinical advisory on systolic blood

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pressure in older Americans. Dr. Izzo reviewed the substantial evidence, especially evidence from **Multiple Risk Factor Intervention Trial** screenees, demonstrating the strong relationship between systolic blood pressure and cardiovascular disease. The Coordinating Committee approved the release of a clinical advisory statement on the importance of systolic blood pressure in older Americans. Clinicians will be encouraged to be diligent in reducing systolic blood pressure values to <140 in all of their patients, including elderly patients.

Dr. James Reed then presented material related to a clinical advisory on diabetes and hypertension. Dr. Reed reviewed results of recent clinical trials indicating the importance of lowering blood pressure in patients with diabetes. The goal blood pressure of <130/85 mmHg in diabetics was emphasized. The Committee voted to release an advisory on the management of hypertension in patients with diabetes. The advisory is authored by Dr. Reed and Dr. James Sowers.

Dr. Ray Gifford presented a report from a Working Group on High Blood Pressure and Pregnancy. The Committee voted to release this working group report; it will be published in the near future. Dr. Gifford reviewed the material in the report, which is comprehensive. Because of a lack of new data in this area, few changes were noted in recommendations to clinicians in the management of these patients.

The Committee will convene again in September 2000. If there are issues that members of the High Blood Pressure Research Council would like to see addressed by the Coordinating Committee, I would be happy to receive any suggestions.

*Daniel W. Jones, MD*

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### **News From the Hypertension Journal**

As we enter the seventh year of our editorial tenure of *Hypertension*, we want to express our deep appreciation to you, the major investigators in the field of hypertension. You are the backbone and major

strength of the journal and, without your continued service as authors, reviewers, and readers, our achievements, stated very simply, our positive experiences, would not have been possible. We also want to thank the staff of our editorial office. Many of you have had personal contact with this hard-working team. Ms. Debby Smith, our Managing Editor, is supported by Mrs. Irene Hebert, Associate Managing Editor, and Ms. Nicole Le Blanc, Editorial Assistant. They have made the difference in our opinion.

It is also appropriate to extend our appreciation to Drs. William B. Campbell and Joey P. Granger who have served the Council for High Blood Pressure Research and our journal as Special Editors for publication of the Proceedings of the Council's Annual Fall Scientific Meetings and of the biennial meeting of the Inter-American Society of Hypertension, respectively. As you undoubtedly know, we have markedly abbreviated the time to publication of these special issues to within 4 months of these meetings. This clearly would not have been possible without their invaluable help and that of their committees and reviewers. Succeeding them are Drs. Donald J. DiPette and L. Gabriel Navar, respectively, who have served as Guest Editors of these 1999 meetings. Finally, much thanks is due to the staff of the American Heart Association and Lippincott Williams & Wilkins (LWW) for their publishing support of these proceedings; this has been no small feat.

With respect to the overall publication statistics, we are proud that the impact factor has risen to 4.94, the highest of all journals in the field of hypertension. The number of manuscripts submitted to us continues to increase. In 1999 we received 1,268 submissions as compared to 617 papers in 1994. We continue to maintain a very speedy review time of 3.9 weeks from submission to first decision and 13.2 weeks from submission to final acceptance. As you know, the first figure is probably more important for an author to assess the promptness of journal review process; the latter reflects many other factors, including the authors' speediness to respond to reviewers' comments and suggestions.

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Of special note, over the past 5 years, we have increased the number of clinical research papers, which now comprises one half of the published papers. They are of the very best work in clinical investigation and on par with those published dealing with the various fundamental laboratory sciences. We are also pleased that over one half of the papers submitted to *Hypertension* emanate from the best laboratories of countries other than the United States. You may also be interested in knowing that selected papers from *Hypertension* are published in Italian, and soon, with the assistance of LWW, there will be a special Spanish and Portuguese edition as well as one in India.

Several innovations will be instituted in the forthcoming months that involve several mechanisms to increase the number of pages for publication of additional scientific manuscripts. Although it has not been possible to pressure authors and reviewers to reduce the number of pages devoted to the Materials and Methods sections, we continue to hope that this request is answered. To feel at ease in the review process of your papers, feel free to include reprints of any prior papers that refer to your methods in greater detail. We can now include detailed appendices of data online, and we have been publishing Letters to the Editor and their responses on the Internet. These items are fully referenceable and afford us the opportunity to use our unchanged printed page allocation (by the Scientific Publishing Committee of the American Heart Association) exclusively for scientific reports. Furthermore, we have recently announced that we will also publish "online only" papers in the journal (see the February 2000 issue of *Hypertension* for greater detail).

We hope that you have enjoyed the 20th anniversary celebration of *Hypertension*. Deliberate effort was made not to diminish our allotted pages for original scientific publications for our editorial notes of this "event." Thus, over these 20 years our journal has assumed a prominent position in the community of peer-reviewed journals of excellence, and we look forward to our next 2 years to make additional

inroads. If you have any comments, suggestions, or criticisms we would value your comments (Telephone: 504-842-4103, E-mail [hypertension@comm.net](mailto:hypertension@comm.net)). Finally, we extend our heartfelt appreciation for your continued confidence and support.

*Edward D. Frohlich, MD*

*Richard N. Re, MD*

*L. Gabriel Navar, PhD*

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### **Statement from the NHLBI on Systolic Blood Pressure, Death, and Treatment Guidelines**

Current guidelines for the prevention and treatment of high blood pressure acknowledge the critically important relationship between systolic blood pressure, diastolic blood pressure, and cardiovascular risk. "This relationship is strong, continuous, graded (and)...predictive...for those with and without coronary heart disease," notes the *Sixth Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC VI)*. A study funded by the National Heart, Lung, and Blood Institute (NHLBI) and published in the January 15 issue of the *Lancet* challenges JNC VI by asserting that the relationship between systolic blood pressure and mortality is not "continuous and graded." After careful review of this study, the NHLBI finds that it does not offer a basis for changing the current hypertension guidelines.

