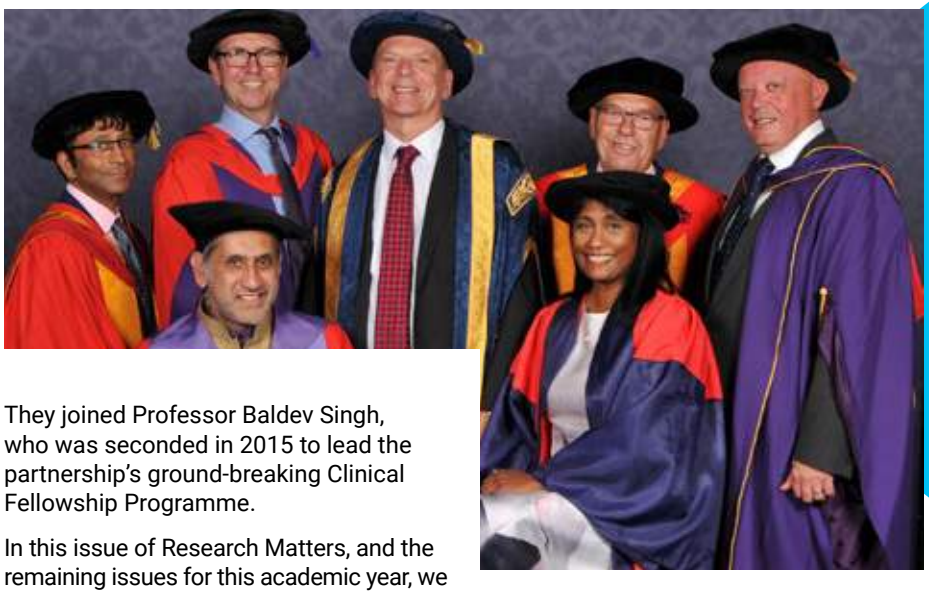
RESEARCH MATTERS

Celebrating research success and opportunities at the University of Wolverhampton

ISSUE 12

New Professors in Clinical Practice and Medicine

In 2019, seven professors in clinical practice and medicine were appointed by the University of Wolverhampton and the Royal Wolverhampton NHS Trust to drive forward medical research, which will improve patient care and treatments regionally, nationally and internationally.



They are also supervising the next generation of researchers, securing external funding for research projects and build new inter-disciplinary research teams.

The new professors are:

- **Professor Rousseau Gama**
  Professor of Laboratory and Metabolic Medicine
- **Professor Supratik Basu**
  Professor of Haematology
- **Professor Thillagavathie Pillay**
  Professor of Neonatology
- **Professor James Cotton**
  Professor of Cardiology
- **Professor David Churchill**
  Professor of Obstetrics
- **Professor Matthew Brookes**
  Professor of Gastroenterology
- **Professor Helen Steed**
  Professor of Gastroenterology

They joined Professor Baldev Singh, who was seconded in 2015 to lead the partnership's ground-breaking Clinical Fellowship Programme.

In this issue of Research Matters, and the remaining issues for this academic year, we will profile the professors individually and highlight the great work they are doing.

Professor Thillagavathie Pillay is a consultant in neonatal intensive care with a special interest in neonatal quality improvement, neonatal service delivery, neonatal immunity and infection, teaching and research.

She is the director of The STORK Collaborative; a network of interested health care teams working towards reducing risks for newborn and infant mortality though parent, carer, and family education and empowerment, using the STORK Programme, in the Midlands.

In the Wolverhampton region, around six per 1,000 live born babies die in the first year of life (2016-2018 data). This infant mortality rate is almost double the national average. While much has been learnt in recent years, the reasons for the high infant mortality in the region are not fully understood: this has been the pattern for the last century in the region.

To help tackle this issue, the STORK Programme explores engaging parents, carers and families as partners in understanding some of the known risks, and empowering them with the relevant knowledge and skills to contribute to reducing these risks. The programme provides information around recognising the signs of illness in their baby, breast feeding support, safe sleeping and reducing the risk for Sudden Infant Death, bystander basic life support, how to deal with a choking child (for older children), the harmful effects of smoking in pregnancy and after, and local signposting to healthy lifestyles support.

Professor Pillay is also the chief investigator on OptiPrem, a £1 million National Institute of Health research grant which provides insights into the best future locations in England for the birth and care of preterm babies between 27 and 31 weeks gestation.

