Last year when I wrote the introduction to the first India Institute Annual report, I reflected on the progress we’d made in establishing a focal point for our interaction with India. Looking at 2020, it is impossible not to view it as exceptional. Early in the year, before COVID-19 had become a fact of life, I was delighted to join both the Vice-Chancellor, Professor Sir David Eastwood, and the Chancellor, Lord Karan Bilimoria on a visit to Delhi.

We saw the progress we’ve made in crucial areas of research as diverse as rail, surgical hygiene and environmental pollution. Working with the British Council and High Commission, we held an event celebrating women in leadership, leading on from our fellowships, which had focused on attracting female academics into STEM subjects. At a gala dinner for stakeholders we met with alumni, stakeholders, and friends who helped establish the University of Birmingham as one of the most engaged British universities in India. We met with Cabinet Ministers Subrahmanyam Jaishankar and Hardeep Singh Puri; both of whom made a valuable contribution to the India Institute by delivering distinguished lectures in Edgbaston, and both of whom were made honorary fellows of the India Institute. Central to all of these celebrations was the opening of the India Institute Office in Delhi.

Establishing a physical presence in India is both a practical and symbolic step. Symbolic in displaying our ongoing, long-term commitment to engaging in India, but also practical as it provides a home for our India-based team and has enabled us to continue to operate through pandemic restrictions in India and the UK in a way that would never have been possible had we not taken this step.

Our Indian partner network expanded to incorporate new education initiatives, notably a partnership with the National Rail Training Institute (NRTI), which will lead to Indian students onto a pathway to study at postgraduate level in Edgbaston, the first such education agreement of this nature, linking one of the world’s biggest railway networks with education delivered through the biggest railways group in Europe.

Whilst the office gave us a footprint in India, the pandemic meant that the wider India Institute structure based in the UK had to innovate in order to continue to be the bridge between colleagues in India and the Edgbaston-based academic community. The results have been better than we could have hoped. We hosted online workshops which enabled potential collaborators from India and the UK to engage in virtual environments and the India Institute live webinar series, through which our academics’ reach extended to audiences in India and the UK simultaneously.

During the second wave of the pandemic in the UK, the weather and the mood across the country was gloomy, but our online Diwali celebration of the festival of light was a particular highlight. Performances from around the world like the Ghungroo dance captured the spirit and energy of the Diwali celebrations we’ve held on campus, but by projecting this through different online platforms, reached audiences far greater in number than we’d ever been able to achieve previously.

So, on reflection, this year has been challenging, but these challenges have vindicated our decision to invest in India, and have provided us with a catalyst to think, and do differently. No matter how 2021 develops, we will ensure the lessons we’ve learned enable us to go from strength to strength.
YEAR IN REVIEW

11 new partnerships
8 Memoranda of Understanding (MoU) Agreements signed
3 key international conferences

13 virtual workshops and webinars
60k views of our online cultural events
1,737 Twitter followers with over 350,000 impressions

International print media coverage reach: 705 million potential views
UoB India work mentioned in international media: 1,880 articles
Advertising Value Equivalent (AVE): £65.25 million

CONTENTS:
2 Welcome
3 Year in review
4 New India Office and stakeholder engagement
6 New partnerships
10 Key conferences and workshops
14 Research highlights
17 Digital campaign
18 Culture and influence
19 Connect with us
NEW INDIA OFFICE AND STAKEHOLDER ENGAGEMENT

NEW INDIA OFFICE
February 2020

Professor Sir David Eastwood, Vice-Chancellor, and Professor Robin Mason, Pro-Vice-Chancellor (International), led a senior delegation of more than 30 academics and researchers to India from 19–21 February 2020. During the whirlwind visit, they inaugurated the India Institute’s new office located in the iconic Taj Mahal Hotel in New Delhi.

The launch of the new India Office marks a key milestone of the University’s engagement in India. Led by the Country Director, Mr Dipankar Chakraborty, the India Office reaffirms the University’s long-term commitment and manages in-country stakeholder engagements, partnerships and recruitment activities across India.
STAKEHOLDER ENGAGEMENT
February 2020

The Vice-Chancellor hosted a reception to meet the University’s partners and alumni and also met with key stakeholders ranging from Cabinet Ministers, policymakers, diplomats, businesses, partner academic institutions and alumni.

