

CATH LAB NIGHTS IN
HANGZHOU
By
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5/1/2017

I thought I would share my experience at Hangzhou so far in case you want any info to help prepare. May 1 is, apparently, a Chinese holiday so I got to rest and explore today a bit. So far, I have only been stopped 2 times by random people asking (or ordering...I don't really know) to take pictures with with me.

Getting here from the airport was super easy. Jing was at the arrival area with a sign that has my name on it.

Its a 30 minute trip. The place that you stay is basically like a Marriott. It is building #7 of the medical complex and seems to be a hotel (mostly for VIP patients, it seems) and meeting center. The hotel has air conditioning, a nice bathroom with a toilet/shower/hairedryer/soap/shampoo/etc. There is a closet with room for cloths and a lock box. There is WiFi and a TV (and a desktop computer). There are 2 small bottles of water in the room. The first day I was here, I went to the ATM to get cash and bought a flat of water bottles (cost 50 CNY for the flat). The room comes with a water heating pot. Philipp gave me the advice to bring some instant coffee and I think the pack of Starbucks Vias that I brought here was a good idea. Hotel power outlets work with US-style, European-style and Chinese-style plugs. I brought an adapter but have not needed it yet.



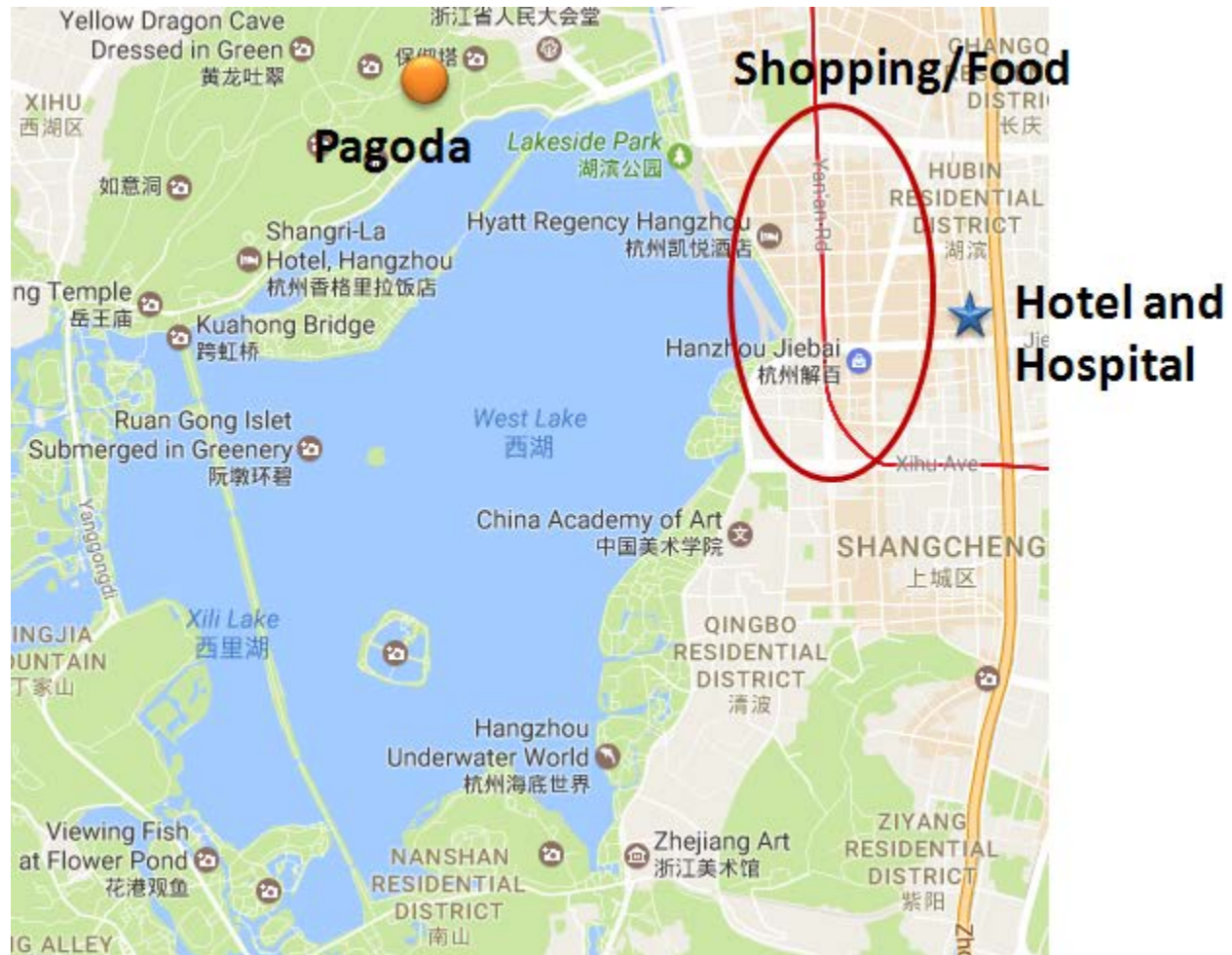


One more thing about the hotel room: Your room key card needs to be in place for the electricity in the room to be on. The problem here is that there is no switch that I have found to turn off the main lights. This means that you either sleep in the light or that you can't charge your phone and enjoy air conditioning at night. Until I find the phantom switch to turn off the main light, I have been just turning off the circuit breaker for the lights (circled in red below) at night and keeping everything else on. The bedside lights still work (plug into wall). The circuit breaker is next to the door.



The street that the hotel and hospital are on has lots of shops that are both Western and Eastern. There is a Starbucks across the street. I would comment on the whole variety of food...except that so far I have subsisted happily off of fresh pork buns and coffee. I'll need to explore this more.

Between where we stay and Westlake, there are tons of shops and restaurants. Some of them are in what, to the non-Chinese speaker, appear to be entire malls in unmarked buildings.



Westlake is a fairly big lake that is a few blocks away from our building. It is super crowded with locals walking around it. It is a great way to spend a day or a part of a day if you want to get out a bit. There are all kinds of monuments, parks and whatnot as you walk around it. Most of the stuff costs \$\$\$ (not much) to see but some of it, like the pagoda pictured below, is free. There are lots of public toilets that are well-marked and reasonably clean. There is no TP, however, so bring something to wipe with or keep some 1 CNY coins in your pocket to buy tissue in the restrooms.