Cover story continued overleaf...

EDITOR'S WELCOME

In July this year, the Department for Business and Industry published the Research and Development (R&D) Roadmap, which sets out the vision and ambition for science, research, and innovation in the UK.

There are many areas of congruence with our own research strategy – a focus on research communities and research culture, investment in research, and a place-based focus. An emphasis on reducing bureaucracy in research is also a very welcome development. We now need to get involved and make sure that these ambitions translate into plans, which result in actual benefits to our researchers. Email me if you want to participate in a working group that we have set up.

In this issue, we report on our ongoing commitment to the Researcher Development Concordat, which we renewed by signing the revised Concordat. One of the commitments we make as institution is that we provide opportunities to engage with a minimum of 10 days professional development (pro-rata) per year. This may include attending formal or informal training, serving on internal or external committees, mentoring staff or participating in knowledge exchange or public engagement activities. If you have examples of professional development activities that could be of interest to other researchers, please email them so we can share these more widely. Equally, drop me a line if you want to get involved in the work of the Researcher Development Concordat.

We have recently launched the next round of applications for the Lord Paul Fellowship scheme. This fund is targeted at early career researchers who want to lead on the design and delivery of an inter-disciplinary research project, supported by a programme of training and development. For more information and to apply, visit the Doctoral College webpage. UKRI have announced that they will be launching a new early career research forum – please consider submitting an Expression of Interest via the UKRI website if you are interested.

This edition of Research Matters comes at the end of one of the most difficult years that many of us have experienced in academia. I would like to thank our research community for all your efforts, and the many acts of help and kindness. I hope you and your loved ones have a good vacation.

Professor Silke Machold
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Front cover story cont.

New Professors in Clinical Practice and Medicine

Professor Matthew Brookes is a consultant clinical gastroenterologist at the Royal Wolverhampton NHS Trust, where he is actively undertaking research into colorectal cancer and inflammatory bowel disease.

This innovative research programme has led to insights into the interaction of colonic iron and the development of colon cancer.

His papers in this field have given the first insight into iron absorption within colonic cells, and he is now evaluating how the iron present within the colon interacts with the gut microbiome and mucosal immune system in this process.

His trials in the field of pre-operative care have evaluated novel treatment options for anaemia, which have allowed treatment pathways to be developed and have changed practice. Further projects have been developed to expand on this work and explore opportunities to treat anaemia in other settings to improve patient outcomes, including palliative care.

Professor Brookes is the deputy chair of the national speciality group for gastroenterology within the National Institute for Health Research Clinical Research Network (NiHR CRN). In this role, he leads a project to support the funding of new chief investigators across the West Midlands. This novel project will lead to the development of a future, research-active NHS workforce.

He is also a member of the Inflammatory Bowel Disease UK (IBDUK) board where he is engaged in developing and supporting a programme to improve standards of care and treatment for everyone with Inflammatory Bowel Disease.

University academic behind new Covid-19 process to help small businesses

Professor Peter Walton, Director of the Law Research Centre, has been instrumental in the creation of a new process which aims to provide support with debt for small and medium-sized enterprises during the current pandemic.

It is designed for use by companies whose businesses have been hit by Covid-19 and which need some time to get their businesses fully operational. It provides for a breathing space period followed by a delayed payment of the company's debts and will hopefully help save jobs.

Professor Walton said: "Many fundamentally sound businesses have become distressed due to the stop/start nature of trading conditions.

"The options for such companies are reasonably limited and may not lead to an optimum outcome for the companies or their creditors; administration and liquidation see a great deal of a company's wealth being expended on costs and fees."

Professor Walton recommended the insolvency community to engage in a significant, pro-bono activity, which he co-led, to react to the Covid-19 crisis.

As a result, the Association of Business Recovery Professionals (R3) has launched a new Covid-19 Company Voluntary Arrangement (CVA) Standard Form for SME businesses.

A CVA allows a company to settle debts by delaying payment of debts or by agreeing with creditors to pay only a proportion of the amount owed.

Creditors with pre-CVA debts are consequently prevented from enforcing their debts against the company while the CVA is in operation. Trading costs incurred during the CVA are paid out of new trading income.

The Standard Form documentation has been made freely available and follows several months of meetings with various Government and commercial bodies, including HMRC, and speaking with many expert practitioners. It has been adapted for use in Scotland and Northern Ireland. Relevant documentation is available online.

