The important thing is not to stop questioning. Curiosity has its own reason for existing.

Albert Einstein
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Welcome

Welcome to the University of Wolverhampton’s research brochure. In it we hope to showcase the often extraordinary and life-changing work of our research community.

Research is an important determinant of a university’s reputation, and at the University of Wolverhampton, we have made significant investment in growing that reputation over the last 20 years. As a result, we now have national and international recognition for some of the research we undertake.

We are recognised as a major centre for brain tumour research, developing new drugs which improve life survival rates. You can read more about the Brain Tumour UK Neuro-oncology Centre on pages 9-12. We are world-leading in informational linguistic processing – trying to better understand how computers can interact with human language. Find out more about this fascinating Centre and its leading Professors on pages 33-36.

Our research centres encompass a broad range of disciplines. Through this publication you can explore their work: from the use of recycled materials in construction, the development of the education system in the West Midlands, and representations of social and cultural reality, to engineering and manufacturing innovation, boardroom efficacy and governance, and the latest developments in healthcare, sport, exercise and performance.

We hope you’ll be inspired by the life-changing work of our researchers.

Professor Ian Oakes
Pro Vice-Chancellor,
Research and Enterprise
Through our broad range of research activities, we collaborate with organisations and universities to provide solutions for tomorrow.

**World-leading**
The University of Wolverhampton has areas of research ranked among the best in the world. The 2008 Research Assessment Exercise (RAE) produced outstanding results for the University, with research achieving the highest four-star rating. Eight of the 11 research areas examined had work in this category. As a result, our allocation from the Higher Education Funding Council for England of £1.9 million for research was the highest amount for any new university in the West Midlands.

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**At the forefront of knowledge**
We are now making preparations for the Research Excellence Framework (REF) 2014 and are aiming for even more of our research to be classed as “world-leading” – the highest accolade.

**Impact**
Our research activities impact on business, public and voluntary sector organisations in a variety of different ways by advancing knowledge or addressing real world problems.

Across the University there are a growing number of dedicated Research Institutes and Centres that cover a variety of research bases – ranging from art and design practices such as glassforming, to new discoveries in diabetes. Working with industry and commerce, as well as producing first-class research outputs, they bring together scholars in a programme of research projects, conferences/seminars, and knowledge exchange.

**Public lectures**
Our public lectures give University and visiting speakers the chance to talk about their research to staff, students and members of the public. With free entry, they provide the perfect opportunity to discuss intriguing and topical matters with the speaker and other members of the audience.

Recent high profile lectures have covered subjects as wide-ranging as DNA fingerprinting by Sir Alec Jeffreys, the geneticist who developed techniques for DNA profiling, and our annual Holocaust Memorial Day Lecture, which recently gave the stage to Frank Diamand, who was deported to Bergen Belsen concentration camp.
Our vision for higher education goes beyond opening minds and widening individual horizons. We want our graduates to be valuable assets to the global economies they will come to serve. Businesses come back to us because we provide them with solutions that help them to sustain their future. Our research focuses on aspects of life that affect us all.

Global outlook
Our University is truly global, with over 2,500 overseas students from more than 100 countries studying with us. We have strong links with several overseas universities, and student exchanges with 30 countries including China, India and United Arab Emirates; and, as part of our commitment to the global economy, we have recently launched a new branch campus in Mauritius. Our regional offices in China, Central Europe, South Asia, South East Asia and West Africa give us excellent bases from which to expand our educational activities.

The University continues to have influence across the world, developing students and staff who are entrepreneurial, eminently employable and well-connected within a research and professionally informed environment. We aim to establish further research partnerships across the world, building on our excellent reputation.

Exceptional facilities
We have invested £125 million over the last 15 years to ensure that our facilities are world class. For our science facilities alone, there has been an investment of £25 million to provide advanced scientific equipment and cutting-edge laboratory accommodation for biomedical science.

In addition, the University has dedicated engineering and technology facilities, including a prototyping laboratory and virtual reality suite, and spaces for teaching, research and consultancy.

From laboratories to law courts, and from The Performance Hub to our rapid manufacturing equipment, we have professional facilities at our fingertips to aid our thriving research community.

Enterprise and employability
The University is a provider of Knowledge Transfer Partnerships (KTP). KTP is a government-backed initiative which places recently qualified graduates within businesses to work on strategic projects which boost the performance and profitability of the host companies. KTPs ensure that our expertise is transferred from the University into business, but also from business back into our Research Centres – ensuring business relevance.

The University has two incubator facilities providing support to new business start-ups and those in the early stages of operation – the e-Innovation Centre in Telford and SP/ARK, based at the University of Wolverhampton Science Park. The incubator space is ideal for individuals who want to develop their embryo business ideas without incurring vast expense. Both sites offer access to a wide range of business support and advice.

Through knowledge, innovation and enterprise we, at the University of Wolverhampton, aim to transform the lives of those who engage with us.
Our vision for higher education goes beyond opening minds and widening individual horizons.
The Brain Tumour UK Neuro-oncology Centre leads the way in identifying the genetic causes of brain tumours and the treatments to deal with them, helping the 8,500 people in the UK who will develop a brain tumour this year.

**Research interests**
Investment from Brain Tumour UK has allowed two research groups – one directed by Professor John Darling and one directed by Dr Tracy Warr – to bring together specialist knowledge in order to develop new medicines for brain tumours based on a greater understanding of their fundamental biology.

