Selected List of
Research Training Programs
Supported by the National Heart Institute
National Institutes of Health
Public Health Service
Department of Health, Education and Welfare

INDEX TO LISTED PROGRAMS ON BACK COVER

Published by the American Heart Association, Inc.
INTRODUCTION

In order to acquaint persons interested in cardiovascular research training with the wide variety of opportunities that are available, the following list of training programs supported by the National Heart Institute is published. The list is a selected one, comprising training programs of particular interest to the readers of this Journal. Not only are there other training programs supported by the National Heart Institute, but other Institutes of the National Institutes of Health also support training programs in their special fields. For example, research training in such preclinical sciences as physiology, biochemistry, anatomy, pathology, pharmacology, etc., are mainly supported in the Division of General Medical Sciences of the National Institutes of Health; the National Heart Institute supports training programs in preclinical departments only when there is special emphasis on cardiovascular research. Further information regarding these other programs may be obtained by writing the Director of the relevant Institute or Division at Bethesda 14, Maryland.*

The National Heart Institute also supports training in cardiovascular research fields by awarding Public Health Service Fellowships. They are awarded for specialized training or when, for any of a number of reasons, the department of the applicant's choice does not have a training grant. The fellowships are awarded competitively on proper application by the individual seeking training. For further information about Public Health Service Fellowships in the cardiovascular and other fields, write to the Division of Research Grants, Bethesda 14, Maryland.

The principal emphasis in all programs is on research and academic training; clinical responsibilities and clinical training are limited to those related to the research goals of the program. Trainee stipends tend to be the same in all programs; they are parallel with those of Public Health Service Fellowships which are graduated according to the stage of training, with dependency allowances. For further information regarding individual programs, or for actual application, the program director should be communicated with directly at his institution. When a training grant has been awarded by the National Heart Institute its conduct, including the policy of candidate selection, is the responsibility of the program director and his sponsoring institution.

It is planned to publish this list of the National Heart Institute cardiovascular research training programs annually, as long as it is deemed useful. Additional copies may be obtained free of charge by writing the Grants and Training Branch, National Heart Institute, Bethesda 14, Maryland.

*National Cancer Institute, National Institute of Allergy and Infectious Diseases, National Institute of Arthritis and Metabolic Diseases, National Institute of Mental Health, National Institute of Neurological Diseases and Blindness, National Institute of Dental Research, Division of General Medical Sciences.

© Copyright 1960 by the American Heart Association, 44 East 23 Street, N. Y. 10, N. Y.
I. BASIC SCIENCE DEPARTMENTS

ANATOMY

1. Dr. Albert I. Lansing
   Department of Anatomy
   University of Pittsburgh
   Schools of Health Professions
   Pittsburgh 13, Pennsylvania
   Predoctoral training in anatomy with special research emphasis on cellular aging, electron microscopy, and cytochemistry. Number of traineeships: 8; Prerequisites: B.A. or B.S.; Duration: 3-4 years.

2. Dr. S. R. M. Reynolds
   Department of Anatomy
   University of Illinois College of Medicine
   1853 West Polk Street
   Chicago 12, Illinois
   Training in embryologic and perinatal cardiovascular physiology and anatomy, with facilities for cineangiography in the study of hemodynamics, including the study of the fetus in utero. Number of traineeships: 4; Prerequisites: B.A., B.S., M.D. or Ph.D.; Duration: 1-3 years.

BIOCHEMISTRY

3. Dr. William C. Boyd
   Department of Biochemistry
   Boston University School of Medicine
   80 E. Concord Street
   Boston 18, Massachusetts
   Training in human and medical genetics including the necessary course work and laboratory techniques to perform supervised independent research on cardiovascular and other related problems. Number of traineeships: 2; Prerequisites: B.A., B.S., M.D. or Ph.D.; Duration: 2 or more years.

4. Dr. Fred A. Kummerow
   Department of Food Technology
   University of Illinois, College of Agriculture
   220 Animal Sciences Laboratory
   Urbana, Illinois
   Training in the nutrition, chemistry and biochemistry of the lipids with special emphasis on the relation of lipids to atherosclerosis and circulatory disorders. Number of traineeships: 5; Prerequisites: B.S. in chemistry; Duration: 3 years.

5. Dr. Irvine H. Page
   Research Division
   The Frank E. Bunts Educational Institute of the Cleveland Clinic Foundation
   2020 East 93rd Street
   Cleveland 6, Ohio
   Training in biochemical research by participation in projects generally concerned with the biochemistry of atherosclerosis. Number of traineeships: 3; Prerequisites: M.D. or Ph.D.; Duration: 2 or more years.

6. Dr. Abraham White
   Department of Biochemistry
   Albert Einstein College of Medicine of Yeshiva University
   Eastchester Road and Morris Park Avenues
   New York 61, New York
   Training in biochemistry with special emphasis on physiologic biochemistry, enzymology and lipid metabolism. Number of traineeships: 4; Prerequisites: M.D. or Ph.D.; Duration: 2 or more years.

GENETICS

7. Dr. Charles M. Woolf
   Department of Genetics
   University of Utah
   Salt Lake City 12, Utah
   Formal training in basic and medical genetics with research opportunities in cardiovascular and related problems. Number of traineeships: 3; Prerequisites: B.S. or A.B.; Duration: 3 years.

PATHOLOGY

8. Dr. Gustave J. Dammin
   Department of Pathology
   Peter Bent Brigham Hospital
   721 Huntington Avenue
   Boston 15, Massachusetts
   Research training in pathology with special emphasis on the pathogenesis of pulmonary vascular disease and transplantation of the kidney, applying biophysical methods, fluorescent antibody techniques, etc. Number of traineeships: 2; Prerequisites: M.D.; Duration: 2-3 years.

9. Dr. Russell S. Fisher
   Division of Forensic Pathology
   University of Maryland School of Medicine
   700 Fleet Street
   Baltimore 2, Maryland
   Training in research and practice of forensic pathology and toxicology with special research interests in sudden and traumatic deaths. Number of traineeships: 2 in toxicology, 3 in pathology; Prerequisites: A.B. or B.S. for toxicology, M.D. for pathology; Duration: toxicology 2-3 years, pathology 1-2 years.
10. Dr. S. E. Gould
Department of Pathology
Wayne State University College of Medicine
1401 Rivard Street
Detroit 7, Michigan
Training in cardiovascular pathology with research interests in unusual forms of cardiac disease. Number of traineeships: 1 or 2; Prerequisites: M.D.; Duration: 6-12 months.

11. Dr. Russell L. Holman
Department of Pathology
Louisiana State University
1542 Tulane Avenue
New Orleans 12, Louisiana
Training and research experience in pathology, with emphasis on aging and cardiovascular-renal disease, principally as related to atherosclerosis and hypertension. Number of traineeships: 3; Prerequisites: Ph.D. in chemistry, physics, or biology, or M.D. with 1 year in pathology; Duration: 1-3 years.

