

# TEXAS CHILDREN'S CANCER CENTER AND HEMATOLOGY SERVICE

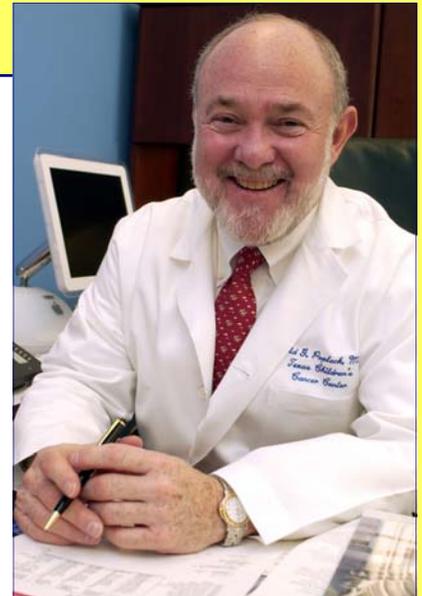


Pediatric Hematology-Oncology  
Fellowship/Faculty Training Program



Dear Prospective Fellow:

Thank you for requesting information about the Baylor College of Medicine Pediatric Hematology-Oncology Fellowship Training Program at the Texas Children's Cancer Center and Hematology Service. The Program is considered one of the country's top pediatric hematology-oncology fellowships, and our graduates have gone on to highly successful academic and research careers. We have worked hard to develop a remarkably comprehensive program that offers superb clinical and research training. Our Program is oriented to developing pediatric hematologist-



oncologists who wish to successfully pursue an academic career, either in clinical or laboratory research. It is most appropriately conceptualized as a "faculty training" program. A number of features, including a structured mentorship program and comprehensive leadership training, distinguish our fellowship as one uniquely geared to educating future leaders in the field.

Our fellows are taught by highly experienced faculty in the exciting clinical setting of the nation's largest children's hospital. As an entering fellow, you will join a medical and academic community that sets the standard of excellence. You will be trained by caring, dedicated faculty in a highly collegial, friendly and supportive environment. We hope that after learning about us, you will consider becoming part of our dynamic training program. Should you have any specific questions about our Program, I welcome you to contact me.

Sincerely,

David G. Poplack, M.D.  
Elise C. Young Professor of Pediatric Oncology  
Head, Hematology/Oncology Section  
Department of Pediatrics  
Baylor College of Medicine, and  
Director, Texas Children's Cancer Center

# Pediatric Hematology-Oncology Fellowship/Faculty Training Program

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## Introduction

Texas Children's Hospital and Baylor College of Medicine collaborate to offer one of the finest pediatric hematology-oncology fellowship programs in the nation. The large clinical service, preeminent faculty and state-of-the-art research programs of these top institutions provide an excellent setting for this specialized training.

Designed to prepare M.D.s and M.D./Ph.D.s for academic careers, this ACGME-accredited comprehensive training program affords opportunities for fellows to work alongside renowned faculty physicians to gain valuable in-depth clinical and laboratory research experience. Six new fellows are recruited annually through the National Resident Matching Program (NRMP). Trainees who complete this Program have acquired superb clinical experience and are firmly grounded in the basic biology of their specialty areas. In addition, fellows receive specialized training experience in laboratory or clinical research and will be well-positioned to become leaders in their field.

Texas Children's Cancer Center draws more than 1,600 new pediatric patients with cancer and hematologic disorders each year. Consequently, fellows deal with a wide variety of clinical pediatric hematologic and oncologic problems. Although formal fellowship training in pediatric hematology-oncology ordinarily involves a three-year training period, we highly

encourage our trainees to pursue a fourth year of training. (See [Fourth<sup>th</sup> year opportunities.](#))



## Program Goals and Strengths

The Program's primary goal is to provide fellows the opportunity to develop the clinical and research skills and experience necessary to become productive and successful independent clinical or laboratory investigators. Upon completion of this ACGME-accredited training program, fellows will meet the subspecialty certification requirements of the American Board of Pediatrics for Pediatric Hematology-Oncology.

The training program draws on the strengths of its association with Texas Children's Hospital, the largest children's hospital in the country, and Baylor College of Medicine's Department of Pediatrics, which ranks first in the United States in NIH funding among Departments of Pediatrics. Situated within Houston's Texas Medical Center, the largest medical center in the world, the program offers numerous opportunities for laboratory and clinical research. Some of the Program's major strengths include:

- experienced, dedicated faculty;
- a robust and varied clinical experience in both hematology and oncology in a "state-of-the-art" medical center;
- a highly-structured educational program with comprehensive, individualized clinical and research mentorship;
- numerous, well-funded laboratory and clinical research programs in which to receive training;
- a formalized, comprehensive core curriculum in clinical research;
- opportunities to receive graduate degrees in Basic or Clinical Research or in Public Health and Epidemiology;
- participation in formalized leadership training;
- education in writing grants for peer review; and
- specific training as an "attending" physician.

The mission of the fellowship training program at Texas Children's Cancer Center is to provide a comprehensive clinical and research training program for candidates interested in a career in academic pediatric hematology-oncology.

## Overview

Throughout the period of training, experienced faculty members guide each fellow to ensure that he or she develops and acquires excellent clinical, research and leadership skills.

The first 13 months are dedicated to obtaining comprehensive clinical skills in pediatric hematology and oncology. During this period, fellows are guided in selecting a clinical research or laboratory research experience to pursue in their second and third years. All fellows are encouraged to pursue an additional year of training in their area of research.

