

A Fulbright Experience in Clinical Pharmacy in India

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ABSTRACT. The Fulbright program is an international exchange program for educators that is sponsored by the Bureau of Education and Cultural Affairs of the United States Department of State and is administered by the Council for the International Exchange of Scholars in over 150 countries. This paper describes the process of acquiring a lecturing grant through the Fulbright Traditional Scholar program, the selection of a host institution, and the subsequent grant opportunities and activities in India in the area of clinical pharmacy. The primary activities of the grant period included lecturing, thesis guidance, patient counseling, case presentations, visits to neighboring institutions, and presentations at national pharmacy meetings. The grant reporting requirements include an interim and final report to be filed through the Council for the International Exchange of Scholars (CIES) office and website. A Fulbright grant is an unusual and satisfying method to gain experience in grant writing and international education. The experience also provides a means to further establish collaborative projects with the host institution, through Fulbright Alumni Initiative Award Programs. *[Article copies available for a fee from The Haworth Document Delivery Service: 1-800-HAWORTH. E-mail address: <docdelivery@haworthpress.com> Website: <<http://www.HaworthPress.com>> © 2006 by The Haworth Press, Inc. All rights reserved.]*

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INTRODUCTION

The Fulbright Program is a flagship international educational exchange program that is sponsored by the U.S. government. The program is designed to create and increase mutual understanding between the people of the United States and the people of other countries. The Fulbright Program was established in 1946 under the legislation introduced by former Senator James William Fulbright of Arkansas. The program is sponsored by the Bureau of Education and Cultural Affairs of the U.S. Department of State and is administered by the Council for the International Exchange of Scholars (CIES). It operates in over 150 countries worldwide. Approximately 261,000 "Fulbrighters," 98,000 from the United States and 162,600 from other countries, have participated in the program, since its inception over fifty years ago (1). This paper describes a Fulbright experience in Clinical Pharmacy in South India during the academic year 2004-2005 through the Fulbright Traditional Scholar Program.

The term "Fulbright Program" encompasses a variety of exchange programs, including both individual and institutional grants for both students and faculty. Table 1 lists the available grants for faculty for both U.S. and foreign nationals and the grants available for U.S. students.

The Fulbright Program for the U.S. Scholars offers faculty, administrators, and professionals in U.S. institutions grants to lecture, do research, or participate in seminars worldwide. They range from 2-6 week grants for the Senior Specialist Program to multiyear grants for the Alumni Initiatives Awards Program. Some are specific to regions, such as the International Administrators Program, which only sends grantees to Germany, Japan, or Korea. Others are nonspecific and can apply to any one of the 150 countries involved in the program.

APPLICATION AND SELECTION PROCESS

The application period for the grant is from March to August each year. There are awards specific to particular countries, professional areas, and host institutions. During the time of application for the Fulbright Traditional Scholar Program, I was an assistant professor in the Department of Pharmacy Practice at Texas Southern University in Houston, Texas. I applied for a country specific lecturing award, open to all fields and host institutions, since there were no specific awards for pharmacy professionals during the 2004-2005 award year. Based on my

TABLE 1. Fulbright Scholar Programs (2)

U.S. Fulbright Scholar (Faculty) Programs

Fulbright Traditional Scholar Program
 Fulbright Alumni Initiatives Awards Program
 Fulbright German Studies Seminar Program
 Fulbright International Administrators Program
 Fulbright Distinguished Chairs Program
 Fulbright Senior Specialists Program
 Fulbright New Century Scholars Program

Programs for Scholars (Faculty) Visiting the U.S.

Fulbright Visiting Scholar Program
 Fulbright Scholar-In-Residence Program (SIR)
 Fulbright European Union SIR Program (EUSIR)
 Fulbright Occasional Lecturer Program (OLP)
 Fulbright Visiting Specialists Program: Direct Access to the Muslim World
 Hubert H. Humphrey Fellowship Program

U.S. Fulbright Student Programs

Fulbright Student Program
 Fulbright Islamic Civilization Initiative
 Foreign Language Teaching Assistant Program (FLTA)

academic qualification, I requested for the award to be in the area of Pharmacy Practice. The eligibility requirements for a Fulbright scholar are the following as listed in Table 2.