The aims of the Research Centre are to:
- understand the genetic mechanisms that drive tumour development
- identify predictive markers of clinical outcome, including malignant progression, recurrence, response to therapy and overall survival
- understand the molecular basis of drug resistance in these tumours
- identify new targets and develop new drugs that can improve survival.

A number of other scientists at the University of Wolverhampton collaborate with the Neuro-oncology Research Centre bringing additional expertise gained in other areas of cancer research to combat these devastating tumours.

**Application of research**
The Centre has the largest collection of short-term brain tumour cell cultures in the UK, and an internationally unrivalled collection of childhood brain tumour cultures in the world – more than 3,000. With their combined expertise, the team are developing new agents to target high-grade brain tumours, and learning how low-grade brain tumours mutate into malignant tumours. Tracy’s research team has already identified a significant gene in nine out of 10 malignant astrocytomomas.

To find out more, contact:
Tel: 01902 322 667
Email: sas-enquiries@wlv.ac.uk
www.wlv.ac.uk/braintumour

**Q&A with Professor John Darling**

Q: What does the future hold for brain tumour research?
A: The next 10 years will see the biggest benefit for people with brain tumours. This will include the development of new, more targeted and more effective treatments.

I am most proud of my contribution to the discovery of cell-based technology to predict how patients will respond to chemotherapy. It has taken years of fine-tuning for this to make its way into practice, and patients are only starting to see the real benefits now.

The work undertaken by myself and the team is likely to make possible the identification of the 20% of glioblastoma patients who respond to chemotherapy, so their treatment can be intensified. It could also mean new ways of treating patients who are traditionally resistant to chemotherapy.
Pioneering new discoveries in the fight against cancer

Brain tumours are the sixth most common cancer in adults, accounting for 2% of all tumours, and the most common form of solid cancer in children. Referred to as ‘Cinderella Cancer’, brain tumour research receives very little funding, which has undoubtedly hindered the development of new and effective treatments.

Researchers from the Brain Tumour UK Neuro-oncology Research Centre at the University of Wolverhampton, co-directed by Professor John Darling and Dr Tracy Warr, are leading the way in identifying the genetic changes that lead to brain tumour development and developing new treatments to deal with them.

Unlike other cancers, brain tumours respond poorly to therapy as they are resistant to toxic therapies. Dr Weiguang Wang is working with Professor John Darling to determine if established drugs can be combined with the anti-cancer drugs used to treat brain tumours in order to develop better chemotherapies for brain tumours.

“We’ve made excellent progress in some adult brain tumours already, but there is still much to be done for childhood tumours and rarer adult tumours” says Professor Darling.

The development of the Neuro-oncology Research Centre has acted as a catalyst for the development of an ever widening research programme aimed at trying to understand the biology of these important and difficult to treat tumours. The Centre is confident that it is in an excellent position to see these laboratory findings translated into new, effective and safe therapies for patients in the coming years.

Professor John Darling is Dean of Research, Director of the Research Institute of Healthcare Science and Professor of Biomedical Science at the University. As a leading figure in the field of brain tumour research, his work is set to have a significant impact.

The University is a founder member of Brain Tumour North West, a strategic alliance of brain tumour scientists and clinicians interested in treating brain tumours across north west England. This alliance will ensure that laboratory findings can be rapidly and effectively translated into patients’ care.

“We want our research to translate into new medicines that will make a difference to people’s lives.

Professor John Darling
The Centre brings together researchers from the fields of the Built Environment, Information Systems and Learning Technology. The theme that binds these together is the interaction between technology and people, the way it changes their lives and jobs, and how the technology can be used to provide sustainability into the future.

**Research interests**
Specific fields of interest include: information systems for management; construction management, project management; technology-mediated training and education; civil engineering; and architecture and urban planning.

**Application of research**
The Centre’s research activity is available to support and enhance the activities of industrial, commercial and public sector organisations through four routes:

- **The Learning Lab** – a research group working with emergent and innovative mobile technologies to deliver, enhance and support learning. The Lab aims to use technology to make learning more interesting and accessible to individuals and communities, and has been instrumental in using mobile technologies to provide new learning opportunities in Africa.

- **Built Environment and Civil Engineering Research Group** – the work of this group is centred around sustainability. One strand is investigating the use of recycled materials in construction, and has recently been supported by a major EU grant. Another looks at sustainable transport infrastructure.

- **Architecture and Urban Planning Research Group** – this group undertakes research into architecture, and virtual reality in the built environment, particularly building information systems, and has major links in the Middle East.

- **Information Systems and Security Research Group** – has been instrumental in leading IT adoption activities for small companies at a European level. Another major research area is IT security, and the group here has recently led a major European network in this area.

To find out more, contact:
Tel: 01902 321 402
Email: stech@wlv.ac.uk
www.wlv.ac.uk/stech/research

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Our drive towards sustainability in building, including the use of recycled materials in building structures, has recently received funding from the EU.

**Professor Robert Newman**
Centre for Art, Design, Research and Experimentation (CADRE)

CADRE focuses on the effect of art and design on society – from digital media, to performance, to contemporary visual art. The Centre investigates a broad range of artistic practices that influence the way we think, feel and behave.