Dr. Sidney Port and coauthors of the study base their conclusions on a reanalysis of data from NHLBI's long-running Framingham Heart Study. Dr. Port concludes that risk of death was unrelated to systolic pressure up to approximately the 70th percentile of systolic blood pressure for each person of a given age and gender. Risk then rapidly increases for those with pressure above the 80th percentile pressure, according to Dr. Port. Based on this finding, Dr. Port suggests a reclassification of hypertension cut points, which would be based on these percentiles and factor in a person's age and sex. He

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concludes that the linear model on which current treatment guidelines are based results in an overestimate of the risks in the midrange of pressures—approximately 130 to 170 mm Hg. Dr. Port suggests that people who are treated at the current threshold for treatment, which is 140 mm Hg, may be taking antihypertensive medication unnecessarily. Dr. Port also notes that clinical trials of isolate systolic hypertension did not include people with systolic blood pressure below 160 mm Hg and, therefore, that therefore giving antihypertensive drugs “to persons solely on the basis that their systolic blood pressure exceeds 140 mm Hg is not justified.”

We attach great value to new scientific findings, and our careful review of Dr. Port’s paper finds his analysis thought provoking. However, we would not recommend a change in the guidelines based on one epidemiologic analysis. JNC VI was prepared by a multidisciplinary expert panel that reviewed all of the available evidence from not only clinical trials—often referred to as the gold standard of scientific research—but also from observational studies, basic research, and epidemiological studies, including all of the Framingham data. The totality of evidence found a clear linear relationship between systolic blood pressure, diastolic blood pressure, and deaths. Based on this review, JNC VI defined hypertension as systolic blood pressure averages of 140 mm Hg or greater and/or diastolic blood pressure averages of 90 mm Hg or greater. JNC VI also examined the frequency of serious nonfatal events such as stroke and heart attack, and the panel found the same linear relationship for these events.

Treatment recommendations are not based solely on a patient’s blood pressure level. The guidelines state that the presence of other risk factors for coronary heart disease and the presence of atherosclerosis must be considered when deciding whom and how to treat. Patients with several risk factors who are at higher risk for a heart attack or stroke should be prescribed drugs at lower blood pressure levels than patients who have no other risk factors. This approach recognizes that multiple factors are responsible for the development and acceleration of cardiovascular disease. Thus, an older male patient who has a systolic blood pressure of 140 mm Hg, diabetes, and heart failure is clearly managed in a different way from someone with a similar blood pressure level but no other risk factors. JNC VI acknowledges that each patient must be carefully evaluated and that physicians must use their best judgment to make individualized treatment decisions.

Hypertension, which affects about 50 million Americans, continues to be a major public health issue. Untreated hypertension can damage the kidneys and lead to stroke, heart attack, and heart failure. Treating hypertension can reduce the risk for these conditions.

Despite momentous declines in mortality from heart disease and stroke over the past 30 years, these diseases are still the first and third leading causes of death, respectively, in the United States. The NHLBI is strongly committed to combating these leading killers. Thus, the Institute will continue to support and critically evaluate new research on hypertension. Scientific research is the foundation on which NHLBI makes recommendations to clinicians.

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## ■ Brief Reviews

# Mechanical Factors Inducing Arterial Remodeling in Hypertension or Don't Blame the Blood Vessels

*Russell L. Prewitt, PhD*

*Department of Physiological Sciences, Eastern Virginia Medical School*

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### Introduction

The structure of the arterial wall remodels in hypertension with outward hypertrophy of the media in large arteries, whereas the arterioles undergo inward, eutrophic remodeling to vessels with a smaller lumen and unchanged cross-sectional area.<sup>1-3</sup> In between, the small arteries at the beginning of the resistance vasculature (~200  $\mu$ m) display a combination of hypertrophy and lumen reduction. As demonstrated by Folkow and coworkers,<sup>4</sup> remodeling increases the minimal vascular resistance of a vasodilated bed, and it amplifies the response to vasoconstrictor agents. Because hypertension almost always results in elevated peripheral vascular resistance, it was natural to suspect that these structural changes might play a primary role in the development of hypertension. With the realization that the kidney is responsible for the long-term regulation of blood pressure and that peripheral resistance can vary widely without changing arterial pressure,<sup>5</sup> the arteries are now viewed as victims of hypertension rather than the culprits. There is a possibility that remodeling of afferent arterioles could be a primary cause in some genetic forms of hypertension,<sup>6</sup> but this is again a renal mechanism, quite different from elevation of total peripheral resistance. Understanding the mechanisms behind the structural changes in the arteries is still of great importance not only because remodeling helps maintain elevated vascular resistance but also because if left unchecked these growth responses become exaggerated and lead to target organ injury, the basis of morbidity and mortality of long-standing hypertension.

Among several possible contributors to arterial remodeling, the mechanical factors of pressure and blood flow are the major determinants of arterial

diameter and wall thickness in hypertension as well as during angiogenesis. As noted by Thoma<sup>7</sup> over a century ago from studies of developing circulatory systems, tension determines the thickness of the wall, whereas blood flow induces enlargement of the lumen. If either of these mechanical forces changes in the adult organism, the vessels remodel appropriately. The rising blood pressure is dominant in hypertension, but, as we shall see, structural changes to pressure and flow may be linked through the Laplace relationship that states that circumferential wall stress is proportional to the radius of the vessel multiplied by the transmural pressure and divided by the wall thickness.

### Cyclical Strain of Cultured Cells

Protecting a vascular bed from the rising blood pressure will prevent remodeling even in genetic models of hypertension such as the SHR.<sup>8,9</sup> In hypertension due to coarctation of the aorta, structural alterations take place in the upper body but not the normotensive hindquarter.<sup>10</sup> These experiments support the importance of pressure itself as the stimulus for vascular remodeling. But how is a change in blood pressure perceived by the cells in the vascular wall and what is the mechanotransduction pathway? Cyclical stretch of vascular smooth muscle cells (VSMCs) cultured on flexible plates coated with fibronectin has revealed that mechanical stretch initiates a proliferative response through an autocrine link involving platelet-derived growth factor (PDGF).<sup>11</sup> If the cells were grown on laminin or elastin, or in the presence of RGD-peptide or soluble fibronectin, DNA synthesis did not occur with stretch.<sup>12</sup> Rather than proliferate, cells stretched on laminin increase their expression of smooth mus-

cle—specific myosin, suggesting a change to a more differentiated phenotype.<sup>13</sup> These experiments show that it is not the stretch of the cell itself that initiates the signal, but that it is the integrins recognizing different binding sites in the matrix that are acting as specific mechanoreceptors. Their specificity comes from the signaling molecules that are recruited to the intracellular tail when the focal adhesion complex is formed.

