Hello Eurekians,

In this month's Eureka Briefing, we learn about the Apollo Society for translational science by talking to Gautam Kok, hear about new connections made through Eureka, and look at some recent publications from Eurekians.

Apollo has branches in Utrecht, Tokyo, London and Miami (photos: Pixabay)

The Apollo Society – an interview with Gautam Kok

The Apollo Society is a professional and social network that supports the translational career of medical, PhD and masters students. Founded in 2014 in collaboration with Eureka and its partner universities, it has branches in Utrecht, Toronto, London and Miami. *Eureka Briefing* spoke to Gautam Kok, who was involved in Apollo from its inception and throughout his medical degree. Gautam will be defending his PhD thesis this week!

Why was Apollo launched?

The idea behind Apollo was that most medical curricula have very little space for research. They lack practical information on how to apply your research in a way that makes a difference for society and patients.

The inception of Apollo involved a group of like-minded students who wanted to actively discuss topics involving translational research, as well as topics involving societal impact and ethics of our research. One or two people would think of a topic they found interesting and we would discuss it.

Apollo is run by students for students. Why is it structured in this way?

We wanted to discuss topics with people who were at the same level, to avoid any perceived hierarchy that might arise. This format created a very low-key and open society where everybody feels comfortable speaking or giving their opinion without feeling they might be overruled.

At the beginning of Apollo, all members were at about the same career stage. Now that Apollo is evolving — it's almost ten years old! — some members are more established in their careers, but they're not as actively involved, they maybe visit meetings now and then.

What type of activities have you been involved in?

From the meetings, we've met many great people with different roles; for example, we've met ethicists, healthcare inspectors and people involved in healthcare economics.

We had media presentation training. Having my presentation filmed and then appraised was scary. But it really helped me to see how others viewed me. I used to be quite afraid of presenting but the training has alleviated this.

Then there's the networking aspect. So if I'm looking for a student for my research project, I can ask the current members if they're interested in this type of opportunity. And conversely, I can ask the group for advice.

The group discussions at Apollo helped me to always critically appraise my research, and take into account many different viewpoints and perspectives.

What does translational science mean to you now?

My PhD work focused on very rare metabolic diseases. We showed that cells from patients with *ARS* mutations are sensitive to amino-acid deprivation. And because of the rarity of the disorder, we immediately got to try personalized amino-acid treatments in patients. It worked -- we saw clinical benefits in individuals that had no other treatment options.

To me, that example is an extremely direct translation of medicine. We figured something out in the lab, and because of the collaborative environment that included a pediatrician, we could immediately try this with patients.

This treatment was then expanded to a few other hospitals because of the very close collaborations and a good network. And now we're setting up a clinical trial to see if the treatment works in a randomized, controlled manner.

Right now we're devising a new project involving gene therapy for children with genetic epilepsies. The project was inspired by a patient in our own hospital that had no treatment options. We want to find a cure that will benefit others. I think it's extremely important to incorporate this into research.

Do you have a story to share? Please get in touch! We are especially keen to hear from Eurekians who have worked in both academia and industry.

Eurekian connections

Brandon Ng, who took part in the Eureka Summer Course in 2022, wrote to us to tell us about connections he's made through Eureka. He is currently in Milan for an internship, in the lab of Professor De Gregorio, who is also a Eureka alumnus. Their research focuses on translational psychopharmacology.

"I am always grateful for the Eureka experience I had last summer, which connects me to different impressive people from all over the world!" he said.

The impressive architecture of Milan

Publications from Eurekians

Below we highlight recent publications from Eurekians (with given names beginning with letters A–J, other letters will be in upcoming Eureka Briefings).
Have a scroll and see if any catch your eye!

