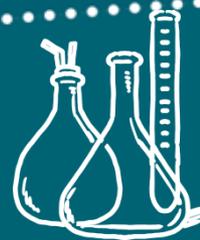
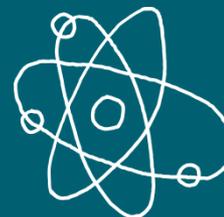


# Skills Planning in Scotland

## Chemical Sciences

2016



# Skills Planning Model

## Our Vision

A Scotland that values skills, realising the potential of its people and businesses to build a competitive and resilient economy

## Top 5 Priorities

- ✓ Foundation Apprenticeships embedded into curriculum
- ✓ Increase number of Modern Apprenticeships > 30,000pa
- ✓ Expansion of school careers service to include P7-S3
- ✓ Development of Graduate Apprenticeships
- ✓ Equality of access to SDS programmes



# UK Chemical & Pharmaceutical Industry

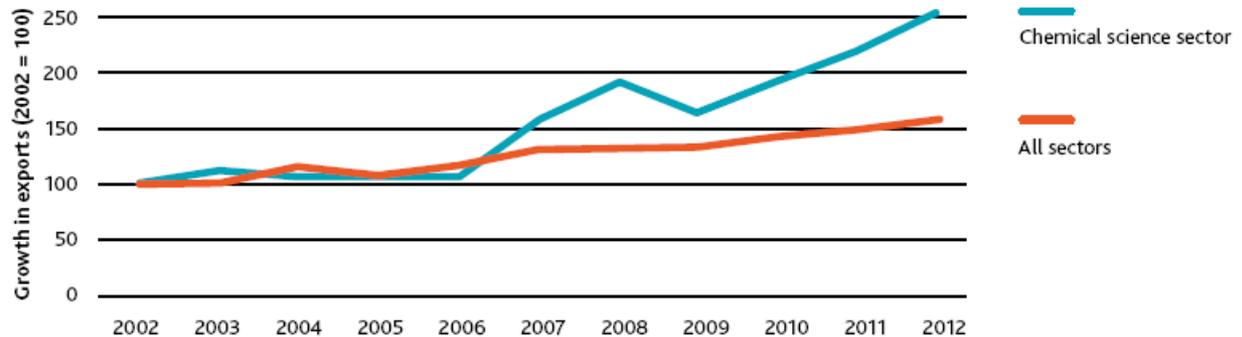
- ❖ Large industry, 160,000 directly, many more indirectly.
- ❖ Globally significant (top ten producer).
- ❖ 20% of all manufactured exports, £52bn (largest sector).
- ❖ Value added £20bn, £75m per day.
- ❖ Energy intensive – largest industrial user; reduced energy input per unit output by 35% 1990-2010. Lifecycle considerations.
- ❖ Research intensive £600m in Chemicals R&D, £4.2bn in Pharma.

*As at January 1<sup>st</sup> 2014*

# The Scottish Chemical Industry

- ❖ Over 200 Companies.
- ❖ Turnover £8.7bn.
- ❖ Exports £3.8bn.
- ❖ Value Add £1.9bn.
- ❖ > 12,000 employees.

Figure 2.2: Growth in exports 2002-2012



Source: Global Connections 2012 – Scottish Government

current size and value of the manufacturing parts of the life and chemical sciences

Area	Business Units (no)	Turnover (£M)	Employees (no)
<b>Medical Technologies</b>	<b>240</b>	<b>1053</b>	<b>8500</b>
<b>Pharma/Fine Chemicals (part of both life &amp; chemical sciences)</b>	<b>30</b>	<b>656</b>	<b>3300</b>
<b>Basic/ speciality chemicals</b>	<b>200</b>	<b>8700</b>	<b>9000</b>
<b>Industrial Biotech</b>	<b>40</b>	<b>189</b>	<b>1100</b>

# Transformational projects

**Chemical Sciences Scotland** is 1 of 15 Industry Leaderships groups in Scotland aimed at shaping and delivering Scotland's economic ambitions.

"sustain a vibrant and competitive Scottish chemicals industry, ..... Within this, we have ambition to increase manufactured exports by 50% by 2020."

## Grangemouth

- Scotland's largest industrial complex
- Be amongst key EU locations for chemical manufacturing

## Industrial Biotechnology

- National Plan for IB Launched 2013
- Innovation centre IBIOIC launched 2014

## Skills Investment Plan

- Skills Investment Plan launched October 2014
- Collaborative programmes under development

## Manufacturing strategy

- Manufacturing Strategy Launched September 2015
- 5 themes lead by experienced Industry figures.