12. Dr. William E. Jaques
Department of Pathology
University of Oklahoma Medical Center
801 Northeast 13th Street
Oklahoma City 4, Oklahoma
Training in pathologic research methodology and clinical pathology with research emphasis in cardiopulmonary and cardiorenal problems. Number of traineeships: 3; Prerequisites: M.D.; Duration: 2-4 years.

13. Dr. Averill A. Liebow
Department of Pathology
Yale University School of Medicine
301 Cedar Street
New Haven, Connecticut
Development of pathologists for investigation and teaching careers, with special emphasis on cardiopulmonary pathology and pathophysiology. Number of traineeships: 3-4; Prerequisites: M.D. or Ph.D.; Duration: 3-5 years.

14. Dr. George H. Acheson
Department of Pharmacology
University of Cincinnati
College of Medicine
Eden and Bethesda Avenues
Cincinnati 10, Ohio
Training in laboratory research on cardiac functions and their abnormalities, and on the influence of drugs on the heart and related tissues. Number of traineeships: 2; Prerequisites: B.A., B.S.; M.D. or Ph.D.; Duration: 1-3 or more years.

15. Dr. Walter M. Booker
Department of Pharmacology
Howard University School of Medicine
Washington 1, D. C.
Graduate training in pharmacology leading to the M.S. degree with emphasis on cardiovascular pharmacology. Number of traineeships: 5; Prerequisites: B.S. or M.D.; Duration: 1-2 years.

16. Dr. R. P. Walton
Department of Pharmacology
Medical College of South Carolina
16 Lucas Street
Charleston 16, South Carolina
Research training in experimental cardiovascular pharmacology, with collaborative projects in the areas of anesthesiology, medicine and surgery. Number of traineeships: 5; Prerequisites: B.S. or M.D.; Duration: 2-5 years.

PHYSIOLOGY

17. Dr. Bernard C. Abbott
Department of Zoology
University of California
405 Hilgard Avenue
Los Angeles 24, California
Training in comparative cardiovascular physiology including formal and laboratory courses, and seminars on biophysics and physiology of contractile tissues. Number of traineeships: 8; Prerequisites: B.A., B.S. or Ph.D.; Duration: 1-3 years.

18. Dr. Chandler McC. Brooks
Department of Physiology
State University of New York
Downstate Medical Center
450 Clarkson Avenue
Brooklyn 3, New York
Predoctoral and postdoctoral training in research techniques of cardiovascular physiology with research emphasis on electrophysiology. Number of traineeships: 4; Prerequisites: A.B., B.S., M.D. or Ph.D.; Duration: 1-3 years.

19. Dr. Robert E. Forster
Department of Physiology
University of Pennsylvania
Graduate School of Medicine
3320 Walnut Street
Philadelphia 4, Pennsylvania
Training in pulmonary physiology for the graduate M.D. including basic course work and guided experience in physiological research. Number of traineeships: 2; Prerequisites: M.D.; Duration: 2 years.
20. **Dr. George P. Fulton**  
Biology Department  
Boston University  
675 Commonwealth Avenue  
Boston, Massachusetts  
Training in vascular physiology and micro-circulatory biology, emphasizing biochemical and biophysical aspects. *Number of traineeships: 4; Prerequisites: B.S. or Ph.D.; Duration: 3 years.*

21. **Dr. Arthur C. Guyton**  
Department of Physiology and Biophysics  
University Medical Center  
University of Mississippi  
Jackson, Mississippi  
Training in cardiovascular physiological research for selected medical students and others wishing to pursue research training simultaneously with and beyond their medical studies. *Number of traineeships: 3; Prerequisites: B.S., M.D. or Ph.D.; Duration: 3 years.*

22. **Dr. C. Adrian M. Hogben**  
Department of Physiology  
The George Washington University  
1339 H Street, N. W.  
Washington 5, D. C.  
Predoctoral training in physiology with particular emphasis on transport phenomena, electrolyte metabolism, and the peripheral circulation. *Number of traineeships: 2; Prerequisites: B.S. or B.A.; Duration: 3-4 years.*

23. **Dr. Howard M. Klitgaard**  
Department of Physiology  
Marquette University School of Medicine  
5618 North 15th Street  
Milwaukee 3, Wisconsin  
Training in physiology, with emphasis on general circulatory physiology, including courses in higher mathematics and biophysics, and facilities for use of radioisotopes. *Number of traineeships: 8; Prerequisites: B.A. or Ph.D.; Duration: 1-4 years.*

24. **Dr. Robert F. Pitts**  
Department of Physiology  
Cornell University Medical College  
1300 York Avenue  
New York, New York  
Postdoctoral research training in the principles of homeostasis of the water and electrolyte content of the body including the distribution of ions in cells and extracellular fluid. *Number of traineeships: 4; Prerequisites: M.D. or Ph.D.; Duration: 1-2 years.*

25. **Dr. R. F. Rushmer**  
Department of Physiology and Biophysics  
University of Washington School of Medicine  
Seattle, Washington  
Training in modern cardiovascular research techniques, including formal work in mathematics, physics and electronics. *Number of traineeships: 6; Prerequisites: M.D. or Ph.D.; Duration: 2 years.*

26. **Dr. George Sayers**  
Department of Physiology  
School of Medicine  
Western Reserve University  
Cleveland 6, Ohio  
Research and academic training leading to the Ph.D. degree or associated M.D. training with major emphasis on hemodynamics, cellular physiology and endocrinology. *Number of traineeships: 3; Prerequisites: B.S.; Duration: 4-7 years.*

27. **Drs. B. Schmidt-Nielson, K. Schmidt-Nielson, and K. M. Wilbur**  
Department of Zoology  
Duke University  
Durham, North Carolina  
Predoctoral training in cellular and comparative physiology concerning especially water and salt balance and volume regulation. *Number of traineeships: 4; Prerequisites: A.B. or B.S.; Duration: 1-3 years.*

28. **Dr. Maurice B. Visscher**  
Department of Physiology  
University of Minnesota  
Minneapolis 14, Minnesota  
Predoctoral training in physiology, including background training in physics and chemistry, with major research opportunities in cardiovascular physiology, broadly defined. *Number of traineeships: 8; Prerequisites: B.S.; Duration: 3-5 years.*

29. **Dr. D. B. Zilversmit**  
Department of Physiology  
University of Tennessee Medical Center  
62 South Dunlap  
Memphis 3, Tennessee  
Research training in the physiology and biochemistry of lipids, particularly the metabolic and nutritional aspects, including training in techniques of lipid analysis. *Number of traineeships: 3; Prerequisites: M.D. or Ph.D.; Duration: 1-2 years.*
PUBLIC HEALTH

30. Dr. Albert V. Hardy  
Director of Research  
Florida State Board of Health  
Jacksonville, Florida  
Graduate research training in Public Health within a State Board of Health, including epidemiology and community aspects of disease. Number of traineeships: 3; Prerequisites: M.D. or Ph.D.; Duration: 2 or more years.

