



## SMART-E Complementary Training

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The SMART-E complementary training programme has been designed to offer all of the SMART-E researchers a strong overview of the skills and methods that they can use both in their academic careers, and in working with and within industry settings. We will cover a range of activities including developing business cases, project management and leadership skills over three week-long workshops, spread across the programme.

Each week long workshop will take place at the Advanced Manufacturing Research Centre at the University of Sheffield. Accommodation will be provided at the University for all delegates.

This training is central to the SMART-E programme, and must be attended by all researchers.

#### ***Dates:***

The first workshop is scheduled for **23-27 February 2015**.

The second workshop will take place in **September 2015**.

The third workshop will take place in **Summer 2016**.

## Workshop 1: February 2015

## Business skills and project management

### Day 1

#### *Preparing yourself to succeed*

- Overview/delegate expectations /Learning Styles
- Creating a Personal Development Plan
- Obtaining and Accepting Feedback
- Time management
- Planning and Organizing

### Day 2

#### *Preparing yourself to succeed (II)*

- **Communicating from shop floor to boardroom:** Utilizing (ACT) Advanced Communication Techniques in addition to (NLP) Neuro Linguistic Programming
- **Motivating others:** Releasing your inner Sales Person to get the job done or the information that you need
- **Influencing Others** Selling your ideas to capture attention enough for individuals to buy in to your concept
- **Presentation skills:** Making sure what you are saying is what is being heard and understood / awareness of learning styles and cultures. How to embed information effectively – embedding the technology

### Day 3

#### *Business Skills*

##### **Creating the right business case**

- Finance in manufacturing – P & L
- PTG-Business cases and Cost Modelling
- Trade Study Methodology

##### **Successful Application of Standards and Manufacturing Techniques**

- **Quality management** – understanding how quality standards work within manufacturing and the parameters that should be adhered to
- **Lean manufacturing:** Understanding the 5 Lean Principles and how they apply to Technology in Manufacturing. Areas include identify waste processes, 5 S systems, Value Stream Mapping, Push/Pull Systems and Process Flow

### Days 4 and 5

#### *Effective project management*

- Importance of projects
- What makes a project different
- Why have a project management method
- Defining a project business case and its use throughout the life cycle
- Project start up
- Executing project plans and strategy
- Resourcing a project
- Controlling the stages and milestones
- Evaluating a project
- Making changes to a project
- Closing a project

## Workshop 2: September 2015 Technology development and Entrepreneurial skills

### Day 1

#### *Design to Manufacture Process – What you need to be aware of*

- Design to Manufacture Steps
- Environmental Considerations
- Health & safety Considerations
- Financial management for engineers
- Ethics the ethics involved in the development of new technology—whether it is always, never, or contextually right or wrong to invent and implement a technological innovation. The ethical questions that are exacerbated by the ways in which technology extends or curtails the power of individuals—how standard ethical questions are changed by the new powers

### Day 2

#### *Entrepreneurial skills*

- Business Start Ups
- Intellectual Property
- Growth Phases of a Company
- Understanding Markets
  - Investors
  - End Customers

#### Worked Examples of

- Ideas Brainstorming
- Design to Manufacture Considerations
- Develop Business plan
- Develop Marketing Plan

### Day 3

#### *Preparing to meet the dragons!*

- Negotiation: This section will include team work on pre-designed role plays which will develop and practice the fine art of negotiation and build questioning techniques and confidence.

Delegates will be put into teams of 2 or 3 and given a project to present to the Dragon's Den presented with a sealed envelope containing details of the project. The project work will be specifically designed to draw on the full range of skills acquired throughout the Program

Each team will present to the Dragon's Den for up to 30 minutes and will be subjected to questions and scrutiny of their presentations.

### Day 4

#### *Dragons' Den*

4 – 5 presentations will be presented to the Dragon's Den for a Maximum of 30 minutes, and will be subject to questions and scrutiny

Each presentation will be followed by frank and constructive feedback

The winning presentation will be awarded the AMRC 2014 Dragon's Den Champion award

**Workshop 3: Summer  
2016****Implementing technology; Research funding****Day 1*****Leading in technology innovation***

- **Translating the vision :** Using technical data to produce highly motivational and inspiring must have information that is powerful enough to effect change
- **Technology leadership:** Your role in leading the way through technical innovation and how to generate solutions from expert teams
- **Industrial relations:** Rapid technological changes experienced throughout industry in the have radically altered the nature and experience of work for many people in both public and private sector employment. Increased production capacity and quality have been accompanied by changes in the way work is organised, and in the strategies adopted by both management and unions to tackle the new conditions with which they are faced.

**Day 2*****Technology in the evolving world***

- **Change management:** Adapting to change, controlling change, and effecting change. A proactive approach to dealing with change is at the core of all three aspects. How to define and implement procedures and/or technologies to deal with changes in the business environment and to profit from changing opportunities

**Days 3 and 4*****Research and innovation funding***

- Training on how to build up your research portfolio, and applying for funding
- How to write a successful grant proposal