The large clinical service and state-of-the-art research programs at Texas Children's Cancer Center and Hematology Service and Baylor College of Medicine provide unique training for our fellows. Approximately 400 new pediatric cancer patients and more than 1,200 new patients with hematologic disorders are referred each year to the Texas Children's Cancer Center and Hematology Service. Virtually every form of childhood cancer and blood disorder is represented in our patient population. As a result, the program offers trainees an extensive, in-depth exposure to a multitude of clinical pediatric hematologic and oncologic problems in a carefully supervised training environment overseen by highly experienced and qualified attending faculty. As the

fellows' knowledge and experience increase, so does their level of clinical responsibility.



## Program Details

### First Year Program

(13 months, including orientation month)

The first-year curriculum includes the following rotations:

- [Orientation — 1 month](#)
- [Inpatient experience — 4 months](#)
- [Outpatient experience — 4 months](#)
- [Consultation Service — 2 months](#)
- [BMT unit — 1 month](#)
- [Practicum — 1 month](#)



### **Orientation Month**

All new fellows participate in an initial one-month sub-specialty-focused orientation lecture series. A wide range of topics is covered, including in-depth reviews of the diagnosis and management of the major diseases that confront the pediatric hematologist-oncologist, discussion of the principles of experimental design and clinical trial implementation, an overview of epidemiology, and topics related to clinical investigation in pediatric hematology-oncology. In addition to this month-long orientation program, organized by training program faculty, fellows also participate in a Fundamentals of Clinical Investigation course. This course involves 32 hours of presentations, covering topics on clinical investigation, statistics, ethics, medical literature appraisal, pharmacokinetics, molecular medicine and gene therapy. Fellows are expected to pass a written examination at the end of this course.

## Clinical Rotations

The subsequent 12 months of training focus primarily on the clinical aspects of pediatric hematology-oncology. Fellows are trained in the principles of evaluation, diagnosis and management of pediatric hematologic and oncologic disorders. The clinical experience includes primary patient care in both the inpatient and ambulatory settings, providing consultations in both settings and participation in teaching pediatric residents. As outlined above, first-year fellows have 12 one-month rotations between the inpatient and outpatient services. These include spending four months on the 36-bed inpatient unit at Texas Children's Hospital, four months in the outpatient clinic, two months on the Consultation Service and one month on the 15-bed Bone Marrow Transplantation Unit. The remaining month is spent in a rotation designated the Practicum Month. Focused learning experiences in coagulation, hematopathology, blood banking, radiation oncology, immunophenotyping, cytogenetics, and DNA diagnostics are provided during this period.



Trainees are given a list of specific procedures and learning goals for each activity.

It is important to emphasize that the Pediatric Hematology-Oncology Training Program emphasizes one-on-one supervision in the education of the trainees. In every phase of the Program, the fellow works closely with members of the faculty in learning to deliver quality patient care.

**Inpatient Service** — On the inpatient service (four months total), the first-year fellows oversee the care of 15-20 patients. These include new patients with possible or established oncology or hematology diagnoses, patients on

scheduled admissions for therapy or other elective procedures, and patients who are unscheduled admissions with complications of their disease and/or treatment. There are two inpatient teams each month. Each team consists of a fellow and a supervising attending physician. Each team works with and supervises first-year and upper-level house officers. The two teams admit patients on alternate days and are responsible for the care of patients admitted to their service every other weekend. Night call on these admission days is taken from home. The fellows make daily work and teaching rounds with the attending physicians and house officers, and



every patient is reviewed, discussed and evaluated. The supervising physician is available to the fellow 24 hours a day. Fellows have no other clinical responsibilities during this month so that they can devote all of their time to patient care and teaching.

**Outpatient Clinic** — In the outpatient clinic rotation (four months total), fellows are involved in evaluating new patients and following established patients. Fellows perform the initial history and physical examination and formulate the initial management plan. Duties include ordering and assessing the results of laboratory and imaging studies on patients seen in the clinic. Faculty review each case with the fellow. Depending upon their experience, fellows are involved in or actually give diagnostic and management presentations to the families and patients where appropriate. They also see established patients, including their continuity clinic patients. There are focused learning experiences in neuroradiology and in Long Term Survivorship scheduled during the outpatient rotations

in the latter part of the year. While continuity patients comprise less of the clinic experience in the first year of training, they constitute a significant portion of the fellows' outpatient responsibilities in the second and third year of the Program.

**Consultation Service** — On the Consultation Service (two months total), the fellow, working closely with a specific attending physician, performs consultations on new referrals in the Texas Children's Hospital (TCH), including the Emergency Center. Fellows on Consultation Service are called upon to assist in making the initial diagnosis for a variety of hematologic and oncologic problems in infants, children and adolescents. Fellows provide the initial encounter for these patients and their families to our service and develop the recommendations for evaluation, eventual diagnosis and subsequent management. Fellows on the consult service follow an average of 10-15 patients at any one time. Consultations are also performed in the nurseries at St. Luke's Episcopal Hospital and Methodist Hospital, both adjacent to TCH. Also, there are occasional consults at the Children's Center of the Ben Taub General Hospital in the Texas Medical Center. Every consultation is seen and reviewed with the supervising physician. The Consultation Service is available from 8:00 am to 5:00 p.m. Monday through Friday. After hours, emergency consultations are seen by the fellow on call for the inpatient service and turned over to the consultation team in the morning.