Not many people speak English, but some do and most stuff is pretty easy to do with minimal communication and hand gestures.

For phones: I have T Mobile and that has worked great here. Internet, texting, and phone worked off of the plane. If you don't have T Mobile or an international plan, it may be worthwhile to look into getting a sim card here for data. I'm not really sure how to do this, but Jing probably knows. I don't think it would be easy to get by without data here. For speaking on the phone: not all software works here. Skype does work very well (if you have data). On Skype you can download the app and then pay \$6.99 for a month of unlimited calls from your app (anywhere you have data) to any phone line in the USA (or don't pay anything and have your people back home download Skype too).

With respect to the Internet: there is plenty of WiFi access. However, as I said, I think having data on the phone is very useful. For one thing, most internet connections here are slow (it seems). I am currently tethering my laptop through my phone, which is much faster than the WiFi. Some sites are blocked. Most google sites do not seem to work (unless VPN is on) through my computer. However, both google maps and apple maps (as well as gmail and google search) work well on my iphone (even without VPN). People here use the app WeChat to communicate. You should download it.

Weather is warm and almost sub-tropical right now. Most people here wear pants (some shorts) and T shirts or collared shirts. I would bring breathable clothing for when you get out and about because there is some humidity and highs are in the 80s.

I am super excited to see the hospital tomorrow. I'll let you know about that when I have been there. I hope this helps you prepare (and get excited).

Stephen

5/2/2017

Day 2 I got to go to the hospital and it was awesome. Jing gave me a 1.5 hour orientation and tour of the hospital. I don't usually go in for this sort of thing, but this was fascinating. The hospital is 150 years old and was originally a missionary hospital. It is also (literally) across the street from where we stay (which is here: <https://goo.gl/maps/ohDUVGRZAbM2> by the way).



The campus is huge. Patients here in China have single-payer government healthcare that runs like a PPO. They can request to see any sort of doctor that they wish. In the outpatient building there is a bank of what appear to be ATM machines. These allow that patients to book appointments with the specialists that they want to see (usually day-of) and to pay their bills (copayments). There are a ton of patients so clinic time with a doctor is usually limited to 5 minutes or less. Because of the huge burden of patients, there has been a push to make people present to smaller hospitals and clinics first and only go to the larger medical centers when advanced services are needed. However, this push has not worked because people trust the larger centers much more. There is also a full hospital. This hospital is one of the first in the country to have helicopter deliveries of critically ill patients.