31. Dr. Abraham M. Lilienfeld  
School of Hygiene and Public Health  
Johns Hopkins University  
Baltimore 5, Maryland  
Training in public health aspects of chronic diseases with emphasis on biostatistical, epidemiological, genetic and sociological methods, which may lead to M.P.H. or Dr. P.H. degree. Number of traineeships: 4; Prerequisites: M.D. or Ph.D.; Duration: 1-2 years.

32. Dr. Kirk T. Mosley  
Department of Preventive Medicine and Public Health  
University of Oklahoma Medical Center  
801 Northeast 13th Street  
Oklahoma City 4, Oklahoma  
Research training in public health with emphasis on community aspects of disease using sociological, psychological, and epidemiological techniques with emphasis on chronic diseases. Number of traineeships: 2; Prerequisites: M.D.; Duration: 1-2 years.

33. Dr. Robert E. Olson  
Department of Biochemistry and Nutrition  
Graduate School of Public Health  
University of Pittsburgh  
Pittsburgh 13, Pennsylvania  
Training in metabolism and nutrition with courses in biochemistry, public health nutrition, biostatistics, epidemiology, and evaluation of nutritional status in man, with emphasis on techniques of clinical investigations. Number of traineeships: 4; Prerequisites: 1 year internship; Duration: 1-3 years.

34. Dr. W. H. Sebrell  
Institute of Nutrition Sciences  
School of Public Health  
Columbia University  
600 West 168th Street  
New York 32, New York  
Training in nutrition including the social, public health, medical, and biochemical aspects of nutrition with opportunity for clinical research leading to the M.S. or Ph.D. degrees. Number of traineeships: 1; Prerequisites: B.S. or M.D.; Duration: 1 year.

35. Dr. Fredrick J. Stare  
Department of Nutrition  
Harvard School of Public Health  
One Shattuck Street  
Boston 15, Massachusetts  
Training in the biochemical and nutritional aspects of atherosclerosis, particularly as related to cholesterol metabolism, using biochemical, clinical and epidemiological research techniques. Number of traineeships: 7; Prerequisites: B.S.; Duration: 1-3 years.

II. CLINICAL DEPARTMENTS

MEDICINE

36. Dr. James K. Alexander  
Department of Medicine  
Baylor University College of Medicine  
Houston 25, Texas  
Coordinated clinical and research training with research emphasis on clinical hemodynamics and pulmonary function studies. Number of traineeships: 1; Prerequisites: M.D.; Duration: 1-2 years.

37. Dr. Samuel Bellet  
Division of Cardiology  
Philadelphia General Hospital  
Philadelphia 4, Pennsylvania  
Research training in diagnostic cardiology with emphasis on hemodynamics, and metabolic aspects of heart disease; includes physiologic and biochemical training. Number of trainee- ships: 7; Prerequisites: 1 year internship; Duration: 1-2 years.

38. Dr. Leonard B. Berman  
Department of Renal Diseases  
Research Foundation of Children’s Hospital  
2125 13th Street, N. W.  
Washington, D. C.  
Research training in renal diseases and renal physiology. Number of traineeships: 2; Prerequisites: M.D.; Duration: 2 years.

39. Dr. Edward F. Bland  
Department of Medicine  
Harvard Medical School  
Massachusetts General Hospital  
Boston, Massachusetts  
Combined clinical and research training with research emphasis on hemodynamic and metabolic
aspects of clinical heart disease. Number of traineeships: 4; Prerequisites: M.D.; Duration: 1-2 years.

40. Dr. S. Gilbert Blount  
Department of Medicine  
University of Colorado Medical Center  
Denver 20, Colorado  
Coordinated clinical and research training with emphasis on hemodynamic and pulmonary studies, medical and cardiac surgical aspects, and diagnostic methodology in congenital heart disease. Number of traineeships: 4; Prerequisites: 2 years residency in medicine; Duration: 2 or more years.

41. Dr. Hermann L. Blumgart  
Department of Medicine  
Director of Medical Research  
Beth Israel Hospital  
Boston 15, Massachusetts  
Coordinated clinical and research training; research emphasis on mechanisms of heart failure and clinical diagnostic methodologies. Number of traineeships: 6; Prerequisites: M.D.; Duration: 1-3 years.

42. Dr. George E. Burch  
Department of Medicine  
Tulane University  
1430 Tulane Avenue  
New Orleans 23, Louisiana  
Research training in inter-related laboratories of vectorcardiography, peripheral vascular and tropical physiology, hemodynamics, and biologic instrumentation in relationship with College of Electrical Engineering. Number of traineeships: 2; Prerequisites: M.D. or Ph.D.; Duration: 1-5 years.

43. Dr. Carleton B. Chapman  
Department of Medicine  
University of Texas  
Southwestern Medical School  
Harry Hines Boulevard  
Dallas 35, Texas  
Research training in basic cardiopulmonary physiology with emphasis on human exercise problems using catheterization, cineangiocardiographic and other techniques; courses in mathematics, biophysics, electronics. Number of traineeships: 5; Prerequisites: M.D. or Ph.D.; Duration: 1-2 years.

44. Dr. Ernest Craige  
Department of Medicine  
University of North Carolina  
Chapel Hill, North Carolina  
Combined clinical and research training with emphasis on the relationship of physiological events to phonocardiography at catheterization and experimentally. Number of traineeships: 2; Prerequisites: residency in medicine; Duration: 1-2 years.

45. Dr. Lewis Dexter  
Department of Medicine  
Harvard Medical School  
Peter Bent Brigham Hospital  
Boston 15, Massachusetts  
Research training opportunities in four relatively independent laboratories: (1) cardiac hemodynamics (Dr. Dexter), (2) cardiac metabolism (Dr. Gorlin), (3) electrocardiography (Dr. H. Levine), and (4) cardiopulmonary dynamics (Dr. Wells). Number of traineeships: 10; Prerequisites: 1 year medical internship; Duration: 1-3 years.

46. Dr. E. Grey Dimond  
Department of Medicine  
University of Kansas Medical Center  
Kansas City 12, Kansas  
Coordinated clinical and research training with research emphasis on clinical diagnostic methodology and hemodynamics; opportunities for more basic cardiac physiology and biochemistry training. Number of traineeships: 2; Prerequisites: 1 year residency in medicine, surgery or pediatrics; Duration: 2 years.

47. Dr. Richard V. Ebert  
Department of Medicine  
University of Arkansas Medical Center  
Little Rock, Arkansas  
Research training in cardio-pulmonary disease including background work in physiology and biochemistry with research interests in pulmonary emphysema and aging changes in the lungs. Number of traineeships: 3; Prerequisites: 1 year residency in medicine; Duration: 2 years.