**Bone Marrow Transplantation (BMT)** — This rotation (one month/year) involves the care of patients in the state-of-the-art 15-bed BMT unit, with the assistance of an advanced nurse practitioner, a bone marrow transplant fellow, and a supervising physician. The fellow and the attending physician make rounds on patients daily. There is one month of BMT training and responsibility during each of the three years of the fellow's training (total of three months). The first-year fellow is paired with a third-year fellow/mentor for

the month, and the second-year fellow does the rotation with night call support from the fellow on the Consultation Service and with the assistance of the inpatient advanced nurse practitioner.

### **Practicum Month**

The remaining month is spent in a rotation designated the “practicum month.” During this month, fellows are provided with focused learning experiences in coagulation, hematopathology, blood banking, radiation oncology, immunophenotyping, cytogenetics, and DNA diagnostics. They are given a list of specific procedures and learning goals for each activity.

### **Continuity of Care**

Longitudinal patient follow-up is an extremely important aspect of oncology training. As a general practice, newly diagnosed patients who are evaluated by the fellow in the outpatient clinic and on the ward are followed by that same fellow when on the outpatient rotation. In the first year of the program, fellows have somewhat limited opportunity to see patients they have initially managed due to the requirements of the inpatient services. However, the outpatient unit employs an electronic medical record system that allows the fellows to track their patients even when not on an outpatient rotation. During the last quarter of their first year, fellows identify a cohort of patients as their formal continuity patients. Subsequently, during the second and third years of training, fellows follow their continuity patients during their weekly clinic time. By working closely with the attending physician and a primary pediatric nurse practitioner, the fellow



can closely monitor the patient's course even if the fellow is not available for every outpatient encounter. Whenever possible, the fellow is involved in major decision-making that relates to the primary continuity patients.

### **Scholarship Oversight Committee**

Each first year fellow has a committee of three individuals who meet with the fellow early in the first year and provide guidance in their career development and selection of a research field and mentor. One of the Committee members is a clinical mentor selected by the fellow. At the end of the first year, the committee membership changes to include the research mentor and additional members expert in the fellow's chosen research field.

### **Psychosocial Aspects of Pediatric Hematology-Oncology**

Fellows receive training in addressing psychosocial issues in caring for children and adolescents with life-threatening illnesses. Working with an experienced attending physician in the day-to-day care of patients in stressful clinical circumstances, fellows learn how to provide optimal psychosocial support to patients and their families. In addition, the service has a full-time psychologist who directs the Psychosocial Support Program and who provides support and advice to fellows. There are also organized multidisciplinary conferences on patient and family management issues, as well as a fellows' seminar series that focuses on recognizing and dealing with the psychosocial aspects of care. (See below.)

### **Leadership Training**

The fellowship program acknowledges that a prerequisite for success in an



academic medical career is leadership ability. An academic physician is expected to guide the patient and family as they adapt to serious illness, supervise the health care team in the care of the patient, direct laboratory and clinical research efforts, teach trainees at all levels and, potentially, lead as the head of a program, department or institution.

Leadership is taught implicitly, as in most programs, by a gradual increase in responsibility throughout the fellow's training, including the opportunity for the fourth-year fellow to function as an attending. Fellows are routinely invited to participate in formal faculty development activities (e.g., workshops on grantsmanship, career planning, etc.). In addition, the program teaches leadership through a unique, twice-monthly Fellows' Seminar.

### **Fellows' Seminar**

This twice-monthly seminar, required for the first-year fellows and optional thereafter, focuses on what we call "reflective practice" and leadership. Fellows are encouraged to discuss any challenging circumstances encountered in their role. These diverse topics include issues such as the difficulty of dealing with a dying patient, the complexities of leading a health care team, and the strain of balancing the demands of a young family with the commitments associated with participating in an academic training program. Selected senior faculty facilitate discussions by framing thought-provoking questions and, at times, relating their own experience. The method enhances fellows' understanding of these complex issues and broadens their base of experience through input from their colleagues and mentors. There is a systematic effort made to help fellows develop skill in analyzing situations and translating reflection into effective action as leaders in academic medicine.

## Conferences, Tumor Boards, Seminars and Teaching Sessions

Regular interactive and didactic conferences are an integral part of the training program. There are five major weekly teaching conferences and one bi-weekly conference.

**Tumor Board and Problem Case Conference—** This is a multidisciplinary conference involving oncologists, radiologists, surgeons, pathologists, and radiation oncologists, as well as nurses, research scientists and trainees. The conference focuses on clinical and laboratory features of a spectrum of cases seen by staff throughout the year. Fellows assume a major role in presenting and moderating case discussions.

**Neuro-Oncology Tumor Board—** This is a multidisciplinary conference involving neuro-oncologists, neurologists, neurosurgeons, radiation oncologists, radiologists, and pathologists. They discuss issues regarding central and peripheral nervous system tumors seen by the Cancer Center staff.

**Hematology Case Conference—** Disorders of erythrocytes, leucocytes, platelets, and the coagulation systems comprise the topics for this conference. New cases presented to the service are reviewed for evaluation and management recommendations. Once a month, there is a formal conference regarding laboratory and clinical aspects of coagulation disorders.

**Research Seminar—** This lecture series involves formal presentations by clinical and laboratory research scientists from many disciplines and areas of research. Local, national and international speakers are invited to present their work. At the end of their third year, senior fellows present their research projects in this setting.

**Bone Marrow Transplant Case Conference—** Bone Marrow Transplant inpatients/ outpatients and new patients are presented and discussed. A formal presentation on selected topics given by Fellows on the Bone Marrow Transplant Services at Texas Children's' Hospital and The Methodist Hospitals follows. The presentations are generally

case-based or retrospective reviews and include overviews of the relevant recent literature pertaining to the field of BMT. In addition, invited international and local faculty members present their transplant-related research.