The application package for a Traditional Fulbright Scholar award includes an application form, a project statement, a tailored curriculum vitae, a letter of invitation or other relevant correspondence from abroad, a language proficiency report, and if needed for the project, a race/ethnicity questionnaire and publicity survey. For lecturing awards a course syllabus, two reference letters, and one teaching report are also needed. Research-based awards require a select bibliography and three reference letters. The reference letters should be from individuals who can comment on your teaching/research accomplishments, leadership capabilities, committee involvements, and quality and significance of your courses and/or research project to the host institution and your profession. The teaching report should be from the individual at your college responsible for assessment activities or from your department chairperson detailing your qualifications to teach and interact with students. Formal

TABLE 2. Eligibility Requirements at Time of Application (3)

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- **U.S. citizenship** at the time of application. Permanent resident status is not sufficient.
 - **A Ph.D. or equivalent professional/terminal degree** (including a Master's depending on the field) as appropriate at the time of application. For professionals and artists outside academe, recognized professional standing and substantial professional accomplishments.
 - **College or university teaching experience** at the level and in the field of the proposed lecturing activity as specified in the award description at the time of application.
 - **Foreign language proficiency** as specified in the award description or as required for the completion of the proposed project. (Note: Except in certain world areas and countries, lecturing is in English.)
 - **Sound physical and mental health.**
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evaluation procedures for evaluating teaching effectiveness should be described and the report should indicate how the applicant rates by these measures. The report should also contain information regarding the applicant's effectiveness teaching in small groups, seminars, tutorials, and large lecture settings. If no formal procedures for teaching evaluation exist, then an informal ranking of the applicant's abilities with his/her peers is an acceptable alternative. The publicity survey is a document requesting the availability and need for publicizing the grant and grantee. The review criteria for awarding the Fulbright are listed in Table 3.

There are three stages of review in the United States and in other countries. The initial stage is a review by a multidisciplinary peer review committee convened by CIES to screen applicants and to recommend candidates. The peer review committee represents academia's diversity. Prospective members are identified based on recommendations from CIES board members and staff, current committee members, and individual self-nomination. Disciplinary, geographic, age and gender balance is taken into consideration in determining the final composition of the review committees. Final membership selection to the committee is based on evaluation of the applicants to the peer committee by the American Council of Learned Societies (ACLS), the Social Science Research Council (SSRC), and the National Academy of Sciences (NAS).

A review of CIES-recommended candidates by Fulbright binational commissions or the Public Affairs Section of U.S. Embassies abroad, together with prospective host institutions is then conducted. Finally, the official selection is conducted by the J. William Fulbright Foreign

TABLE 3. Review Criteria (4)

Professional Qualifications

- Training, academic rank and position
- Reputation as a scholar, artist or professional
- Teaching ability, as evidenced by the teaching report and other references, course syllabi, pedagogical approach, teaching awards and participation in innovative teaching or curriculum projects
- Quality of professional accomplishments, as evidenced through publications, research grants, exhibition records and papers delivered at conferences

Lecturing Activity

- Match of academic, professional or artistic expertise to the award
- Appropriateness of proposed courses to proposed host institution
- Evidence of host institution interest and affiliation, if indicated in the award description

Research Activity

- Merits of the proposal
- Research design and methodology
- Feasibility in terms of resources and amount of time allocated to the project
- Significance to the applicant's field and professional development
- Significance to the interests and needs of the host country
- Need for residence in host country to accomplish the project
- Evidence of host institution interest and affiliation, if indicated in award description

Language Proficiency Report

- Proficiency in language required or recommended for lecturing or lecturing/research award, if applicable
- Proficiency in language required to complete research project, if applicable

Previous Experience Abroad

- Preference is generally given to candidates who have not had substantial recent experience abroad in the country to which they are applying (see eligibility and basic objectives). Substantial experience may be defined as study, teaching, research or employment for a period aggregating more than an academic year (nine months) during the past five years.
- In-country residence at the time of application or a recent extended stay may reduce chances for an award to that country. Duty abroad in the U.S. Armed Forces, however, is not considered disqualifying within the meaning of this section.

Previous Fulbright Awards

- Preference is given to applicants who have not already had Fulbright scholar grants, especially when there is a high ratio of applicants to available awards and the previous grant was awarded within the past 10 years.

Personal Qualities

- Collegiality, adaptability, cultural sensitivity and ability to serve as a cultural ambassador.

TABLE 3 (continued)

Geographic Distribution

- Other factors being equal, and to the extent possible, applicants are chosen to represent a broad geographic distribution, by both home state and type of institution.

