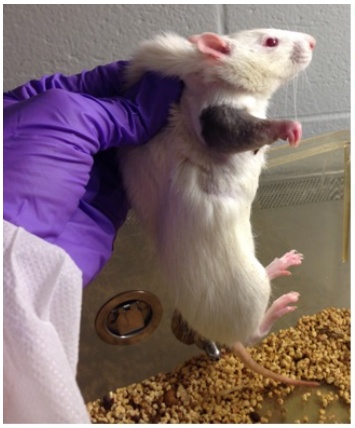
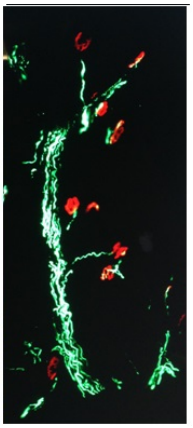
Omar Hausien – Medical Elective, Johns Hopkins University, Baltimore, 2014

I visited the plastic surgery laboratory ('Vascularised Composite Allotransplantation (VCA) laboratory') at Johns Hopkins University in Baltimore, Maryland, USA. VCA involves the transplantation of multiple tissues at once, e.g. hand, face or abdominal wall. The lab experience hugely exceeded my expectations and left me inspired for a future in academic surgery.

The lab works from basic science (test tubes) to large animal models (e.g. swine). The findings of composite tissue allotransplantation have furthered our knowledge in numerous neighbouring fields, such as immunology, surgical technique, psychiatry and nerve regeneration. My main clinical project was in describing the institutional donor limb harvest technique, including the logistics of this process, something which has no current consensus, and, to our knowledge, is largely undescribed. My main lab-based project was in studying the effects of different immunosuppressive agents on nerve regeneration in hindlimb transplanted rats. We also established a new, though technically challenging, model for forelimb transplantation in rats. This allows us to measure grip strength as a functional outcome measure of nerve regeneration to complement more traditional techniques of staining nerves and muscles for view under a microscope. The senior research fellows were enthusiastic to teach and supervise one-to-one on skills and techniques in immunology, microsurgery and study design.





The donor limb harvest paper was published on December 31st 2014. It has been presented at the royal Society of Medicine in London. It is currently submitted to the European Plastic surgery and Transplant surgery meetings in Belgium for the Summer of 2015 and awaiting reply. We hope to build on this by producing official guidelines and standardised protocols for the American Society for Reconstructive Transplantation (ASRT).

http://www.tandfonline.com/doi/full/10.4161/23723505.2014.973799#.VPnPz_msVe8

The rat models of nerve regeneration and experimental findings are due to be published in Summer 2015.

Further to this, I had the opportunity to network greatly and explore some of the surrounding vibrant cities of the East coast and stunning nature reserves. Overall, I was fortunate enough to learn unique research skills and meet friends for life in the form of inspirational scientists, who I will collaborate with for my future research in the coming two years at the University Department of Surgery at Addenbrooke's hospital.

What to Expect

Location: Plastic surgery laboratory, Johns Hopkins University, Baltimore, USA.

Research: Transplant immunology, translational research, animal models of hand transplantation, nerve regeneration

Length:	8 weeks (including a 5 day trip mid-way to California) (official clinical school length is 7 weeks).
Supervisor:	Gerald Brandacher (gbranda2@jhmi.edu)
Flights:	Around £500 booking 6 weeks in advance, LHR to Baltimore (BWI) (Air France). If you fly to Washington it may be pricey ($100) to get a taxi.
Accommodation:	McElderry house $600-750/month (3 mins from hospital) (single room in shared house, usually other visiting students). The house was basic, luck with who you live with, and if walking back at night walk with a security guard from hospital. If you can it is more expensive but the 929 apartments on the other side of the hospital are far more ideal, being closer, nicer to live in, having a gym and many other students.
Facilities:	Hospital gym (free for students), outdoor pool ($60 for summer), beach volleyball in city centre.

They have a very useful online handbook with supervisors and their email addresses. The lab hugely exceeded my expectations and left me inspired for a future in academic surgery.

VCA involves the transplantation of multiple tissues at once, e.g. hand, face or abdominal wall. The lab works from basic science (test tubes) to large animal models (e.g. swine). My main projects were in nerve regeneration in hand transplantation and immunology. I was also involved daily in caring for/helping operate on/injecting/withdrawing blood from the animals. The research fellows are enthusiastic to give you one-to-one theoretical and practical teaching on skills and techniques e.g. in microsurgery, flow cytometry. My clinical projects included writing a paper on donor limb harvest for hand transplantation and characterising midface fractures in children.

You will be expected to work hard, though in the evenings I explored with the Johns Hopkins medical students, and on weekends travelled to nearby cities e.g. Washington DC (50 mins away, Natural history museum etc.), New York (3 hours), etc. I made a beach volleyball team with my lab and we played in an open league every weekend. The city can be quite daunting at first so make lots of friends early to travel/explore with and book accommodation very close to the hospital. The fees were far less than other US universities. They have on-call security guards to escort you at night. There are some great areas in the city to visit, e.g. Fell's point.