### **Performance feedback and evaluations**

Trainees participate in both informal and formal performance evaluations and feedback conferences throughout every rotation in the training program. Written evaluations of conference presentations, ward rotations and overall performance reports are reviewed with the trainee by the involved faculty on a regular basis. In addition, each fellow meets individually with Drs. Poplack and Steuber twice a year to review their overall evaluations and progress.

Fellows also meet as a group with the Chief of Service, Dr. Poplack, and the Program Coordinator, Dr. Steuber, on a monthly basis to address programmatic issues. These meetings provide the fellows with the opportunity to discuss issues regarding the curriculum and its implementation. The meetings also serve as a forum for resolving issues that have been identified as impediments to the learning experience.

### **Book Allowance and Meeting Attendance**

Incoming fellows are provided with their own copies of textbooks relating to pediatric hematology-oncology; thereafter, the fellows have an annual book allowance. Support is also provided for attendance at one national scientific meeting annually. In addition, second- and third-year fellows are encouraged to participate in conferences and meetings that relate to their chosen fields of research.



Fellows receive support to present their work in poster or platform format at these meetings.

### **Second and Third Year Program**

#### **Research Training**

The Baylor College of Medicine Pediatric Hematology-Oncology Training Program emphasizes the importance of achieving significant research expertise and productivity during fellowship training. A strong foundation in research is critically important to the development of a successful academic career. The fellow's education in research actually begins during the initial orientation month. The Fundamentals of Clinical Investigation course introduces the fellow to the concepts of research design and data analysis. During this initial orientation period (and throughout the fellowship), trainees learn about clinical research through their exposure to and involvement in the many ongoing clinical trials and study protocols at the Texas Children's Cancer Center and Hematology Service. This includes the Center's clinical trials, those of the Children's Oncology Group, and those related to other collaborative research efforts, including the NCI-sponsored Brain Tumor Consortium, the NIH-supported Pediatric Pharmacology Research Unit and the Glaser Pediatric Research Network. As the

## **Research Opportunities**

**Clinical and laboratory research opportunities are available in these general areas:**

- **solid tumors**
- **leukemia**
- **hematology**
- **cancer genetics**
- **epidemiology**
- **long-term survivorship**
- **cell and gene therapy**
- **stem cell and marrow transplantation**
- **clinical pharmacology**
- **developmental therapeutics**
- **medical informatics/education**
- **cancer genomics and proteomics**
- **molecular oncology**
- **tumor biology**
- **tumor immunology**
- **hematopoiesis**

fellows attend the Center's weekly teaching conferences, they are exposed to the presentation and interpretation of research data by multiple clinical researchers and laboratory investigators. At weekly Research Seminars, faculty and outside guest speakers present and discuss their research. Visiting speakers often meet with the fellows in lunchtime discussion sessions.

Beginning in the middle of their first year, trainees attend a series of special presentations given by laboratory and clinical research-oriented investigators. These sessions are designed to familiarize the fellows with the specific research being conducted in the Program's many laboratories. Physician-scientists in the 26 laboratories within the Cancer Center perform research in molecular oncology, cancer genetics, cancer genomics, cell and gene therapy, pharmacology and experimental therapeutics, neuro-oncology, tumor immunology, transplantation and stem cell biology, and research hematology.

A senior member of the Education Committee organizes this series of presentations. During the subsequent two to three months, fellows make individual follow-up appointments with selected faculty members of their choosing to further discuss research opportunities. Fellows may also explore research opportunities within other research groups and laboratories throughout Baylor College of Medicine and the Texas Medical Center. By the end of May of their first year, with guidance from their mentor, the Program Director and their Scholarship Oversight Committee, each fellow selects a research mentor and laboratory or clinical research project.

Subsequently, during the second and third years of the training program, the fellows have an extended protected period with limited clinical responsibilities in order to pursue their independent research project under the supervision of their research mentor. Approximately 80% of the fellows' time is committed to their research projects. The goal of training during this time is for the fellow to develop the research skills and training necessary to ultimately become a productive and successful independent clinical or

laboratory investigator. Because this process often requires more than three years, fellows are encouraged to spend an additional year on their research.

Excellent mentorship is a hallmark of this Fellowship Training Program. Fellows receive in-depth training in their selected clinical or basic research interest, under the mentorship of a committed senior faculty research mentor. Senior faculty mentors are dedicated to ensuring that each fellow receives the guidance and direction necessary to develop a successful career in academic pediatric hematology-oncology. Fellows are responsible for carrying out an independent research project under the receives support from a faculty advisory committee. This committee, which includes the research mentor and additional faculty members with expertise in the fellow's area of research, meets with the fellow twice each year to assist in ensuring that the fellow has a productive and successful research experience.

## **Grants**

Funding for all fellows' salaries is guaranteed for the three or four years of their fellowship training. Because writing and obtaining grants is a critically important aspect of academic research careers in pediatric hematology-oncology, all fellows are encouraged to write a grant proposal in support of their research. Comprehensive instruction and training in grant proposal preparation is an important component of this Fellowship Program. Each fellow receives in-depth supervision and support in the identification, preparation and submission of grants to both NIH and non-federal granting agencies. In addition to the individuals' research mentors, the Cancer Center has three experienced Research Service Coordinators who work closely with the fellows to facilitate this process. Each second-year fellow has the opportunity to take advantage of the expertise and resources of the research services staff, which help locate grant opportunities that match each fellow's level of training and expertise and area of interest. An individualized plan, focused on further career development in basic or clinical research, is developed for each fellow. Once a

grant opportunity has been matched to a fellow, research services staff members assist the fellow by providing a written outline of the grant application, timeline, budget calculations, and assistance with writing and routing the proposal through the Department of Pediatrics and Baylor College of Medicine's Office of Research. A Texas Children's Cancer Center and Hematology Service grants and contracts web page also serves as a resource for fellows seeking grants. It provides key information, including a calendar of grant application deadlines, patient demographics, instructions on applying for use of humans and animals in research, and links to funding sources.