After the tour we were issued 2 white coats and shown where to put cash on our hospital cards (this is good for food at the cafeteria in our building as well as for other things like using the fitness center). In the hospital, people pretty much wore the same sort of clothing that we do here. Jing took me to the cath lab. I was issued clogs, a locker and some scrubs.

After changing, I was immediately taken into a cath lab to do a diagnostic (with an attending there). I think I had some preconceived notion that the facility or equipment here would be knock-off, second-rate or old. This was absolutely incorrect. They have current-technology Phillips fluoroscopy suites. The facility is modern and clean. There are 5 labs, two of which seem to be dedicated to EP (including a stereotaxis room with an electroanatomical mapping system).



The procedure went well. They use counterpuncture for radial access, like we do at the VA. They also have some very nifty techniques like hydroplaning the (short) guide wire for exchanges (they don't even try to keep a grip on the wire). Following this case, I was able to do a PCI (where I did most of it), a second complex PCI (where I did just a little of it) and a few more diagnostics. Not bad for day 1. Although some of the equipment is from brands that I have not heard of, most of it is Boston Scientific, Medtronic and Tuermo (just like here!). They also have things that we do not, like drug-coated balloons for the coronaries and some fancy catheters for CTOs and complex bifurcations. The operators are extremely skilled. Also, there is no paperwork. Well, none for us and little for them. Technicians write the reports while cathing is in progress and the MD signs afterward.

In terms of technique, they do seem to do a LOT of PCI. I am told that they do 2,700 PCIs per year (I assume that this includes both campuses). In part this may be cultural, but there really is a lot more stent-able disease than what we seen in LA. They do use and know the same literature that we do. However, it seems that they do not weigh it as heavily as we do. A lot more here relies on clinical judgement. Some cases do still go to CABG. There was one today that (even at UCLA) could have gone either way and, after a family discussion, went for surgery. Operators here are very skilled and very comfortable with things like ad-hoc CTO cases. One thing that I found interesting was that they do routine 9-12 month follow-up angiograms on all left main cases. I am told that about 10% of them require additional intervention at that time.

Things to know about the cath lab for those of you visiting in the future: They don't wear safety glasses here. That is because they all wear regular prescription glasses. If you want any sort of radiation or safety glasses, bring them. They do have scrubs and at least 1 set of lead that fit

people up to my size. They do not have gloves that fit people up to my size. If you need gloves larger than 7.5, consider bringing your own.

After a day in the lab, I was able to go to dinner with some of the folks here. Despite the language barrier, this was awesome. I also tried some strange foods like cow stomach and "century old egg", both of which taste about as bad as you might guess. They bought lots of beer, which was actually hydrating (I think it is about 0.5% ABV). The attendings and fellows here are all very interested in learning about how we approach things in the US, even though they are super competent and confident themselves.



A couple of other things: There is a mini-fridge in the room. To fill said mini fridge, you should go to Century Mart (another Wiesner recommendation). This place is huge (think Super-Wal-Mart).

I'll let you know what other interesting things come up.

Stephen

5/4/2017

Hi,

Today I made it over to second hospital campus. We take the bus for free and it is easy to get there. Their buses are new and all-electric with free wifi. The "remote" hospital is actually just across town (closer than Olive View) and is a modern hospital. Part way through the day, there was concern because a post-PCI patient had syncope and I went with the cardiology team to assess the patent. The rooms were large and modern. They have the same equipment that we do, including the same small Phillips echo machine that we use at Olive View. The only differences that I noticed were: an all-Chinese population and 2 patients per room.



Dr. Yang asked me to maintain a log of cases. Let me give you the log for today. In a single cath lab (at the remote campus, the main campus has 5) we completed 15 cases from 9 AM until 8:30 PM. Of these, I was able to complete or participate in 11 cases, including...

- 5 diagnostic angiograms
- 4 PCI cases
- 2 diagnostic + IVUS cases

For the diagnostic cases, I was either alone or with their equivalent of a general fellow (who had less experience than me). For the IVUS cases, I was a solo operator. The attendings watch from the control room until a case goes to PCI, then then they join the fun. When we went to PCI, I shared the cases with their equivalent of an interventional fellow. Dr Li, the main attending at this site, told me that that this fellow's name means "powerful man" in Chinese so that became his English nickname for the day. Dr. Li does 700 PCIs per year.



