

Johns Hopkins - Elective Experience

Syed Mojiz-Ul-Hasan¹

¹Medical Student, Sindh Medical College, Dow University of Health Sciences, Karachi, Pakistan

Medical students from all over the world come to the United States (U.S.) to do their electives, to get acquainted with the U.S. medical system and to expose themselves to the latest research. With similar aims I came to U.S. to start my research elective at Johns Hopkins University (JHU) or simply called Hopkins, an initiative which is not common among the Pakistani students. My elective was 9-week long in the department of neuroradiology. This elective gave me a preview of U.S. health care system and especially revealed ins and outs of research field.

JOHNS HOPKINS MEDICINE

Johns Hopkins Medicine is located in the city of Baltimore, Maryland. This hospital has been widely regarded as the world's greatest hospital and is being ranked every year as America's best hospital for the past 20 years by U.S. News and World Report. In addition, most of the departments in the hospital are also individually ranked among the top 10 in the United States. The Johns Hopkins University is also the recipient of the largest sum of research grants received from the National Institute of Health (NIH) in the United States. The University was created in the name of its benefactor, Johns Hopkins, and in 1876 it was America's first research university. Since then this university is considered as a pioneer and the world's most cited and reputable institute in research. Until the end of 2009, 33 recipients of the Nobel Prize have been affiliated with JHU.

ELECTIVE'S EXPERIENCE

At Hopkins, neuroradiology is a subspecialty of radiology. The Russell H. Morgan Department of Radiology and Radiological Science at Johns Hopkins was ranked as the top radiology department in the United States by *Medical Imaging Magazine* (the most recent ranking in 2007). The main focus in neuroradiology is to study the brain, spine, head, and neck by computed tomography (CT) scans and magnetic

resonance imaging (MRI), but it also includes myelograms, angiograms, and image-guided biopsies.

A typical day during a research elective begins with resident/fellow 'clinical discussion' at 07.30am in Stoll Conference Room. The discussion includes presentation of interesting cases, application of new research in the outpatient settings and to daily practice and talks about latest developments and guidelines in the diagnosis of different diseases. The 'clinical discussion' is followed by discussion on interesting CT and MRI scans. I can attest from my personal experience that everyone was extremely helpful and kind.



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Correspondence to
Syed Mojiz-Ul-Hasan
Medical Student

Address: Sindh
Medical College,
Dow University of
Health Sciences,
Karachi, Pakistan.

Email:
s_mojiz@hotmail.com

At noon I was scheduled to be on the 3rd floor of the Park Building, where the research section of the radiology department is located, to work on my research project. My research project was the assessment of neurometabolite status of children diagnosed with attention deficit hyperactivity disorder (ADHD) with the help of magnetic resonance spectroscopy (MRS) using 7 Tesla scanners. My first few weeks were spent in literature search of relevant articles on PubMed and to become familiar with the LC Model, software used for automated quantification of *in vivo* Proton MRS, and few other research related softwares. Every week we would scan different brain regions of two enrolled children (usually one with ADHD and one healthy control). The resulting data files were analyzed with LC Model to get MRS spectrum images and measures of individual neurotransmitters in the respective brain regions. We would then load this data into the dataset for statistical analysis at a later date.

Thursday used to be the most interesting day for me because I used to join Dr. Jay Pillai at Phipps Building for functional magnetic resonance imaging (fMRI), a specialized MRI scan which measures the blood flow changes in brain in relation to neural activity. Every Tuesday, investigators presented their research to the visiting students and other faculty members during noon conference. At the end of it, we were provided with free lunch, an icing on the cake. Since it was a radiology research elective, there was no direct patient interaction. As far as language problems are concerned, if you have good fluency in English, you will not have any difficulty in interacting with the staff and other students. However, even if you are not comfortable with your English skills, you don't need to worry. I will still advise to interact with the faculty and other students; they all are very cooperative and understanding and you will not feel like being a visiting student from another country.

Based on my experience, I strongly believe that you will learn a lot if you choose to do your research elective here. I will specifically advise those who see radiology as their career to come here. I found that having basic knowledge of neuroanatomical structures and understanding the basics of MRI and other imaging techniques was very helpful in submersing me quickly into the research project and in becoming a productive member of the research team.

ACCOMODATION

The housing is provided by the University and is cheap as compared to nearby apartments and houses. Living at Reed Hall, dorms provided by the University, has its own charm and attraction. You will be provided with all the basic facilities here, from laundry to high speed wireless internet, and from snooker and table tennis playing area to 24-hour access to library and television room. Since most of the facilities are for medical students, you will come across many visiting medical students from all corners of the world. It will enable you to interact with people from diverse cultures and traditions.

BALTIMORE CITY

Should I tell the visiting places in Baltimore? Definitely, I should. You must go to Inner harbor, Baltimore Aquarium, Maryland Science Center, Baltimore Maritime Museum and Fort McHenry.

If you have good taste buds then Baltimore is the best place for you. Beside other features, the city is world famous for its seafood restaurants. This city has lot of things to offer; from delicious crab pizzas to luscious shrimps and lobsters, and from savory oriental foods to Afghani and desi (Indo/Pak) cuisines.

TRAVELING

Traveling is relatively cheap within the state if you compare it to other nearby states like Washington DC and New York. Maryland Transit Authority (MTA) provides local buses and metro services and you can



visits across the whole city with its reliable service; more information is available on its official website: <http://mta.maryland.gov/>

If you love traveling and you can afford it without breaking your budget then probably you are at the best place. You can very easily spend your weekends in the surrounding states of New York, Washington DC, Philadelphia and Virginia. You can take Bolt Bus or China Bus and go to New York as cheap as \$2 with advanced purchase.

However, there are few concerns about the law and order situation. Many people talked about street crimes in the city. In the University and the nearby areas, there is ample security and one does not need to worry about anything. However, traveling at night and particularly alone must be avoided.

APPLICATION PROCEDURE

The application procedure is quite simple and straight forward; everything is available on JHU elective webpage: <http://www.hopkinsmedicine.org/som/students/academics/electives.html>

For electives, JHU does not have any application fee nor it has tuition fee, but there is registration fee which is waived off if your medical school has an affiliation with JHU. You have to apply with a formal application along with few required documents about 4-6 months in advance.

BIRD'S EYE VIEW

In concluding remarks, the elective experience at Johns Hopkins Hospital was beyond my expectations. The faculty was extremely friendly and dedicated to teach me in the best possible manner. Hopkins staff was very cooperative; they did whatever they could to make my stay a memorable experience. I met quite a few people from various parts of the world and many of them became very good friends, providing me with a rich cultural experience.

To sum up in one sentence, it was one of the best experiences of my life; I don't think it could have been any better.

