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**RESPONDING
THROUGH
RESEARCH
TO GLOBAL
CHALLENGES**

Background

As part of its revised strategy for research Warwick has established a number of Global Priority Programmes (GRPs).

Goal 1.3 aims to:

- Re-present our major areas of research strength around the interdisciplinary 'grand challenges' currently confronting the world
- Give particular emphasis to areas which can make a globally distinctive contribution
- Re-orientate resource to enhance these priority areas

Strategic Aims

1. Increase Warwick's ability to **generate research income** by responding to the needs of funding bodies for interdisciplinary research that addresses key global issues
2. Serve as a platform through which to **showcase our research excellence** in key areas and develop our capacity to demonstrate the impacts of this research
3. Provide a forum for supporting and enhancing Warwick's **multidisciplinary and cross-departmental research**.

Global Research Priorities



CONNECTING
CULTURES



ENERGY



FOOD
SECURITY



GLOBAL
GOVERNANCE



BEHAVIOURAL
SCIENCE



INNOVATIVE
MANUFACTURING



INTERNATIONAL
DEVELOPMENT



MATERIALS



SCIENCE &
TECHNOLOGY
FOR HEALTH



SUSTAINABLE
CITIES

Academic Lead:

Phil Mawby – Department of Engineering

Aims to focus on current specialisms in:

- **Electrical Power** – Our dependence on electrical power is set to grow as dependence on Fossil fuels reduces. Thus how power is delivered via a smart grid infrastructure is a critical issue.
- **Solar Energy** – Efficient conversion of the sun's energy into electrical energy is the main focus of this theme, using conventional crystalline and organic materials
- **Thermal Energy** – Possessing of heat, from the sun or other sources to provide electrical energy as well as heating and cooling
- **Nuclear Fusion** – A potentially limitless source of low carbon energy. Researchers at Warwick are at the forefront of bringing this technology to reality
- **Low Carbon Transport** – Warwick is at the centre of developments in electric vehicle technologies in the UK. Rapid improvements in this technology will allow the decarbonisation of transport to take place.



ENERGY

Academic Lead:

Rosemary Collier – School of Life Sciences

Aims to focus on:

- **Sustainable production** - assured supply of sufficient appropriate food (now and in the future)
- **Sustainable consumption / resilient communities** - resilience of the food system to significant disruptions, and public confidence in that system
- **Global food justice** - that all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life
- **Sustainable healthy future diets** (link with Science and Technology for Health GPP activity)



**FOOD
SECURITY**

Academic Lead:

Kerry Kirwan – Warwick Manufacturing Group (WMG)

Aims to focus on specific calls from Research Councils, such as:

- **Maths for Manufacturing** (e.g. Mathematics, Statistics, Engineering, WMG)
- **ICT enabled Manufacturing** (e.g. Computer Science, Engineering, WMG)
- **Industrial Biotech** (e.g. Life Sciences, Chemistry, Engineering, WMG). This GPP will focus on manufacturing aspects of Industrial Biotech
- **Sustainable Manufacturing** (e.g. Life Sciences, Chemistry, WMG, Engineering).



**INNOVATIVE
MANUFACTURING**

Academic Lead:

Prof. Sudhesh Kumar – Warwick Medical School (WMS)

Focus on:

3 themes and the 5 cross-cutting platforms that can support them:

Themes:

- Healthy Aging
- Early Diagnosis and Treatment
- Improving Health in Resource Poor Settings

Platforms:

- Analytical Science
- Healthcare Technology
- Research to Practice
- Evaluation
- Public Involvement



SCIENCE & TECHNOLOGY FOR HEALTH

application domains



GRP Activities

- Open meetings to promote GRPs and to encourage people to become involved
- Steering Groups to drive forward their GRPs' agendas
- Ideas Cafes
- Provided funding for the development of research ideas
- Developed distinctive overall GPP branding for each of the individual GRPs
- GRP website and sub-pages for each theme (<http://www2.warwick.ac.uk/research/priorities/>)
- Inter-departmental discussions on collaborative ideas

Future Plans

- Continuation of Programme - commitment to next 2 years
- On-going development of multidisciplinary research ideas
- How to grow funding
- Horizon 2020
- More events to come – ideas cafes, Westminster events, Warwick debates, 50th Anniversary celebrations