Research interests
The Centre’s overall concern lies in art practices that involve social interaction and public engagement. The social impact inherent in new interactive technologies, the theory and practice of cultural agency, experiments in radical democracy and the exploring of material processes for performative objects remain the hallmark of both the intellectual and practical research in its five research groups:

- Art Critique and Social Practice
- Materials and Theoretical Practice
- Digital Theory Technology and Practice
- Communication and Pedagogy
- Creative Processes in the Performing Arts.

Application of research
Recent research investigations have included:

- Dualism and the Critical Languages of Portraiture
- Instances of the Emergence of the Documentary, Relational and Post-Relational Art Practice
- Art, Landscape and Material, Subject into Media.

Through the CADRE research groups, academics and artists are invited to give public lectures which are open to all students, staff and members of the public. The groups also provide the structure within the Centre for knowledge transfer and research and development.

To find out more, contact:
Tel: 01902 322 213
Email: art-design@wlv.ac.uk
www.wlv.ac.uk/cadre

“...
We recognise that real-world problems require creative solutions that go beyond the traditions of a single discipline, and are eager to foster links across disciplines.
Professor Dew Harrison

“...
Clear vision

The University of Wolverhampton was a pioneer in the education of glass art, and its glass design course was the first in the country. Established in 1854, the course has been in continuous operation ever since. Emerging from industrial roots, the studio-glass movement focused upon material research to enable new levels of individual creativity and expression.

Professor of Glass Studies and active member of the University’s Centre for Art, Design, Research and Experimentation’s (CADRE) Material and Theoretical Practice Research Group, Keith Cummings, is a key figure in the studio glass movement.

In 1980 Keith published his work ‘The Technique of Glass Forming’, which quickly became the bible for the new breed of glass sculptors and a landmark in the dissemination of glassmaking knowledge.

With his first-hand study of ancient glassware to work out their methods of manufacture by a reverse logic, Keith has radically altered the views of notable archaeologists – who until then had held their own egocentric views of how ancient glass had been made. Those ancient glass influences have been paramount in his work from the beginning – but gradually other influences and other materials, including metals, have resulted in a body of work in which he has led by example.

As well as contributing to a number of publications, his glasswork appears in public and private collections around the world, including the Victoria & Albert Museum, London; Museum of Scotland, Edinburgh; Birmingham Museum & Art Gallery; Corning Museum of Glass, New York; Museum of Decorative Art, Paris; and the Shanghai Museum of Glass.

The publication of his 2007 seminal book ‘The Techniques of Kiln-formed Glass’ in a Chinese edition marked Keith’s impact on the next generation of glass artists practising today in China, and the effect of the University of Wolverhampton glass programme upon newly established university programmes in studio glass in Shanghai and Beijing.

In 2008 he was honoured with the first major retrospective exhibition of his work at Bilston Craft Gallery, Glass Routes: Wolverhampton to China. The exhibition examined the impact and influence of Keith’s position as Professor of Glass Studies at the School of Art & Design, and his central role in the history of glass education in the UK and China.

Professor Keith Cummings has been working with glass for almost 50 years. His influences are drawn from a fascination with arms and armour, ancient machines, natural form, and landscape.

CADRE’s Material and Theoretical Practice Research Group brings together researchers rooted in studio-based, creative and professional practices and is based upon investigations into methods of thinking through making.
The Centre for Developmental and Applied Research in Education (CeDARE) brings together researchers and academics from across the University.

**Research interests**
The Centre has a developing reputation with central and local government, schools, and a range of agencies, community organisations and practitioners for high quality research; and aims to:

- impact upon the beliefs, decisions and practices of those engaged in education to enhance opportunities and the quality of provision
- make research accessible and meaningful to all those involved in education
- create and bring together local, national and international partnerships and networks of researchers and practitioners to support the development of the education system in the West Midlands.

**Application of research**
Since its inception, the Centre has undertaken over 100 knowledge and practice transfer projects. This has involved nearly 30 separate contracts with local authorities, work with five regional organisations and over 20 national projects, including work with UK industry and commerce. These have resulted in the production of a range of products and programmes to support the wider use of research outputs, research and evidence-based approaches to policy and programme design, as well as bespoke consultancy.

To find out more, contact:
Tel: 01902 323 242
Email: cedare@wlv.ac.uk
www.wlv.ac.uk/cedare
Building on a long tradition of cultural studies at the University, scholars grouped in the Centre carry out research into representations of social and cultural realities. Areas of particular interest are gender and lived experience, discourses of mental illness, social exclusion, as well as media, religion and popular culture.

**Research interests**
Research into gender and lived experience focuses in particular on:
- masculinity and fatherhood and mental illness
- the experience of organ and tissue transplantation
- experience of psychosis.

Research into social exclusion and trauma has a particular focus on the following areas:
- post-accession migrants to the United Kingdom
- child forced-labourers
- narratives of post-Communist transformation in Central and Eastern Europe.

Media research projects include:
- psychoanalysis and space in American and British cinema
- representations of insanity and trauma in war films
- landscape and British cinema.

**Application of research**
The Centre has built up a vast amount of internationally recognised publications and externally funded projects. Current research being undertaken focuses on marginalisation and trauma in media.

To find out more, contact:
Tel: 01902 322 484
Email: lssc-enquiries@wlv.ac.uk
www.wlv.ac.uk/cdcs

**Q&A** with Professor Dariusz Galasinski

**What research are you currently focusing on?**
I’m primarily interested in how people with a diagnosis of mental illness speak about their experiences. I want to uncover how their mental illness is socially represented, discursively constructed and made available in a story. I’m particularly interested in exploring the links between the narratives of mental illness with those of masculinity and fatherhood. I am also very keen on developing links between discourse analytic work on mental illness and clinical practice.
Engineering and Computer Science Research Centre

A Centre with its eye firmly on the future; exploring cutting-edge technology in the fields of engineering, computing, gaming and materials science to create both virtual environments and real systems.