# Chemical Science Skills Investment Plans

- Skills gaps and shortages can have impacts on company growth
- Emphasis from employers (and in policy) on better aligning skills investment with the needs of the economy
- We invest c £1.3bn in post -16 education
- Based on evidence and consultation:
  - Quantitative and qualitative research with numerous businesses
  - Carried out 20+ individual meetings to discuss action plan
  - Tested and endorsed by Skills groups
  - Chemical Sciences SIP launched October 2014



# Common Themes

- **Inspiring and preparing the future workforce** to engage with the career opportunities provided in the sector (i.e. sector attractiveness)
- **Creating and investing in pathways** to enable people to enter and build their skills in the workforce (i.e. entry routes, MAs, FE and HE provision)
- **Providing support to address immediate** workforce development **needs** (i.e. tactical projects to fill short term gaps and transition training)
- **Stimulating change in the skills system to better align provision with the needs of employers** and the economy (i.e. right content, right place, right time)

# Inspiring and Preparing the Future Workforce

## Internship programme

- Proposed in response to industry concerns that University graduates are not adequately prepared for the world of work.
- 12-week placements, 50% funded by SDS.

## Master classes

- Industry provide insights into diverse roles in the sectors.
- Commercial R&D, Proof of Concept / Prototyping, Market Analysis /Industry Need, Quality, Regulatory, Design for Manufacture, Manufacture including GMP, Product Launch and Sales and Marketing

## Placement for HND/C students

- Placement running at a number of Chemical companies

## Scottish Graduate Fair 2014 and 2015

- >5,000 students attended the event



Making Learning Work

Forth Valley College Skills Development Scotland

## Funded Work Placements

### Chemical Process Technology

Forth Valley College and Skills Development Scotland have launched a new pilot programme in conjunction with Chemical Sciences Scotland.

The innovative pilot scheme aims to create work-ready graduates who, on completion of their HND in Chemical Process Technology, will possess the required practical skills sought by the Chemicals industry, together with the desired theoretical knowledge gained at Forth Valley College.

Students would undertake the placement two days per week (Monday & Tuesday) in Year 2 of their HND.

6 Days in College	3 Days in College & 2 Days in Sponsor Company	Work Ready graduates to enter
HNC Chemical Process Technology Year 1	HND Chemical Process Technology/Funded Placement Year 2	Employment Advanced level study at University
Course Outline: Fluid Mechanics Heat Transfer Energy Main Balances Inorganic Chemistry Physical Chemistry	Course Outline: Process Safety Process Operations All main Chemistry disciplines	

Students have greater awareness of careers and industry needs

# Providing Support to Address Immediate Needs

## Lab skills project

- Industry endorsed course to run at Edinburgh Napier University
- The course is feeding into the new Biosciences general accreditation degree

## Transition training

- Automation course developed with industry and FVC

## Further Upskilling courses being developed

## Target gender balance

- Women returners programme
- To bring qualified women back into work in STEM occupations after extended leave, contributing to the alleviation of skills shortages in the STEM sectors

Continue to listen to the needs of the employers



**AUTOMATION ENGINEER PROGRAMME**

There is no financial cost to you, the only cost to your company will just be the investment of the time of your employees. So far we have invited Calsonant signed up for the course and we need a further 2 people to start the pilot.

Recognising the severe shortage of automation skills in the UK and how essential these skills are to the success of the Chemical Industry, this programme is aimed at upskilling Automation Engineers specifically for our industry and will run in January 2016.

**Why has the course been developed?**  
This is a pilot project in response to industry concerns of the potential loss of automation engineers now and in the future. There is also a strategic fit with the Chemical Industry Skills Investment Plan, developed by Skills Development Scotland on behalf of industry and Scottish Government.

**How is it funded?**  
This is funded through the Skills used funding raised by Skills Development Scotland to support and maintain the Chemical Industry Incident Skills Investment Plan. The hope is the course will be a necessary tool for Chemical Industry companies in Scotland and become well established in the future.