### **Continuing Clinical Training in Second and Third Years**

In order to maintain and enhance fellows' clinical skills during this extended research period, all fellows have basic clinical

responsibilities that involve a total of 20% of their time. Fellows rotate in the weekend coverage schedule, spend one-half day per week in the clinic seeing their own continuity patients and others when time allows. They also spend one month each year in the BMT unit. Upon completion of the 36-month training period, the trainees will have spent approximately 50% of their time in the various clinical settings and the other 50% engaged in research activities. In addition, fellows continue to participate in the ongoing schedule of educational conferences, tumor boards and research seminars — all of which serve to enhance the fellowship educational experience.



Several long-term survivors from the Cancer Center's infant leukemia protocol

### **Additional Opportunities**

## **Fourth Year Opportunity**

Although the basic board-required fellowship program is three years in duration, qualified fellows are encouraged to extend their experience for a fourth year. This additional year affords fellows an opportunity to further enrich their clinical and research education, to augment their teaching skills, and to receive additional, invaluable training in a junior faculty role. During this period, fellows are normally appointed as an Instructor (faculty level) and become independent practitioners with protected research time. The Department of Pediatrics sponsors two career development programs for junior faculty—the Junior Faculty Career Assistance Group (CAG) and the Research and Clinician-Educator Special Interest Groups (SIGs). Those trainees who elect to become Instructors are eligible to participate in these programs. A popular component of the fourth-year experience involves participating as an attending physician on the hematology-oncology unit for a one-month period, with the support and mentorship of senior faculty members. One of the key features of the fourth year is that it offers an additional year of “protected” research time, which usually serves to enhance research productivity. Overall, the fourth-year experience is viewed as a critical “stepping stone” to a successful career in academic medicine.

## **BMT Fellowship**

A stem cell transplant fellowship position is available each year at Texas Children's Cancer Center and Hematology Service. This is a clinical position for training in pediatric stem cell transplantation and is open to individuals who have completed a basic three-year program in pediatric hematology-oncology. The pediatric stem cell transplant program includes basic, translational and clinical research for a wide range of disorders, both malignant and non-malignant.

The pediatric transplant clinical facility includes a 15-bed inpatient unit with a contiguous outpatient/infusion area. The fellow performs a range of innovative clinical protocols using cellular and genetic therapies. The fellowship position is available

beginning July 1, but other accommodations may be possible for qualified individuals. The fellowship extends over 12 months, and the fellow rotates through the inpatient and outpatient units, the Cell Processing facility, the pheresis center, and the HLA tissue-typing laboratory. The position meets all criteria for clinical training in BMT as identified by the American Society of Bone Marrow Transplantation and the Federation for Accreditation of Cell Therapy. The pediatric component is part of a FACT-accredited program. As noted, all candidates must have completed specialty training in pediatric hematology-oncology. If candidates are interested in laboratory research, there is the possibility of spending additional time working in one of the Center's basic or translational research programs.

### **Elective Opportunities**

**Training in a community on the Mexican border** — The Texas Children's Cancer Center and Hematology Service has an outreach clinic in the Rio Grande Valley in McAllen, Texas. The Vannie E. Cook Jr. Children's Cancer and Hematology Clinic has two full-time pediatric hematology-oncology faculty members who saw more than 2000 patients with cancer or hematologic disorders in the first four years of the clinic's operation. The McAllen area was previously an underserved area with a large Spanish-speaking population. As an elective in the senior years of training, fellows may take the opportunity to work in this environment and observe the practice of pediatric hematology-oncology in a community setting.

**International opportunities** — The Texas Children's Cancer Center and Hematology Service has established close collaborative interactions with several programs internationally. Depending on their research interests and progress, fellows who elect to stay for a fourth year may spend an elective in one of several collaborating institutions internationally, including sites in Italy, France, Oman, Eastern Europe, and Latin America.

## Advanced degrees

A variety of programs leading to advanced degrees are available to fellows after the completion of the initial 13 months of clinical training. These pathways provide the requisite fellowship research experience and, in addition, may lead to a master's or doctorate degree.

**Basic Science Degrees** — Interested fellows may apply to the Baylor College of Medicine Graduate School and work towards a Ph.D. degree in a basic science discipline. They can receive credit while working in the laboratory of one of the many pediatric hematology-oncology program faculty who have appointments in basic science departments.

**Public Health and Epidemiology** — Fellows may choose to pursue an M.P.H. degree through concurrent enrollment in the University of Texas School of Public Health, which is within walking distance from Texas Children's Hospital. Fellows can pursue an M.P.H. or Ph.D. in epidemiology with mentorship from the pediatric hematology-oncology faculty who are members of the Childhood Cancer Epidemiology and Prevention Center.

**Clinical Research** — Baylor College of Medicine has an organized curriculum in clinical research that offers the potential to receive either an M.A. or a Ph.D. degree. An NIH K30 award supports this Clinical Scientist Training Program. Fellows are eligible to participate in this program that is oriented towards training individuals for academic careers in clinical research.