The cases here go from routine to highly-complex and all of them are taken in-stride. When the patient is in the cath lab, family members wait in an adjacent consultation room. This room has a monitor that the attending can use to review the cath with the family. When there is a decision to be made, the attending goes to this room and talks with the family, whom make a decision. Although China has a socialized health care system with a government insurer, procedures like PCI and CABG cost a lot of money. A PCI with a couple of balloons and up to 2 name-brand (Boston, Abbott, Medtronic) or 3 domestic stents costs approximately 40,000 CNY (\$5,799 USD) out-of-pocket. Additional stents are paid out-of-pocket at ~\$1,000 USD each (for domestic stents). A CABG costs 100,00 CNY (\$14,499 USD) out-of pocket. As you can imagine, for a country with a GDP per capita 20% of ours, these numbers weigh heavily when it comes to therapeutic decision making.

Because of the reasons described above and others, there are many cases that are fairly complex which are not uncommon. In the 3 days that I have been here, I have participated in multiple left main PCIs, multiple CTO cases, and multiple multi-lesion PCIs in patients with EFs of ~25%. CTO cases are done ad-hoc. Other things that I have noticed include: 100% radial access (so far), counterpuncture radial access technique (used in LA at the VA), a preference for long stents (most stents that we place are at least 28 mm), no (and I mean zero) flushing of sheaths, what I have termed the "Hangzhou wrap" as an alternative to a TR band for radial hemostasis, and very fast (5 minute patient-to-patient) room turn-over.

I have also noticed that there are some cultural differences here when it comes to the cath lab. For one thing, they are all very worried about getting cancer (especially gastric cancer) or infertility from radiation. For this reason, most of them have techniques to minimize radiation exposure including doubling-up on lead aprons and, in more creative cases, wearing lead

underwear and high-coverage face masks (both pictured). Some of the cardiologists here also smoke and do not think this is a big deal.

Lead Headgear



Lead Underwear

I have to leave you with a weird food update. I could tell you about how awesome it is to eat lunch and dinner family-style in the cath lab (which it is). I could tell you about how I ate chicken foot and it wasn't even a big deal (I did and it wasn't). Instead, I will tell you how appreciative Chinese patients are. One of Dr. Li's patients brought him this leg from a pig imported from Spain. Apparently it is cured (not cooked) for 36 months and is very expensive. It was tasty.



For those of you traveling here: bring an umbrella and a USB flash drive (at least 20 GB for angiogram films).

Best,
Stephen

5/9/2017

Hi All,

Okay, I wrote the original email to give practical tips to Nataila, Dave and future travelers. Since they will both be leaving soon, I'll wrap things up with a final email. Since the readership has been more broad (thank you Dr. Yang!), I will put the cardiology-related stuff first so most of you can ignore the rest (the end of the email will be a bit of Vampola's 2017 Hangzhou Travel Guide).

First, I have to comment that everyone in the hospital has been incredibly courteous. They really treat us very well here. I was taken to dinner with Mingli (the international center director) and her husband at a nice Hangzhou-style restaurant yesterday. Not only was the food amazing, but I also learned a great deal about the hospital here and how highly they value connections with UCLA. It seems that China is investing a lot of money in advancing its medical system. Locally, they are sending delegations throughout the USA to see how we practice medicine. This week there is a group heading to MD Anderson, for instance (they are building a new cancer hospital here). What we should be proud of is that they value their UCLA connection the most. They want to try to grow this relationship as much as possible, be it with research, clinical or teaching endeavors. If anyone that reads this email has ideas about how to do this, by all means, let me know! Today I was able to meet with the vice-chair and vice-director of the hospital and the director wants to meet me tomorrow. They really value Bruins and are interested in close cooperation with us.

Interestingly, medical education in Hangzhou is also transforming. Currently, after medical school graduation, there is no formal residency or fellowship training program; students simply sign-on with a hospital and have on-the-job-training there. This naturally progresses to specialization and often resembles a residency and fellowship in terms of graduated autonomy and skill development in a specific discipline. However, there are not set time frames or requirements to advance to the next level or to become a specialist. Furthermore, there is extremely limited institutional mobility after medical school and the quality of education is highly variable from hospital to hospital. This is all about to change in September. Hangzhou will be one of the pilot sites for a new residency and fellowship program that China hopes to adopt. This system reportedly reflects ours, and they are currently recruiting, but I have not been able to hear the specifics about it.