EM TTI

European Master's in Technology for Translation and Interpreting

The European Master's in Technology for Translation and Interpreting (EM TTI) addresses the need for a new generation of translators and interpreters through a programme of outstanding academic quality, in line with the Erasmus+ ethos of building a stronger workforce with the breadth of skills and perspectives needed to stimulate developments in the field.

Funded by Erasmus+, the programme comprises the University of Wolverhampton as coordinator; University of Malaga; New Bulgarian University; and Ghent University.

This consortium is complemented by a network of partners including leading companies, user organisations and non-EC universities to ensure EM TTI delivers both educational quality and vocational skills to maximise students' career potential.

Professor Ruslan Mitkov, project leader and director of RIILP, explains: "The amount of text available in electronic format is growing exponentially, and much of this information has to be translated or interpreted.

"The result is a pressing demand for a new translators and interpreters relying less on traditional methods and instead benefitting from a range of time and labour-efficient technological tools.

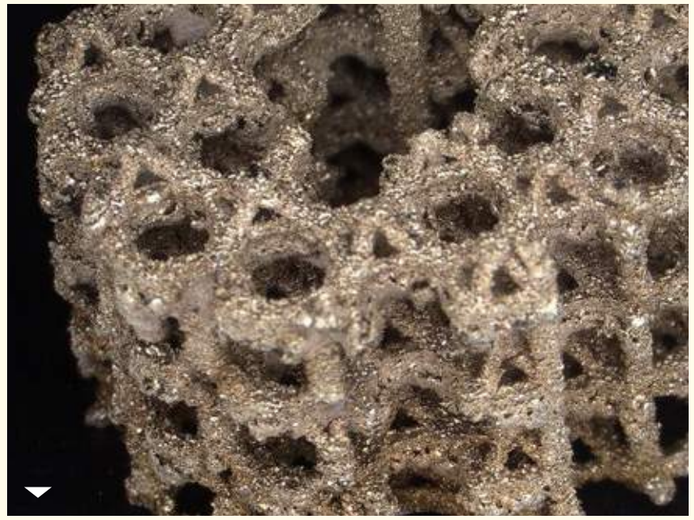
"EM TTI was set up to address this and meet the needs of the industry."

The programme is research-intensive, with dissertation topics based on realistic problems, complemented by placements at associate partners, enabling students to use real-life experience as part of their work.

> *"I have a chance to learn from the professionals in the field, and I believe that this experience will help me to pursue a successful career as a translator and interpreter."* ***Karina Arzumanyan***.

> *"The programme has opened my eyes to the world of language technology development: an industry in which I hope to work after graduating."* ***Rea Bartlett***.

> *"I am really enjoying EM TTI. I have had the opportunity to meet great professors and researchers, study in more depth various aspects and areas related to translation and interpreting, attend international meetings and conferences and improve my personal skills."* ***Nadia Basciu***.



3D PRINTED SILVER IMPLANTS HELP TACKLE INFECTIONS

An interdisciplinary team of researchers from the University of Wolverhampton and the University of Sussex are investigating the possibility of 3D-printing patient-specific silver-based implants to reduce infection and antimicrobial resistance.

Despite substantial advances in invasive surgery and aseptic techniques, implant-related infection remains an all too common complication.

The team, Dr Arun Arjunan, John Robinson, Dr Enas Al Ani, Dr Wayne Heaselgrave, Dr Ahmad Baroutaji and Dr Chang Wang, reported that 3D printed silver implants and tissue engineering scaffolds provides antibacterial protection, while featuring complex porous architecture, suitable for patient-specific tissue reconstruction.

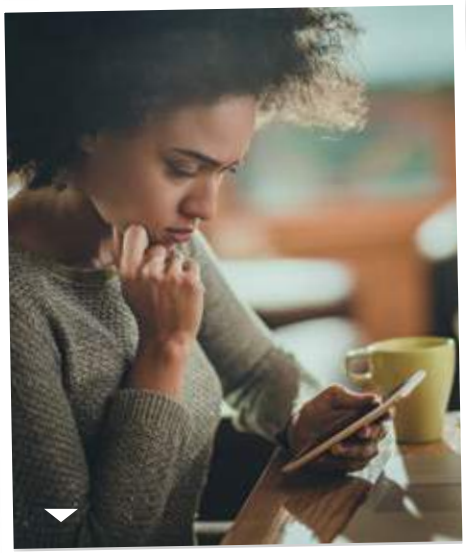
Dr Arjunan, Reader in Additive Manufacturing of Functional Materials, said: "Millions of people across the world suffer from inflammatory and degenerative diseases associated with bone and joints requiring implants where infection is a serious complication resulting in pain, mortality, prolonged recovery, and antimicrobial resistance. Therefore, reducing the risk of infection associated with tissue implants requires imminent attention and pure silver offers enormous potential."