**Faculty Training in Pediatric Oncology Clinical Research** — Fellows who stay for a fourth year are eligible to apply for a unique NIH K12 award that offers three years of directed mentorship and training in advanced clinical research. This program provides the participant the opportunity to receive career development training in any of five specific tracks including Leukemia, Solid Tumors, Marrow and Stem Cell Transplantation, Cancer Genetics, and Neuro-oncology. Acceptance into this program includes salary support for a

three-year period.

**Clinical Pharmacology Training** — Texas Children's Cancer Center and Hematology Service has an exceptionally strong clinical and laboratory research program in clinical pharmacology. For example, the program is the site of one of only 13 NIH-funded Pediatric Pharmacology Research Units in the U.S. Pediatric hematology-oncology fellows interested in a career in cancer pharmacology may choose to participate in the Baylor College of Medicine Clinical Pharmacology Fellowship Training Program. These fellows pursue research in the laboratories of the Developmental Therapeutics Program of the pediatric hematology-oncology section during their second and third years of fellowship. Their fourth year is spent in didactic coursework offered at the University of Houston School of Pharmacy in the Texas Medical Center. Following a fifth year, during which individuals rotate through several different clinical pharmacology rotations, trainees become eligible to sit for Boards in Clinical Pharmacology.

### **Camp Opportunities**

The staff of the Cancer Center is intimately involved in providing camping opportunities for different patient populations: Camp Periwinkle, a weeklong summer camping experience for children (ages 7-15 years) with cancer and



other life-threatening illnesses; Camp YOLO, a weekend camp offered in the fall and spring to teenagers with chronic illnesses; and Camp Sky, a weeklong summer camp for children with sickle cell disease. Participation is optional, and second- and third-year fellows may choose to become involved with these experiences as senior counselors.

## **Facilities and Environment**

### **Texas Children's Cancer Center and Hematology Service**

The TCCC&HS has three clinical sites at Texas Children's Hospital (TCH): an outpatient clinic, a 36-bed inpatient unit and a 15-bed bone marrow transplantation (BMT) unit. The TCCC&HS outpatient facility is located in the new 17-story Clinical Care Center (CCC), which is the TCH ambulatory care building that opened in fall 2001. The 22,000-square-foot outpatient clinic houses 25 outpatient chemotherapy treatment areas, a satellite pharmacy, 12 examination rooms, four procedure rooms, an activity area, centralized team stations, and a large family lounge staffed by volunteers from the Ronald McDonald House of Houston. The 36-bed inpatient unit for children with cancer and hematological diseases is located in the West Tower of TCH. The inpatient unit also features a large family lounge sponsored by the Ronald McDonald House of Houston. The BMT program is housed in a combined outpatient and inpatient unit in TCH's West Tower. The program includes a state-of-the-art 15-bed inpatient unit, furnished with such specialized equipment such as a unit-wide HEPA filter, which sterilizes the air and allows children to leave their rooms. This HEPA filtering system allows caregivers to eliminate gowns, masks and gloves within the unit, thus decreasing the physical barriers often associated with caring for these children.

TCCC&HS staff see nearly 1,600 new patients with cancer and blood diseases and handles more than 25,000 outpatient visits per year. Virtually every form of childhood cancer is represented in our patient population, including leukemias, lymphomas, brain tumors, bone and soft tissue tumors, neuroblastomas, and a wide variety of other pediatric cancers. Treatment options for patients with cancer range from chemotherapy, radiation and surgery, to bone marrow transplantation and gene therapy. The Hematology Service treats all types of hematological disorders, including anemias, thrombocytopenias, leukopenias, and coagulation disorders.

## Texas Children's Hospital

The primary pediatric teaching hospital of Baylor College of Medicine (BCM), Texas Children's Hospital is located in the Texas Medical Center (TMC) and is a full-care pediatric facility providing inpatient and outpatient care in more than 40 specialties and subspecialties. Texas Children's Hospital and its Integrated Delivery System employs more than 6,000 people, has 1,580 physicians on its medical staff, and records more than 21,000 admissions, 78,000 EC visits and 190,000 clinic visits annually. The hospital consists of a four-building complex that includes: the Abercrombie Building, which is devoted to a variety of administrative and patient-oriented uses; the West Tower, where the emergency center, critical care units and operating rooms are located (15 floors were completed in May 2001 and now serve as the primary home of inpatient units, including the BMT and the Hematology/Oncology inpatient service); the new 17-story Clinical Care Center, which opened in the fall of 2001 and houses all outpatient clinics; and the Children's Nutrition Research Center, dedicated to nutrition research in the neonate, infant and child—a joint venture between Texas Children's, Baylor College of Medicine and the U.S. Department of Agriculture. The Feigin Center is dedicated to research, providing an additional 151,000 square feet of space for state-of-the-art pediatric investigation, with special emphasis on cancer and cell and gene therapy (approximately 30,000 square feet). TCH received accreditation with commendation by JCAHO in 2005.

## Baylor College of Medicine

Baylor College of Medicine ranks among the top of the country's 125 medical schools and is the only private medical school in the Southwest. *U.S. News and World Report* placed the College 13<sup>th</sup> among all medical schools in its



annual survey, while Baylor was ranked first by the National Science Foundation in its list of U.S. universities and colleges for research and expenditures in the biological sciences. Baylor College of Medicine is also listed 11<sup>th</sup> among all US medical schools for NIH funding.

Founded in 1900, Baylor has grown into a medical institution widely respected for excellence in education, research and patient care. The patient care services of Baylor College of Medicine extend to 20 institutions in Houston. In addition to Texas Children's Hospital, Baylor maintains affiliations with six other area hospitals which have a combined total of over 4,000 beds. Baylor College of Medicine also provides medical services for six of the Harris County Hospital District community health centers and the Thomas Street AIDS Clinic. The College collaborates with the Menninger Clinic for the treatment of psychiatric and behavioral disorders.

