DUKE EXCHANGE

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DukeMedicine

NATIONAL CHENG KUNG UNIVERSITY 1931

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Introduction

Not long after entering medical school I heard about a program that sent students abroad for exchange at Duke University. I had considered attending college in the United States, but ultimately returned to Taiwan to pursue a medical degree. I had always been curious about higher education in the United States, and maintained an interest in exchange programs that would allow me to experience a little of what might have been.

In my fifth year of medical school I stepped outside of my home school for the first time. I completed a clinical rotation at Koo Foundation Sun Yat-Sen Cancer Center, which changed my perception of how medicine could be practiced Taiwan. In the summer before my sixth year I went abroad to Brown University and its affiliated Rhode Island Hospital, providing my first glimpse of medicine in the United States. This year's exchange at Duke University concludes my final and most comprehensive exchange before graduating from medical school. The past three months have been an extraordinary journey, and a pivotal stepping stone for my personal and professional growth.

This report is organized by rotation, and I preface each chapter with a general introduction and schedule as a reference for future students. A series of anecdotes follow, which reflect on life at Duke, medical education, patient-physician dynamics, or are simply interesting stories that I wanted to share.

Kevin Yen

Internal Medicine: Consultative Cardiology

Schedule

	Monday	*Tuesday*	*Wednesday*	*Thursday*	*Friday*
AM	7-8 Pre-Round Consult	7-8 Pre-Round 8-9 Harvey Consult	7-8 Pre-Round Consult	7-8 Pre-Round 8-9 Harvey Consult	7-8 Pre-Round 8 Medicine Grand Round Consult
Noon	Conference	Conference	Conference	Conference	Conference
PM	Consult	Consult 5-6 Cardiology Grand Rounds	Consult	Consult	Consult

General

On the consultative cardiology service medical students are expected to complete comprehensive consults – including history taking, performing a cardiology physical exam, and formulating an assessment and plan for the patient.

As the team gets consults throughout the day, the resident will assign each medical student a patient. The student will get around an hour to evaluate the patient and complete an official "pink sheet," which is the Duke consult note.

The complete evaluation includes first reviewing the patient's prior medical history via the eBrowser, which is the Duke medical record system. After going over the patient's home medication, known allergies, social history, family history, etc. the student will enter the patient's room to obtain a history of present illness and perform a physical examination. Finally the student will document pertinent findings on the "pink sheet" before reporting the case to the rest of the consult team.

The general schedule is as follows: every morning students arrive at Duke Hospital around 7AM to pre-round on patients. Pre-rounding includes understanding the patient's overnight events and reviewing any new lab or imaging results. The team converges on 7100 (Cardiology Ward) where the attending arrives around 8AM and begins rounding on "old" inpatient consults. Throughout the day new consults with arrive via emergency department or other departments.

There are two unique aspects about the Cardiology consult service. The first are the Harvey classes. Dr. Anna Crowley will arrange for a series of Harvey sessions to help medical students review the cardiovascular physical exam and its clinical interpretation. These are every Tuesday and Wednesday from 8AM to around 9:30AM. On these days it is still necessary to pre-round on your own patients at 7AM before Harvey classes.

There are at most three students learning with Dr. Crowley, making Harvey classes a very personal teaching experience. There is also a computer with modules that can be used in conjunction with Harvey, and Dr. Crowley encourages students to come in on their own time to complete as many of these modules as possible.

The second is the catheterization lab. We were lucky enough that one of our attendings, Dr. Terry Fortin, is an interventional cardiologist who took us to the "cath lab" to observe heart catheterizations. The fellows or other attendings in the "cath lab" are very friendly and will answer any questions one may have.

Summary, Summary, and More Summary

Dr. Anna Crowley's Harvey classes are superb. A list of how she does it:

1. *Short classes* – they never last more than an hour and a half, and so students are not overwhelmed with information.
2. *Small classes* – with a total of three students and one teacher, the classes are very personalized. There is less pressure when students need ask Dr. Crowley to stop and explain something again in greater detail.
3. *Set goals* – every class has a set goal. For example the first class will focus only on the venous pulse exam, the second class on the arterial pulse exam, and so forth.
4. *Show and tell* – there are no PowerPoints in Dr. Crowley's class. She simply emails everyone the necessary text document a week before class and then proceeds to teach us by demonstrating directly on the Harvey model.
5. *Repeat after me* – Dr. Crowley always checks to make sure we are not lagging behind by asking us to repeat what she has just demonstrated.
6. *Instant scenarios with feedback* – to keep us thinking and on our feet, Dr. Crowley will throw out some short clinical scenarios that are relevant to what we are learning, and explain if we answer incorrectly.
7. *Analogies* – Dr. Crowley loves to make analogies to make physiological concepts clearer. Her analogies work because they are simple and straightforward.
8. *Summaries* – my favorite part of Dr. Crowley's classes are her summaries. At the end of each class she gives us a two minute run-down of what we have learned (or should have learned) in that one hour class. This is extremely effective and helps refocus students on what we should take away from her class.

Figure 1: Harvey classes with Dr. Anna Crowley, center.