Veterans of Military Service

- Preference is given to veterans when other factors are equivalent.

Scholarship Board, which is composed of 12 educational and public leaders appointed by the President of the United States. Once the final selection is made, approval from the specific country's government is required for entry into that country for the grant period. In India, the visa approval comes from the Ministry of Human Resource Development.

My project statement concentrated on two main areas. One is that the host institution, and the profession as a whole in India, is moving into the education of clinical pharmacy, and I would be influential in course development and thesis advisement for the students in this program. The other area of concentration included learning and understanding the healthcare system in India, specifically in the state of Kerala. Kerala was always indicated as a state where technologically advanced medical care is provided at a reasonable cost with acceptable overall medical outcomes. I wanted to learn more about the financing and accessibility of health care in this state, especially in a government institution.

HOST INSTITUTION

Unless the nature of the award is for a specific institution, there are two options. The option chosen by me was to find a host institution and request the appropriate administrative personnel to become a lecturer or researcher. The other option is to request the Fulbright Office in the country of interest to locate for you an institution which may be interested in having a Fulbright Scholar/Researcher on campus for that year. At this time, the only college in Kerala that offers a Masters program in Pharmacy Practice, which has a similar curriculum to the Doctor of Pharmacy Program in the United States, it is the College of Pharmaceutical Sciences at Trivandrum Medical College, Trivandrum, Kerala.

The College of Pharmaceutical Sciences at Trivandrum Medical College served as my host institution during the period of my grant. Established in 1967, this college is the only institution in the state of Kerala

imparting undergraduate and graduate pharmacy education. The academic activities of the college include training of Diploma of Pharmacy, Bachelor of Pharmacy, and Masters of Pharmacy students. The Diploma of Pharmacy students complete a two-year program post their high school (12th grade) education, including three months of clerkship in a hospital or community pharmacy environment. The Bachelor of Pharmacy students complete a four-year program, including three months of clerkship in either a hospital or manufacturing site. The Master of Pharmacy students complete a two-year program post their Bachelor's degree, including three months of clerkship in a hospital and nine months for thesis research.

The college also provides regular continuing education courses and workshops for pharmacy teachers and hospital pharmacists. This is coordinated through the efforts of the Kerala State Board for Pharmacists, which is the licensing body for all pharmacists in the state. The classes are usually taught by the faculty at the pharmacy colleges throughout the state. While, there are no mandatory requirements for continuing education courses and/or workshops for maintaining an active license, there is large participation by the member pharmacists in these programs.

The Masters of Pharmacy has seven branches of specialization: pharmaceutical analysis; pharmaceutical chemistry; pharmacognosy and phytochemistry; pharmaceuticals; pharmacology; pharmaceutical biotechnology; and pharmacy practice. I was granted the scholarship to be involved in the pharmacy practice branch. The pharmacy practice branch encompasses both the clinical and operational side of managing a pharmacy in an institutional setting. Therefore, courses include lectures in pharmacy management, pharmacotherapeutics, drug information, poisoning and toxicological analysis and monitoring, manufacturing and quality control of intravenous fluids and other medications, and inventory control. The research activities of the pharmacy practice branch are related to hospital, clinical, and community pharmacy. Toxicological studies, adverse drug reaction monitoring, drug usage evaluations, therapeutic drug monitoring, etc. are some of the areas of special interest.

GRANT ACTIVITIES

Lecturing

During the period of the grant, I lectured to students enrolled in the Masters of Pharmacy (M.Pharm.) in Pharmacy Practice program. The curriculum for this program consisted of lectures in the following areas:

clinical pharmacy practice; pathophysiology and pharmacotherapeutics; clinical toxicology and pharmacokinetics; hospital and community pharmacy management; and pharmacy practice practical. During my tenure at the college, I delivered lectures in the areas of clinical pharmacy activities, drug information, drug literature evaluation, clinical trials, pharmacoeconomics, pharmacoepidemiology, and biostatistics in a course titled "Clinical Pharmacy Practice." As an assistant professor of Drug Information at an institution in the United States, I was able to utilize my own lecture notes for this course.

I also taught in their Pharmacotherapeutics course. Table 4 lists the lectures that were taught in the Therapeutics Lecture series by me during my tenure at the Trivandrum Medical College.

