When I Dream of Magic, I Think of Science

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The second question people always ask me, as Regional Director of Science, Innovation, Health and Tech at the British High Commission in New Delhi (after "do you get to meet astronauts?"), is what I enjoy most about my job. My answer is always the same: "I travel into the future on a daily basis".

My goal is to build and strengthen prosperity-driven connections between science and innovation policymakers, thinkers and doers in the UK and India. It presents me with a challenging problem – albeit an enviable one. India's science and innovation community is young, dynamic, mobile and keen to partner with us: Opportunities pop up daily across a wide range of States - more than my hard-working team can realistically broker. Furthermore, we have support from the very top of a complex and skilled administration governing the biggest democracy in the world - Indian Prime Minister Narendra Modi has called the UK-India science partnership an "unbeatable combination". With a flurry of Ministerial engagement in the pipeline, my team is working with Indian counterparts to realise a tantalising vista of science diplomacy possibilities visible over the next 10-50 years.

My job is part detective, part cheerleader, part oyster shucker – like a 16-person science diplomacy algorithm, we identify, assess and prioritise the ideas that UK and India think will define tomorrow and forge bilateral alliances to catalyse their potential. The pearls we covet – the moments when I log off feeling like I am living my best science counsellor life – are when the brightest science and innovation minds in the UK and India collaboratively make groundbreaking research discoveries, save lives or propel pioneering innovations into each other's marketplace.

They say great moments are always the work of many. They also often take time to bloom, skidding messily across multiple annual delivery plans, disrespectful of our impact reporting frameworks. This gig is not for the faint-hearted or people thirsty for a quick fix. It is pertinent, as science diplomats, that we feel comfortable on the frontier: Whilst we strive for success, and the work is undoubtedly exciting, a percentage of our plans will fail. Whilst we all want to place our carefully curated consortia confidently onto the Whitehall or public-private conveyor belt to grow into the larger scale market, infrastructure or research propositions, sometimes they won't be viable. If evidence suggests initiatives will fail – we record and share those insights too. It is crucial as it allows UK Government departments, agencies and key private sector stakeholders to make informed decisions before enormous amounts of funding are committed to programmes.

My favourite thing about being a science counsellor is my team's agility: We can move quickly whenever we need. We are structured uniquely in the High Commission, which enables us to quickly turn a

strong political headwind or a global challenge into a science superpower story. COP26 and the COVID-19 pandemic have demonstrated it and given two excellent recent examples of how UK and Indian science cooperation can bring tangible benefits to its citizens' lives through game-changing vaccines.

Over the past year, the **UK-India Virtual Vaccines Hub** brought UK and Indian vaccine regulators together – which was crucial in ensuring UK and Indian authorisation of the Oxford Astra Zeneca vaccine – and were informed by the most comprehensive possible datasets. This regulatory diplomacy also boosted both countries' citizens' confidence that the Astra Zeneca vaccine was safe, maintaining decent uptake during the critical early period of the vaccine rollout. Thanks to the Vaccines Hub, we can compare notes rapidly with key Indian counterparts on deployment, supply, variants and keeping a global distribution fair.

Our climate change and environment work go from strength to strength, with marine science collaborations being a shiny jewel in our science diplomacy crown. My team brokered the **UK-India pilot project under the Commonwealth Litter Programme (CLiP)**, which aims to understand deteriorating seawater quality due to marine litter. It kicked off in 2021 and involved technology-sharing through a microplastics (MP) sampling pump, loaned by Defra's Centre for Environment, Fisheries and Aquaculture Science (Cefas) to India's National Centre for Coastal Research. This dynamic group of scientists has managed – despite many pandemic-related challenges - to do no less than three research cruises off the Chennai-Puducherry coast over the last year, collecting and jointly analysing 300 water and sediment samples, leading to the publication of three joint research papers. We launched the first-ever deep sea expedition between Indian, Maldivian and UK scientists in early September, which was a huge success, and I'm excited to see where this groundbreaking ocean science partnership between the two countries will go next.



UK and Indian scientists jointly examining samples collected using the Micro FTR plastic pump shared by UK for this project (left), and participating in a deep-sea expedition going to the depth of 1000 meters as part of a trilateral mission with the Maldives (right)

Our Newton Fund work is another source of great pride, exemplifying the impact of when UK and Indian scientists put their heads together to solve pressing global challenges. The **UK Met Office partnered with the Indian Ministry of Earth Sciences (MoES)** to develop weather prediction tools through the **Weather and Climate Science for Service Partnership** (WCSSP) programme supported by Newton Fund. The tool provides timely forecast guidance to produce earlier and more accurate warnings of extreme weather events. It allows Governments, policymakers and citizens more time to act and **reduce the impacts of flooding, monsoons and landslides. Tamil Nadu innovators have taken their Newton-funded projects to the next level to design SEVILI - a low-cost, fully functional robot to help frontline medical personnel serve COVID-19 patients.**

This robot reduces human exposure to the disease by taking medicines, water, food and other necessities to a person in the isolation ward. It is WiFi-enabled, specifically designed to understand Indian accents and uses artificial intelligence to suggest future movements. **SEVILI comes at a quarter of the cost of similar AI-based robots in the marketplace.**

I have the privilege of meeting many "21st century magicians" redefining the course of history from their labs or incubators. My value as a science diplomat is drawing their brilliance together to solve the most pressing problems, save lives or generate prosperity for both countries. It is this mission that motivates me on those bleak Monday mornings in Delhi when the breakthroughs seem far out of reach or conversations stall. On those days, I try to focus on what we've achieved this past year – how our endless Teams calls, and frank exchanges leave the world's oceans cleaner, with fragile biodiversity ecosystems intact for future generations. How our meticulously choreographed WhatsApp and Note Verbales, fired carefully into a system between power cuts and all staff meetings, swirl at the right time led to the vaccination of 10 million British people two weeks later. The British and Indian innovators riding their co-developed electric transport around the IISc, Bangalore campus for the first-time last year made everyone feel supported and optimistic that the future is open, free and full of possibilities. This is where the real magic of science diplomacy lies – brokering science, technology and innovation partnerships that deliver benefits our citizens can touch, see and feel in every corner of our countries. I look forward to continuing my professional time travelling – and hopefully meeting some astronauts along the way.