Week One

Attending Physician: Dr. Terry Fortin

Resident: Dr. Coral Day

Intern: Veronica

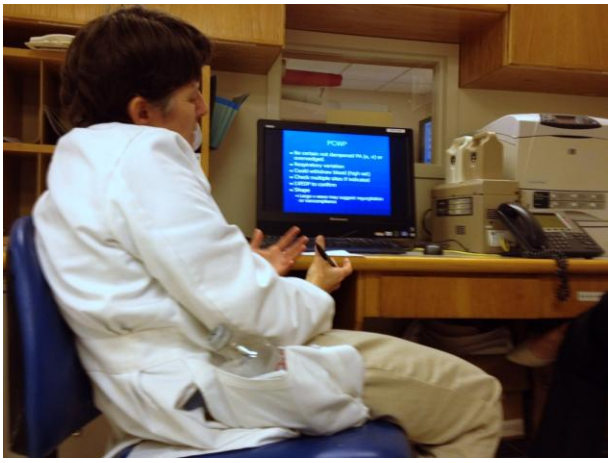

Figure 2: Dr. Terry Fortin giving a short talk on wedge pressure.

Completing the Waveform Puzzle

Dr. Terry Fortin, one of the most energetic cardiologists at Duke, exemplifies what it means to practice interdisciplinary medicine. As a pulmonary hypertension expert, she specializes in two organs – the heart and the lung. Dr. Fortin is also an interventional cardiologist, and her passion for cardiac catheterization is palpable – even on consult service she swings by the catheter lab for a quick peek.

One afternoon during a break from the beeping pagers, Dr. Fortin grabbed a couple of sheets with squiggly lines and brought us all to sit at a cafeteria table.

It turns out those sheets were results from pulmonary catheterizations. Like pieces of a puzzle, she began to put the different waveform readings together, explaining what those squiggly lines could tell us about underlying heart and lung physiology.

She would teach a bit and then stop to quiz us to make sure that we were following. At the end of the session she gave us an "exam," making sure we were capable of discerning if the reading was taken in the ventricle, atrium, or vessel just by looking at the shape of the waveform.

As the final piece of the puzzle, Dr. Fortin took us back up to the catheterization lab and showed us the monitors and waveforms at work in real-time.

Best Actress

Dr. Fortin never stopped teaching. Whenever we had a ten or fifteen minute break, she would cover topics that she felt medical students had to know in Cardiology.

She would take a marker and write words like “Chest pain” on a whiteboard. Then, she would turn to face us with her hands over her chest and tell us “I just came in the emergency department, ask me questions!”

We would shoot questions and answers back and forth, and along the way she would keep drawing new arrows on the board. Before we knew it we had a simplified diagnostic and management algorithm on the whiteboard for chest pain.

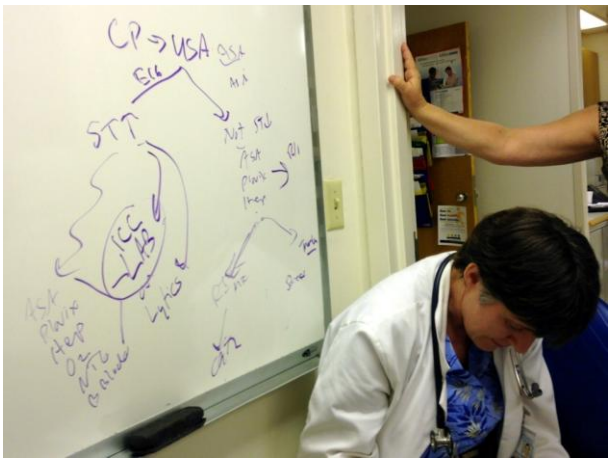

Figure 3: Dr. Terry Fortin, shortly after her re-enactment of a patient with chest pain, and the completed management algorithm on the white board.

Week Two

Attending Physician: Dr. Richard Becker

Resident: Dr. Krishn Sharma

Intern: Dr. Kevin Trulock

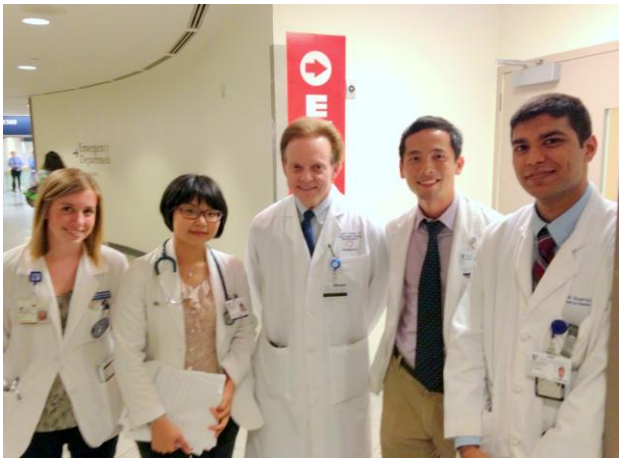

Figure 4: From right to left, Dr. Krishn Sharma, me, Dr. Richard Becker, Wendy, and a physician assistant student.

Did You Understand That?

Dr. Kevin Trulock was the intern on our team during the second week of cardiology service. I have always believed that really smart people tend to make even the most complex ideas simple to understand. Kevin was tremendously smart.

When our attending Dr. Becker dropped terms like “pulsus paradoxus” during discussion of a patient, Kevin would pull the students aside afterwards and ask “So did you guys understand that?” When we did not, he would proceed to teach us.