**Research interests**
The Centre undertakes research in the areas of:
- aerospace and automotive engineering
- medical engineering
- engineering management and knowledge based engineering
- advanced manufacturing and its associated simulation
- rapid manufacturing and prototyping
- materials science
- pervasive computing
- gaming
- electronics, sensors and communications systems
- graphics and image analysis
- innovation and intellectual property rights (IPR) commercialisation through the industrially sponsored Caparo Innovation Centre.

**Application of research**
The Centre promotes Engineering and Computer Science research in the development of innovative technologies across a range of industries and research fields.

Example applications include: the manufacture of tooling and component parts through Direct Laser Sintering and Melting Technology; superplastic forming of metals (simulation and prototyping); signal processing of brain-computer interfaces and emerging biometrics; dynamic simulation of implants for knee, hip and shoulder; radio-frequency identification and ambient intelligence to provide original solutions to real-world problems, particularly in the areas of sustainability, food and agriculture; research into the next generation of computer games with particular emphasis on the use of artificial intelligence and games simulation for learning.

To find out more, contact:
Tel: 01902 321 402
Email: stech@wlv.ac.uk
www.wlv.ac.uk/stech/research
Evolution in engineering analysis

Continued investment in product enhancement can help UK manufacturers as global competition intensifies. With manufacturing “back on the map” for the UK, and an increasingly competitive global manufacturing landscape, the ability to rapidly respond to the needs of the customer will help some businesses stay one step ahead of their competition.

Often companies are unable to access research expertise to enable product enhancement; one way of achieving this is through a Knowledge Transfer Partnership (KTP). The KTP programme, which is part-funded by Government, allows companies to access the academic expertise, as well as the facilities and skills of a university. In this case the expert was Dr Chang Wang.

Chang has a background in engineering design and finite element analysis, and his research has enabled Fabweld Steel Products Ltd to incorporate finite element analysis into the design of their access cover products.

The company required a numerical representation of their products which would conform to British Standards; and the underpinning knowledge and expertise to carry out their own structural analysis in the future. Thanks to Chang, they are now able to provide quick and accurate sales quotations, as well as generate cutting instructions and product drawings – making the whole process much slicker.

By embedding technical expertise in-house, the company can now provide their clients with technical data and calculations they previously did not have the capability to generate.

Further work Chang has undertaken with the Hadley Group includes the complex analytical analysis of sleeved purlin joint systems, enabling the company to compare themselves with their competitors. The Hadley Group recognised the significance of Chang’s research to their company and have sponsored his position within the University of Wolverhampton as the Hadley Group Reader in Engineering Analysis.

In addition, Chang worked on a three-year project to develop the theoretical calculations that underpin the behaviour of Hadley’s patented processes and products; enabling the company to enhance their technical confidence when talking to customers. This work resulted in the sponsorship of two PhD projects, one related to the thermal-acoustic behaviour of partitions constructed from cold rolled steel sections and plasterboard; the second looking at the optimisation of structural joints for large-span cold-rolled purlins.

Chang’s research interests include combining mechanical, structural and biomechanical engineering. He applies his expertise to a range of engineering problems, including: non-linear metal forming analysis, biomimetic applications and medical implant behaviour.
Dr Martin English, CEng BEng EngD MIMechE, Design and Development Manager, Hadley Group, tells us how Chang’s expertise has helped shape the company.

“Dr Chang Wang has provided technical support and guidance on a range of highly complex structural problems that have enabled the Hadley Group to make substantial progress in developing new products and supporting our published performance data. His expertise in finite element methods has also proven to be invaluable in a variety of analysis problems ranging from acoustic modelling to highly non-linear mechanical simulations. This work has taken the Hadley Group into a new era of technical ability that offers significant competitive advantage for the future.”
The aim of the Centre is to develop a new understanding between higher education, health and social care organisations, and businesses to improve the planning, delivery and evaluation of services, and development of people.

**Research interests**
CHSCI seeks to promote excellence in health and social care research, focusing on both the science and the art of preventing disease, prolonging life and promoting health and social wellbeing.

There are four main themes within CHSCI:
- Inequalities and Global Issues in Health and Social Welfare
- Mental Health and Long-term Conditions
- Quality and Partnerships in Health and Social Care Practice
- Public Health and Integrated Care.

Our vision encompasses contributing to the development of appropriate policies and interventions locally, nationally and internationally.

**Application of research**
A multi-disciplinary and thematic approach to research means that projects are commissioned from a variety of sources across the university, private and public sectors.

The Centre’s work incorporates collaboration at local, national and international levels with professional and non-professional groups represented within the health and social care sectors. Engagement with business, voluntary and charitable organisations within the local economy is key to their current and future development.

“To find out more, contact:
Tel: 01902 518 614
Email: chsci@wlv.ac.uk
www.wlv.ac.uk/chsci

“There is a commitment to research that is informed by practice and informed by the views of service users and staff. The Centre’s work incorporates multi-disciplinary and inter-professional collaboration with local, national and international colleagues within the health and social care sector. Our thematic approach to engaging with businesses and charitable organisations in the community ensures that we continue to provide a high quality service which is key to our current and future development. The broad focus of each research theme means it is easy to modify the range and scope of the indicative content within our research focus, which allows us to respond quickly to changes in industry.”