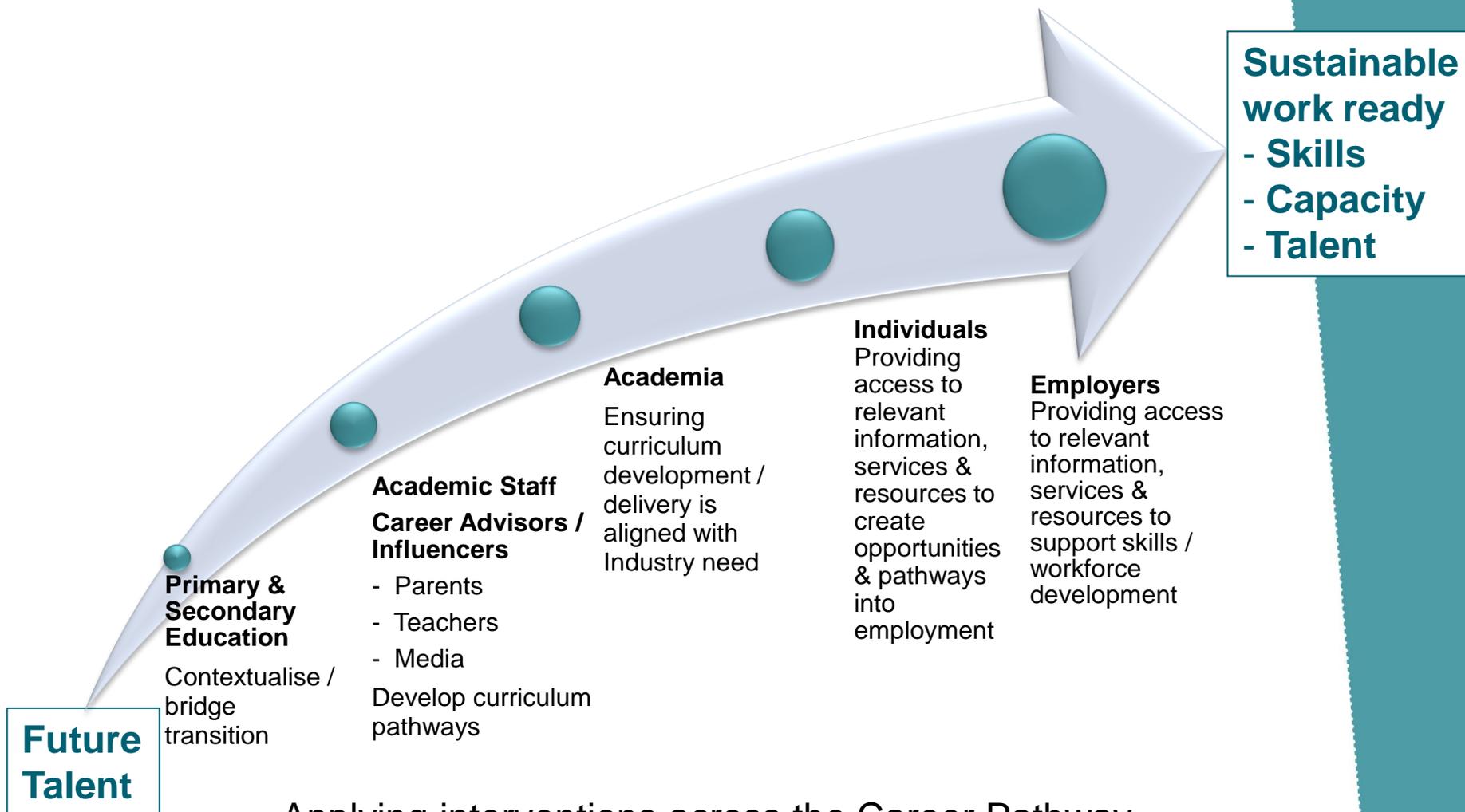
**How does it work?**  
You will send employees on a 20 week course for 1 day a week at Perth Valley College. The course is split 50/50 between practical and theory elements and candidates will receive BSCA accredited units.

**Please contact:**  
Helen.gunn@scds.co.uk or helen.gunn@edn.napier.ac.uk  
If you'd like more or sign up for this course,  
please email Helen.gunn@scds.co.uk

Perth Valley College | Skills Development Scotland



# Vision: A Supply Chain from Education into the Workplace



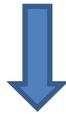
Applying interventions across the Career Pathway