Kevin would guide us through the thinking process by asking us leading questions. Leading questions are simple questions that usually have a straightforward answer. He would begin with something like “So what happens with your venous return when you inspire?” If you answered correctly, he would nod and say “Exactly right.” If you answered incorrectly, he would “Actually, it’s…” and proceed to explain before moving on to the next question.

By taking these small steps, Dr. Kevin Trulock walked us through the physiology of “pulsus paradoxus” in a logical manner that was easy to remember. In fact, when a new medical student asked me about “pulsus paradoxus” I was able to share what Dr. Kevin Trulock had taught me.

Don't Ever Call Me Dr. Sharma

Mondays are big days on Cardiology consult service. The entire team changes and we get a new attending, resident and intern.

Being polite, I paged the new resident who I had not met yet – "Hello Dr. Sharma this is Kevin. I just finished with my patient, would you like to meet in 7100 to discuss?"

When I met Dr. Sharma back in the physician work room, he shook my hand, and then looked at me straight in the eye - "Don't ever call me Dr. Sharma again. Just call me Krishn. If any resident or intern tells you to tell call them Dr. whatever, they deserved to be slapped."

After that, he walked away, shaking his head in disbelief, muttering "Dr. Sharma, hah!" Not wanting my senior resident to get slapped by the medical student, from that day on I called him Krishn.

Figure 5: In the footsteps of role models. From left to right, senior resident Dr. Krishn Sharma and intern Dr. Kevin Trulock.

Gentle Speech

Dr. Richard Becker was my attending physician for the second week on consult services. Dr. Becker is a soft-spoken man, one who makes a point of never rushing and maintains his composure at all times. He is also perhaps one of the most polite individuals I have ever met.

Dr. Becker taught me the how composure and soft-spoken words can empower a physician and diffuse difficult situations with patients.

On one occasion our team was consulted on an emergency room patient who had just came in after recent cocaine use complaining of both chest pain and stroke-like symptoms. The patient was very uncooperative when we first saw him, sometimes muttering and complaining and other times choosing to close his eyes and nap. Yet Dr. Becker never pressed or rushed the patient. He was always polite, always asking the patient's

permission before doing anything - “Do you mind if we take a listen to your heart?” or “It is okay if we take a look at your legs?”

However the patient’s refusal to cooperate persisted, and our team left without a clear history. We then talked another physician, and decided to see the patient again together for clarification. The second physician was of a sterner sort. When he saw how uncooperative the patient was, he clapped his hands loudly and told him “Hey, you need to cooperate with us!”

Immediately the patient’s eyes shot wide open, and he stared hard at the Emergency Attending and retorted: “Don’t f*cking talk to me like I’m a dog.” Dr. Becker immediately intervened, gently apologizing to the patient using his usual soft-spoken tone and informing him that we were just trying gather some information. And just like that the patient became cooperative.

I have always questioned if medical communication can be taught effectively in a classroom as part of a formal curriculum. But no lecture, or even a role-playing simulation, can truly recreate the emotions and challenges of communicating with a real patient in a difficult situation. Action, after all, speaks louder than words. I had learned best by watching how senior physicians like Dr. Becker used subtleties in choice of words and body language to diffuse a tense moment. Good role models in action are the best teachers of medical communication.

The Quiet Giant in the Room

Dr. Becker, our attending physician, was always the calmest and least imposing individual in the room.

One afternoon he sat us all down and gave a short talk on anticoagulation for us medical students, and concluded with “If any of you are interested in doing some research, you are welcome to let me know.”

Out of curiosity I went online to take a look at what type of work Dr. Becker was engaged in. I was completely stunned to discover that the little “talk” on anticoagulation I had just heard came directly from one of the most renowned leaders in the field.

The quiet Dr. Richard Becker holds the directorship for the Duke Comprehensive Center for Hemostasis and Thrombosis, Cardiogenetics Thrombosis Clinic, and Cardiovascular Thrombosis Center. He a member of numerous professional societies and has published over 450 articles and authored thirteen textbooks. He is also the founding Editor-In-Chief of the *Journal of Thromboembolism* and on the editorial board for *Circulation*, *Thrombosis Research*, *Journal of the American College of Cardiology,* and *Cardiovascular Therapeutics*.

I came to the conclusion that when you have that type of resume, you really do not have to raise your voice to be heard.

Words of Encouragement

Words have a powerful effect. After completing a formal case presentation to the attending, my resident Krishn would walk over to me and say “Good job Kevin. That was a difficult case.” His words of encouragement really helped me gain confidence with my work, and his positive attitude also created a great vibe for the whole team.

Krishn talked a lot about positivity, about its importance in a high-stress hospital environment. He says it is easy to grow frustrated and complain. The atmosphere of negativity that comes out of that is contagious, affecting everyone, health care providers and patients alike. Krishn reminded us “Just remember to stay positive, remember what your goal is, and take the best care of the patient.”

One last thing about Krishn is he loved to laugh, and he made me realize how kind words and laughter can be powerful catalysts for a constructive environment.

Week Three

Attending: Dr. Christopher Kontos

Resident: Dr. Mandar Aras

Figure 6: From left to right, senior resident Dr. Mandar Aras, Wendy, attending physician Dr. Christopher Kontos, me.