My cath lab experience here continues to be amazing. There is a robust case load, but the truly impressive things are the techniques that we don't employ here and the incredible amount of raw skill that the operators have. It has also been fascinating to see some technologies that we either do not have yet or have not had for long. Today I performed 2 scheduled follow up angiograms on patients that underwent PCI 6-12 months ago. One had a bioabsorbable vascular scaffold and the other had a drug-coated balloon. In both cases, the coronary lumens were widely patent with no apparent prior intervention! In other cases, I continue to see complex CTO cases daily. It is not unusual to see 3 coronary wires in at a time.

Now that the honeymoon period is over, working in the cath lab here has also given me a very strong appreciation of the way that we practice medicine back home. I find myself missing reliance on critical evaluation of evidence and other modalities (like echo!). I also miss stents that are shorter than 28 mm (I have not used one in China so far), medical management and reasonable referrals to cardiac surgery. At the end of the day, this is a great experience. The over-arching cultural message for me has been simple: as a physician, I feel as though I have much more in common (dedication to patients, profession, scientific curiosity and education) with the doctors here in Hangzhou than I do with most other Americans back home (despite the language barrier, the cultural differences and everything). I can only say that this is truly a privilege.

If you do not plan to visit Hangzhou, you can stop reading now. Otherwise, here are my travel experiences.

Things I have found to do in Hangzhou for the weekend...

Rather than act as if I have any right to give you a comprehensive travel guide, I'll tell you the what I did this weekend.

1. Hefang Street - This is within walking (or biking, see below) distance. It is essentially a tourist street. There are buildings that appear to be the Chinese equivalent of San Diego's Gas Lamp District (they are not old, but they look old!). There are tons of (99% Chinese) tourists here. They sell lots of gadgets and lots of food that comes in deep-fried-and-impaled-on-stick format. I ate something that was most likely a rat or a lizard, but possibly a fish (deep fried, it is hard to tell...and it tasted like chewy chicken). You can visit this place any day after work. It is lively and fun.

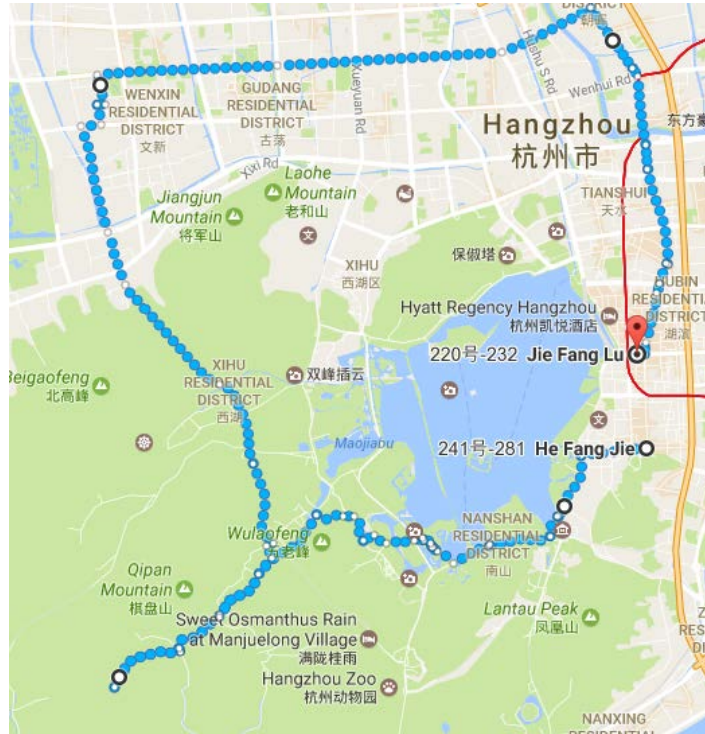


2. Running - After not running since my layover in Hong Kong (there is a nice run up to Victoria Peak there), I was feeling down. Life is tough for someone who only held the UCLA fellow Bruce protocol record for a hot second before being overshadowed by Drs. Small and Schmidt. I finally went for a run around West Lake. It was great, but you have to get up early (we are talking 4-5 AM). the loop is 7 miles from the hotel or 6 miles if you walk to the lake first and just do the perimeter. It is peaceful, beautiful and (rare here) not crowded.