48. Dr. Howard A. Eder  
Department of Medicine  
Albert Einstein College of Medicine of Yeshiva University  
Eastchester Road and Morris Park Avenue  
New York 61, New York  
Research training in biochemistry, especially in lipid metabolism as related to atherosclerosis, and its application to clinical medicine. Number of traineeships: 2; Prerequisites: M.D. or Ph.D.; Duration: 2 or more years.

49. Dr. Laurence B. Ellis  
Thorndike Memorial Laboratory  
(Heart Station)  
Boston City Hospital  
Boston 15, Massachusetts  
Combined clinical and research training with research emphasis on hemodynamic studies and diag-
nostic methodology. Number of traineeships: 2; Prerequisites: 1 year residency in medicine; Duration: 1-2 years.

50. Dr. Stuart C. Finch  
Department of Internal Medicine  
Yale University School of Medicine  
333 Cedar Street  
New Haven, Connecticut  
Training in clinical and investigative hematology with opportunities for independent research experience. Number of traineeships: 2; Prerequisites: M.D.; Duration: 1-2 years.

51. Dr. Charles K. Friedberg  
The Mount Sinai Hospital  
1 East 100th Street  
New York 29, New York  
Research training with investigative emphasis on clinical diagnostic methodology including electrocardiography, esterification, mechanisms of heart failure, and cardiac surgical problems. Number of traineeships: 6; Prerequisites: 2 years of residency; Duration: 1-3 years.

52. Dr. Robert H. Furman  
Oklahoma University Medical School  
Oklahoma Medical Research Foundation  
Oklahoma City 4, Oklahoma  
Research training in nutritional and endocrine aspects of atherosclerosis and lipid metabolism, with opportunities for further relevant biochemical and clinical training. Number of traineeships: 2; Prerequisites: B.S., M.D. or Ph.D.; Duration: 1-4 years.

53. Dr. Grace A. Goldsmith  
Department of Medicine  
Tulane University School of Medicine  
1430 Tulane Avenue  
New Orleans 12, Louisiana  
Training in clinical nutrition, especially biochemical techniques in nutritional diagnosis and research including radioactive isotopes, enzyme chemistry and research in lipid metabolism. Number of traineeships: 5; Prerequisites: M.D.; Duration: 1-3 years.

54. Dr. Tinsley R. Harrison  
Department of Medicine  
Medical College of Alabama  
Birmingham, Alabama  
Clinical research training with research emphasis on diagnostic clinical methods, hemodynamics and cardiac ballistics; informal affiliation with preclinical laboratories. Number of traineeships: 4; Prerequisites: residency in medicine; Duration: 1-2 years.

55. Dr. W. Proctor Harvey  
Division of Cardiology  
Department of Medicine  
Georgetown University Medical Center  
3800 Reservoir Road, N. W.  
Washington 7, D. C.  
Research training in clinical cardiology with an informal alliance with preclinical departments offering work on correlated basic problems. Number of traineeships: 4; Prerequisites: completion of medical residency; Duration: 2 years.

56. Dr. Hans H. Hecht  
Department of Medicine  
University of Utah  
Salt Lake City, Utah  
Integrated research training in pulmonary, electrophysiologic, hemodynamic and other clinical investigative fields; special courses in mathematics, biophysics, and electronic design. Number of traineeships: 4; Prerequisites: M.D. or Ph.D.; Duration: 2 years.

57. Dr. John B. Hickam  
Department of Medicine  
Indiana University Medical School  
1100 West Michigan Street  
Indianapolis 7, Indiana  
Training in the method and techniques of cardiovascular and cardiopulmonary research including basic grounding in mathematics and electronics. Number of traineeships: 8; Prerequisites: 1 year of residency; Duration: 2 years.

58. Dr. Louis N. Katz  
Michael Reese Hospital  
Chicago 16, Illinois  
Integrated clinical cardiology and research training with research emphasis on cardiovascular physiology, experimental atherosclerosis, electrocardiography, and experimental and clinical hemodynamics. Number of traineeships: 12; Prerequisites: internship or residency in internal medicine or Ph.D.; Duration: 1-3 years.

59. Dr. Calvin F. Kay  
Department of Medicine  
University of Pennsylvania  
3400 Spruce Street  
Philadelphia 4, Pennsylvania  
Research training and related clinical opportunities in laboratories studying myocardial metabolism, hypertension, electrophysiology, hemodynamics, and experimental coronary disease. Number of traineeships: 7; Prerequisites: 2 years residency; Duration: 1-3 years.
60. Dr. Walter M. Kirkendall  
Department of Medicine  
State University of Iowa  
General Hospital  
Iowa City, Iowa  
Training in a research unit within the Department of Medicine consisting of renal and electrolyte, hemodynamic, arteriosclerosis and pulmonary function laboratories; emphasis on clinical research problems. Number of traineeships: 4; Prerequisites: 1-3 years medical residency; Duration: 2 years.

61. Dr. Charles E. Kossmann  
Lenox Hill Hospital  
111 East 76th Street  
New York 21, New York  
Coordinated clinical and research training, with research emphasis on electrophysiology; opportunities for more basic biophysical training. Number of traineeships: 2; Prerequisites: 2 years residency in medicine; Duration: 2 years.

62. Dr. Charles L. Leedham  
Departments of Research and Internal Medicine  
The Frank E. Bunts Educational Institute of the Cleveland Clinic Foundation  
2020 East 93rd Street  
Cleveland 6, Ohio  
Training in the fundamental clinical and laboratory aspects of cardiovascular disease including diagnostic cardiology, renal disease and hypertension, etc. Number of traineeships: 6; Prerequisites: 3 years residency in medicine; Duration: 2 years.

63. Dr. Aldo A. Luisada  
Division of Cardiology  
Chicago Medical School  
Chicago 8, Illinois  
Combined clinical and research training with research emphasis on hemodynamics, phonoangiography, and experimental cardiopulmonary physiology. Number of traineeships: 5; Prerequisites: M.D. or Ph.D.; Duration: 1-3 years.

64. Dr. Richard H. Lyons  
Department of Medicine  
State University of New York, Upstate Medical Center  
150 Marshall Street  
Syracuse 10, New York  
Research training in pulmonary, electrophysiological and other areas of cardiovascular disease with opportunity for further training in basic science disciplines. Number of traineeships: 3; Prerequisites: 2 years residency in medicine; Duration: 1-3 years.

65. Dr. Werner Maas  
Department of Medicine  
New York University Medical School  
Bellevue Medical Center  
550 First Avenue  
New York, New York  
Research training in medical genetics including basic and clinical training appropriate to the research interests of the trainee. Number of traineeships: 4; Prerequisites: M.D. or Ph.D.; Duration: 3 years.

66. Dr. Victor A. McKusick  
Department of Medicine  
Johns Hopkins University School of Medicine  
Johns Hopkins Hospital  
Baltimore 5, Maryland  
Advanced training in medical genetics including formal instruction and related research experience with staff from several departments. Number of traineeships: 10; Prerequisites: B.S., M.D. or Ph.D.; Duration: 1-2 years.