### Mechanotransduction in Isolated Resistance Arteries

Consistent with these findings are experiments on isolated resistance arteries showing that elevation of distending pressure from 90 to 140 mm Hg initiates a signaling pathway leading to *c-fos*, *c-myc*, and 18S rRNA expression without significant stretch of the artery.<sup>14</sup> If the arteries constrict when the pressure is elevated, the response is attenuated.<sup>15</sup> Such a myogenic response reduces circumferential wall stress according to the Laplace relationship, but this can be counteracted by raising pressure even higher (160 mm Hg) to elevate wall stress and recover proto-oncogene expression in an artery with a reduced diameter (unstretched). Proto-oncogene expression correlated very well with wall stress but

not with stretch of the vascular wall.<sup>15</sup> Recent studies have shown that phosphorylation of Erk 1/2 is necessary for *c-fos* induction in isolated arteries and that activation of *c-Src* is necessary for Erk 1/2 phosphorylation.<sup>16</sup> As shown in Figure 1, based on a proposal by Williams,<sup>17</sup> *c-Src*, along with focal adhesion kinase, may be associated with the focal adhesion complex and initiate a signaling pathway through the adapter proteins Grb-2-Shc-Sos to Ras and the MAP kinase pathway. Other mechanotransduction pathways such as activation of p38 through oxidative stress and mechanical activation of the PDGF receptor may also be involved in the response to pressure elevation, but the pathway shown in Figure 1 is supported by the most evidence.

### Remodeling to Shear Stress

Langille and O'Donnell have shown that remodeling of the arterial lumen to changes in blood flow is endothelium dependent.<sup>18</sup> It is well established that the endothelial cells release nitric oxide in response to increased shear stress, but how do they signal a growth response in the media? Do endothelial cells produce growth factors and secrete them on the abluminal side? Along these lines it is interesting that mesenteric resistance arteries remodeling to

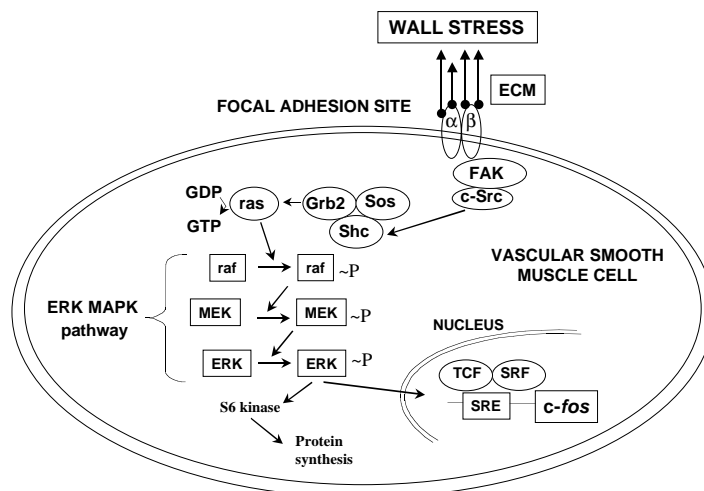


Figure 1. Proposed mechanotransduction pathway for a pressure stimulus acting through wall stress on a vascular smooth muscle cell. Activation of *c-Src* associated with the adhesion complex initiates signaling through the MAP kinase pathway leading to proto-oncogene expression and/or protein synthesis.

increased blood flow upregulate expression of mRNA for PDGF-A in the media before the endothelium.<sup>19</sup> One possible explanation is that when shear stress increases, nitric oxide—induced vasodilation increases circumferential wall stress by the Laplace relationship and that this activates the same signaling pathway in the VSMC as an elevation of pressure. Likewise, a decrease in shear stress will result in a reduction in diameter and wall stress and lead to inward remodeling of the artery.

### Wall Stress, Shear Stress, and Vascular Remodeling in Hypertension

If pressure is perceived as wall stress by VSMCs in the arterial wall, the various types of remodeling in different sections of the arterial network can be explained. As pressure rises, large arteries that possess little tone adapt to the increased wall stress by increasing the thickness of their wall, whereas their lumen remains unchanged. The arterioles, on the other hand, respond to the elevated pressure by constricting due to myogenic and autoregulatory mechanisms. The wall stress is reduced by the smaller radius, but the maintained constriction leads to inward, eutrophic remodeling of the wall. It is known that adhesion sites are not static and that realignment of adhesion sites and turnover of matrix components may underlie the inward remodeling process. Upstream the small arteries at the beginning of the resistance vasculature have less tone and weaker myogenic responses. Thus, they fail to control their wall stress by vasoconstricting and must still hypertrophy to reduce wall stress. They therefore exhibit a combination of inward and hypertrophic remodeling. In all cases, hypertrophy proceeds in an outward direction, and lumen reduction is the result of the chronic vasoconstriction. Endothelial dysfunction manifesting as a reduction in the release of nitric oxide appears early on in hypertension and may play a permissive role in the inward remodeling by failing to regulate shear stress. Thus, shear rates and shear stress are higher through the resistance vessels, because they must be to dissipate the elevated blood pressure before reaching the capillaries.

At first, remodeling is exactly what the arteries need to do to control blood flow and wall stress in the face of elevated pressure. As the endothelium is damaged over time by the rising high blood pressure, it ceases to maintain its antithrombotic and antiinflammatory role and the growth response becomes maladaptive, leading to subintimal hyperplasia, arteriosclerosis, and injury of the cerebral, renal, and coronary circulations. A major difference is that this hypertrophy and hyperplasia begin to occlude the lumen. So, do not blame the blood vessels for hypertension and its deleterious effects. If the arteries did not remodel, target organ injury would appear much earlier in the form of aneurysms and sclerotic and fibrotic injury from abnormal pressures allowed to penetrate the microcirculation. As it is, the damage is delayed until the arteries themselves are severely injured and the real culprit is the failure of the renal mechanisms for excretion of sodium and water.