Macrophages promote anti-androgen resistance in prostate cancer bone disease.
J Exp Med. doi: 10.1084/jem.20221007

Gene therapy for urea cycle defects: An update from historical perspectives to future prospects.
J Inherit Metab Dis. doi: 10.1002/jimd.12609

3D human induced pluripotent stem cell-derived bioengineered skeletal muscles for tissue, disease and therapy modeling.
Nat Protoc. 2023 doi: 10.1038/s41596-022-00790-8

Tumour-educated platelets for breast cancer detection: biological and technical insights.
Br J Cancer. doi: 10.1038/s41416-023-02174-5

EVL and MIM/MTSS1 regulate actin cytoskeletal remodeling to promote dendritic filopodia in neurons.
J Cell Biol. doi: 10.1083/jcb.202106081

Evolutionary characterization of lung adenocarcinoma morphology in TRACERx.
Nat Med. doi: 10.1038/s41591-023-02230-w

Automated Adolescence Scoliosis Detection Using Augmented U-Net With Non-square Kernels.
Can Assoc Radiol J. doi: 10.1177/08465371231163187

The ultra-acute steroid response to traumatic injury: a cohort study.
Eur J Endocrinol. doi: 10.1093/ejendo/lvad024

PIM1 phosphorylates ABI2 to enhance actin dynamics and promote tumor invasion.
J Cell Biol. doi: 10.1083/jcb.202208136

Artificial intelligence to enhance clinical value across the spectrum of cardiovascular healthcare.
Eur Heart J. doi: 10.1093/eurheartj/ehac758

The Enduring Effects of COVID for Cancer Care: Learning from Real-Life Clinical Practice.
Clin Cancer Res.. doi: 10.1158/1078-0432.CCR-23-0151

Tracking early lung cancer metastatic dissemination in TRACERx using ctDNA.
Nature. doi: 10.1038/s41586-023-05776-4

The evolution of lung cancer and impact of subclonal selection in TRACERx.
Nature. doi: 10.1038/s41586-023-05783-5

Genomic comparison of mecC-carrying methicillin-resistant Staphylococcus aureus from hedgehogs and humans in the Netherlands.
J Antimicrob Chemother. doi: 10.1093/jac/dkad047

Fluorescence lifetime-based assay reports structural changes in cardiac muscle mediated by effectors of contractile regulation.
J Gen Physiol. doi: 10.1085/jgp.202113054

A machine learning approach on whole blood immunomarkers to identify an inflammation-associated psychosis onset subgroup.
Mol Psychiatry. doi: 10.1038/s41380-022-01911-1

Emergence of KPC-3- and OXA-181-producing ST13 and ST17 Klebsiella pneumoniae in Portugal: genomic insights on national and international dissemination.
J Antimicrob Chemother. doi: 10.1093/jac/dkad093

Role of CD14+ monocyte-derived oxidised mitochondrial DNA in the inflammatory interferon type 1 signature in juvenile dermatomyositis.
Ann Rheum Dis. 2023 doi: 10.1136/ard-2022-223469

Natural history of epilepsy in argininosuccinic aciduria provides new insights into pathophysiology: A retrospective international study.
Epilepsia. doi: 10.1111/epi.17596

Matching researchers' needs and patients' contributions: practical tips for meaningful patient engagement from the field of rheumatology.
Ann Rheum Dis. doi: 10.1136/ard-2022-223561

Don't forget to send us details of any publications so we can include a little bit of detail about them. And in future Eureka Briefings we will try to highlight the Eureka authors.

And finally….

The SpaceX Starship test flight (photo: SpaceX.com)

… some trivia. Above, we learned about the Apollo Society, named after the multifaceted Greek god of medicine. Apollo was also the name chosen for the US space program that ran in the 1960s–1970s.
Jumping forward in space-travel time to last week and the launch of SpaceX's Starship, **how high (peak altitude) did the uncrewed Starship reach** before suffering "a rapid unscheduled disassembly"?
Once you've had a think, the answer is here (you'll need to scroll down)

Thank you for reading!

Charlotte Harrison
Freelance Science writer and editor
who prefers the word 'explosion' rather than 'rapid unscheduled disassembly'