Arguing Against the Textbook

Dr. Kontos is a physician who is not only involved in clinical care, but also in research and administrative work overseeing the MD-PhD students. An active teacher, he always finds interesting teaching points during our consults and explains things at an impressive microbiological level.

We would talk for example about cardiomyocytes and its effect on electrical currents and QRS complex widening. But my favorite part of his rounds was when he would throw stuff we learned in the textbooks out the window.

I remember on the first day, we had a patient with suspected Prinzmetal's angina. Dr. Kontos retorted "I don't think Prinzmetal's angina exists – that term is an anachronism. I believe that the pathophysiology is different." He argued that instead of the classic theory of vessel smooth muscle cell dysfunction, he believed that endothelial defect and eNOS dysfunction played a more important role in vasoconstriction.

Dr. Kontos reminded me that it was worthwhile to challenge the established, and to think in an unorthodox fashion. Who knows, perhaps it will be Dr. Kontos' beliefs that become mainstream and it will be my turn to challenge him.

Week Four

Attending: Dr. Igor Klem

Resident: Dr. Mallika Dhawan

Intern: Dr. Carli Lehr

Figure 7: From left to right, medical student Andreas, Dr. Igor Klem, Wendy, me, and medical student Daniel.

Grabbing a Beer

Dr. Igor Klem is a cardiologist who specializes in magnetic resonance imaging of the heart. But more interestingly he is an Austrian who loves soccer and good beer. I know this because on the very last day of our rotation, Dr. Klem rounded us up and told us "If you guys are free this weekend, I would love to grab a beer together."

I thought it was all pleasantry until I got a call from my resident Mallika who informed me that we would be meeting up at the Bull City Burger and Brewery on Sunday afternoon with the rest of the team. There we tried out some of the local ales and lagers and had a good time.

Figure 8: Beer and food on a Sunday afternoon with Dr. Igor Klem, left.

One of the things I have noticed about my interactions with attending physicians is their willingness to talk to students as colleagues, even if our knowledge gap is light-years part. Even more significantly is that they work at developing a relationship outside of work, where everyone gets to know each other on a much more personal level.

Harvard EKG

The interns at Duke take their teaching job seriously. Carli, our intern on Dr. Klem's rotation, would always find a way to teach students during downtime. Sometimes this involved taking out our "green book," the Massachusetts Internal Medicine Pocketbook and go over a specific topic, and other times it would be a brief discussion on a case we had just seen.

Another time, Carli took us to an empty office with a computer to go over sample EKG scenarios from a Harvard medical website. The great thing was that though she may not have known all the answers, she would always explain her rational and it was a wonderful learning experience for all those involved.

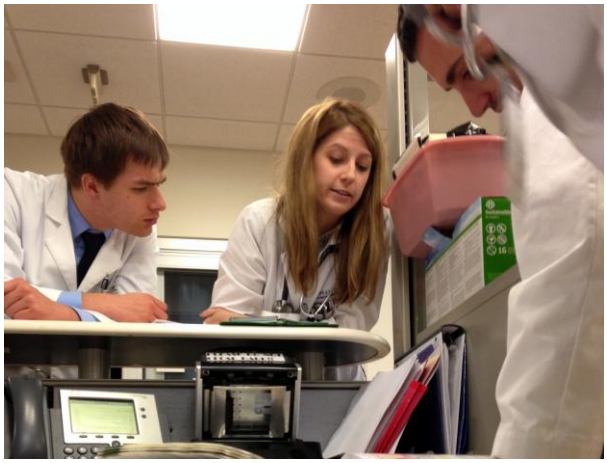

Figure 9: Intern Dr. Carli Lehr, center, teaching the medical students.

The Other Days

Duke Echo

One popular question that I heard frequently asked by different attending physicians on rounds was "Has this patient gotten a *Duke echo*?" There was special emphasis on the words "Duke echo." If the patient had not, then the attending physician would often say "Well then we should arrange a Duke echo," and give the fellow and resident a knowing look of confidence.

At Duke one thing I have observed is the high degree of specialization when it comes to certain procedures. On the Cardiology service for example, the cardioechograms were performed by a well-trained team of technicians with years and years of experience. Not only were these technicians technically adept but they were also medically proficient to the degree where they could readily converse with physicians. More than once I have observed an attending ask for something specific, such as "getting a better look" at one heart chamber or valve, and the technicians adapted with ease.

Most importantly was the high degree of trust between the physicians and technicians. I have never heard a physician question the results of a "Duke echo." This contributes to a strong sense of team at Duke. I played basketball growing up, and one thing I learned that believing in your teammates was integral to winning games. At Duke, that belief was certainly there, and that adds up to a win for the patient.

The Physician Patient

During one noon conference an attending physician gave one of the most fantastic one-hour talks I have ever heard. This attending physician told us the story of how in his mid-50's, he discovered that he had prostate cancer.

I will describe here some of the most memorable bits and pieces of his talk.

On giving bad news: he talked about how he got the bad news over the phone in the middle of a conference from a doctor who was on a vacation. "I know about getting bad news, and I will tell you how *not* to do it. Be brief about it. Don't leave the room. Keep eye contact. And don't do it over the phone."