67. Dr. C. Thorpe Ray  
Department of Medicine  
University of Missouri Medical Center  
Columbia, Missouri  
Coordinated clinical, physiological, and biophysical research training with emphasis on hemodynamics, pulmonary, physiological and isotopic techniques. Number of traineeships: 3; Prerequisites: M.S., M.D. or Ph.D.; Duration: 1-3 years.

68. Dr. Samuel T. R. Revell, Jr.  
Division of Hypertension  
Department of Medicine  
University of Maryland School of Medicine  
Baltimore 1, Maryland  
Research training in renal disease and hypertension, particularly artificial dialysis, serotonin metabolism, renal tissue enzymes, and the effects of various experimental techniques on standard clearances. Number of traineeships: 2; Prerequisites: 2 years residency in medicine; Duration: 1-2 years.

69. Dr. Simon Rodbard  
Chronic Disease Research Institute  
University of Buffalo  
Buffalo 14, New York  
Research training in clinical and experimental cardiac physiology, with opportunities for more advanced training in preclinical departments. Number of traineeships: 2; Prerequisites: M.D. or Ph.D.; Duration: 1-3 years.
70. Dr. George E. Schreiner
Department of Medicine
Georgetown University Medical Center
Georgetown University Hospital
Washington, D. C.
Research training in renal disease including physiology and pathology of the kidney and use of the artificial kidney, with independent research opportunities. Number of traineeships: 2; Prerequisites: 2 years residency in medicine; Duration: 2 years.

71. Dr. William B. Schwartz
Department of Medicine
Tufts University School of Medicine
New England Center Hospital
171 Harrison Avenue
Boston 11, Massachusetts
Research training in renal and electrolyte physiology and clinical renal disease, particularly renal mechanisms for the control of electrolyte and acid-base equilibrium. Number of traineeships: 6; Prerequisites: 1 year residency in medicine; Duration: 1 or more years.

72. Dr. John R. Smith
Department of Medicine
Washington University School of Medicine
St. Louis 10, Missouri
Four laboratories offer research training in (1) coagulation and fibrinolysis, (Dr. Sherry); (2) myocardial ultra-structure, (Dr. Smith); (3) hemodynamics, (Dr. Parker); (4) hypertension and renal physiology, (Drs. Perry and Bricker). Number of traineeships: 10; Prerequisites: M.D. or Ph.D.; Duration: 1-3 years.

73. Dr. Maurice Sokolow
Department of Cardiology
University of California
Medical Center
San Francisco 22, California
Clinical training coordinated with Dr. Comroe’s research training program (#127), includes opportunities for training in mathematics, physics, physiology, pharmacology and modern cardiovascular diagnostic techniques. Number of traineeships: 2; Prerequisites: M.D.; Duration: 2 years.

74. Dr. Eugene A. Stead
Department of Medicine
Duke University School of Medicine
Durham, North Carolina
Coordinated clinical and research training with research emphasis on cardiac and peripheral vascular hemodynamics, sociological aspects of disease, lipid metabolism, renal, and pulmonary disease. Number of traineeships: 8; Prerequisites: M.D.; Duration: 1-3 years.

75. Dr. Mario Stefanini
Department of Medicine
Tufts University School of Medicine
St. Elizabeth’s Hospital
736 Cambridge Street
Boston 35, Massachusetts
Training in hematologic research with emphasis on biochemistry, coagulation and fibrinolysis as related to cardiovascular disorders. Number of traineeships: 2; Prerequisites: M.D. or Ph.D.; Duration: 2 years.

76. Dr. Burton S. Tabakin
Department of Medicine
University of Vermont
Burlington, Vermont
Training in research techniques in clinical cardiopulmonary physiology. Number of traineeships: 1; Prerequisites: 1-2 years medical residency; Duration: 1-2 years.

77. Dr. David A. Turner
Biochemistry Research Division
Department of Medicine
Johns Hopkins School of Medicine
Sinai Hospital of Baltimore, Inc.
Baltimore 5, Maryland
Specialized training in newer lipid analytical techniques for those particularly interested in atherosclerosis and aging with special emphasis in vapor phase and silicic acid chromatography and radioisotope techniques. Number of traineeships: 2; Prerequisites: M.D. or Ph.D.; Duration: 30 days for senior persons; 1-2 years for others.

78. Dr. James V. Warren
Department of Medicine
University of Texas
Medical Branch
Galveston, Texas
Research training with emphasis on integrative mechanisms in heart function, both experimental and clinical, including a close relationship with clinical cardiology activities. Number of traineeships: 3; Prerequisites: M.D. or Ph.D.; Duration: 1-3 years.

79. Dr. Stewart Wolf
Department of Medicine
University of Oklahoma School of Medicine
800 N. E. 13th Street
Oklahoma City 4, Oklahoma
Research training in effects of psychological and social forces on cardiovascular phenomena, with experience in psychodynamics. Number of traineeships: 4; Prerequisites: M.D.; Duration: 1-2 years.
80. Dr. J. Edwin Wood  
Department of Internal Medicine  
Medical College of Georgia  
Augusta, Georgia  
Research training in clinical cardiovascular investigation including design and techniques of experimentation, affiliated with Dr. Hamilton’s program in cardiac physiology (#120).  
Number of traineeships: 3; Prerequisites: M.D. or Ph.D.; Duration: 1-3 years.

OBSTETRICS-GYNECOLOGY

81. Dr. Russell R. de Alvarez  
Department of Obstetrics and Gynecology  
University of Washington Hospital  
School of Medicine  
Seattle 5, Washington  
Training for academic and research careers in obstetrics and gynecology with special emphasis on the methodology and techniques of basic and clinical investigation and in toxemia of pregnancy.  
Number of traineeships: 2; Prerequisites: M.D.; Duration: 1-2 years.

82. Dr. N. S. Assali  
Department of Obstetrics and Gynecology  
University of California Medical Center  
Los Angeles 24, California  
Research training in circulatory and physiological problems related to obstetrics, with emphasis on the fetal, placental, and biochemical aspects.  
Number of traineeships: 2; Prerequisites: M.D.; Duration: 1-2 years.

83. Dr. Edith L. Potter  
Department of Obstetrics and Gynecology  
Chicago Lying-In Hospital  
University of Chicago  
Chicago 37, Illinois  
Research training in the pathology and physiology of the fetus and newborn in relation to perinatal mortality, to prepare career investigators.  
Number of traineeships: 2; Prerequisites: M.D.; Duration: 1-2 years.

84. Dr. Seymour L. Romney  
Department of Obstetrics and Gynecology  
Albert Einstein College of Medicine of Yeshiva University  
Eastchester Road and Morris Park Avenue  
New York 61, New York  
Postdoctoral research training particularly concerned with maternal and fetal cardiovascular adaptations of pregnancy, including neonatal respiratory problems.  
Number of traineeships: 3; Prerequisites: Ph.D. or M.D.; Duration: 1 or more years.

