THE JOHNS HOPKINS UNIVERSITY

Programs in Human Genetics

Programs of Study

Flexible and individualized programs leading to the Ph.D. degree are designed to give the graduate student training in the genetic aspects of human biology. The cornerstone of the training program is the research project conducted under the guidance of a faculty member. Course work provides a background for the research and is intended to develop the student's critical, yet innovative, approach to scientific problems. The course of study differs to some extent according to the particular area of emphasis, e.g., biochemical genetics, cytogenetics, population genetics, statistical genetics, immunogenetics. Studies in general genetics, human genetics, cytogenetics and population genetics form an integrated core for the program. Firm grounding in biostatistics and a reading ability in one foreign language are required for the Ph.D. degree. Most students will be expected to gain basic knowledge in biochemistry, physiology, developmental biology, cell biology and pathology. The details of the program are developed by the student in consultation with his faculty adviser and with the approval of the Committee on Human Genetics under the aegis of the Department of Biology (see the list of committee members on the reverse side).

A combined Ph.D.-M.D. program is also possible in appropriate instances (admission to the Medical School is required first). Ordinarily the Ph.D. requires at least four years beyond the baccalaureate; six are usually required for the combined M.D.-Ph.D. program. Several persons already possessing the M.D. degree have earned a Ph.D. in this program; completion of the Ph.D. in such cases usually requires at least three years. Application for this program can be made after acceptance to the Johns Hopkins University School of Medicine.

Postdoctoral fellowships without a degree goal are also available.

A course of study leading to a degree of Master of Health Sciences with a specialty in human genetics is available through the Department of Epidemiology of the School of Hygiene and Public Health. The program, incorporating instruction, laboratory and field training in epidemiology, biostatistics, and related fields as well as the various areas of molecular, general and human genetics is designed for students with a degree in medicine, dentistry, public health or the biological sciences who wish to prepare themselves for professional work in human genetics including research, teaching and/or public health programs, field studies and services.

Research Facilities

The members of the faculty listed on the reverse side have fully equipped laboratories and are prepared to accept graduate students. Computer and library facilities are excellent. The program in human genetics is a University-wide activity in which not only the Department of Biology but also several departments of the School of Medicine and the School of Hygiene and Public Health participate.

Financial Aid

Predoctoral and postdoctoral traineeships are available which provide an adequate living stipend and cover other expenses including tuition.

Cost of Study

Resident tuition is currently $2700 per annum.

Cost of Living

Monthly rates in the University residences can be obtained on request. Dining facilities are available. Ample off-campus housing is available at a wide range of prices.

Student Body

The number of graduate students in the Department of Biology is usually about 80 (the faculty numbers 32). Each of the other participating departments has a sizeable group of graduate students at various levels of training and a favorable faculty-student ratio.

The Area

Because of its central location less than an hour from Washington and less than 3 hours from New York City, because of its historic traditions, and because of its proximity to the attractive Chesapeake Bay and Maryland countryside, Baltimore is a culturally and recreationally agreeable city for students.

The University

Founded in 1876, the University has from the beginning been a leader in graduate education and research, particularly in the biomedical area. In human genetics, the aggregate strength of the Department of Biology, the McCollum-Pratt Institute, the School of Medicine, the School of Hygiene and Public Health, and the Johns Hopkins Hospital is great. A University-wide program in human genetics has been in existence since 1957. Eight Ph.D.'s in human genetics and a large number of postdoctoral fellows have been trained during this period.

Applying

Detailed information as well as application material can be obtained from any member of the faculty listed on the reverse side. Application for admission in the following academic year should be submitted no later than February 1.

Correspondence and Information

Address any member of the Committee on Human Genetics at the institution indicated for each on the reverse side. (The Schools of Medicine and Hygiene and Public Health, and the Hospital are all Baltimore 21205; the University itself is Baltimore 21218.) Or you may write to:

Chairman
Committee on Human Genetics
c/o Department of Biology
Johns Hopkins University
Baltimore, Maryland 21218

(over)

THE FACULTY

Wilma B. Bias, Ph.D., Assistant Professor of Medicine, Medical Faculty, and Assistant Professor of Epidemiology, Hygiene and Public Health Faculty. Immunogenetics and histocompatibility; population genetics.

Digamber S. Borgaonkar, Ph.D., Associate Professor of Medicine, Medical Faculty. Human population cytogenetics; clinical cytogenetics; comparative mammalian cytogenetics; dermatoglyphics.

Samuel H. Boyer, M.D., Professor of Medicine, Medical Faculty. Genetic variation in proteins; genetic regulatory mechanisms; evolution of hemoglobins.