On sharing bad news: he described how by far the most difficult part of the cancer was sharing the news with the people he loved most – for him, his children "Always have a plan before you tell someone."

On getting to know a patient: he told us of the immense sadness he felt over a conversation with an intern about the quick turnover of patients. He stated - "I could care less about their PSA. What I remember at the end of the day is that patient's story."

On side effects: he completely transformed the way I thought about "side effects." As physicians and physicians-to-be, we tend to throw terms like "dry mouth" or "constipation" so nonchalantly at patients when explaining side effects. He mentioned how he had to take anticholinergic drugs during the course of his treatment, and how the constipation was so distressing to the point that "it gave me a new meaning to constipation." His own experience of having to wear a Foley catheter for many months was so intensely painful that when friends now ask him for advice on prostate cancer, he puts the "Foley catheter" right up there with choice of treatment as important things to consider.

On diapers: he talked about how the urinary incontinence and overactive bladder completely changed the way he lived for a whole year, and how he finally understood what it meant when patients with chronic diseases talked about a "new normal." He went on to describe the emotional distress he felt from having to wear a diaper constantly to deal with the fact that he often could not go thirty minutes without using the bathroom.

Laundry at Brookwood

Brookwood Inn was the hotel we stayed at throughout the Duke exchange program. It advertises itself as the "hotel closest to Duke University Hospital," which is definitely true – it takes only about five minutes to walk from the front of the hotel door to the entrance of Duke Hospital. An interesting consequence is that patients' family sometimes tell us that they are staying at the Brookwood Inn.

For some reason that made me uneasy at first – there were scenes running through my mind where the family members recognized me at the hotel and started asking a lot of difficult medical questions that I could not answer.

One night I headed downstairs to the hotel laundry room to wash my clothes. It just so happened that Brookwood Inn was booked full that weekend because of Duke University's undergraduate graduation ceremony. I ran into a middle-aged lady who was waiting for her clothes to dry, and out of curiosity I asked if she was there for the graduation. She replied "Oh no, actually my husband is here at the ICU." Her honesty and straightforwardness surprised me, but I decided to reply with the same forthrightness, and told her I was an exchange medical student at Duke.

Over the next ten minutes or so she told me about how her husband has actually been in the ICU for over three weeks, and that they are originally from Michigan so she booked a place at the Brookwood Inn. Fortunately, he was finally going to the step-down unit the next day, and I gave her some words of encouragement, telling her "that this was definitely a step in the right direction."

Then she said something that really left an impression on me, only because I have heard it on multiple occasions from different patients at Duke - she told me "The people here at Duke have been absolutely wonderful." It was really a déjà vu moment, because just yesterday morning on rounds another patient's son had said exactly the same thing – "You guys have really made the whole experience wonderful, and I just want to say thank you."

During noon conferences I have heard the term "Duke Miracle" being used, most of the time by the staff in a humorous fashion when discussing patients' expectations for Duke University Hospital. After my moment with the lady at the Brookwood Inn, it began to dawn on me the gravitas of the term. For a lot of really sick people, Duke is a lighthouse in dark seas. It has a reputation of care that has become something that people believe in. I've met and heard of so many patients who were turned down by other transplant programs in the United States to be finally accepted by Duke. For these individuals, the "Duke Miracle" is very real.

Internal Medicine: Pulmonary Medicine

Schedule

	Monday	*Tuesday*	*Wednesday*	*Thursday*	*Friday*
AM	7:30 – 11 Round	7:30 – 11 Round	7:30 Round 8:30 Pulmonary Fellow Round	7:30 – 11 Round Consult	7:30 Round 8 Medicine Grand Round
Noon	Conference	Conference	Conference	Conference	Conference
PM	Consult/Round	Consult/Round	Consult/Round	3 ILD Combined Meeting Consult/Round	Consult/Round

General

Pulmonary Medicine service with Dr. Mark Powers includes two main patient groups. The first are the inpatients that are admitted to 7800 (Pulmonary Ward) under Dr. Powers' service. These patients have a wide variety of conditions, but some of the most commonly seen diseases include cystic fibrosis, pulmonary hypertension, sarcoidosis, restrictive lung disease, and interstitial lung disease.

The inpatients are seen first thing in the morning with a full rounding team, including the attending, fellow, resident, intern, registered nurse, patient care services consultant, pharmacist, and pharmacy students. The intern is usually given the responsibility of updating the team on the patient's most recent condition and any overnight events. After the intern presents, the team enters the room to see the patient.

One of my favorite parts of morning rounds is the presence of the pharmacist, Dr. Roy Pleasants, and his two pharmacy students. They were absolutely wonderful in answering questions related to medication dosage, side effects, etc. Dr. Pleasants often will take it a step further and share evidence-based literature with us.

Figure 10: Clinical pharmacologist Dr. Roy Pleasants discussing a case.

An interesting aspect of morning rounds is that often other physicians will drop by to discuss a certain patient with our team. One such person is Dr. Terry Fortin from interventional cardiology, who does the right heart catheterizations and specializes in pulmonary hypertension. The discussions on patient management can get heated but are a great way to learn about the intricacies and difficulties of day-to-day decisions. Often there is no one right answer.