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### **AHA Web Site News**

Please visit the AHA's Web Site at [www.americanheart.org](http://www.americanheart.org) for information regarding nutrition, exercise, programs, and products. There is information on Stroke prevention, treatment and recovery. The Science and Professional section will provide information on AHA publications, research, statistics, Continuing Medical Education (CME), Meetings, and Council activities. You will also have the opportunity to Show Your Support through donations, volunteering information regarding your AHA and Public Advocacy.

If you haven't visited our Council's Web Site yet, please do so at [www.americanheart.org/Scientific/council/hbp/index.htm](http://www.americanheart.org/Scientific/council/hbp/index.htm) and you will find information about *Announcements, Annual Fall Conference, Awards, Becoming a Member, Bulletin Board, Committees, Hot Links* (associations and societies, universities and research centers, journals and publications, etc.), *Hypertension Journal, Hypertension Primer, Membership Directory, News, Newsletter, Register for a Meeting, and Suggestion Box.*

### **Membership Online Directory**

Your membership numbers control access to the Membership Directory Online. If you need to verify your membership number, refer to renewal notices or call Lippincott Williams & Wilkins at 1-800-787-8984 or 410-361-8080. We encourage you to access the Membership Directory and expertise profile and, if necessary, update your profile by making revisions directly to your records online.

### **Job Board**

The Job Board Web Site will be accessible yearround through the Scientific Sessions Web Site at [www.scientificsessions.org](http://www.scientificsessions.org) or the Stroke Conference Web Site at [www.strokeconference.org](http://www.strokeconference.org). Click on the *Job Board* button to access *Jobs Available, Jobs Wanted*, and instructions for posting a job.

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■ **54th Annual Fall Conference and Scientific Sessions of the Council on High Blood Pressure Research**

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**Workshop on Growth and Death of Cardiovascular Cells:  
Mechanisms and Implications for Cardiovascular Remodeling and Injury**

Omni Shoreham Hotel  
Washington, DC  
Tuesday, October 24, 2000  
8:00 AM – 5:30 PM

Remodeling of the heart and arterial vessels in hypertension and other cardiovascular diseases features dysregulation of the complex mechanisms governing cell growth and death in the cardiovascular system. Target organ injury in hypertension also is punctuated by cellular dysfunction in relation to mechanisms controlling cellular differentiation, growth, proliferation and death. Over the past decade, much new knowledge was accrued on the aforementioned processes, particularly, on the nature and mechanism of action of endogenous factors that promote or inhibit cell growth and death in the cardiovascular system. This one-day workshop, aimed at basic and clinical scientists, will provide an overview of the mechanisms underlying cellular differentiation, growth and death in the heart and arterial vessels, determine whether dysfunction of such mechanisms contributes to cardiovascular remodeling and vascular injury, define some of the major unanswered questions, and review the methods and approaches that can be used to answer such questions. Presentations will strive to frame fundamental information on the molecular mechanisms controlling cell growth and death within the context of cardiac and vascular remodeling and injury in hypertension and other cardiovascular diseases. Topics to be considered include: (1) the molecular mechanisms of apoptosis in cardiovascular tissues; (2) the role of angiotensin in cardiovascular remodeling; (3) vascular apoptosis and growth in hypertension; (4) differentiation of vascular smooth muscle in physiological and pathological settings; (5) angiogenesis; (6) cross-talk between signalling pathways impacting on the tone and structure of arterial vessels in hypertension; (7) inflammatory mechanisms and target organ injury; (8) the role of endothelial cell dysfunction in the progression of diabetic nephropathy; (9) diabetes, PPAR-gamma and cell cycle regulation in the vasculature; and (10) angiotensin II, nitric oxide, and cardiorenal injury in clinical and experimental hypertension.

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**Workshop on Mechanisms of Growth and Death of Cardiovascular Cells:  
Mechanisms and Implications for Cardiovascular Remodeling and Injury**

Omni Shoreham Hotel  
Washington, DC  
Tuesday, October 24  
8:00 AM – 5:30 PM

<b><u>SPEAKER</u></b>	<b><u>TITLE</u></b>
Michael D. Schneider, MD	Genetic Dissection of Cardiac Life and Death Cascades
Piero Anversa, MD	The Renin-Angiotensin System, Cell Death, and Cell Growth
Pavel Hamet, MD, PhD	Growth and Death of Vascular Smooth Muscle Cells in Hypertension
Gary K. Owens, PhD	Mechanisms Controlling Vascular Smooth Muscle Differentiation: Dysregulation in Disease States
Kenneth Walsh, PhD	Role of Endothelial Cell Growth and Death in Angiotensinosis
Rhian M. Touyz, MD, PhD	Molecular Physiology of Vascular Cells: Implications for Vascular Structure and Tone in Hypertension
Friedrich C. Luft, MD	Inflammatory Mechanisms and Cardiovascular Damage in Hypertension
Willa Ann Hsueh, MD	PPAR Gamma, Diabetes, and Cell Cycle Regulation in the Vasculature
Michael S. Goligorsky, MD, PhD	Endothelial Cell Dysfunction: Role in the Progression of Diabetic Nephropathy
Leopoldo Raij, MD	Angiotensin II, Nitric Oxide, and Cardiorenal Injury in Hypertension: From the Laboratory to the Bedside

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**Mini-Symposium**  
**“New Concepts on the Role of Aldosterone in Hypertension  
and Cardiovascular Disease”**

Omni Shoreham Hotel  
Washington, DC  
Friday, October 27

Renal actions of aldosterone promoting retention of salt and water contribute importantly to the pathogenesis of hypertension and congestive heart failure. Actions of aldosterone on extrarenal, non-epithelial, and tissues also contribute to prohypertensive mechanisms, cardiovascular remodeling and target organ damage. This mini-symposium aims at providing basic and clinical scientists with an update of the latest basic and clinical research on the involvement of aldosterone in the pathogenesis of cardiovascular disease. Topics to be considered include: (1) expression and regulation of aldosterone biosynthesis at extra-adrenal sites, e.g., brain and cardiovascular tissues; (2) the involvement of aldosterone in central nervous system mechanisms promoting hypertension; (3) the role of aldosterone in cardiac remodeling and hypertensive vascular injury; and (4) therapeutic strategies using aldosterone receptor(s) antagonists for management of hypertension, heart failure and other cardiovascular conditions.