PEDIATRICS

85. Dr. Henry L. Barnett  
Department of Pediatrics  
Albert Einstein College of Medicine of Yeshiva University  
Eastchester Road and Morris Park Avenue  
New York 61, New York  
Research training in pediatrics concerning particularly the influence of growth on the renal and endocrine control of water and electrolyte metabolism.  
Number of traineeships: 3; Prerequisites: M.D. or Ph.D.; Duration: 2-3 years.

86. Dr. Sidney Blumenthal  
Department of Pediatrics  
Columbia University College of Physicians and Surgeons  
630 West 168th Street  
New York 32, New York  
Training in pediatric cardiology with opportunities for independent investigation as well as special clinical activities.  
Number of traineeships: 4; Prerequisites: completion of pediatric residency; Duration: 2 years.

87. Dr. Louis K. Diamond  
Department of Pediatrics  
Harvard Medical School  
Children’s Medical Center  
300 Longwood Avenue  
Boston, Massachusetts  
Research training in the hematology and physiology of the hematopoietic and circulatory systems in infancy and childhood.  
Number of traineeships: 4; Prerequisites: completion of pediatric residency; Duration: 2 years.

88. Dr. James N. Etteldorf  
Department of Pediatrics  
University of Tennessee College of Medicine  
62 South Dunlap  
Memphis 3, Tennessee  
Training in pediatric cardiology with research emphasis on hemodynamics, renal disease, metabolism, etc.; close affiliation with preclinical departments for additional training.  
Number of traineeships: 3; Prerequisites: completion of pediatric residency; Duration: 1-3 years.

89. Dr. Donald C. Fyler  
Department of Pediatrics  
Children’s Hospital of Los Angeles  
4614 Sunset Boulevard  
Los Angeles 27, California  
Training in pediatric cardiology with research emphasis on related basic physiology.  
Number of traineeships: 3; Prerequisites: completion of residency.
90. Dr. Jerome S. Harris
Department of Pediatrics
Duke University School of Medicine
Durham, North Carolina
Training in pediatric cardiovascular research, including diagnostic methodology (catheterization, dye dilution methods, etc.), radio isotopes, and surgical and physiological research techniques. Number of traineeships: 2; Prerequisites: residency in pediatrics; Duration: 1-2 years.

91. Dr. Doris A. Howell
Department of Pediatrics
Duke University School of Medicine
Durham, North Carolina
Research training in the hematologic diseases of children with particular reference to anemias, blood immunology and banking, coagulation defects, and use of radioactive isotopes and chemotherapeutic agents. Number of traineeships: 3; Prerequisites: 2 years of pediatric training; Duration: 1-2 years.

92. Dr. Samuel Kaplan
Department of Pediatrics
College of Medicine
University of Cincinnati
Cincinnati 29, Ohio
Training in pediatric cardiology; research emphasis on diagnostic methods and congenital cardiovascular diseases. Number of traineeships: 2; Prerequisites: M.D. or Ph.D.; Duration: 2-3 years.

93. Dr. Edward C. Lambert
Department of Pediatrics
University of Buffalo School of Medicine
219 Bryant Street
Buffalo 22, New York
Training in pediatric cardiology; research emphasis on diagnostic methodology with informal affiliation with preclinical departments. Number of traineeships: 2; Prerequisites: residency in pediatrics; Duration: 1-2 years.

94. Dr. Alexander S. Nadas
Department of Pediatrics
Harvard Medical School
Children's Medical Center
300 Longwood Avenue
Boston, Massachusetts
Training in pediatric cardiology particularly congenital heart disease and rheumatic fever, with clinical and physiological research in hemodynamics, pulmonary hypertension, phonocardiography, electrocardiography. Number of traineeships: 9; Prerequisites: residency in pediatrics or medicine; Duration: 2 years.

95. Dr. Nathan B. Talbot
Children's Medical Service
Massachusetts General Hospital
Boston 14, Massachusetts
Research training in pediatrics, particularly in the fundamentals of metabolism and endocrinology as related to the regulation of body water, electrolytes and protein homeostasis. Number of traineeships: 4; Prerequisites: M.D.; Duration: 1-2 years.

96. Dr. Helen B. Taussig
Department of Pediatrics
Cardiac Clinic, Harriet Lane Home
Johns Hopkins Hospital
Baltimore 5, Maryland
Training in pediatric cardiology with special emphasis on diagnostic methodology and management of congenital cardiac malformations. Number of traineeships: 8; Prerequisites: 1 year of pediatric residency or 1 year of medicine and cardiology; Duration: 1-2 years.

CLINICAL THERAPEUTICS

97. Dr. Samuel Bellet
Division of Cardiology
Philadelphia General Hospital
34th St. & Curie Avenue
Philadelphia 4, Pennsylvania
Research training in a diversified cardiovascular research laboratory, with emphasis on cardio-active agents; biostatistics and relevant basic science training in other departments. Number of traineeships: 3; Prerequisites: M.D.; Duration: 2-3 years.

98. Dr. Frank A. Howard
Harvard University
Lemuel Shattuck Hospital
170 Morton Street
Jamaica Plains 30, Massachusetts
Multidepartmental program with special biostatistics and pharmacodynamics training; basic research in drug action in the clinical department of the trainee's choice. Number of traineeships: 3; Prerequisites: M.D. and 2 years of clinical training; Duration: 1-3 years.

99. Dr. Louis Lasagna
Clinical Pharmacology Section
Department of Medicine
Johns Hopkins Hospital
Baltimore 6, Maryland
Joint training between departments of medicine and pharmacology with special training in statistics and pharmacodynamics; basic research relevant to drug action in clinical department of trainee's choice. Number of traineeships: 3; Prerequisites: M.D.; Duration: 2-3 years.
RADIOLOGY

100. Dr. Russell H. Morgan
Department of Radiology
The Johns Hopkins Hospital
Johns Hopkins University
Baltimore 5, Maryland
Research training for postdoctoral candidates in the techniques and applications of cardiac radiology integrated with the research and clinical activities of other departments. Number of traineeships: 2; Prerequisites: completion of internship; Duration: 1-2 years.

101. Dr. Charles M. Nice, Jr.
Department of Radiology
Tulane University School of Medicine
1430 Tulane Avenue
New Orleans, Louisiana
Training roentgenologists in specialized aspects of research and diagnosis in cardiovascular roentgenology. Number of traineeships: 1; Prerequisites: three years of residency in Radiology; Duration: 1 or more years.

SURGERY

102. Dr. Ivan D. Baronofsky
Department of Surgery
The Mount Sinai Hospital
Fifth Avenue and One Hundredth Street
New York 29, New York
Training in cardiovascular surgery and research, clinically, and in the experimental surgery laboratory. Number of traineeships: 3; Prerequisites: completion of general surgery residency; Duration: 3-4 years.