After we have completed rounding on the inpatients around 10 – 11 AM, we wait to see if there are any new consults for us. If there is, we go with a resident or intern to see the new consult and report back to the rest of the team after medicine noon conference at 1PM. If not, sometimes there will be a patient scheduled for bronchoscopy with bronchoalveolar lavage, or transbronchial biopsy in the bronchoscopy suite in the basement. The fellow Dr. Dahhan usually performs these himself, and medical students are welcome to watch and learn.

Afternoons consist of reporting the new consult case to the rest of the team at 1PM. The main focus of the medical student's presentation is the assessment and plan for the patient, which is discussed thoroughly with the rest of the team. After that the afternoon consult team, which is considerably smaller than the morning inpatient team, goes to see the patient and make recommendations. The afternoon consults are completed around 3 – 4PM, after which the resident and intern work on the notes with the medical students before calling it a day at around 5PM.

There are two conferences unique to Pulmonary Medicine – the Pulmonary Fellow Round and Interstitial Lung Disease combined meeting. The Pulmonary Fellow Round is every Wednesday 8:30AM – 9:30AM and involves a pulmonary fellow presenting two interesting cases where the diagnoses are revealed at the end.

I recall an extremely interesting case involving homeowners who used spray-polyurethane foam to insulate homes leading to exposure to toxins inducing asthma, which was later published by Dr. Tony Huang as a case report. On Thursdays 3PM – 4PM there is an Interstitial Lung Disease combined meeting, which also invites radiologists and pathologists for discussion.

Finally Dr. Tony Huang will also invite the Taiwanese medical students on the Pulmonary Medicine inpatient service to take a day to visit his clinic outside Duke. For that day you will see patients in Dr. Huang's clinic, type up the patient encounter in the system, and then Dr. Huang will give constructive feedback immediately on your work.

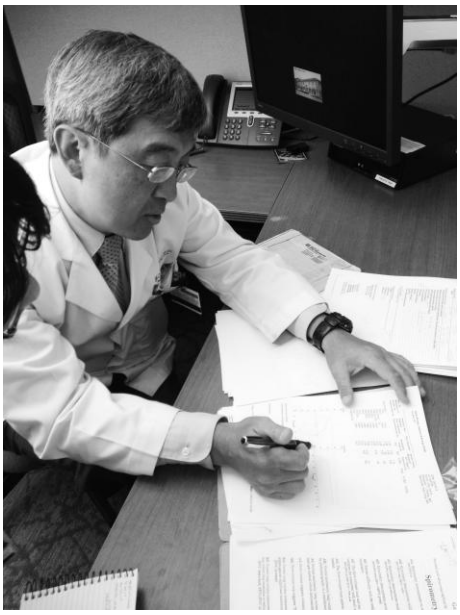

Figure 11: Clinic with Dr. Tony Huang.

Weeks 1 and 2

Attending: Dr. Mark Powers

Fellow: Dr. Talal Dahhan

Resident: Dr. Rebecca Sadun

Intern: Dr. Deng Madut

Pharmacist: Roy Pleasants

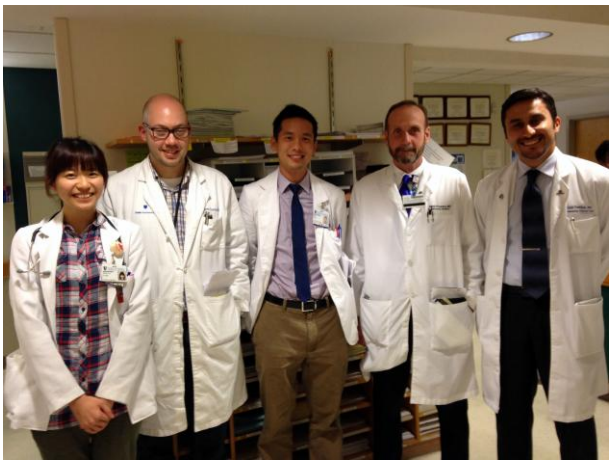

Figure 12: Pulmonary medicine inpatient team. From left to right, Lisa, intern, me, Dr. Mark Powers, Dr. Talal Dahhan.

My Name is Kevin

The first thing that Dr. Powers upon entering a patient's room is to introduce everyone. There was only one time that he almost forgot to introduce us - we were consulted for a complicated case in the intensive care unit, and Dr. Powers invited me and another student to go with him. Dr. Powers was just about to start history taking when he suddenly stopped and remarked "I almost forgot to introduce you to Kevin and Lisa. They are medical students with our team." Lisa and I then each went over to shake hands to greet the patient and her husband.

As a medical student, it is often easy to get lost in a large group of medical professionals who are all rounding to assess a patient. Everyone else plays a specific role in the care of the patient, so sometimes students are the odd ones out.

But what Dr. Powers' does, through a simple introduction, is to establish medical students as an integral part of the team providing care for the patient. This has significant implications as it immediately brings the student and the patient closer together – the medical student becomes a known entity, paving the way for students to establish a better working relationship when taking history or completing a physical examination. It is a small act on Dr. Powers' part, but something I deeply appreciate.

Flolan to Qatar and Al Jazeera to Durham

We were very fortunate to have Talal on our team. Talal is a fellow from Saudi Arabia who spoke fluent Arabic. This was immensely useful for a patient from Qatar, a middle-aged male diagnosed with pulmonary hypertension and spoke only Arabic. Talal was irreplaceable in his clinical care, explaining everything and getting him started on the pulmonary hypertension medication Flolan.