3, 4, 5 & 6. Bike Ride - It turns out that Hangzhou has a great public bike rental system that is basically free. After traveling to a metro station you need to buy a pre-paid card. This is good for metro use as well as for bike rental. It costs 20 CNY and you need to have at least 200 CNY on it to rent a bike. I put 300 CNY. When you come here, you should do this day #1 as the bikes are useful to get around town. Once you have the card, you can rent a bike at any of the public bike rental stations and leave it at any other. Then: you can go on an epic bike ride on a beach cruiser! Bike rental station shown below. You just swipe the card over the bike-holder before pickup and after return.



Of course, epic bike rides can take many forms. This was mine...



First I headed North. With limited time, I blew past the museum of science and technology and the cultural center (maybe next visit?). My first stop was one of Hangzhou's famed electronics marketplaces. These multi-floor warehouses sell all kinds of electronics--legal and otherwise. I would not recommend stopping for this, but it may make you chuckle. Next, I stopped at Xixi National Wetland Park. This is a park that you can visit after paying ~70 CNY. It has lots of bridges to walk on and much of it is landscaped. It's almost like a botanical garden. It is meant to give the feel of old, natural China. However, just one generation ago, this area was a populated neighborhood. People were encouraged or forced to move to adjacent areas to make this area appear natural. It is peaceful and a good break.



After this stop, I headed South. This has been the best part of my trip so far. After biking through tunnels and hills (nothing too steep...until the very end, which you can walk if you want to), I was able to get to Dragon Well. This is in the heart of the small local tea-producing country and you bike through tea fields to get here. At the top you can buy tea from the tea shop or just enjoy the peaceful atmosphere (this is the only time that I have really gotten away from the crowds so far). If you don't want to bike here, the bus comes close and you can walk the rest.