Professor Sir David Eastwood met with Ministers Subrahmanyam Jaishankar and Hardeep Singh Puri; both of whom had made a valuable contribution to the India Institute by delivering distinguished lectures in Edgbaston, and both of whom were made honorary fellows of the India Institute. Professor Eastwood also had a productive meeting with Mr Kiren Rijiju, Honourable Minister of Sports and Youth to discuss how the University can use its expertise in sports science to work better with India for athlete and coach training, as well as collaboration for the Commonwealth Games 2022 in Birmingham.
Partnership is crucial to our India engagement strategy and even more important in a unique year like 2020. Thanks to everyone’s hard work and, in particular, the great support from the new India Office, this year we still strived to develop eleven new partnerships for education, CPD training and joint research, despite the COVID-19 pandemic and the lockdown in both countries. These partnerships bring in mutual benefits, help us secure our connections, boost efficiency and improve our resilience in uncertain and difficult times.

NEW PARTNERSHIPS

NATIONAL RAIL AND TRANSPORTATION INSTITUTE (NRTI)

The University and the National Rail and Transport Institute of India (NRTI) have launched a joint MSc programme in Railway Engineering. India’s future rail experts will spend a year studying at each institution, before graduating with an MSc degree from Birmingham and an MS degree from NRTI. Students with a place on NRTI’s MS Railway Systems Engineering and Integration course in 2020/21 will be able to subsequently study at Birmingham for an MSc in Railway Systems Engineering and Integration or Railway Safety and Control Systems. The programme has received a large number of applications and we look forward to welcoming the first cohort in September 2021.

MANIPAL ACADEMY OF HIGHER EDUCATION

Manipal engineering students, after completing two years of study in Manipal, will be able to join Birmingham undergraduate courses in Civil Engineering, Computer Science and Engineering, Electrical and Electronics Engineering, Mechanical Engineering and Mechatronics Engineering. Upon successful completion of the remaining two years, they will graduate with a Birmingham degree.
MINISTRY OF RURAL DEVELOPMENT, GOVERNMENT OF INDIA

The University’s civil engineering experts will work with the Ministry of Rural Development (MoRD) to create a hi-tech monitoring system that will allow transport chiefs to respond to damage and deterioration on the country’s rural roads. University experts will work with one of MoRD’s Rural Connectivity and Training Centres to set up a Global Centre of Excellence in Rural Roads. The initiative will bring together leading research groups and practitioners, initially from India and the UK, to develop a global reach.

INSPIRE INSTITUTE OF SPORT

University experts will work with Inspire Institute of Sport to develop bespoke distance-learning and blended Continuous Professional Development (CPD) programmes for the development of the Institute’s staff, as well as developing scholarships for postgraduate study in sports science. The partnership is an outcome of the India–UK Sports Alliance set up by the UK Government’s Department for International Trade to drive collaboration in sports between the two countries.

CIPLA

Building on the great work Dr Kanta Kumar and Dr Cara Bailey did in India last year, the University is working with CIPLA, a multi-national pharmaceutical company in India, to develop short-term capacity development programmes for Indian healthcare professionals. The programmes will be delivered in India, involving blended learning including face-to-face lectures, interactive workshops, online lectures, role play and supported learning resources. The programmes are expected to improve patient safety, patient satisfaction and patient outcomes.
We have formalised the partnership with PDPU. Researchers from both sides will continue working on the joint ‘India-H2O’ project, which is developing, designing and demonstrating high-recovery, low-cost water treatment systems for saline groundwater, as well as domestic and industrial wastewaters. The institutions will also identify new research and student mobility opportunities.

In the photo from left: Professor Robin Mason, Pro-Vice-Chancellor (International); Dr Rakesh Kumar Vij, Director PDPU; Professor Sir David Eastwood, Vice-Chancellor; Dr Ritu Sharma, Associate Professor PDPU.