**SPEAKER**

**TITLE**

Gelso Gomez-Sanchez, MD	Novel Prohypertensive Actions of Aldosterone
Bernard Swynghedauw, MD	Role of Aldosterone in Cardiovascular Remodeling
Gordon H. Williams, MD	Aldosterone, Hypertension and Cardiovascular Disease

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## ■ International Society of Hypertension 2000 Meeting

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The 18th Scientific Meeting of the International Society of Hypertension will be held in Chicago, August 20-24, 2000. It has been 20 years since the ISH meeting was last hosted in the United States (1980 in New Orleans). The recent scientific meetings of the ISH have set escalating standards of excellence and have been attended by more than 6,000 participants. The upcoming Chicago ISH-2000 meeting represents the first coordinated effort of the Council for High Blood Pressure Research and the American Society for Hypertension to organize a large international meeting of this sort.

The Organizing Committee will continue the commitment of the ISH to a program that addresses epidemiology, prevention, and clinical trials in addition to human and animal physiology and molecular and genetic mechanisms. The Program Committee, comprised of 22 members from the American Society of Hypertension and Council and 14 international members will promote presentations aimed at the impact of national health care policies on the prevention and treatment of hypertension to promote a global focus. The meeting will also be preceded and followed by a series of 25 exciting sponsored and investigator-initiated Satellite Symposia that have emerged as one the highlights of this forum. Four Breakfast Workshops will be scheduled

every morning to stimulate informal discussion of unresolved questions in hypertension research and to provide "how-to" information to practicing physicians. A limited number of Young Investigator Travel Grants and Travel Grants for delegates from countries experiencing economic hardship will be available.

The venue for the meeting will be the newly reconstructed Navy Pier, which extends nearly a half a mile out into Lake Michigan from the heart of downtown Chicago. The Sheraton Chicago Hotel and Towers is the headquarters hotel, and ISH-2000 has reserved a large block of other hotels and rooms convenient in the area around Navy Pier.

### **Important Deadlines:**

Reduced Registration - May 1, 2000

Housing Requests - June 16, 2000

Details of the ISH-2000 meeting are currently available from:

Web site: [www.hypertension2000.org](http://www.hypertension2000.org)

E-mail: [ish2000@courtesyassoc.com](mailto:ish2000@courtesyassoc.com)

Courtesy Associates

2000 L Street NW, Suite 710

Washington, DC 20036

Telephone: 1-202-331-0111

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## ■ Inter-American Society of Hypertension 2001 Meeting

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The Scientific meeting of the Inter-American Society of Hypertension will be held in Santiago, Chile, on March 26-30, 2001. For more information

on the meeting, please contact Gloria Valdes, MD, by telephone (562) 686-3714, fax (562) 639-7377, or e-mail [gvaldes@med.puc.cl](mailto:gvaldes@med.puc.cl).

# Calendar of Upcoming Events

Upcoming conferences that should be of interest to Council members are shown below. Meetings sponsored by the AHA and the various AHA Councils and those sponsored by other societies are included.

## AHA SCIENTIFIC CONFERENCES

### May 20-22, 2000

First Conference on Arteriosclerosis Thrombosis and Vascular Biology, Omni Interlocken, Denver, CO

### July 30-August 11, 2000

26th 10-Day Seminar on the Epidemiology and Prevention of Cardiovascular Diseases, Granlibakken Conference Center, Tahoe, CA

### October 24-27, 2000

54th Annual Fall Conference and Scientific Sessions of the Council for High Blood Pressure Research  
Omni Shoreham, Washington, DC

### November 8-11, 2000

Jackson Cardiovascular Renal Meeting, Jackson, MS  
Tel: (601) 984-1801

### November 12-15, 2000

73rd Scientific Sessions, New Orleans, LA  
Tel: (214) 706-1543; Fax: (214) 706-5262

### February 14-16, 2001

26th International Stroke Conference  
Ft. Lauderdale Convention Center, Ft. Lauderdale, FL

### September 22-25, 2001

55th Annual Fall Conference and Scientific Sessions of the Council for High Blood Pressure Research  
Hyatt Regency, Chicago, IL

### November 11-14, 2001

74th Scientific Sessions, Anaheim, CA  
Tel: (214) 706-1543; Fax: (214) 706-5262

### September 25-28, 2002

56th Annual Fall Conference and Scientific Sessions of the Council for High Blood Pressure Research  
Walt Disney World Resort, Orlando, FL

### Inquiries for all AHA Scientific Sessions and Conferences:

American Heart Association  
Meetings and Councils  
7272 Greenville Avenue, Dallas, TX 75231  
Tel: 214-706-1543  
Fax: 214-373-3406  
E-mail: scientificconferences@amhrt.org

## OTHER MEETINGS WITHIN THE US

### May 5-7, 2000

Frontiers in Lipoprotein & Vascular Disease Research, Basic Science, Analytical, Clinical & Public Health Applications  
St. Louis, MO, Tel: (800) 323-2996, Ext. 405

### May 17-20, 2000

American Society of Hypertension (ASH) Conference  
New York  
www.ash-us.org

### July 8-12, 2000

29th Annual Scientific Meeting ISEH, Tampa, FL  
Tel: (202) 857-1890

### August 20-24, 2000

18th Scientific Meeting of the International Society of Hypertension, Chicago, IL  
www.hypertension2000.org

### October 11-16, 2000

American Society of Nephrology Renal Week and 33rd Annual Meeting and Science Expo, Toronto, Canada  
Tel: (202) 8578-1190

## INTERNATIONAL MEETINGS

### June 25-30, 2000

XII International Symposium on Atherosclerosis  
Stockholm, Sweden, Contact: Ruan Changgeng,  
Jiangsu Institute of Hematology, Suzhou Medical  
College Hospital, Jiangsu Province, Chinsclerosis,  
Stockholm, Sweden

### September 6-10, 2000

XIth International Vascular Biology Meeting, Geneva,  
Switzerland, Tel: 41 22 345 3600

### March 26-30, 2001

Inter-American Society of Hypertension, Santiago, Chile  
Tel: (502) 585-3714

# We Want YOU To Become a Member

## Council on High Blood Pressure Research

The American Heart Association is a non-profit voluntary health organization that supports basic and clinical research as well as education of health professionals and the lay public. The Council for High Blood Pressure Research is one of 12 scientific councils of the association - each of which represents a body of knowledge important to our mission, which is to reduce disability and death due to cardiovascular diseases and stroke.