**Professor Laura Serrant-Green,**
**Director of Research and Enterprise**
Pioneering research into cancer, diabetes, immunity, disinfection and the psychology behind coping with illness are just some of the areas under investigation by RIHS.

**Research interests**
The Institute supports interdisciplinary research with appropriate critical mass, providing a platform for the development and promotion of healthcare science research activities. Research is divided into several research groups, covering:

- cancer
- diabetes, physiology and metabolic medicine
- food biology, medical microbiology and disinfection
- molecular immunology
- molecular pharmacology
- pharmacy
- psychology of health
- sport, exercise and health.

There are also two further research groups in development; one in applied research in health policy evaluation and practice, and one in clinical physiology.

**Application of research**
The Institute provides a platform for the development and promotion of healthcare science research activities; collaborating with local NHS Trusts and the National Cancer Research Institute-funded Black Country Cancer Research Network to ensure research is applied to clinical practice.

RIHS strives to contribute to national and international developments in patient-centred healthcare and pharmaceuticals, and inform policies and healthcare practices. A number of consultants in local NHS Trusts hold honorary academic contracts with the University, providing further links between the University and the NHS. To underpin our research activity, the University has invested heavily in the recruitment of research-active staff and the provision of high-quality research facilities, resulting in world-class refurbished laboratory accommodation for biomedical science, and new-build support for psychology and exercise physiology research. In addition, over the last two years there has been considerable investment in scientific equipment.

To find out more, contact:
Tel: 01902 321 129
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www.wlv.ac.uk/rihs
The Centre for Historical Research is one of the University of Wolverhampton’s most active Research Centres. The Centre has an established research culture with a number of its publications classed as world-leading in the last Research Assessment Exercise. Undertaking research which is both innovative and international, the Centre aims to bridge between past and present Britain and the rest of the world.

**Research interests**

The Centre is led by a team of internationally respected researchers; investigating topics as diverse as:

- **Class, Community and Identity**: building on established work on labour movements, and developing new interests in popular culture, the relationship between gender, class and identity and the uses of auto/biography.
- **Conflict Studies**: military history; the history of intelligence and security; terrorism, insurgency and conflict resolution.
- **German History**: migration and minorities; National Socialism and the Second World War; post-war humanitarian assistance; the German Democratic Republic (GDR) and German unification.
- **Retailing and Consumption History**: the early modern retail trade, and the retailing and consumption of commodities for domestic use.

**Application of research**

During the last 10 years, the Centre has organised more than 20 national and international conferences and workshops, with current research projects in place funded by national and international research grants from, among others, the British Academy, the Leverhulme Trust, the foundation Remembrance, Responsibility and Future (Berlin), the Gerda Henkel Stiftung (Dusseldorf), the Arts and Humanities Research Council (AHRC) and the European Union.

To find out more, contact:
Tel: **01902 322 484**
Email: lssc-enquiries@wlv.ac.uk
www.wlv.ac.uk/chr

**Q&A with Dr Laura Ugolini**

What topics are the Centre currently investigating?

Members of the Centre for Historical Research undertake research on a variety of aspects of modern and early modern history. Areas of research include social history, especially working-class history, popular culture and historical biography, the history of conflict, from the First World War to the conflict in Northern Ireland and contemporary terrorism, as well as aspects of consumer and retailing history, from the early modern period to the twentieth century.
Fereshteh Didegah
Researcher (RIILP)
RIILP brings together two complementary and interdisciplinary research teams that explore the potential of advanced computing technologies for ‘understanding’ human language and social sciences, respectively.

**Research interests**
This Institute conducts research in a number of areas where computers and human language interface, including the problems that computers have in coping with the complex and intuitive system that is human language. It is also active in developing software and methodologies to exploit internet-based data sources for social sciences research – including link analysis, cybermetrics and webometrics.

Particular specialisms include:
- anaphora resolution
- named entity recognition
- corpus development and exploitation
- hyperlink and web text analysis
- web-mining
- internet-based quantitative methods.

**Application of research**
RIILP has secured funding from a variety of national and international research sponsors and has recently embarked on a number of projects designed to exploit the commercial potential of the research findings of its research groups.

The results from Research Assessment Exercise 2008 confirm RIILP as one of the top performers in UK research. Both groups which form the institute – the Statistical Cybermetrics Research Group and the Research Group in Computational Linguistics are among the UK leading groups in their fields.

To find out more, contact:
Tel: 01902 321 629
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www.wlv.ac.uk/riilp

**Q&A with Professor Ruslan Mitkov**

**What research are you currently working on?**
“I’m currently working on a variety of topics in Natural Language Processing (NLP) and have so far published more than 180 articles. I’m still very much interested in anaphora resolution, but another research topic which I proposed and actively investigate is the automatic generation of multiple-choice tests. Recent topics that I have researched and published include the automatic identification of cognates and false friends; the use of NLP methodology and corpora to verify the validity of translation universals; and translation memory as well as bilingual term extraction.”
Work is currently underway at the University of Wolverhampton on a research project based on sentiment analysis. The University’s Statistical Cybermetrics Research Group have discovered how to effectively ‘filter’ unstructured online data, taking advantage of the sudden availability of large volumes of public commentary online, leading to early warnings of key public debates on the most pressing social science issues.