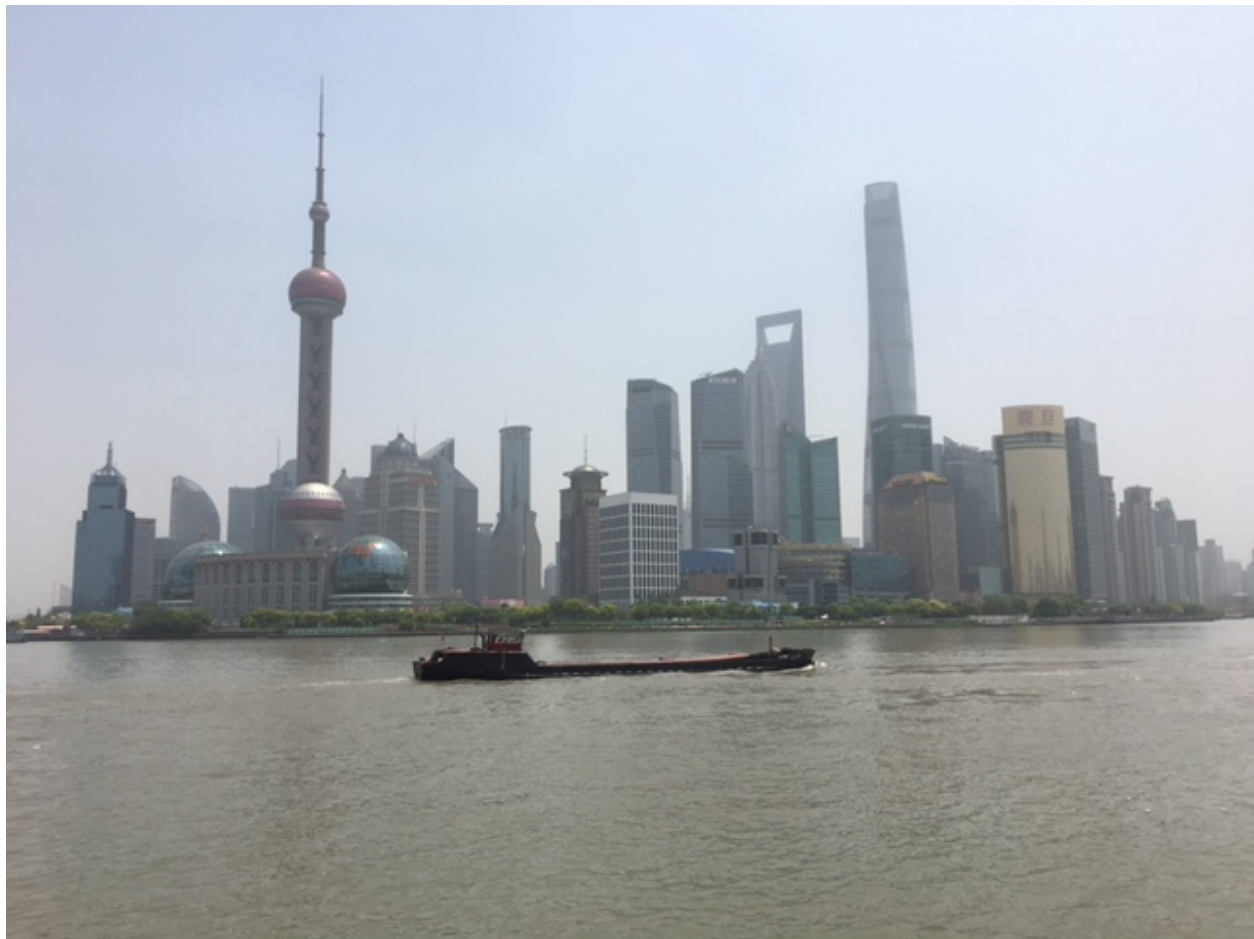


From here, I headed back to Hangzhou proper, by way of West Lake, to Wushan Square. There, I ditched the bike. There is a ton to see around Wushan square. What I highly recommend, however, is looking at the flower and pet store there. It is 4 stories and has plants and all kinds of animals for sale (rabbits, cats, squirrels, you name it). The conditions for animals are mostly abysmal and will make you sad, so please don't support them with your cash, but it is definitely worth seeing!



From here, you can walk home. I know I mentioned a different grocery store earlier (Century Mart). But Carrefour (which can be found on maps) is closer and much better. I picked up the USB memory stick (for copies of those PCI cases!) and some milk on the way home.

7. Travel to Shanghai - Shanghai is only about an hour away by high-speed rail. Using the card that I had purchased for a bike, I was able to get to Hangzhou East Train Station pretty easily. Although there are no international traveler windows there anymore, you can easily buy a high-speed rail ticket to Shanghai for 70 CNY by walking up to window 33 (or probably any window) and saying "high speed, Shanghai" (might be easier if you have this written in Chinese on your phone with a translator app). You will need your passport. Trains go to multiple locations in Shanghai, but I found that it was easiest and fastest to just take the next train and rely on the subway system in Shanghai (which speaks English) upon arrival. Shanghai was worth doing, but did not take much time. It is busy with more tourists and more smog. As pictured below, you can almost see the Pearl Tower from the Bund through all the smog.



I came back from Shanghai the same day, but imagine that it would be easy to spend a night there.

Here are my pics for apps that you should have if coming to Hangzhou...

1. WeChat - This is essential. It is what everyone here uses for messaging.
2. Google Translate - Since most of us can't read Chinese characters and "alphabetical order" doesn't really apply, it is very difficult to read labels and whatnot (was that milk pasteurized?). Download this app and the Chinese language set before you leave. The camera text translator is super helpful.
3. Bing - This app is fast and it works very well in China for web searches, maps, etc.
4. More Hangzhou - This app has a list of local venues for shopping, eating, etc. Complete with taxi directions in Chinese. Nice in case you want to do anything.
5. Skype - Although Apple facetime is the easiest and most secure way to make internet-based calls here, Skype is helpful because you can call people that don't have an iPhone at minimal cost. This includes calling numbers in China. I found it very helpful when I had to call the airline. Most google services (like google voice and hangouts) do not work here on normal networks.
6. China Metro - This app has the subway maps for major Chinese cities, including Hangzhou and Shanghai.
7. A voice translator app would be helpful. The app names are in Chinese, so I'll give a some text that you can copy into the app store: 翻译君-腾讯实时口语对话翻译,词典学习软件 (copy and paste into app store).

Also, do not forget to call UCLA BOL to activate VPN services and to set up VPN on your phone before you leave. VPN is your only pipeline to the real WWW.

Best,

Stephen