The purpose of this council is to aid and promote the study, prevention, and cure for hypertension and associated disorders. Every fall the council holds a major scientific conference, an international event bringing together some 500 scientists to hear major presentations on hypertension. Selected presentations at this conference are published in a special issue of Hypertension. One of the most prestigious awards in the field, the Novartis Award for Hypertension Research, is also presented at the conference. A subscription to

Hypertension is included in council membership dues.

As a member, you will receive the following benefits and opportunities:

- Reduced registration for the Council's Annual Fall Scientific Sessions, early notification and reduced registration fees for the association's annual Scientific Sessions as well as other council-sponsored meetings
- Newsletters with updates on council activities and issues of interest to members
- Access to on-line membership/expertise directory, bulletin boards, and council home pages
- 25% discount on subscriptions to our scientific journals
- Opportunities to apply for council-sponsored scholarships and travel stipends

Don't delay. Join today!

For only \$210 (\$264 non-US) you become a member of the American Heart Association at the National Level!

**Yes! I want to become a member of the Council on High Blood Pressure Research.**

Name \_\_\_\_\_ Degree \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_ Country \_\_\_\_\_

Phone \_\_\_\_\_ Fax \_\_\_\_\_ E-mail \_\_\_\_\_

Month/Year of Birth \_\_\_\_/\_\_\_\_ Gender  (M)  (F) Speciality \_\_\_\_\_

Race/Ethnicity:  Alaskan Native  American Indian  Asian or Pacific Islander  Black  Hispanic  White

% of time spent (=100%) Student\_\_\_\_ Research\_\_\_\_ Administration\_\_\_\_ Teaching\_\_\_\_ Clinical\_\_\_\_ Other (specify)\_\_\_\_

Method of Payment:

- Bill Me (membership will not be activated until payment has been received)
- Check or money order enclosed (payable to the American Heart Association drawn on US bank in US dollars)
- MasterCard  Visa  American Express  Discover

Card Number \_\_\_\_\_ Expiration Date \_\_\_\_\_

Total payment \$ \_\_\_\_\_

Signature as it appears on the card \_\_\_\_\_

To become a member of the Council for High Blood Pressure Research, please complete this form and mail along with your payment to: American Heart Association, Council Services, 7272 Greenville Ave, Dallas, TX 75231. Questions? Call Customer Service at 800-787-8984, (301-714-2307 outside US) or fax 800-787-8985, (301-714-2327 outside the US). If paying by credit card, you may fax your order to 214-691-6342.

## Council for High Blood Pressure Research Membership Survey

**Please print information below:**

Name \_\_\_\_\_ Degree \_\_\_\_\_  
 Title \_\_\_\_\_  
 Institution \_\_\_\_\_  
 Department \_\_\_\_\_  
 Address \_\_\_\_\_  
 \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Postal Code \_\_\_\_\_  
 Phone: \_\_\_\_\_ Fax \_\_\_\_\_  
 E-Mail: \_\_\_\_\_

**PHYSICIAN / MD**

\_\_\_ Cardiology  
 \_\_\_ Endocrinology  
 \_\_\_ Internal Medicine  
 \_\_\_ Nephrology  
 \_\_\_ Other (specify) \_\_\_\_\_

**SCIENTIST/PHD**

\_\_\_ Biochemistry  
 \_\_\_ Physiology  
 \_\_\_ Pharmacology  
 \_\_\_ Other (specify) \_\_\_\_\_

**NURSE** \_\_\_ **ALLIED HEALTH PROFESSIONAL**

**OTHER (specify)** \_\_\_\_\_

\_\_\_ **Young Investigator** (less than 4 years since first full-time faculty/staff appointment at assistant professor level or equivalent)  
 Year of first appointment \_\_\_\_\_

The following information is optional and will not be used for any purpose other than to provide the AHA with statistical information concerning the level of participation by women and minorities in its programs.

Male  
 Female

**Race/Ethnic Background**

\_\_\_ Alaskan Native  
 \_\_\_ American Indian  
 \_\_\_ Asian  
 \_\_\_ Black  
 \_\_\_ Hispanic  
 \_\_\_ White  
 \_\_\_ Other (specify) \_\_\_\_\_

**Percent of time spent in each of the following:**

\_\_\_ Administration  
 \_\_\_ Patient care  
 \_\_\_ Research  
 \_\_\_ Teaching  
 \_\_\_ Other (specify) \_\_\_\_\_

**Past AHA Involvement:**

Local Level \_\_\_\_\_  
 Affiliate Level \_\_\_\_\_  
 National Level \_\_\_\_\_

**Current AHA Involvement:**

Local Level \_\_\_\_\_  
 Affiliate Level \_\_\_\_\_  
 National Level \_\_\_\_\_

Membership in \_\_\_\_\_  
 other societies (1) \_\_\_\_\_ (2) \_\_\_\_\_ (3) \_\_\_\_\_

**INTEREST IN SERVING AT THE NATIONAL LEVEL IN THE FOLLOWING CAPACITIES:**

\_\_\_ Grading abstracts for stroke conference/scientific sessions  
 \_\_\_ Peer reviewing research grant applications  
 \_\_\_ Contributing to council newsletters  
 \_\_\_ Participating on writing groups  
 \_\_\_ Planning scientific conferences  
 \_\_\_ Participating in mentoring programs  
 \_\_\_ Chairing sessions at national meetings  
 \_\_\_ Serving on Council committees/task forces  
 \_\_\_ Other \_\_\_\_\_