Baylor attracts students from around the world. Currently enrolled are more than 666 medical students, 496 graduate students, 736 postdoctoral fellows, 128 allied health students and 1,007 resident physicians pursuing specialty training.

In addition to Texas Children's Cancer Center, Baylor has more than 90 research and patient care centers, including the U.S. Department of Agriculture/Agricultural Research Service Children's Nutrition Research Center, the DeBakey Heart Center, the Brown Foundation Human Neuroimaging Laboratory, the Baylor Human Genome Sequencing Center, the Center for Cell and Gene Therapy, the Breast Center, a unit of the Howard Hughes Medical Institute, the Child Health Research Center, the Huffington Center on Aging, the Center for AIDS Research, and federally funded units that collectively form an Influenza Research Center.

### **Baylor Department of Pediatrics**

The Department of Pediatrics at Baylor College of Medicine ranks first in NIH funding. It is the largest pediatric department in the United States with 468 full-time faculty members, 43 part-time faculty members and more than 120 voluntary clinical faculty who

offer extensive expertise and experience in every subspecialty of pediatric practice. The Department of Pediatrics conducts numerous undergraduate, graduate and postgraduate training programs. Currently more than 160 individuals are in training for board certification in pediatrics, and an additional 160 are receiving fellowship training in pediatric subspecialty areas.

Members of the department conduct extensive research funded by extramural grant support in all general and subspecialty areas.

### **Texas Medical Center**

The Texas Medical Center in Houston is one of the largest centers of its kind in the world. Its 42 not-for-profit member institutions are dedicated to the highest standards of patient and preventive care, research education and the well-being of local, national and international communities. Thirteen renowned hospitals and two specialty institutions, two medical schools, four nursing schools, and schools of dentistry, public health, pharmacy, and virtually all of the health-related careers are represented.

More heart surgeries are performed in the Texas Medical Center than anywhere else in the world. Additionally, the Texas Medical Center is the home of

### **Texas Medical Center Facts and Figures**

- TMC draws approximately 5.2 million patient visits per year.
- TMC is host to 10,456 international patients.
- The area spans 800+ acres with more than 100 permanent buildings.
- Between 2002 and 2004, more than \$2.1 billion spent in adding to or renovating facilities of Medical Center institutions.
- Over 65,000 employees, 11,000 registered nurses and 4,000 physicians work in the Medical Center institutions as well as 12,000 volunteers.
- There are 11 education institutions operating facilities on the Medical Center campus.
- Over \$3.5 billion has been committed to research by TMC institutions as grants from 2000-2004.

one of the first-ever, and still the largest, air emergency services and was the originator of a very successful inter-institutional transplant program.

## **Houston, Texas**

This international city is an exceptional place to live. A dynamic, multicultural city, Houston is the fourth largest city in the country and home to a thriving blend of ethnic populations. An international port and business center, Houston also serves as the touchstone for our national space program.

With core businesses in energy, shipping, education and medicine, among others, Houston boasts a vibrant student and research community supported by major universities and corporations. Baylor College of Medicine joins several other institutions of higher learning engaged in cutting-edge scientific and medical research in and around the world-famous medical center.

Just blocks from the hospital, Rice Village offers convenient shopping and dining with 350 retail shops, restaurants and services. Also within walking distance of Texas Children's, Houston's first and largest city park features a running track, public golf course and the Houston Zoo. The park conjoins Houston's Museum District, home to 11 top-ranked museums.

Approximately three miles north, Houston's downtown Theater District houses eight world-class performing arts organizations, including the Houston Grand Opera, Houston Symphony and Houston Ballet. Other attractions include professional sports, played with drive and energy in Houston year-round.

The Lyndon B. Johnson Space Center is located 20 minutes south of downtown Houston, and just 50 miles away is Galveston Island, with historical attractions and more than 20 miles of uncluttered beaches along the Gulf of Mexico.



Houston's hospitality, affordable cost of living and healthy economy make it an exceptional place to live.

### **Application and Selection Procedure**

Individuals with M.D., M.D./Ph.D., or D.O. training and an interest in an academic career in pediatric hematology-oncology are encouraged to apply. The Texas Children's Hospital/Baylor College of Medicine program accepts up to six fellows each year, and applicants are accepted based on their potential to become successful academic subspecialists.

Applications are accepted year-round, and candidates are encouraged to apply 18 months in advance of the July starting date. The Pediatric Hematology-Oncology Fellowship/Faculty Training Program participates in the National Resident Matching Program (NRMP).

An interview will be offered to prospective candidates selected from the completed applications. The in-town costs of the interview, including lodging and meals, are provided by Texas Children's Hospital.

Applications to the Hematology-Oncology Fellowship Training Program are initiated by submitting:

- A letter stating interest in the program;
- A curriculum vitae; and
- An application.

Forward the requested materials to:

**David G. Poplack, M.D.**

Director, Texas Children's Cancer Center

Texas Children's Hospital

6621 Fannin, CC1410.00

Houston, Texas 77030

Contact the Texas Children's Cancer Center and Hematology Service at 832-822-4207, or e-mail Dr. Poplack at [dpoplack@bcm.tmc.edu](mailto:dpoplack@bcm.tmc.edu). Information is also available on Texas Children's Hospital's website at [www.texaschildrenshospital.org](http://www.texaschildrenshospital.org).