103. Dr. H. H. Bradshaw
Department of Surgery
Bowman Gray School of Medicine
South Hawthorne Road
Winston Salem, North Carolina
Training in the experimental approach to clinical and basic cardiovascular problems. Number of traineeships: 1; Prerequisites: completion of residency in general and thoracic surgery; Duration: 1 year.

104. Dr. Oscar Creech, Jr.
Department of Surgery
Tulane University School of Medicine
1430 Tulane Avenue
New Orleans, Louisiana
Training in techniques of investigation in cardiovascular surgery, including pulmonary function and extra-corporeal circulation techniques. Number of traineeships: 4; Prerequisites: surgical residency training; Duration: 1-2 years.

105. Drs. J. Frances Dammann, Jr. and William H. Muller, Jr.
Department of Surgery
University of Virginia Hospital
Charlottesville, Virginia
Training in surgical cardiology to improve total understanding of the physiologic, pathologic, diagnostic and therapeutic approach to cardiovascular diseases amenable to surgical treatment. Number of traineeships: 4; Prerequisites: 1 year residency in medicine, surgery or pediatrics; Duration: 2 years.

106. Dr. Michael E. DeBakey
Department of Surgery
Baylor University College of Medicine
Houston 25, Texas
Research training in cardiac, arterial and peripheral vascular surgery; affiliated with basic science departments. Number of traineeships: 5; Prerequisites: completion of general surgery residency; Duration: 1-2 years.

107. Dr. Jacob Fine
Department of Surgery
Beth Israel Hospital
330 Brookline Avenue
Boston 15, Massachusetts
Training in surgical cardiovascular research with emphasis on factors related to peripheral vascular collapse and related peripheral circulatory problems. Number of traineeships: 3; Prerequisites: M.D. or Ph.D.; Duration: 1 year.

108. Dr. Frank Gerbode
Department of Cardiovascular Surgery
San Francisco - Stanford Hospital
San Francisco 15, California—and the Stanford Medical Center
Palo Alto, California
Training in basic and clinical cardiovascular surgery, including rotation through laboratories for cardiac catheterization, pulmonary function, angiocardiology and the experimental animal laboratory. Number of traineeships: 3; Prerequisites: residency in surgery, thoracic surgery, medicine or pediatrics; Duration: 1-4 years.

109. Dr. John H. Gibbon, Jr.
Department of Surgery
Jefferson Medical College
1025 Walnut Street
Philadelphia 7, Pennsylvania
Clinical and experimental surgical training with research emphasis on cardio-respiratory physiology and cardiac by-pass methods. Number of traineeships: 2; Prerequisites: completion of surgery residency; Duration: 1 year.
110. Dr. Henry Haimovici  
Surgical Division  
Montefiore Hospital  
New York 67, New York  
Training in the physiology and surgery of vascular disease, including research education in the basic aspects of peripheral vascular disease. Number of traineeships: 1; Prerequisites: residency in surgery; Duration: 1-2 years.

111. Dr. C. Rollins Hanlon  
Department of Surgery  
St. Louis University  
1325 South Grand  
St. Louis, Missouri  
Training in clinical and basic research in cardiovascular surgery, with relevant operative experience. Number of traineeships: 1; Prerequisites: surgical residency; Duration: 1-4 years.

112. Dr. Claude R. Hitchcock  
Surgery Department  
Minneapolis General Hospital  
Minneapolis 15, Minnesota  
Combined clinical and research training in cardiovascular surgical techniques. Number of traineeships: 3; Prerequisites: completion of surgery residency; Duration: 1 year.

113. Dr. James V. Maloney, Jr.  
Department of Surgery  
University of California Medical Center  
Los Angeles 24, California  
Training in cardiovascular surgery with emphasis on the basic biochemical and physiologic aspects. Number of traineeships: 4; Prerequisites: M.D.; Duration: 1-3 years.

114. Dr. K. Alvin Merendino  
Department of Surgery  
University of Washington  
School of Medicine  
Seattle 5, Washington  
Surgical research training with opportunities for collaborative training with cardiology, radiology, pharmacology and pathology. Number of traineeships: 2; Prerequisites: surgical residency; Duration: 1-2 years.

115. Drs. Francis D. Moore and Dwight E. Harken  
Harvard Medical School  
Department of Surgery  
Peter Bent Brigham Hospital  
721 Huntington Avenue  
Boston 15, Massachusetts  
Training in cardiovascular research concepts and techniques, with emphasis on physiology, biochemical, metabolic and clinical investigation. Number of traineeships: 2; Prerequisites: M.D.; Duration: 1-2 years.

116. Dr. Will C. Sealy  
Department of Surgery  
Duke Medical Center  
Durham, North Carolina  
Training in cardiovascular surgery and research, including congenital and valvular heart disease, coronary artery disease, peripheral vascular disease, and the autonomic nervous system. Number of traineeships: 5; Prerequisites: M.D.; Duration: 1 year.

117. Dr. Harry B. Shumacker  
Department of Surgery  
Indiana University Medical Center  
1100 West Michigan Street  
Indianapolis 7, Indiana  
Training in basic and experimental cardiovascular surgery. Number of traineeships: 3; Prerequisites: internship; Duration: 1-3 years.

118. Dr. Henry Swan  
Department of Surgery  
University of Colorado School of Medicine  
4200 East Ninth Avenue  
Denver 20, Colorado  
Research training in experimental cardiovascular techniques, with formal instruction in biochemical and physiological techniques and other basic sciences. Number of traineeships: 4; Prerequisites: M.D.; Duration: 1 year.

119. Dr. Richard Warren  
Surgical Department  
Peter Bent Brigham Hospital  
721 Huntington Avenue  
Boston 15, Massachusetts  
Research training in vascular surgery, with germane clinical and teaching opportunities, including investigation of blood flow in the extremities and blood coagulation. Number of traineeships: 1; Prerequisites: 3 years residency in surgery; Duration: 1 year.

III. MULTIDEPARTMENTAL

PRECLINICAL

120. Drs. W. F. Hamilton and R. P. Ahlquist  
Department of Physiology & Pharmacology  
Medical College of Georgia  
Augusta, Georgia  
Training in techniques of basic cardiovascular research with emphasis on supervised research on a
problem of the candidate’s choice, leading to publishable contributions to the literature. **Number of traineeships:** 4; **Prerequisites:** M.D., Ph.D., or 2 years of experience in research; **Duration:** 1-2 years.

### CLINICAL

121. Dr. Robert H. Bayley  
Department of Medicine  
University of Oklahoma  
School of Medicine  
Oklahoma City, Oklahoma  
Research training in cardiovascular disease with emphasis in cardiac potentials, hemodynamics, theromistie and radioisotope techniques, and immunology as related to heart disease. **Number of traineeships:** 2; **Prerequisites:** M.D., M.S. or Ph.D.; **Duration:** 2 years.