**SPECIFIC AREAS OF EXPERTISE (Check up to 5.)**

**BASIC SCIENCE**

\_\_\_ Autonomic, reflex control of circulation  
 \_\_\_ Cardiac structure/function  
 \_\_\_ Cell and developmental biology  
 \_\_\_ Endothelial biology  
 \_\_\_ Genetically engineered models of human disease, gene transfer  
 \_\_\_ Growth factors, cytokines  
 \_\_\_ Hormones (RAS, steroids, kinins, etc.)  
 \_\_\_ Inflammation and adhesion molecules  
 \_\_\_ Integrative cardiovascular physiology  
 \_\_\_ Ion channels and membrane transporters  
 \_\_\_ Obesity, insulin resistance, metabolism  
 \_\_\_ Receptors and signal transduction  
 \_\_\_ Renal Mechanisms  
 \_\_\_ Vascular Biology, angiogenesis  
 \_\_\_ Other (specify) \_\_\_\_\_

**CLINICAL SCIENCE**

\_\_\_ Clinical hypertension  
 \_\_\_ Clinical trials  
 \_\_\_ Diabetes  
 \_\_\_ Genetics of cardiovascular disease  
 \_\_\_ Gene therapy, clinical  
 \_\_\_ Heart failure, cardiac dysfunction  
 \_\_\_ Kidney disease  
 \_\_\_ Nursing  
 \_\_\_ Physical therapy  
 \_\_\_ Rehabilitation, prevention, education, patient care  
 \_\_\_ Stroke  
 \_\_\_ Other (specify) \_\_\_\_\_  
 \_\_\_ Speech therapy/pathology  
 \_\_\_ Thrombolytic treatment, clinical

**POPULATION SCIENCE**

\_\_\_ Epidemiology  
 \_\_\_ Health Policy and Outcomes Research  
 \_\_\_ Prevention Research  
 \_\_\_ Risk Factor Modification  
 \_\_\_ Other (specify) \_\_\_\_\_

**Please Fax to: 214/691-6342 or Mail to: Rae Trevathan-Arwood  
 American Heart Association  
 7272 Greenville Avenue  
 Dallas, TX 75231**

**SUPPORT HEART & STROKE RESEARCH FUNDING  
COMMIT TO MAKING A DIFFERENCE**

**Send a Letter to President Clinton**

**Urge Him to Make Heart and Stroke Research  
A Top Priority in His Budget**

SPRING 2000

The Honorable Bill Clinton  
The White House  
Washington, DC 20500

Dear Mr. President:

I urge you to make heart and stroke research a top priority in your FY 2001 budget for the National Institutes of Health.

Heart attack, stroke and other cardiovascular diseases remain America's No. 1 killer and a main cause of disability. Nearly 60 million Americans of all ages suffer from cardiovascular diseases at an estimated cost of \$287 billion in medical expenses and lost productivity in 1999.

Heart attack is America's single largest killer and stroke is the No. 3 killer. About 21 million Americans live with the effects of heart disease. Heart disease is the leading cause of premature, permanent disability among American workers, accounting for nearly 20% of Social Security disability payments. Around 4.4 million Americans suffer from the consequences of stroke, a leading cause of permanent disability.

Despite these staggering statistics, in constant dollars from FY 1988 to FY 1998, the National Heart, Lung, and Blood Institute's Heart Program budget decreased 2.3%. Stroke will cost an estimated \$45 billion in 1999, but the National Institute of Neurological Disorders and Stroke expects to invest a mere \$96 million in stroke research in FY 1999. Yet, in a national public opinion poll, 81% of Americans support more money for heart research and 78% support more money for stroke research.

Promising opportunities in the battle against heart disease and stroke can only be expanded with more resources. Please show support for heart and stroke research in your FY 2001 budget for the National Institutes of Health.

Respectfully,

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Print Address

\_\_\_\_\_  
Print City/State/Zip

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■ **NOMINATION FORM FOR COUNCIL POSITIONS**

# Council for High Blood Pressure Research

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## General Information

The Nominating Committee invites nominations for Executive Committee members and Assembly Delegates. Terms are for two years and will begin July 1, 2001. Executive Committee members are required to attend two meetings per year and serve on a subcommittee.

## Instructions

Please submit nomination form along with an updated curriculum vitae to: Council Services, American Heart Association, 7272 Greenville Ave., Dallas, TX 75231-4596. Deadline is July 1, 2000. Nominations received after this date will not be considered for this year's candidates.

## Biographical Information (Please type)

Name: \_\_\_\_\_

Position and title: \_\_\_\_\_

Place of employment: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_ Fax: \_\_\_\_\_ E-mail Address: \_\_\_\_\_

Home Address: \_\_\_\_\_

*Current or past AHA involvement:*

Division: \_\_\_\_\_

Affiliate: \_\_\_\_\_

National: \_\_\_\_\_

**Consent:** I consent to having my name submitted to the Nominating Committee in consideration for the position of:

\_\_\_\_\_ Council Vice Chairperson

\_\_\_\_\_ Member-at-Large

\_\_\_\_\_ Assembly Delegate

I agree to serve if elected

\_\_\_\_\_  
Signature of Nominee

\_\_\_\_\_  
Typed Name

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Proposer

\_\_\_\_\_  
Typed Name

\_\_\_\_\_  
Date

## **Personal Data**

The Women and Minorities Leadership Committee of the American Heart Association (AHA) is committed to increasing participation and promotion of women and minorities to leadership positions on councils, on committees, and in AHA components. So that we may accurately report these statistics to the committee, we ask that each nominee provide the following information. **Providing this information is strictly voluntary, and all data will be confidential.** Thanks for your cooperation.

Sex:  Male  Female

Race and/or ethnic origin (check one):

Note: for purposes of reporting mixed racial and/or ethnic origin, the category that most closely reflects the individual's recognition in the community should be used.