Sentiment analysis is a new trend in social media, and involves the evaluation of comments and suggestions left on social media sites such as blogs and social networks to identify public attitude towards a brand. Developing methods to gather and process information from the web on a large scale, the Research Group can provide market research companies with the knowledge to analyse online material and act quickly if there is negative feeling, in order to protect their brand.

In parallel with the Research Group’s first focus – blog analysis, researchers have developed other types of internet-based text analysis and a new type of issue analysis. For example, in a Dutch government-funded project, online evidence was monitored for the spread of the United Nations Integrated Water Resource Management initiative through identifying and analysing relevant online documents, showing the importance of commercial considerations for this environmental issue.

Other work by the Research Group has included projects for the EU and the BBC World Service Trust, and more recently has focused on social networks as a logical extension from blog research; adapting its methods for the hyperlink and text analysis of social network sites like YouTube, Twitter and MySpace in order to gain insights into this important new phenomenon.

Professor Mike Thelwall, leader of the Research Group, explains: “We use sentiment analysis to investigate the role of sentiment in Twitter so that we can see what sentiment people express in reaction to particular events. We also do the same for YouTube. Our users typically follow brand names in social media to see how public perceptions of their brands fluctuate over time. In this way they can get early warning if something bad is happening to their brand and can monitor the effectiveness of advertising campaigns or the popularity of new products.”

Professor of Information Science, Mike Thelwall, is a computer scientist and mathematician at the University of Wolverhampton. He is one of the leading researchers in his field of informetrics, specialising in measuring the value of web pages.

The Statistical Cybermetrics Research Group is an Information Science research group that develops software and methods to analyse new internet-based information on a large scale. The group hosts a number of externally-funded projects and has extensive research connections throughout the world.
“The Statistical Cybermetrics Research Group’s research interests include scientometrics, link analysis, cybermetrics, webometrics, web science and sentiment analysis. Our work has been used by the Yahoo! search engine, displayed in lights on the London Eye during the Olympics and used to aid research policy decision making. Our evaluation by the UK research assessment Library and Information Management panel placed us joint second in the UK. Of our submitted research publications, we had the joint highest proportion in our category in the top “world-leading” class. Individual members have also been listed amongst the most productive information scientists in the world.”

Professor Mike Thelwall
Centre for Research in Law

including The Central Institute for the Study of Public Protection

The Centre provides a focal point for the University’s legal research, undertaking research broadly in two areas – Corporate and Commercial Law and Criminal Justice and Human Rights – which represent some of the major issues facing society today and which pose national and global challenges.

Research interests
Research areas include:
• corporate governance
• intellectual property law
• insolvency law
• financial services law
• Alternative Dispute Resolution (ADR) and mediation
• policing: the law of evidence
• international and national human rights.

The Centre also works closely with researchers from the Central Institute for the Study of Public Protection (CISPP) to further the University’s work in criminology, forensic science, uniformed services, and consumer protection.

Application of research
The Centre gathers evidence and further knowledge in the broad spectrum of legal fields which inform current legal practice; providing legal advice and assistance to governments, regulators, the civil service, leading counsel and major law firms.

To find out more, contact:
Tel: 01902 322 484
Email: lssc-enquiries@wlv.ac.uk
www.wlv.ac.uk/crl

The Central Institute for the Study of Public Protection
The Central Institute for the Study of Public Protection (CISPP) aims to develop and promote the University’s increasing activity across the fields of criminal justice, criminology, forensic science, policing, fire and rescue, safeguarding, armed forces, security, terrorism and consumer protection. CISPP has conducted extensive research into measures designed to tackle domestic abuse, bring offenders to justice, and support families.

Researchers have also completed research on the inclusion of youth and the homeless, and continue to collaborate across the University to undertake projects in these and other emerging areas of policy.

“My research interests include corporate mismanagement, governance, disqualification, the protection of minority shareholders, corporate status and corporate manslaughter. The impact of my work is evidenced generally by numerous citations and is cited in the High Court and Privy Council, Law Commission Reports. My research has also resulted in media interest, and I provided advice in relation to a proposed Financial Times article relating to the sinking of the Costa Concordia”.

Professor Stephen Griffin
Hidden minority

Experts at the University have embarked on a groundbreaking research project to investigate the experiences of women sleeping rough who have suffered domestic abuse.

The number of people officially classed as homeless in England increased by 14% in a year, the biggest increase in nine years according to a 2012 report. The lack of European-wide data on women sleeping rough is of concern to many organisations witnessing an increase in demand for women’s shelters as a result of rising unemployment and emotional and financial vulnerability.

The University’s Central Institute for the Study of Public Protection (CISPP) secured €720,000 from the EU for the two-year women rough sleepers project. University of Wolverhampton academics are working with partners in Spain, Sweden, Hungary and Belgium to research the needs of women sufferers of domestic violence who now sleep rough, and support them back into mainstream society.

In the UK, Sweden, Hungary and in Spain research has identified that homeless women and women rough sleepers have a very low visible presence, hence limited intervention to date. Local government organisations and agencies have not been provided with enough expertise and knowledge on the issue and therefore are not adequately equipped to tackle it. The project will reverse this trend by conducting interviews with target organisations that work with women who sleep rough in order to gain access to women affected and arrange interviews.

