

## NWUA Briefing Note: JOINT ECONOMIC COMMISSION FOR THE NORTH WEST

**Date:** 15<sup>th</sup> February 2010  
**Meeting Theme:** Manufacturing

If manufacturing is taken to encompass the manufacturing process in totality, there are a huge number of relevant potential higher education interventions. This paper intends to capture some examples of relevant activities across skills, research and knowledge transfer, however this is not a comprehensive listing.

### Skills

The North West's universities offer over **70 courses relating to the manufacturing sectors** ranging from CPD to full foundation, bachelors and postgraduate degrees. Employer engagement is significant in many of these. For example, the **North West Higher Level Skills Partnership** has funded the development of 11 new HEI courses for work based learners in manufacturing sectors.

Institution	Qualification	Industry Partners
NW Higher Level Skills Pathfinder 2006 - 2009		
MMU	Masters Level CPD Furthering Careers in Technical Textiles	7 industry partners
The University of Manchester	Technical Textiles Masters to Provide Graduate Level Skills in Design and Technology	18 industry partners
University of Manchester University of Bolton	PG Cert, PG Dip and MSc Composite Manufacturing Education and Training (CoMET)	11 industry partners
University of Bolton University of Manchester	PG Cert, PG Dip and MSc Composite Design and Analysis Training and Education (CoDATE)	
MMU Liverpool Community College Wigan & Leigh College	CPD Furthering Fashion	15 industry partners
University of Salford	CPD modules and MSc Advanced Construction Manufacturing	7 industry partners
NW Higher Level Skills Partnership 2009 - 2011		
University of Bolton	CompHET (Composites for HE and Training ) for Advanced Materials & Composites	17 industry partners
University of Cumbria	FD in Sustainable Food Production and Manufacturing	12 industry partners
University of Chester Reaseheath College	Increasing higher level skills for workers within the Food Chain Management and Technology sector	6 industry partners
MMU	Level 4 & 5 CPD Innovation and Growth in FD Manufacturing Industries	11 industry partners
UCLan	CPD Food Waste and Resource Solutions	6 industry partners
UCLan	CPD understanding the nature of how different products can influence the biomechanics of the human body	20 industry partners

## Research Centres

The North West hosts many research centers and institutes dedicated to research and knowledge transfer in manufacturing sectors. Further details are provided in **Annex A** (HEI Advanced Manufacturing Capabilities in the North West) with some highlights below.

In the 2008 RAE, North West submissions specifically relating to manufacturing were made by four institutions:

- **University of Liverpool** - Manufacturing and Laser Engineering Group
- **University of Manchester** - Innovative Materials Processing, Bio-Manufacturing, Composite Manufacturing and Digital Manufacturing
- **University of Central Lancashire** - Digital Manufacturing and Environmentally Friendly Manufacturing
- **Lancaster University** - Composites Manufacturing.

The North West also has particular capabilities in Metallurgy and Materials achieving 27% of England's 4\* rated activity in the 2008 RAE.

However, capabilities can be found more widely. In 2008/09, NWUA mapped North West HEI strengths (self assessed) relating to the Food & Drink, Aerospace and Chemicals sectors. All of these included manufacturing elements. In the North West, 11 institutions<sup>1</sup> identified interests in manufacturing related activities with particular strengths highlighted in advance machining, bioprocessing, design and intensification, fluid dynamics, tableting, formulation, flow chemistry, responsive manufacturing, food & drink manufacturing ICT systems, robotics for food & drink manufacturing, resource management , emissions reduction, innovation & new technology management, powertrain technology and systems, chassis, steering and breaking systems, advanced materials processing and manufacturing process.

The full capability matrix can be found in **Annex B** (HEI Capability Matrices Relating to the Manufacturing Sectors). It should be noted this is a partial listing, as the matrices were compiled very much within sector specific frames of reference (Aerospace, Chemicals, Food & Drink and automotives). NWUA has not undertaken a specific exercise for manufacturing capabilities.

## Knowledge Transfer

The European Regional Development Fund (**ERDF**) supported a number of university-led knowledge transfer programmes in the North West. Three university-led ERDF projects in the current round (2007-2013) are specifically related to manufacturing:

University	Project Title	Summary	ERDF Value
University of Liverpool	KE-LAS (Knowledge Exchange in Laser Engineering)	The project seeks to facilitate knowledge exchange between laser materials research facilities at the Universities of Liverpool and Manchester's North West Laser Engineering Consortium (NWLEC), and SMEs, especially in the advanced manufacturing sectors throughout the North West.	£88,2000

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<sup>1</sup> University of Bolton, Liverpool John Moores University, Manchester Metropolitan University, University of Central Lancashire, University of Lancaster, University of Liverpool, University of Manchester, University of Salford, University of Chester, University of Cumbria and Edge Hill University.

University of Liverpool	NW Virtual Engineering Centre	The project will establish a Virtual Engineering Centre (VEC) that will provide the UK engineering value chain with VE capabilities for optimising costs-effective design, manufacturing and operational options. The VEC will build on a strong partnership that brings together the University of Liverpool, STFC Daresbury and the NWA.	£2,501,743
Lancaster University	SusDram (Support for Design & Rapid Manufacturing)	The project will engage with beneficiary SMEs to support them in innovating and diversifying their existing capabilities in design and manufacturing, in order to capitalise on the opportunities afforded through adoption and utilisation of Rapid Manufacturing technologies.	£1,024,000

Also of note, of the SMEs assisted through the 2000-6 Knowledge Based Action Plan, 22% were within the Manufacturing/Mechanical/Engineering sector.

The North West also secured two of 12 **EPSRC Knowledge Transfer Accounts (KTAs)** established in October 2009 and designed to stimulate an environment to better exploit EPSRC-funded research and create a culture of knowledge transfer.

- The University of Manchester's KTA will fund secondments of staff between the university and industry, and horizon-scanning events to bring together researchers and potential users from across a range of sectors in the areas of healthcare, energy and security, advanced materials, advanced engineering and the digital economy.
- The University of Liverpool's KTA will establish a Knowledge Exploitation Laboratory in the fields of molecular engineering, advanced manufacturing and sensors and monitoring. The laboratory will allow the university's engineering, electrical engineering and electronics, physics and chemistry departments to share research and expertise with industrial and manufacturing partner organisations.

### **Engagement with the Future Regional Agenda**

NWUA has been closely involved in the development of the North West Manufacturing Strategy and Action Plan, launched in October 2009, as a member of the skills subgroup and leader of the interaction of education and business subgroup. The latter was comprised of NWUA's Academic Advisors for the AEM and Food and Drink sectors with a manufacturing focus, the Association of Colleges and the North West Automotive Alliance. Future work will concentrate on the implementation of the Strategy, specifically in progressing the agreed actions. The Strategy can be downloaded at <http://www.nwda.co.uk/media-library/publications/business/manufacturing-strategy.aspx>

NWUA and member institutions are beginning discussions in relation to a Centre for Sustainable Manufacturing, through the Sustainable Consumption and Production Action Plan.

As part of its work around responding to the economic downturn and supporting recovery, NWUA will be producing a sector report outlining NW HEI capabilities relating to the advanced manufacturing sector. Identifying HEI capabilities relating to advanced manufacturing will also be a continuing aspect of the HE sectors engagement with the New Industry, New Jobs agenda.