- Alaskan native
- American Indian
- Asian or Pacific Islander
- Black, not of Hispanic origin
- Hispanic
- White, not of Hispanic origin

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## COUNCIL FOR HIGH BLOOD PRESSURE RESEARCH FELLOWSHIP APPLICATION

### Criteria for New Fellowship:

**Fellows** are nominated by Fellows of the Council for High Blood Pressure Research and elected by the membership. Fellowship is reserved for physicians and medical scientists.

*To be elected as a Fellow in the Council for High Blood Pressure Research, a candidate must have made and be making outstanding contributions in the field of basic, clinical, or epidemiological hypertension research or in relevant basic sciences.*

**International Fellows** are nominated by Fellows and elected by the membership. International fellowship is reserved for physicians and scientists residing outside North America. The criteria for election to International Fellowship will be equivalent to those described for Fellows.

**Emeritus Fellowship** may be granted upon request after a Fellow has retired. Emeritus Fellows are exempt from payment of Council dues.

### Fellowship Nominations:

Each nomination must have one sponsor and a letter of recommendation from that sponsor. The sponsor must be an active Fellow or Emeritus Fellow of the Council for High Blood Pressure Research. Nomination forms are reviewed by the Nominating Committee. Recommendations are presented to the Executive Committee for approval. Approved nominations are then presented to the voting membership at the annual business meeting for election.

### Responsibilities of Sponsors:

- a. The Sponsor must be a Fellow of the Council for High Blood Pressure Research.
- b. The Sponsor obtains the nominee's curriculum vitae and bibliography and attaches it to the nomination form.
- c. The Sponsor must sign the nomination form.
- d. The Sponsor must write a letter of recommendation.
- e. The Sponsor forwards the nomination form and attachments to:

Credentials Secretary, Scientific Councils, American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231-4596.

### Council for High Blood Pressure Research

NOMINATION FOR MEMBERSHIP—As A \_\_\_ FELLOW OR \_\_\_ INTERNATIONAL FELLOW (Please Type)

Name \_\_\_\_\_ (as it should appear on Fellowship certificate) Degree(s) \_\_\_\_\_

Position or Rank \_\_\_\_\_

Department \_\_\_\_\_ Phone \_\_\_\_\_

E-Mail Address \_\_\_\_\_ Fax Number \_\_\_\_\_

Institution \_\_\_\_\_

Address \_\_\_\_\_

City/State/Postal Code \_\_\_\_\_

Home Address \_\_\_\_\_ Phone \_\_\_\_\_

City/State/Postal Code \_\_\_\_\_

Proposed by \_\_\_\_\_

Position or Rank \_\_\_\_\_

Institution \_\_\_\_\_ Phone \_\_\_\_\_

Address \_\_\_\_\_

City/State/Zip Code \_\_\_\_\_

### GENERAL SURVEY INFORMATION ON THE PROPOSED FELLOW

Month and Year of Birth \_\_\_\_ / \_\_\_\_ Gender:  M  F

Race/Ethnicity:  Alaskan Native  American Indian  Asian or Pacific Islander  Black  Hispanic  White

% of time spent: (=100%) \_\_\_ Student \_\_\_ Research \_\_\_ Administration \_\_\_ Teaching \_\_\_ Clinical

\_\_\_ Other (specify) \_\_\_\_\_

## AMERICAN HEART ASSOCIATION SERVICES

To provide you with the best customer service, listed below are the services and contact numbers you are most likely to need.

To ensure timely delivery of your newsletter, journals, and other important information, please send us your address changes and telephone and fax numbers using the coupon below.

**AHA National Center**  
7272 Greenville Avenue  
Dallas, TX 75231-4596  
Tel 214-373-6300  
Fax 214-373-3406

<http://www.americanheart.org>

Service	Department	Telephone	Fax	E-mail
<b>Address Changes</b>	Customer Service	800-787-8984 or 410-361-8080	800-787-8985 410-361-8048	custserv@wwilkins.com custserv@wwilkins.com
<b>Awards</b> Council New Investigator Award Research Award Student Scholarship (Council)	Council Services Research Administration Scientific Councils	214-706-1565 214-706-1453 214-706-1565	214-373-3406 214-706-1341 214-373-0268	
<b>Conferences</b> Annual Scientific Sessions Scientific Conferences	Meetings Meetings	214-706-1543 214-706-1511	214-373-3406 214-373-3406	
<b>Council Membership</b> Applications—Catalog Billing Information Donations/Memorials	Customer Service Customer Service Finance	800-787-8984 or 410-361-8080 214-706-1417	800-787-8985 410-361-8048 214-368-1228	custserv@wwilkins.com custserv@wwilkins.com
<b>Journals</b> Advertising Billing Information Permissions Reprints Subscriptions—Catalog	Williams & Wilkins Williams & Wilkins Williams & Wilkins Williams & Wilkins Williams & Wilkins	410-528-4047 800-787-8984 or 410-361-8080 410-528-4016 410-528-4292 or 4195 800-787-8984 or 410-361-8080	410-528-4452 800-787-8985 410-361-8048 410-528-8550 410-528-4305 800-787-8985 410-361-8048	ahopkins@wwilkins.com custserv@wwilkins.com custserv@wwilkins.com dheise@wwilkins.com godom@wwilkins.com custserv@wwilkins.com custserv@wwilkins.com
<b>Publications</b> Public/Patient Education Scientific Statements	Local AHA Offices Inquiries	800-242-8721 214-706-1220	214-706-1341	

## Moving?

Please print your new address below:

Name \_\_\_\_\_

Address \_\_\_\_\_  
\_\_\_\_\_

City \_\_\_\_\_ State/Province \_\_\_\_\_

Country \_\_\_\_\_ Zip/Post Code \_\_\_\_\_

Phone \_\_\_\_\_

Fax \_\_\_\_\_

E-mail Address \_\_\_\_\_

Moving Date \_\_\_\_\_

IMPORTANT!

ATTACH ADDRESS LABEL HERE

Clip this form including your mailing label and send to:

**AMERICAN HEART ASSOCIATION**  
PO Box 62073  
Baltimore, MD 21264-2073

Fax 800-787-8985  
or 410-361-8048

Tel 800-787-8984  
or 410-361-8080