They will also hold workshops and European conferences to raise awareness about the specific needs of this diverse but vulnerable group, in order to create an online resource of ‘what works’ for organisations in the field.

Kate Moss, Professor of Criminal Justice at the University of Wolverhampton explains: “No-one knows the true figures, and that makes this sort of research even more important. One of the issues from research so far is that women rough sleepers are a hidden body of people because many of them can be professional or ex-professional women who have got into financial difficulties and have been evicted. They end up ‘sofa-surfing’ – living on friends and family members’ floors.” While it remains difficult to estimate the number of women sleeping rough, it is not hard to understand the importance and necessity of the research for the people affected. Kate explains: “The research is not only an addition to knowledge. It seeks to implement the findings of the knowledge in a practical way to individuals who are some of the most vulnerable in society. It engages with the frontline services to help resolve these issues for people in a more appropriate way.”

Kate Moss is a Professor of Criminal Justice at the University’s School of Law, Social Science and Communications and part of the team of research staff at CISPP. She has conducted extensive research and consultancy work for a wide range of institutions, including the police, and the Home Office.
No-one knows the true figures, and that makes this sort of research even more important.

Professor Kate Moss
The Centre provides a research environment for interdisciplinary investigation into the history and continuing relevance of internationalism, cosmopolitanism, and other intercultural configurations of consciousness and identity, including the ways in which these are manifested in national, regional or local contexts.

**Research interests**
The Centre has three key research areas:

- **Europe: Trend and Transformation** — focusing on the development of European society and culture with particular reference to integration, migration and identity.
- **Global Consciousness and Culture** — considering the ideas, faiths, and group identities in global cultures, including migrant communities within the United Kingdom.
- **Writing, Culture and Identity** — looking at the language, literature and other media of different cultures and societies, including consumer-driven (or anti-consumerist) culture.

**Application of research**
The Centre is currently undertaking a number of international research projects. One project is turning a traditional southern African folktale into an iPad app in order to model how this art form can be revitalized and globally commercialised.

Another research project is focusing on research into the experience of caste prejudice in personal relations faced by dalits (the ex-Untouchable Indian castes) in the UK and urban Indian Punjab. The research seeks to understand why the practice of caste hierarchies and caste prejudices persist.

“CTTR staff enjoy close association with several central European partners. These include the Slovak Foreign Policy Association in Bratislava and the Institute for International Relations, Prague; both of which are leading centres for academic and policy-related research in international affairs.”

**Professor Martin Dangerfield,**
**Jean Monnet Chair in the European Integration of Central and East Europe, University of Wolverhampton.**

To find out more, contact:
Tel: **01902 322 484**
Email: **lssc-enquiries@wlv.ac.uk**
www.wlv.ac.uk/cttr
Management Research Centre (MRC)

The Centre groups together researchers from the University with an interest in all aspects of business and its relationship to wider society.

Research interests

- Entrepreneurship and small business management – specialises in research on family business, entrepreneurial learning and knowledge transfer and rural entrepreneurship.
- Corporate governance and ethics – centred on research on board effectiveness, corporate governance systems, normative foundations of corporate governance and firm idiosyncratic risk.
- HRM and industrial relations – focuses on employee relations in the UK’s public sector, comparative industrial relations, pay and pay determination, and human resource development.

A further newly emerging area of research is International Business, with an interest in inequalities in the global economy and foreign investment in the UK.

Application of research

MRC aims to contribute not just to narrow academic debate, but to the broad discussion of the role of business and management in the region and wider world. They are always eager to engage with the wider community to provide focused research, designed to deliver high-quality, user-relevant solutions to current managerial issues.

Recent highlights include:

- an Ernst & Young-funded investigation into the dynamic capabilities of family firms in the UK and China
- a research project into BME workers in local government, funded by Unison
- a study of the impact of livestock disease outbreaks on farmers and farming enterprises, funded by The Oldacre Foundation.

To find out more, contact:
Tel: 01902 321 772
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www.wlv.ac.uk/mrc

“The importance of family businesses as a sustainable basis for world economies has never been greater. The current research conducted by MRC is insightful in exploring the dynamic capabilities of family businesses, which may help understand their resilience and competitive advantage. IFERA is proud to be associated with guiding this important project with far-reaching implications.”

Professor Sanjay Goel, President, International Family Enterprise Research Academy (IFERA)
Back to the drawing board

In recent years there has been a greater focus on the boardroom and increased pressure on board members. New areas such as potential IT risks; crisis management and reputational risk, including how organisations communicate with stakeholders; and an overall increase in boardroom-shareholder engagement have made the role more demanding.

The University of Wolverhampton’s Management Research Centre (MRC) conducts research which identifies characteristics of healthy governance, boardroom efficacy and influences on boardroom dynamics.

A current study from the MRC analyses board leadership in small firms from a team production perspective as a precursor to board strategy involvement. Boards’ involvement in strategy is generally seen to be an indicator of board effectiveness, but less is known about the relationship between board leadership and strategy involvement, especially in small firms.

Dr Silke Machold, Joint Head of the MRC, is currently conducting the research using survey data from 140 small firms in Norway, collected in two different time periods, to demonstrate that leadership behaviours and processes have a greater impact on boards’ strategy involvement than structural characteristics alone.

Benchmarks for good board performance have already emerged from the research, which offers insights to small business owners into how to improve the strategy involvement of boards. For policy-makers, the study shows implications for the codes of good governance practice relevant to small firms, specifically in relation to board development initiatives and board evaluations. By striving to meet these benchmarks, perhaps more companies would avoid reaching crisis point.