Thesis Assistance

I provided thesis guidance to the second-year M.Pharm. students in Pharmacy Practice. During the second year, the students are expected to conduct research in a specified area of practice. Eight students conducted research, after IRB approval, on the following topics: streptokinase usage evaluation, community pneumonia treatment patterns, HIV treatment patterns, effect of typical vs. atypical anti-schizophrenic agents on glucose and cholesterol levels, outpatient prescription patterns in the government hospitals, development of antibiograms at a government hospital, rheumatoid arthritis treatment patterns, and medical use evaluation of preeclampsia and eclampsia. The area where there is the greatest need for assistance in developing and monitoring thesis projects is in actually finding practice oriented topics and subsequent statistical analysis of these projects.

Patient Counseling

In my Fulbright period, a patient counseling program was restarted utilizing the M.Pharm. students as the primary providers of patient information. The program had been suspended for a year prior to my arrival due to the fact that the professor in charge of this program had been transferred to another institution at the same university. The patient counseling program focuses on patients with chronic medical conditions for which there was free medications available from the hospital. Patients receiving medications for asthma, hypertension, epilepsy, and diabetes were counseled on the medications and lifestyle modifications involved in the treatment of these diseases. Counseling was provided

TABLE 4. Lectures Taught in Pharmacotherapeutics

| Lecture # | Topics |
|-----------|--|
| | Cardiovascular Therapeutics |
| 1 | Arrhythmias |
| 2 | Hypertension |
| 3 | Myocardial Infarction |
| 4 | Congestive Heart Failure |
| 5 | Ischemic Heart Disease |
| | Infectious Disease Therapeutics |
| 6 | Viral Hepatitis |
| 7 | Community Acquired Pneumonia |
| 8 | Nosocomial Pneumonia |
| 9 | HIV/AIDS |
| 10 | Pyelonephritis |
| | Endocrine Therapeutics |
| 11 | Diabetes Mellitus Type I |
| 12 | Diabetes Mellitus Type II |
| 13 | Reproductive Disorders/Contraception/Infertility |
| | Renal/Nutrition Therapeutics |
| 14 | Acute Renal Failure |
| 15 | Chronic Renal Failure |
| 16 | Nutrition Therapeutics |
| 17 | Peptic Ulcer Disease |
| 18 | Solid Transplant Therapeutics |
| 19 | Oncology |
| 20 | Pediatric Therapeutics |

from 9:00 a.m. to 1:00 p.m. on the days when the specialty clinics for these diseases were scheduled. It was initially difficult to arrange the lecture schedule for the students around the counseling schedule. However, the department chair was helpful in rearranging other lecture and course requirements. The specialty physicians were notified of our activities and were submitted a list of the drugs for which counseling was provided. M.Pharm. students are now involved in conducting research on the impact on counseling of these patients.

Halfway through the grant period, the Trivandrum Medical College also initiated delivery of free HIV medications to its HIV population. The

highly active anti-retroviral therapy (HAART) regimen consisted of combinations of non-nucleoside reverse transcriptase inhibitors (NNRTIs) and nucleoside reverse transcriptase inhibitors (NRTIs). There are no protease inhibitors available in the program. The pharmacy director and I also initiated a patient counseling program for the HIV patients as the prescriptions were being dispensed. The M.Pharm. students were the pharmacists assigned with the responsibility of dispensing, counseling, and maintaining adequate documentation of this whole program. One of the thesis projects for the 2005 academic year is an evaluation of this program.

M.Pharm. students utilized various references for their counseling activities. They were thoroughly trained on the use of Micromedex and Clinical Reference Library (www.crlonline.com), which was made available through Texas Southern University. There was also an extensive reference library, consisting of Facts and Comparisons and other references. Pharmacy management staff, faculty, and I oversaw their counseling activities and provided feedback and role modeling.

Case Presentations

M.Pharm. students also started presenting clinical cases during my grant period. The students collected patient information during pharmacy rounds on floors with staff pharmacists and later would present the cases to the whole college of pharmacy. They were initialized into the case presentation format through lectures utilizing the *Pharmacotherapy Case Book* (5) and role modeling of case presentations of actual patient cases.