# BAYLOR COLLEGE OF MEDICINE PEDIATRIC FELLOWSHIP APPLICATION

DEPARTMENT OF PEDIATRICS  
 BAYLOR COLLEGE OF MEDICINE  
 ONE BAYLOR PLAZA  
 HOUSTON, TEXAS 77030

Optionally, provide a small  
 passport-style photograph  
 in this space.

Application for fellowship appointment in (specialty):	Level of training applied for:	Beginning (MO) (DAY) (YEAR)
--	--------------------------------	-----------------------------

Name	Last	First	Middle	Present Address
Telephone (Home)		Telephone (Hospital or School)		Social Security Number
Permanent Home Address			Name & address of someone we are able to contact	
Birthdate (MO) (DAY) (YEAR)		Place of Birth		Citizenship
				If non-citizen, date of entry into U.S.
If non-citizen, type of Visa held (Exchange Visitor, Immigrant, etc.)				
Do you have any conditions which might impair your participation in the program? If so, please describe				

## EDUCATION:

High School	From	To	
Address			
College	From	To	Degree
_____			
_____			
Medical School	From	To	Degree
_____			
Address			
Other Degrees	From	To	Degree
_____			
Address			

Please indicate exam's passed: ECFMG \_\_\_\_\_, Visa Qualifying Examination (VQE) \_\_\_\_\_, Foreign Medical Graduate Exam in the Medical Sciences (FMGEMS) \_\_\_\_\_, National Board Exam (parts 1-2-3) \_\_\_\_\_, United States Medical Licensing Examination (USMLE, steps 1-2-3) \_\_\_\_\_, or FLEX \_\_\_\_\_. Please enclose notarized copies of your exam results and ECFMG certificate.

	Hospital	From	To	Field
Internship	_____			
	City and State			
	Hospital	From	To	Field
Residency	_____			
	City and State			
And	Hospital	From	To	Field
	_____			
	City and State			
Fellowship	Hospital	From	To	Field
	_____			
	City and State			
Graduate	College(s)	From	To	Degree(s)
School	_____			
	Field(s)			

Membership in Honorary or Professional Societies, prizes, awards, fellowships, etc. Please include AOA membership.

\_\_\_\_\_

\_\_\_\_\_

**PROFESSIONAL GOALS AND CAREER PLANS** (omit if included in CV or Personal statement.)

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

U.S. Board	Specialty	Certified or eligible (circle one)	Date of certification
certification	Specialty	Certified or eligible (circle one)	Date of certification
or			
eligibility			

**MEDICAL LICENSURE:** State \_\_\_\_\_ year issued \_\_\_\_\_  
 State \_\_\_\_\_ year issued \_\_\_\_\_

	College	From	To
Faculty	Department	Rank	
Appointments	College	From	To
	Department	Rank	

Practice	Location	From	To
or	Type		
other clinical	Location	From	To
experiences	Type		

**CURRICULUM VITAE: PLEASE ATTACH COPY AND, IF APPLICABLE, A LIST OF PUBLICATIONS.**

**REFERENCES:** Please list four references, of whom one must be your residency program director and three must be physicians who can render an evaluation of your professional and academic abilities. Please ask that your recommenders comment on academic and personal attributes such as judgment, industry, interpersonal relationships, capacity to assume responsibility and professional ethics. Please have these recommendations sent directly to the director of the fellowship program.

Residency Program Director	Address
Other Recommenders	Address
_____	_____
_____	_____
_____	_____

I certify that to the best of my knowledge the above information is accurate and correct.

Date \_\_\_\_\_ Signature \_\_\_\_\_

## Selected Texas Children's Cancer Center Faculty

Stacey Berg, M.D.  
Alison A. Bertuch, M.D., Ph.D.  
Susan M. Blaney, M.D.  
Catherine Bollard, M.D.  
Lisa Bomgaars, M.D.  
Melissa Bondy, Ph.D.  
Paul F. Bray, M.D.  
Malcolm Brenner, M.D., Ph.D.  
Murali Chintagumpala, M.D.  
Alan R. Davis, Ph.D.  
Elizabeth A. Olmsted-Davis, Ph.D.  
ZoAnn E. Dreyer, M.D.  
Helen Heslop, M.D.  
Josef T. Prchal, M.D.  
Ernest Frugé, Ph.D.  
Adrian Gee, Ph.D.  
Margaret A. Goodell, Ph.D.  
Stephen M. Gottschalk, M.D.  
Marilyn J. Hockenberry, Ph.D., RN-CS, PNP, FAAN  
Marc Horowitz, M.D.  
James Huang, M.D.  
Richard Hurwitz, M.D.  
John Y. H. Kim, M.D., Ph.D.  
Robert A. Krance, M.D.  
Ching C. Lau, M.D., Ph.D.  
Donald H. Mahoney, Jr., M.D.  
Tsz-Kwong (Chris) Man, Ph.D.  
Judith F. Margolin, M.D.  
Kenneth L. McClain, M.D., Ph.D.  
Brigitta U. Mueller, M.D.  
M. Fatih Okcu, M.D., M.P.H.  
Debananda Pati, Ph.D.  
Sharon E. Plon, M.D., Ph.D.  
Pulivarthi Rao, Ph.D.  
Cliona M. Rooney, Ph.D.  
Heidi V. Russell, M.D.  
Michael Sheldon, Ph.D.  
Jason M. Shoet, M.D., Ph.D.  
C. Philip Steuber, M.D.  
Lisa L. Wang, M.D.  
Kwong-Kwok Wong, Ph.D.  
Jianhua Yang, Ph.D.  
Xiaoliu "Shaun" Zhang, M.D., Ph.D.