The University and ICGEB will be working together on multi-disciplinary research including immunity and infection, as well as projects tackling human diseases and compound screening for identifying autophagy modulators. There will be exchanges of students and staff across relevant projects.

In the photo from left: Miss Surbhi Verma, UoB India Institute Fellow; Dr Dhiraj Kumar, ICGEB New Delhi; Professor Dinakar Salunke, Director, ICGEB New Delhi; Professor Sir David Eastwood, Vice-Chancellor; Dr Sovan Sarkar, Birmingham Fellow; Professor Robin Mason, Pro-Vice-Chancellor (International).

The University and GRDIDSR formalised a partnership as part of the collaborations taking place between India and the UK in the healthcare sector. The partnership is aimed at promoting exchange of students, staff and of best practices, to develop understanding of research and education between the two institutions. Guest lectures have already been delivered to GRDIDSR staff and students since the signing of the formal agreement.

In the photo from left: Professor Robin Mason, Pro-Vice-Chancellor (International); Dr Kavipal Singh, Principal GRDIDSR.
TECHNOFIN

The Birmingham Centre for Railways Research and Education (BCRRE) and Technofin are working together on a bid to provide rail research and consultancy to the Dedicated Freight Corridor Corporation of India Ltd., to support the establishment of a Heavy Haul Research Institute.

INDIA COOLING COALITION

The University has joined the India Cooling Coalition, which is a multi-stakeholder group comprising non-profits, academic and research institutions, and industry associations engaged extensively in sustainable cooling research and application. The coalition provides a national non-governmental platform for dialogue with various national and international stakeholders and jointly recommends policy initiatives to ensure the success of government programmes on smart cities, smart grid, housing, buildings, universal access to power, cold-chain, transport sector and refrigeration servicing sector while ensuring affordable and sustainable cooling for all.

AUTOMOTIVE RESEARCH ASSOCIATION OF INDIA (ARAI)

The University and Government of India’s ARAI are working together to develop and promote environmentally friendly and efficient vehicle technologies. Researchers from ARAI participated in a University-organised sandpit workshop to construct a Road-Map document regarding the challenges of particulate-matter emission reduction in India. University and ARAI researchers have agreed to explore the possibility of joint research in the fields of air quality management, alternate fuels, power train and electric vehicle technology.
Women leaders and scientists are important for any society’s progress and development, and yet various studies have shown there is a significant leadership diversity gap.

Promoting equality and encouraging inclusive leadership in higher education, business and science will help organisations in these sectors to achieve greater prosperity. A panel discussion, organised jointly with the British Council, brought together senior academicians, policymakers, thought leaders and senior decision makers from the higher education, business, science and technology sectors to deliberate on:

- Understanding the barriers to gender equality in leadership
- Discussing the impact of inclusive leadership
- Promoting diversity in leadership

After the successful event, the University has been invited to partner with the British High Commission’s initiative in promoting gender equality in India, which aims at taking practical steps in building a gender-equal society.
NIHR GLOBAL HEALTH RESEARCH UNIT SURGICAL RESEARCH WORKSHOP

The University is leading the NIHR Global Health Research Unit on Global Surgery (GSU), which was established in July 2017. The unit has collaboration with more than ten countries, with India being one of its primary partners.

The Unit has recently published in The Lancet that more people die after surgery than HIV, malaria and TB combined; post-operative death being the third-largest across the globe. The workshop conducted a ‘research prioritisation’ exercise, whereby the research topics were proposed, voted upon and selected by the Unit’s partners. A prioritisation exercise ensures that research topics address the most critical gaps that are most relevant to partners.

The research topics ranged from finding interventions that can reduce post-surgical wound infections, improving perioperative care to reduce mortality, improving access to surgical care, the impact of nutrition on outcomes after cancer surgery, task shifting of surgical care and others.
When places of worship were shut in pandemic lockdown, the UK government introduced a Places of Worship Taskforce and had specific faith roundtables to discuss policy changes and guidance for faith communities. Our prominent scholar Dr Jagbir Jhuti-Johal, senior lecturer in Sikh Studies, has been engaged with various government and Sikh and other faith communities to provide advice to policymakers and ministers. In the Sikh Roundtable, she contributed to disseminating knowledge about religious practices to officials and the impact of possible recommendations. She then took updated guidance and information back into the community so that the worship is done in accordance with the guidance. She has also been working very closely with Sikh community groups to help ensure that gurdwaras understand the legislation, how to control the spread of the virus and protect the community, and now more recently, how to get messaging out regarding the importance of getting vaccinated.