Journal Club

An attempt was made to initiate a regular journal club at the pharmacy college in Trivandrum. The sixteen students were divided into groups of four and assigned selected clinical trials to review as a team and present the pertinent information as PowerPoint presentations. This attempt was made at the end of the lecture series in the course "Clinical Pharmacy Practice," which covered material dealing with study designs, biostatistics, and literature evaluation skills. I also presented several literature evaluations of recent published studies as examples. Of the four groups only two actually presented their literature evaluation assignments due to time conflicts with other program requirements.

Visits to Other Institutions

During the grant period, I was given the opportunity to visit other colleges of pharmacy in India with Masters degree programs in Pharmacy Practice. The Fulbright grant does not allocate funds for travel and boarding to visit other campuses. However, if the scholar acquires an invitation from another institution, he/she is allowed to accept travel and boarding per diem reimbursement from the institutions being visited. The choice of which institutions to visit is dependent entirely upon the scholar and the contacts he/she is able to establish during the course of the grant. I visited three other institutions in Karnataka, a neighboring state. These programs were older than the one at Trivandrum. The students at these institutions participated in medical rounds with physicians, an activity that was not yet initiated at the Trivandrum program. Two programs had working drug information centers and they all had an adverse drug reaction reporting and monitoring program in place. One of the colleges (JSS College of Pharmacy in Mysore, Karnataka), was the first to offer a Masters in Pharmacy in Pharmacy Practice in India.

National Presentations

In December 2004, the Indian Pharmaceutical Association (IPA) held its annual conference in Calcutta, India. The IPA is the national professional body of pharmacists engaged in various facets of the profession of pharmacy. The members include pharmacists from academia, industry, research and development, hospitals, community, and governmental regulatory agencies, and students. I presented an abstract entitled "Pharmacoeconomics in the Clinical Trial Environment" in a symposium at this conference.

REPORTING REQUIREMENTS OF THE GRANT

The grant requires that an interim report and final report be submitted to the CIES office if the grant period is six months or longer. If the grant period is shorter than six months then only a final report is required. The interim report is due midway into the grant period, which is made up of three sections. The first section collects information on the grantee profile and is an evaluation of the services by the CIES office in the United States and in the host country. The second section deals with grant experiences and expectations. Core professional activities are described, as

well as the degree to which grant activities are on schedule, relationships with colleagues at the host institution, teaching assignments, facilities and resources, and other issues that have either facilitated or hindered grant activities. The final section deals with advice for future Fulbrighters, specifically, living conditions, customs and visa issues, transport of equipment, and arrangements dealing with money and family members. This information is collected and published in future orientation booklets.

The final report is more comprehensive. In addition to the evaluation of CIES services and advice for future Fulbrighters, this report also focuses on specific activities, requirements, and outcomes of the grant. Grant activities covered in this report include courses taught; academic curricula or educational materials development and/or assessment; student advising for projects or theses; committee membership at the host institution, conference presentations, local publications, seminars for local audiences, collaborative projects with colleagues in the host country, planning for future collaborations between home and host institutions, participation in community-based cultural or social gatherings, interviews by local media, and other activities, such as visits to other institutions. In addition, the final report also requires an analysis of the impact of the Fulbright on your life, both professionally and personally.

FUTURE DIRECTIONS AND CONCLUSIONS

I am now part of an exclusive community that has crossed cultural and geographic boundaries to share knowledge throughout the world. The Fulbright experience has provided me with a unique opportunity to view the development of a clinical pharmacy program in its early stages and to be involved in the development of this program. It is also a way to gain experience in grant writing, since the Fulbright grant is a competitive grant. Based on this award, I am now qualified to compete for institutional grants that are awarded only to Fulbright alumni. The Fulbright Alumni Initiatives Awards Program provides competitive, institutional grants to Fulbright alumni to develop innovative projects that will foster institutionally supported linkages and sustainable, mutually beneficial relationships between the Fulbright scholar's home and host institutions. Fulbright alumni can also remain connected to the program by serving on a peer review committee. Using their academic or professional expertise and the perspective gained from having already participated in the program, they are able to assist the Fulbright program in the

review of applications and recommendation of qualified U.S. applicants for grant selection.

Pharmacy practice is evolving into an international discipline and there are opportunities for faculty to assist in the development of clinical pharmacy activities around the world. As more and more foreign graduate pharmacists are becoming part of our profession in the United States, the Fulbright program bestows an opportunity to influence the quality and caliber of this international pool of candidates. The highest level of need exists in the area of teaching and conducting appropriate research methodology for these new types of pharmacy practitioners in the developing nations.

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