However as the patient planned his return to Qatar, there was the problem of getting him his medication, as there was no inventory of Flolan there. Talal began organizing the logistics of getting the medication shipped to Qatar. He contacted people at the American embassy, hospital coordinators, and staff of international companies based there to try and facilitate the process. Another attending on the case even had a Skype conference with the hospital staff in Qatar.

Not only was getting the Flolan to Qatar a challenge, but the patient also asked if it was possible to watch Al Jazeera in his Duke hospital room. An attending immediately offered to pay out of his own pocket to get a connection set up.

While I was there the details were still being hammered out for the two challenges above. However, I was impressed by how hard Duke physicians wanted to help this patient, even one from across the world, to feel comfortable both in Durham and in Qatar.

Patient Knows Best

One of the most surprising things to me at Duke was how knowledgeable patients were about medicine. I am not talking about being familiar with medication and dosages (that is something I have already come to expect from patients in the United States), but patients that are so aware of their own medical condition that they could actively discuss with our medical team and participate in the decision-making process.

On our service was a patient with cystic fibrosis and had been hospitalized multiple times for exacerbations over the last few years. She had not only accrued more medical knowledge than I did, but awed me with her clear and cogent insight into her current condition. She could tell you that she was anemic, but that she still was not feeling “to the point” where she needed transfusion, and then she would tick off a list of how she usually felt when she needed more blood. She was able to negotiate with the attending about getting labs just once a week, because she knew that there was not going to be much change in her electrolytes in between. She was always intelligent and articulate about her ideas, and was never shy about challenging medical orders she deemed debatable.

Pediatrics: Allergy and Immunology

Schedule

	Monday	*Tuesday*	*Wednesday*	*Thursday*	*Friday*
AM	Clinic at CHC w/ Dr. Joseph Roberts	8 – 9 Pediatric Grand Rounds Clinic at CHC w/ Dr. Ivan Chinn	Clinic at AAAC w/ Dr. Joseph Roberts	Clinic at CHC w/ Dr. Buckley	8:30 – 9 Patient Review 9 – 10 A/I Teaching Conference
Noon	Conference	Conference	Conference	Conference	Conference
PM	Clinic at AAAC	Clinic at AAAC	4 – 5 A/I Seminar at MSRB	Clinic at AAAC	Inpatient

A/I: Allergy and Immunology

CHC: Children's Health Center 4F

AAAC: Asthma, Allergy, and Airway Center on Hillandale Road

MSRB: Medical Science and Research Building

General

The Pediatric Allergy and Immunology elective spans four weeks and is centered around participation in the Allergy and Immunology clinic on the fourth floor of the Children's Health Center, which is just adjacent to Duke University Medical Center's main north building.

There is a set weekly schedule with Dr. Joseph Roberts seeing morning clinic on Mondays and Wednesdays, Dr. Ivan Chinn on Tuesday mornings, and Dr. Rebecca Buckley on Thursday mornings. There will always be a fellow assigned to clinic who will help oversee the medical student's progress and assist should any difficulties or questions arise. Also in the clinic there will be up to two physician assistants, Ginger and Deborah, who also see their own patients and perform food challenge tests.

On the first day of clinic the fellow will give a quick orientation. Depending on your level of comfort, you can begin seeing the first outpatient yourself or if you want, you can shadow the fellow on the first few encounters to get a better sense of how clinical encounters are managed.

When you are ready, you will begin seeing the patients by yourself and then report back to the attending physician. After giving a formal presentation on the patient, the attending physician will inquire about your own assessment and plan and discuss management with you. Then the attending will proceed to see the patient again with you. Afterwards the medical student will be responsible for typing up the encounter note, either through the dictation machine or by typing directly into the system.

The morning clinics will usually go well past noon. In the afternoon if there is sufficient time remaining you may choose to go to the Asthma, Allergy, and Airway Center (AAAC) on Hillandale Road. Be sure to inquire with the fellow first if the physician at the AAAC clinic are fine with taking on a medical student. I was fortunate to be able to work with Dr. Heather Gutekunst on multiple occasions at the AAAC. She was very friendly and extremely instructive. In addition she also saw adult patients, so I was able to gain some experience working with adult allergy patients.

Outside of clinic there are Pediatric Grand Rounds on Tuesday mornings, Allergy and Immunology Seminars which focus on research on Wednesday afternoons, and Patient Conference as well as a Teaching Conference on Friday mornings. Finally, because I was interested in seeing the inpatient side of Allergy and Immunology, I asked it was possible to follow Dr. Rebecca Buckley on inpatient rounds for a day. The fellow was more than happy to arrange the opportunity for me.

Ultimately Pediatric Allergy and Immunology provides a good mix of outpatient clinics, teaching seminars, and a touch of inpatient care, providing a comprehensive learning experience.