Dr Jhuti-Johal has also conducted a number of podcasts, interviews on BBC Radio 4, and presented on panels with esteemed leaders, such as the ‘Faith in the Commonwealth’ multi-faith webinar featuring a video message from HRH The Prince of Wales. She spoke alongside religious leaders, including Mgr. Antoine Kambanda, Archbishop of Kigali (Roman Catholic), Chief Rabbi Ephraim Mirvis (Jewish) and the Bishop of London, Dame Sarah Mullally (Anglican). In their contributions, they discussed the role religions play in strengthening society around the Commonwealth.
VEHICULAR PARTICULATE MATTER EMISSION CHALLENGES WORKSHOP

Multiple source apportionment studies have proven that the transport sector is a major contributor to high PM2.5 pollution levels and high Air Quality Index (AQI) values. Though research and development of vehicle technologies and various policy implementations have proven to significantly reduce emission levels, the automotive industry still faces many challenges in reducing PM2.5 and PM10 pollution. The University organised an online workshop to discuss challenges faced by the automotive academic and industrial organisations to tackle particle pollution in India. It aimed to find multi-disciplinary solutions on the specific issues relative to particle pollution and vehicle technologies.

INTERSECTING VULNERABILITIES WORKSHOP

The research team in the School of Atmospheric Sciences – A Systems Approach to Air Pollution (ASAP) – is undertaking a project focused on intersecting vulnerability. The project involves three components and three thematic areas of exploration on the theme of intersecting vulnerabilities in relation to air pollution, homelessness and health. The workshop brought together partners from academic institutions and civil society to discuss how the concept of intersectional vulnerability can be deployed, developed and extended. It also deliberated on how the partnerships involved in the project can be mobilised for future funding bids.
At the India Institute, we aim to inspire and support the multi-disciplinary research that tackles the challenges India and the world are facing, such as air pollution, railway network efficiency and the antimicrobial resistance spread in waterways. The joint research we are developing with our Indian partners is making a difference to help answer the global challenges of our age.

**INDIAN RAILWAYS**

Our experts at the railways research group are working with Indian railways to help make the world’s third-largest railway network more efficient. Following the signing of the Memorandum of Understanding with National Rail and Transportation Institute (NRTI), the University has been awarded a study to help implementation of the European Train Control System Level 2 (ETCS L2) signalling system in India’s rail network. The research project will develop a combined signalling and operations-based simulation using the Birmingham Railway Simulation Suite for a particular section of the network. The simulation suite will be used to evaluate the theoretical and practical increases in line capacity available through an upgrade to ETCS level 2. The outputs of the simulation will help to verify requirements for ETCS L2 implementation, support design specifications; and help to understand the practical operational requirements post-ETCS implementation.

**CENTRE OF EXCELLENCE IN POST-HARVEST MANAGEMENT**

The University is leading a consortium of UK post-harvest management (PHM) experts to develop a plan for a UK–India collaboration for the first-of-a-kind ‘Centre of Excellence’ (CoE) in Haryana to support the roll-out of sustainable post-harvest management and cold-chain at scale in India. The project is funded by the British High Commission in India and the Agri-Tech sector team at the Department for International Trade. The ambition is to establish the Centre as the hub for a future global network of CoEs providing thought leadership, practical training and demonstration along the farm to fork continuum necessary to drive meaningful local and global change in sustainably, addressing the critical issues of post-harvest food loss.
INDIA–UK TEAM TACKLES ANTIMICROBIAL RESISTANCE SPREAD IN WATERWAYS

British and Indian experts are joining forces to investigate the impact that releasing antibiotics from antibiotic manufacturing into India’s waterways has on the spread of potentially fatal drug-resistant infections.