# Examples of Scottish industry

## -Manufacturing processes



Root Vegetables



Cellulose



Curran



Draff/Pot ale



Fermentation

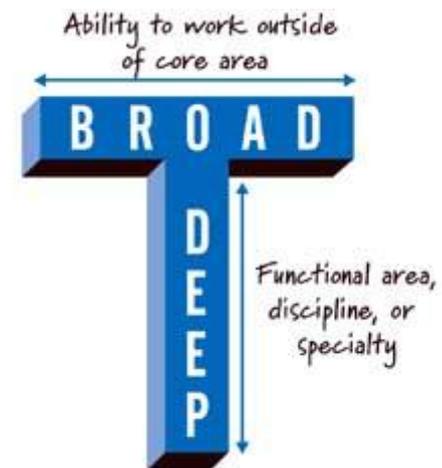


Biobutanol



# A career in science

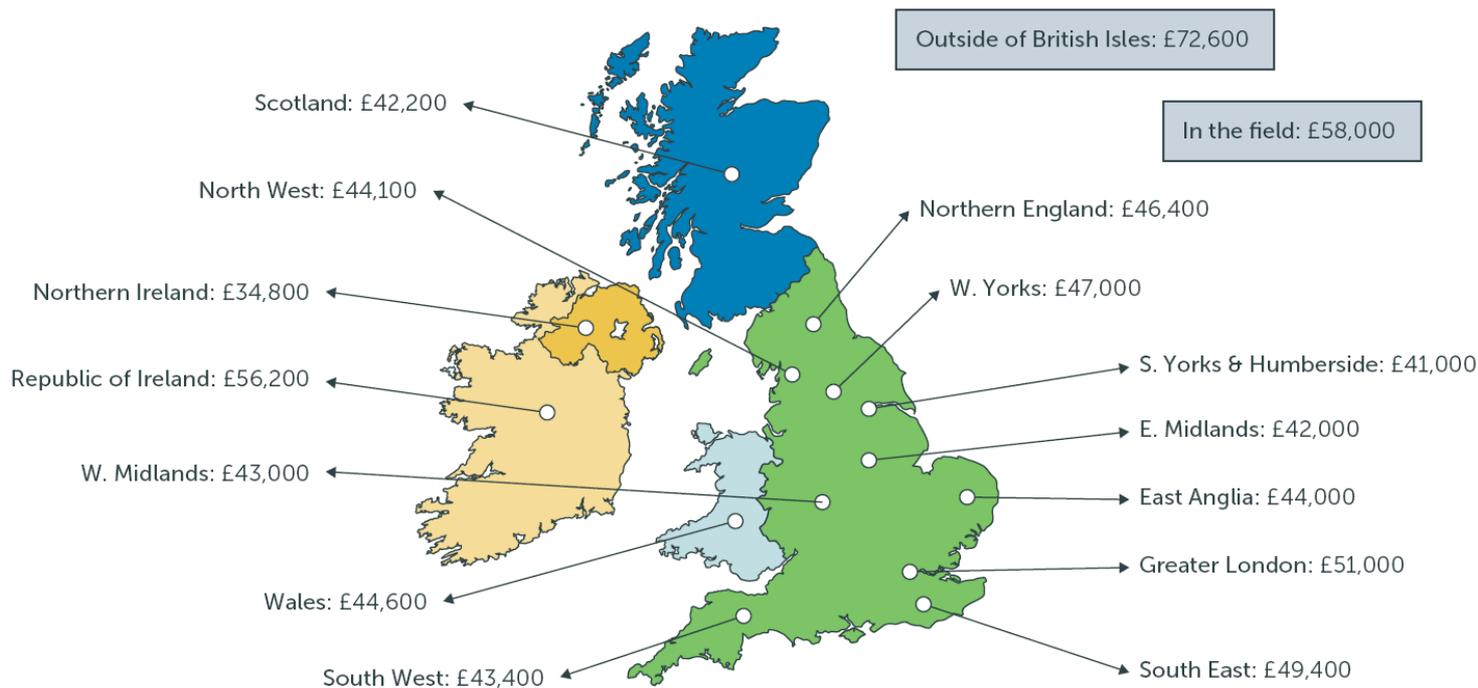
- ❖ Have an impact on key challenges, energy, environment, healthcare, water.
- ❖ Work across disciplines.
- ❖ Global network.
- ❖ Starting point for a diversity of career options (think of other sectors)
- ❖ The requirement to continually learn.
- ❖ Differentiate from the rest
  - Experience
  - T-Shaped person
  - Network (hidden job market)
  - Seek advice from careers service





# RSC Trends in Remuneration Survey Report 2013

## Remuneration Medians by Location



Published October 2013

For more information visit our website: [www.rsc.org/trends](http://www.rsc.org/trends)