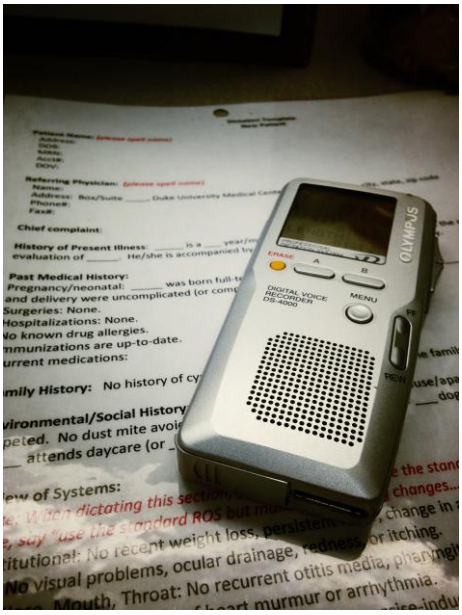

Figure 12: Dictation using a template.

Weeks 1 through 4

Buckley Syndrome and MedScape Articles

At Duke I discovered I was surrounded by famous people. It was hard to realize this thought, because everyone was so down-to-earth and unassuming.

In clinic one afternoon a physician named Dr. Michael Frank dropped by the room after seeing a patient with hereditary angioedema. It was my first encounter with Dr. Frank, and I observed how this older gentleman had a very friendly demeanor and smiled often. He noticed me and began discussing his case with me – "So this is an unusual hereditary angioedema case."

Later that afternoon after Dr. Frank had left I decided to read up on hereditary angioedema, and came across an online article on the medical database MedScape. I finished reading an article and happened to glance at the author list. To my surprise, there I saw "Author: Michael M Frank, MD." I initially thought it must have been someone else with the same name, but then I clicked into the author details, and there it was – Michael M Frank, MD; Samuel L Katz Professor of Pediatrics, Professor of Medicine and Immunology, Duke University Medical Center. A little more research online revealed that Dr. Frank was the previous chairman of Pediatrics at Duke, as well as the former clinical director of the National Institute of Allergy and Infectious Diseases.

Another incident occurred while I was at Dr. Rebecca Buckley's clinic. It was my first time working with Dr. Buckley, and I had just seen a case of Hyper IgA Syndrome and finished discussing with her. I began reading up Hyper IgA Syndrome in a textbook that was lying around in the office. In the history of section of the text, I read that "The syndrome was further defined and clarified by Buckley et al. (1972)…also known as the Buckley Syndrome." I looked up from the textbook and stared in astonishment at the friendly Dr. Buckley who was just sitting a few feet away from me. It is not every day that you learn about Buckley Syndrome from Dr. Buckley herself.

Personalized Letters for Retirement

During my last week at Pediatric Allergy and Immunology clinic, I learned from the fellows that Dr. Rebecca Buckley would be concluding her clinical practice at Duke University Medical Center. Dr. Buckley had been at Duke for a remarkably extensive period, and over the last few decades established her renown as one of the top primary immunodeficiency physicians in the country.

Some of Dr. Buckley's older patients' had been seeing her for over three decades. She had watched as these infants grew up, went to school, fell in love, married, and eventually had kids of their own. It was not unusual that multiple family members spanning different generations were all under her care. Dr. Buckley's connection with these patients went beyond the simple patient-physician relationship.

As her time in clinical medicine came close to an end, she began seeing patients for the last time. After conducting the usual thorough exam and giving assurances that they would be in good hands with the physician that would take over, she gave each family envelope.

I discovered that inside each envelope was a personalized letter that Dr. Buckley had provided for the patient and family. Every family that had seen her received a letter. Her actions spoke volumes about her dedication to her patients, and reminded me of a quote often used in medicine – "the task of medicine is to cure sometimes, relieve often, care always." Dr. Buckley did just that.

Concluding Thoughts

The Koo Foundation Sun Yat-Sen Cancer Center's exchange program with Duke University Medical Center is one of its kind in Taiwan – it provides the rare opportunity to act in the capacity of a Duke medical student equivalent. This is an important distinction. There are many international students who participate in exchange as observers, but as the name indicates, they can only observe. Our status at Duke University Medical Center allows us to have the same privileges and responsibilities as one of Duke's own.

Learning medicine at Duke is a true luxury. There is a "culture of teaching" where everyone, from the interns to the residents to the fellows to the attendings, understand that teaching is an important and expected part of the job description. Some departments even adjust hospital schedules to meet the needs of their educational goals. For example, the consult service of Cardiology is regarded as a "teaching service." As a result it is department policy that it usually does not accept inpatients under its service and the number of active consults is usually capped. The house staff and attending on the service also understand the nature of the service, and go the extra mile to make sure students are getting the most out of the rotation.

Duke also many great mentors willing to reach out and guide students. At Duke I was told to be proactive about learning. I took that advice and actively emailed Dr. Tony Huang about writing up an interesting case that I had seen on Pulmonary Medicine inpatient service. At that time Dr. Tony Huang recommended me to a fellow, Dr. Wayne Tsuang, who was interested in doing a write-up in a similar case. Dr. Wayne Tsuang was extremely gracious, stating that if we worked together on the case and it was published, he would be more than happy to let me be first author.

Over the next few weeks we worked on and completed the write up, which is currently in the process of submission. Throughout the whole experience both Dr. Huang and Dr. Tsuang were highly instructive and responsive to my questions. Having clinical physicians who are open to being mentors and actively welcome students to work together on publications was a fantastic experience.

Special Thanks

Finally, I would like to thank the following people for making this exchange possible:

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