An estimated 58,000 babies die in India every year from superbug infections passed on from their mothers, whilst drug-resistant pathogens cause between 28,000 to 38,000 extra deaths in the European Union every year. A research programme led by experts at the University of Birmingham and the Indian Institute of Technology (IIT) Hyderabad has received £1.2 million of UK and Indian funding to explore the role played by India’s rivers in increasing antimicrobial resistance. Supported by the UK’s Natural Environment Research Council (NERC) and India’s Department of Biotechnology (DBT), the cross-disciplinary team includes researchers from Newcastle University and the James Hutton Institute in Scotland, IIT Gandhinagar and IIT Madras.
The University leads on the studies of Autophagy – a biological process through which the cells remove undesirable materials like protein aggregates and pathogens. This is essential for cell survival and combating infections, thus pertinent to human health, whereas malfunction of autophagy contributes to diverse diseases. Dr Sovan Sarkar is our expert in autophagy studies and his research involves understanding the homeostatic role of autophagy and its therapeutic exploitation in pathologies, ranging from rare neurodegenerative disorders like Niemann-Pick disease and Wolfram syndrome to global infectious diseases like tuberculosis. He utilises human pluripotent stem cells for differentiating into brain cells like neurons and immune cells like macrophages. Previously, he identified various autophagy-inducing pathways and small molecules of biomedical relevance. He has over 65 publications with over 19,500 citations and four patents.

Dr Sarkar has an active collaboration with Dr Dhiraj Kumar at the International Centre for Genetic Engineering and Biotechnology (ICGEB) in New Delhi to study the role and pharmacological manipulation of autophagy in pathogen clearance. Apart from research funding from Wellcome Trust and LifeArc, his Indian collaborations are supported by UK–India Education and Research Initiative (UKIERI) grant (2017–2020), Newton-Bhabha PhD Placement Awards (2018, 2020) and UoBII Visiting Fellowship (2019). He has five publications with India, and recently assisted in a Memorandum of Understanding between the University of Birmingham and ICGEB New Delhi.
We ran a ‘Decolonising the Curriculum’ campaign in August 2020 to feature a number of Indian-proud heroes, including Rabindranath Tagore, the first non-European to win the Nobel Prize in Literature; Dr Anandi Joshi, India’s first female physician; Srinivasa Ramanujan, a fantastic and world-changing mathematician, and Sophia Duleep Singh, an exiled princess in the UK who used her power and influence to help women across the world.
In a year of pandemic when physical events are difficult to organise, we continue to build academic connections and cultural ties through digital and innovative ways.

**INDIA INSTITUTE LIVE WEBINARS**

**July–August 2020**

The India Institute ran a series of webinars to celebrate the South Asia Heritage month in July 2020. The topics covered a wide range of themes from the fascinating connections between the colonial South Asia and West Midlands, the remarkable untold stories of a vanishing generation about partition and to a deep dive into the contemporary US-India relations and regional politics and securities.

- **16 July 2020**, Dr Manu Sehgal on South Asia and its History at the University of Birmingham
- **23 July 2020**, Professor Jagbir Jhutti-Johal in conversation with Kavita Puri, BBC producer and author, and Aanchal Malhotra, Indian historian and writer, on Legacies of Partition
- **30 July 2020**, Professor Scott Lucas on ‘The Region Kaleidoscope, the “Trump Variable”: US–India Relations in an Uncertain Time’
THE SPIRIT OF DIWALI VIRTUAL CONCERT
November 2020

Working with Sampad Arts and Heritage, we put together an exclusive virtual concert this year, bringing the Spirit of Diwali celebrations from around the world celebrating the light of joy over darkness, knowledge over ignorance and hope over despair. The virtual concert was streamed on Facebook and YouTube featuring a range of internationally renowned artists from India, Spain and the UK, including award-winning Bollywood music director Amit Trivedi, UK-based musician Jasdeep Degun and trendsetting musicians the Nandy Sisters. The online concert was hugely successful and enjoyed by tens of thousands of viewers across the world.