**Five benchmarks for good governance**
1. Put an end to marathon board meetings – meet more regularly for shorter periods and set aside time for quality interactions like board development days.
2. Create the right mix – aim to build a diverse board membership and encourage constructive challenges.
3. Have an outside board assessment done – it will give you a new perspective on how you perform as individuals and as a team.
4. Attract rounded individuals – board performance is positively influenced by the range of experiences board members bring to the boardroom.
5. Apply knowledge – boards that are ready to learn and apply the latest thinking are more likely to innovate and grow the company.

Dr Silke Machold is a Reader in Governance and Ethics at the University of Wolverhampton Business School. She currently works with boards of both large and small firms to help identify team dynamics for effective teams. In her role as Joint Head of MRC, Silke leads a research group examining many more areas of corporate governance and ethics.

To find out more about their research activities, visit: [www.wlv.ac.uk/cgec](http://www.wlv.ac.uk/cgec)
Research Centre for Sport, Exercise and Performance (RCSEP)

Research in RCSEP focuses on achievements within sport, exercise and performance. It aims to facilitate and develop research in social sciences, and performance and health associated with sport, exercise and dance.

**Research interests**
The Centre undertakes research in the areas of:
- Applied Psychology and Coaching
- Leisure Industries
- Sport Culture and Physical Education
- Dance Science
- Health and Exercise
- Sport Performance.

**Application of research**
The Centre has worked with a number of national organisations hosting events, running workshops or being sponsored to give presentations. These include the British Association of Sport and Exercise Sciences, British Psychological Society, National Council for Graduate Entrepreneurship, Higher Education Academy and the British Basketball Association.

As well as ongoing involvement in an Economic and Social Research Council project called Emotion Regulation of Others and Self, the Centre is one of the world’s leading dance medicine and science research establishments – working in collaboration with dance companies and researchers from across the world to improve dance performance and decrease injury rates.

Current projects are looking at Vitamin D, muscle function and injury occurrence in professional ballet dancers; consultancy work for event organisers and venues, and BBC learning lab project The Winning Mind.

To find out more, contact:
Tel: 01902 323 008
Email: sspal@wlv.ac.uk
www.wlv.ac.uk/rcsep

“I’m currently exploring how to improve the health of dancers whilst maintaining their performance schedules. This has led to major UK ballet companies, and a number across the world, providing vitamin D supplementation and implementing supplemental training – resulting in a 50% reduction in chronic injuries.

This has led to me being appointed Visiting Professor at HAN University, Netherlands and exercise physiologist for English National Ballet and Birmingham Royal Ballet”.

Professor Matthew Wyon

The University of Wolverhampton, through dance science and medicine research, has become a lead partner in setting up the National Institute of Dance Medicine and Science – the first in the world.

Professor Matthew Wyon
Making tracks

University of Wolverhampton sports Professor, Andy Lane, is researching the psychological state of runners.

Professor Andy Lane is a member of the Emotion Regulation of Others and Self (EROS) research network, investigating the mental and behavioural processes by which people influence their own feelings and the feelings of others in sport.

EROS researchers examine different types of psychology, covering areas such as work, social and sports psychology. They investigate how environments and people shape moods and emotions, with a view to using their finds to make recommendations – such as how coaches can get the best out of athletes.

Andy explains the importance of such projects: “Research that helps understand emotion regulation and how to change it has clear social and economic value and could enhance wellbeing and performance.”

Current collaboration with the London Marathon has seen Andy complete a music and motivation research project with 1,100 readers of Runner’s World. The research is part of a four-year EROS project, funded by the Economic and Social Research Council, worth £2.2 million.

The objectives of the project are to investigate the effectiveness of interventions designed to improve a runner’s performance and whether they could make runners feel better mentally when running.

The four interventions
1. Runners set a goal for their training runs.
2. ‘If then’ planning – eg. ‘if I feel tired, then I’ll take it easy for a couple of miles’.
3. Encouraging people to carefully select motivational music for their run – runners were provided with a tool to rate their music on a scale of how it motivates them.
4. Using Audiofuel to pick motivational music close to their goals, eg. fast or slow depending on the stage of the run. All of the runners who used this tool rated it highly; even those using it for the first time agreed it was effective.

Following the study, the results for all 1,100 participants were analysed, showing their improved performance and emotional control as a direct result of the interventions. The runners found that the goal setting was effective, as it raised their awareness of the standard of performance they wanted to achieve and encouraged more effort.

Professor of Sport Psychology, Andy Lane, is one of the country’s leading sports psychologists, whose research includes the mental aspects of preparing for marathon running and the stress for footballers taking penalties.

Andy became a consultant to the London Marathon in 2010 and is the author of “A Guide to Running Psychology”, which is available for athletes to download at: www.musicandmotivation.com/mental_fitness/rough/guide
“Our research seeks to examine how people perform under pressure, whether in the final of Olympic competition, giving a presentation in a boardroom, or taking an exam. We examine the emotions and thoughts people experience in these types of situations and develop and test interventions to fine-tune their mental game. A current project, in conjunction with BBC Lab UK and fronted by Olympic Gold Medal winning athlete, Michael Johnson, examines this issue. With over 100,000 participants taking part, the study is possibly the largest ever conducted.”

Professor Andy Lane