Hello Eurekians,

In this month's *Eureka Briefing*, we talk to Giulio Cavalli about his recent move to the pharma company Novartis, look at some recent publications from Eurekians, and highlight an analysis showing the funding gender gap.



Giulio moved to Novartis, which is located in Basel (images from Pixabay)

A move to industry: a chat with Giulio Cavalli

Giulio Cavalli is an immunologist who trained as a medical doctor and completed a fellowship in Italy, before moving to the Netherlands for his PhD and then to the USA for a post-doc position. He then returned to Italy, where he was an attending physician at the Ospedale San Raffaele for almost 6 years. In December 2022, he moved to Switzerland to become Associate Director of Translational Medicine/Immunology at Novartis.

Eureka Briefing spoke to Giulio about his recent move to industry.

Why did you decide to leave academia and clinical medicine to pursue the role at Novartis?

I realized that I wanted a career where the output of my activity was more impactful than a focus on publications. And being a translational scientist, I figured that developing drugs for a pharmaceutical company with a great reputation in immunology was probably where I could contribute to change the most.

I also realized that my talent resides in creative and strategic thinking, for example, reasoning how to develop a given compound for a given disease, more so than in one-to-one doctor–patient care. Patient care is obviously noble and wonderful, but I think other people enjoy it more than I did.

What is the most enjoyable aspect of your role at Novartis?

like the fact that I'm in the very early stages of drug development; I work at the latest stages of preclinical development up until Phase 2 clinical trials. I get to select compounds and propose them for further development for given indications. So, I have to identify unmet needs, I have to come up with settings in which hypotheses can be tested, and then make it happen despite innumerable complexities.

This type of work is exciting; the idea that I try to tackle an unmet need for which there's no treatment available right now is thrilling. That is something that I could not address effectively as a doctor, since back then I mostly applied existing knowledge.

Yet I'm also aware that not every molecule I'm working on is likely to make it to the clinic. I guess that is what I like the least, that molecules and projects that I dedicate myself to may not ultimately come to fruition. But this is part of the game.

What are the most noticeable differences between academia and industry?

There's no doubt that in academia you enjoy more freedom to answer your own specific research questions. This is somewhat lost in a bigger organization with specific long-term goals. The work is more structured, and decisions are not made by yourself alone. You cannot just pursue a research direction simply because it interests you.

But in academia I had different constraints, such as the constant struggle for funds. Theoretically I had the freedom to address all the questions that I wanted to, but that didn't mean I always had the means to do so.

Do you think academia and industry should collaborate more in translational science?
Yes, and that's actually what I see happening right now. In some countries, academia and industry are still very separate. But generally speaking, I see ever more collaboration between pharmaceutical companies and academic institutions, which is being kindled bilaterally.

Universities approach pharma with ideas, pharma hosts people from academia to showcase their research, and collaborate with academic investigators that have the right knowledge and skills to address specific questions.

So I don't see academia and industry as silos. And from a career perspective, collaboration and communication between academia and industry mean that scientists will be able to transition from pharma back to academia. Indeed, in some countries, previous experience in pharma is already seen as a plus for recruitment by academic centers.

Overall, I see more and more collaboration on the horizon.

Do you have a story to share? Please get in touch!

Publications from Eurekians

Below we highlight recent publications from Eurekians (with given names beginning with letters K–R, other letters will be in upcoming *Eureka Briefings*). For papers with fewer than eight authors, the name of the Eurekian is in red. **Have a scroll and see if any catch your eye!**

Dysregulated Smooth Muscle Cell BMPR2-ARRB2 Axis Causes Pulmonary Hypertension.
Circ Res. doi: 10.1161/CIRCRESAHA.121.320541.

Cell-autonomous Cxcl1 sustains tolerogenic circuitries and stromal inflammation via neutrophil-derived TNF in pancreatic cancer.
Cancer Discov. doi: 10.1158/2159-8290.CD-22-1046.

C/EBPa confers dependence to fatty acid anabolic pathways and vulnerability to lipid oxidative stress-induced ferroptosis in FLT3-mutant leukemia.
Cancer Discov. doi: 10.1158/2159-8290.CD-22-0411.

Vulnerable populations in childhood cancer research and clinical care.
Nathan PC.
Cancer. 2023 doi: 10.1002/cncr.34702.

TIL Therapy: Facts and Hopes.
Monberg TJ, Borch TH, Svane IM, Donia M.
Clin Cancer Res. doi: 10.1158/1078-0432.CCR-22-2428.

Structural basis of selective cannabinoid CB_2 receptor activation.
Nat Commun. 2023 doi: 10.1038/s41467-023-37112-9.

Interspecies Variation Affects Islet Amyloid Polypeptide Membrane Binding.
J Am Soc Mass Spectrom. doi: 10.1021/jasms.3c00005.

Immunosuppression for immune-related adverse events during checkpoint inhibition: an intricate balance.
Verheijden RJ, van Eijs MJM, May AM, van Wijk F, Suijkerbuijk KPM.
NPJ Precis Oncol. doi: 10.1038/s41698-023-00380-1.

Mitochondria and the eye-manifestations of mitochondrial diseases and their management.
Chen BS, Harvey JP, Gilhooley MJ, Jurkute N, Yu-Wai-Man P.
Eye. doi: 10.1038/s41433-023-02523-x.