122. Dr. John T. Cuttino  
Department of Surgery  
Medical College of South Carolina  
16 Lucas Street  
Charleston, South Carolina  
Research and related clinical training in medical cardiology and cardiovascular surgery. **Number of traineeships:** 3; **Prerequisites:** 1 year surgery residency; **Duration:** 1 year.

123. Dr. Allan V. N. Goodyer  
Department of Medicine  
Yale University School of Medicine  
New Haven, Connecticut  
Integrated cardiovascular research training in the departments of medicine, surgery, pediatrics and radiology, including related biostatistical training. **Number of traineeships:** 4; **Prerequisites:** M.D.; **Duration:** 2 years.

### CLINICAL-PRECLINICAL

124. Dr. E. Cowles Andrus  
Joint Committee on Cardiovascular Teaching and Research  
Johns Hopkins University  
School of Medicine  
Baltimore, Maryland  
Research training in a number of independent laboratories with different cardiovascular research interests in both preclinical and clinical departments. **Number of traineeships:** 15; **Prerequisites:** M.D. or Ph.D.; **Duration:** 2 or more years.

125. Dr. Robert A. Bruce  
Division of Cardiology  
Department of Medicine  
University of Washington  
Seattle, Washington  
Research training in cardiovascular fields; first year in basic science laboratories (anatomy, physiology, pharmacology, pathology, microbiology); second year in clinical laboratories (medicine, pediatrics, radiology and surgery) according to candidates’ interests. **Number of traineeships:** 4; **Prerequisites:** M.D. or Ph.D.; **Duration:** 2 or more years.

126. Dr. H. Mead Cavert  
1300 Mayo Memorial  
College of Medical Sciences  
University of Minnesota  
Minneapolis 14, Minnesota  
Research training in the general area of cardiovascular disease in several preclinical and clinical departments. **Number of traineeships:** 15; **Prerequisites:** 1 or more years of residency or Ph.D.; **Duration:** 1-3 years.

127. Dr. Julius H. Comroe, Jr.  
Cardiovascular Research Institute  
University of California Medical Center  
San Francisco 22, California  
Basic and clinical cardiovascular-pulmonary research with multidepartmental staff; special seminars in mathematics, physics, physical chemistry, statistics, and integrated basic medical sciences. **Number of traineeships:** 4; **Prerequisites:** B.S. or M.D.; **Duration:** 1-2 years.

128. Dr. Charles W. Crumpton  
Cardiovascular Research Laboratory  
University of Wisconsin  
1300 University Avenue  
Madison 6, Wisconsin  
Cardiovascular research training involving various basic and clinical departments oriented towards the trainees’ interests. **Number of traineeships:** 5; **Prerequisites:** B.S., M.S. or M.D. with 2 years of clinical residency; **Duration:** 1-3 years.

129. Dr. James W. Dow  
Circulation Laboratory  
Presbyterian Hospital  
51 North 39th Street  
Philadelphia 4, Pennsylvania  
Interdisciplinary research training, including course work at the Drexel Institute of Technology, for both physical and biological scientists, stressing the application of physical and engineering sciences to the human system. **Number of traineeships:** 12; **Prerequisites:** Physical scientist—B.S. in engineering, physics, or mathematics; Biological scientist—B.S. in biology or physiology, or M.D.; **Duration:** 2 or more years.
130. Dr. F. Lowell Dunn  
Department of Internal Medicine  
University of Nebraska  
College of Medicine  
Omaha, Nebraska  
Training coordinated with College of Engineering, offering medical electronics and biophysics to M.D.'s and biology and physiology to electrical engineers. Number of traineeships: 8; Prerequisites: B.S. or M.D.; Duration: 1-3 years.

131. Dr. David P. Earle  
Department of Medicine  
Northwestern University Medical School  
303 East Chicago Avenue  
Chicago 11, Illinois  
Research and academic training in the cardiovascular field using appropriate disciplines reflecting the interests of the trainee, including one or two years for independent research. Number of traineeships: 4; Prerequisites: Completion of residency or Ph.D.; Duration: 4-5 years.

132. Dr. John M. Evans  
Department of Medicine  
George Washington University  
School of Medicine  
Washington, D.C.  
Research training in hemodynamics, renal and electrolyte metabolism, electrophysiology, lipid metabolism, angiocardiography, etc., in departments of Medicine, Physiology, and Biochemistry, including basic science training. Number of traineeships: 2; Prerequisites: 2 years of residency; Duration: 2-5 years.

133. Dr. Paul F. Formel  
Department of Medicine  
Albany Medical College  
Albany, New York  
Research training coordinated between preclinical and clinical departments in the cardiovascular field of the trainee's choice. Number of traineeships: 3; Prerequisites: M.D. or Ph.D.; Duration: 2 years.

134. Dr. Harold D. Green  
Department of Physiology and Pharmacology  
Bowman Gray School of Medicine  
Winston-Salem, North Carolina  
Coordinated training of cardiovascular investigators in both basic and clinical fields involving chiefly the Departments of Physiology and Pharmacology, Medicine, Surgery, and Radiology. Number of traineeships: 10; Prerequisites: B.A., Ph.D. or M.D.; Duration: 1-3 years.

135. Dr. W. E. Macpherson  
Department of Physiology  
School of Medicine  
College of Medical Evangelists  
Loma Linda, California  
Training in basic research techniques primarily in the cardiopulmonary field with major concentration in the departments of physiology and medicine. Number of traineeships: 1; Prerequisites: M.D. or Ph.D.; Duration: 1 year.

136. Dr. Samuel Proger  
Department of Medicine  
New England Center Hospital  
171 Harrison Avenue  
Boston, Massachusetts  
Cooperative research training between the Massachusetts Institute of Technology and New England Center Hospital combining physical sciences, molecular biology, and clinical investigation. Number of traineeships: 6; Prerequisites: M.D.; Duration: 3 years.

137. Dr. Arthur P. Richardson  
Emory University School of Medicine  
Emory University  
Atlanta 22, Georgia  
Coordinated research training in cardiovascular disease involving particularly the departments of pharmacology, physiology, and medicine. Number of traineeships: 10; Prerequisites: M.D. or Ph.D.; Duration: 1 or more years.

138. Dr. Roger Warren Sevy  
Department of Pharmacology  
Temple University School of Medicine  
3400 N. Broad Street  
Philadelphia 40, Pennsylvania  
Research training in cardiovascular physiology and disease in the departments of pharmacology, physiology, medicine, and radiology emphasizing methodology and experimental design. Number of traineeships: 6; Prerequisites: B.S., M.S., Ph.D. or M.D.; Duration: 1-4 years.

139. Dr. Robert W. Wilkins  
Department of Medicine  
Boston University School of Medicine  
65 East Newton Street  
Boston 18, Massachusetts  
Multidisciplinary training in cardiovascular research, including pharmacology, physiology, biochemistry, surgery, medicine, and clinical investigation. Number of traineeships: 7; Prerequisites: B.S., M.D. or Ph.D.; Duration: 1-3 or more years.