Raymond Byrne, Ph.D., Assistant Professor of Biophysics, Medical Faculty. Regulation of protein and nucleic acid synthesis in both prokaryotes and eukaryotes.

William A. Carter, M.D., Assistant Professor of Medicine and Microbiology, Medical Faculty. Biochemistry of ribosomes; translational control of protein synthesis in animal cells; molecular mechanisms of oncogenic virus-induced transformations.

Gary A. Chase, Ph.D., Assistant Professor of Medicine, Medical Faculty, and Assistant Professor of Biostatistics, Hygiene and Public Health Faculty. Statistical genetics; genetic counseling.

Barton Childs, M.D., Professor of Pediatrics, Medical Faculty. Biochemical genetics, genetics of behavior.

Bernice H. Cohen, Ph.D., Professor of Epidemiology, Hygiene and Public Health Faculty. Epidemiological genetics; genetic components in fertility, life span, congenital malformations, chronic diseases.

Harold E. Cross, M.D., Ph.D., Assistant Professor of Ophthalmology and Medicine, Medical Faculty. Ophthalmologic genetics.

Howard M. Dintzis, Ph.D., Professor of Biophysics, Medical Faculty. Structure, function and biosynthesis of protein and nucleic acids.

Philip E. Hartman, Ph.D., Professor of Biology, Arts and Sciences Faculty. Bacterial genetics; gene action.

Neil A. Holtzman, M.D., Associate Professor of Pediatrics, Medical Faculty. Inborn errors of metabolism; biochemical genetics; screening methods for inborn errors.

Pien-Chien Huang, Ph.D., Associate Professor of Biochemistry, Hygiene and Public Health Faculty. Chemistry and function of genes.

Richard L. Humphrey, M.D., Assistant Professor of Medicine, Medical Faculty. Synthesis and structure of immunoglobulin molecules; genetic control.

Irene E. Hussels, M.D., Assistant Professor of Medicine and Ophthalmology, Medical Faculty. Population genetics; clinical genetics; ophthalmologic genetics.

Haig H. Kazazian Jr., M.D., Assistant Professor of Pediatrics, Medical Faculty. Biochemical genetics, quantitative control of protein synthesis; hemoglobins.

Ephraim Y. Levin, M.D., Assistant Professor of Pediatrics, Medical Faculty. Inborn errors of porphyrin metabolism.

Victor A. McKusick, M.D., Professor of Medicine, Medical Faculty and Professor of Epidemiology, Hygiene and Public Health Faculty. Population genetics of endogamous groups; clinical genetics; genetic linkage.

Timothy Merz, Ph.D., Associate Professor of Radiological Sciences, Hygiene and Public Health Faculty. Radiation biology; cytogenetics; tissue culture.

Barbara R. Migeon, M.D., Associate Professor of Pediatrics, Medical Faculty. Genetic analysis of diploid somatic cells in culture; X-chromosomal inactivation in female somatic cells.

Edmond A. Murphy, M.D., Sc.D., Associate Professor of Medicine, Medical Faculty. Statistical genetics.

James H. Renwick, M.D., Ph.D., Lecturer in Medicine, Medical Faculty. Genetic linkage; computer analysis of pedigree data.

Sigmund R. Suskind, Ph.D., Professor of Biology, Arts and Sciences Faculty. *Neurospora* genetics; genetics of permeases, ribosomes and enzymes; immunogenetics.

The Committee on Human Genetics

Samuel H. Boyer, M.D., Professor of Medicine and Biology; School of Medicine.

Barton Childs, M.D., Professor of Pediatrics and Biology; Johns Hopkins Hospital.

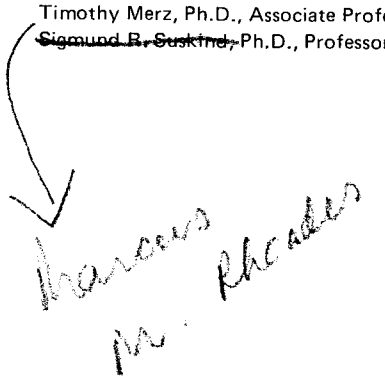
Bernice H. Cohen, Ph.D., Professor of Epidemiology and Biology; School of Hygiene and Public Health.

Philip E. Hartman, Ph.D., Chairman, Professor of Biology; Johns Hopkins University.

Victor A. McKusick, M.D., Professor of Medicine, Epidemiology and Biology; Johns Hopkins Hospital.

Timothy Merz, Ph.D., Associate Professor of Radiological Sciences; School of Hygiene and Public Health.

~~Sigmund R. Suskind,~~ Ph.D., Professor of Biology; Johns Hopkins University.



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