Recurrent or unusual infections in children - when to worry about inborn errors of immunity.
Reilly L, Emonts M.
Ther Adv Infect Dis. doi: 10.1177/20499361231162978.

Vitamin B5 and succinyl-CoA improve ineffective erythropoiesis in *SF3B1*-mutated myelodysplasia.
Sci Transl Med. doi: 10.1126/scitranslmed.abn5135.

Uncoupling CD4+ TIL-mediated tumor killing from JAK-signaling in melanoma.
Clin Cancer Res. doi: 10.1158/1078-0432.CCR-22-3853.

OPA1 disease-causing mutants have domain-specific effects on mitochondrial ultrastructure and fusion.
Proc Natl Acad Sci U S A. doi: 10.1073/pnas.2207471120.

Heart Rate Variability in Subjects with Severe Allergic Background Undergoing COVID-19 Vaccination.
Vaccines. doi: 10.3390/vaccines11030567.

Investigating Daptomycin-Membrane Interactions Using Native MS and Fast Photochemical Oxidation of Peptides in Nanodiscs.
Reid DJ, Dash T, Wang Z, Aspinwall CA, Marty MT.
Anal Chem. doi: 10.1021/acs.analchem.2c05222.

Mannose metabolism inhibition sensitizes acute myeloid leukaemia cells to therapy by driving ferroptotic cell death.
Nat Commun. 2023 doi: 10.1038/s41467-023-37652-0.

Handheld chromatic pupillometry can accurately and rapidly reveal functional loss in glaucoma.
Br J Ophthalmol. doi: 10.1136/bjophthalmol-2021-319938.

Randomized trial of bilateral gene therapy injection for m.11778G>A MT-ND4 Leber optic neuropathy.
Brain. 2023 doi: 10.1093/brain/awac421.

Psychoeducational and motivational treatment for low-weight Avoidant/Restrictive Food Intake Disorder (ARFID): Three case reports in school-aged children.
Datta N, Matheson B, Walker AC, Van Wye E, Lock JD.
Clin Child Psychol Psychiatry doi:10.1177/13591045231169141.

The Burden of Surviving Childhood Medulloblastoma: A Population-Based, Matched Cohort Study in Ontario, Canada.
Clin Oncol. doi: 10.1200/JCO.22.02466.

Multi-population genome-wide association study implicates immune and non-immune factors in pediatric steroid-sensitive nephrotic syndrome.
Nat Commun. doi: 10.1038/s41467-023-37985-w.

BCG Vaccination of Health Care Workers Does Not Reduce SARS-CoV-2 Infections nor Infection Severity or Duration: a Randomized Placebo-Controlled Trial.
mBio. 2023 doi: 10.1128/mbio.00356-23.

External validation of the Codman score in colorectal surgery: a pragmatic tool to drive quality improvement.
Spence RT, Guidolin K, Hutter MM.
Colorectal Dis. doi: 10.1111/codi.16547.

Predicting the outcome of liver transplantation in patients with non-alcoholic steatohepatitis cirrhosis: The NASH LT risk-benefit calculator.
Karnam RS, Punchhi G, Mitsakakis N, Chen S, Saracino G, Lilly L, Asrani SK, Bhat M.
Clin Transplant. doi: 10.1111/ctr.14930.

Long-Term Morbidity and Mortality Among Survivors of Neuroblastoma Diagnosed During Infancy: A Report From the Childhood Cancer Survivor Study.
J Clin Oncol. 2023 doi: 10.1200/JCO.22.01732.

Impact of living donor liver transplantation on long-term cardiometabolic and graft outcomes in cirrhosis due to nonalcoholic steatohepatitis.
Clin Transplant. doi: 10.1111/ctr.15008.

Health-related impact of illness associated with excessive daytime sleepiness in patients with obstructive sleep apnea.
Grandner MA, Min JS, Saad R, Leary EB, Eldemir L, Hyman D.
Postgrad Med. doi: 10.1080/00325481.2023.2203623.

Associations between sleep and eye diseases: The concurrent promotion of sleep health and tackling knowledge gaps is key for better public health outcomes.
Najjar RP, Sia JT, Lamoureux EL, Man REK.
Clin Exp Ophthalmol. doi: 10.1111/ceo.14243.

Don’t forget to send us details of any publications so we can include a little bit of detail about them.

The funding gender gap

An analysis in *Nature* full of infographics indicates that many diseases that affect more women than men are underfunded relative to how much disability they cause. The article explores how boosting investment might lead to big returns on women's health.
In next month's *Eureka Briefing* we'll hear about diversity, equality and inclusion in translational science from Vicki Seyfert-Margolis — Eureka's upcoming chief diversity officer — and Hester den Ruijter, professor of cardiovascular disease in women.

Many diseases that affect more women than men are underfunded (image from Pixabay)

Eurekian News

Paul-Peter Tak is on the Medicine Maker's power list for 2023 for his influential and inspirational leadership in biopharmaceutical development.

And finally….

… some trivia. Above, we talked to Giulio about his move to industry from academic medicine. Many academic institutions are very old. There are 35 universities founded before the year 1500 that have retained institutional continuity since their founding (according to Wikipedia). How many can you name before you take a look at the answer?

Thank you for reading!

Charlotte Harrison
Freelance Science writer and editor
I confess that I only scored 4 on the list of old universities….

The University of Edinburgh in Scotland opened for business in 1583, so doesn't make it into Wikipedia's list of old universities (image from Pixabay)