In the study, which is the first step towards developing 3D-printed silver-based infection-resistant porous implants, the team fabricated 99.9% pure silver through selective laser melting. The properties of the resulting silver and two fully porous bone scaffolds were investigated to assess the suitability for tissue engineering.

The antimicrobial efficacy of printed silver was tested against the common implant infection-causing Staphylococcus aureus and led to 90% kill in four hours and 99.9% in 14 hours. The study also shows that 3D-printed pure silver scaffolds can be used as a cancellous bone replacement as they offer comparable strength.

The study's findings will serve as the basis for the development of new functional silver-based biomaterial and alloys suitable for infection-resistant total-bone replacement, reducing the reliance on antibiotics and improving patient recovery.

The full study can be accessed at https://doi.org/10.1016/j.jmbbm.2020.104090



How harmful is real-world violence on social media?

The impact of viewing explicit real-world violent content via social media will be the focus of a new study by University of Wolverhampton researchers funded by Facebook Research.

There has been extensive research into the impacts of exposure to fictional violent media, for example in videogames and films. Research has also demonstrated that news footage of shootings or bombings can cause some people to enter a 'cycle of distress' where they increasingly worry about future events.

However, the uncontrolled and uncensored exchange of footage within individuals' social media networks has been virtually unstudied. Some internet users interact with the material as a form of entertainment while others are unwittingly exposed to it, with potential adverse consequences suspected but, as yet, poorly understood.

Dr Joanne Lloyd and Dr Laura Nicklin will be working as co-principal investigators on the cyberpsychology project 'Exploring harmful [mis]information via normalised online violent content' which will start next year.

Dr Joanne Lloyd said: "Both the recording and exchanging of these acts would be considered by most as deviant, however, they risk becoming normalised where individuals are misinformed through frequent engagement within a peer group, both physical and digital social networks, or as part of an emerging subculture; particularly if unchallenged by external influences.

"A lack of knowledge about the prevalence and frequency of this behaviour, its psycho-social predictors, or its potential to cause psychological harm, mean that this funded research can play a crucial role in improving our understanding of this phenomenon."

During the project, they will respectively explore in-depth experiences of this phenomenon and learn more about how individual differences across a larger number of people predict risks of harm from, or resilience to, this experience.

University signs Concordat to Support the Career Development of Researchers

The University of Wolverhampton has signed and is committed to the principles of an agreement that supports researchers' career development.

The UK Concordat to Support the Career Development of Researchers is an agreement between funders and employers of research staff to improve the employment and support for researchers and research careers in UK higher education.

It sets out the expectations and responsibilities of researchers, their managers, employers, and funders. It aims to increase the attractiveness and sustainability of research careers in the UK and to improve the quantity, quality and impact of research for the benefit of UK society and the economy, thereby sustaining research excellence in the UK and bringing benefits to the health, economy, and wellbeing of our nation.

The three core principles are:

- Environment and culture – Excellent research requires a supportive and inclusive research culture
- Employment – Researchers are recruited, employed and managed under conditions that recognise and value their contributions
- Professional and career development – These are integral to enabling researchers to develop their full potential.

The Researcher Development Concordat Sub-Committee of URC has formal responsibility for annual review and monitoring of our institutional action plan. The sub-committee is chaired by the Dean of Research, and includes membership from all faculties and research institutes as well as the Director of Doctoral College and the Deputy Director of HR (Strategic Development).

Update on REF

Following the revised guidance by the funding bodies in relation to Covid-19, we updated and published a revision to our Code of Practice. We also contacted staff with a further call to voluntarily declare individual circumstances, including the new Covid-19 related circumstances. Between August and November 2020, we have also completed the second output review and colleagues will be informed in early December of the final output selections. November was also the internal deadline for impact case studies and environment statements. The next few months will focus on final validation and submission checks. We have also received further instructions on submission of books and book chapters from the REF team, and will share this with colleagues as soon as we get clarification on remaining queries.

Find out more about our research at: **wlv.ac.uk/research**