

Skills revolution: developing the local workforce

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- What are the key labour market and skills challenges facing tech, knowledge and science-based industries?
- What are the trends terms of changes to workforce skills and need over the next 10-20 years?
- What does a coherent and effective strategic and delivery response look like?
- What learning is there from other global tech regions in terms of developing workforce and skills?
- What might it make sense to do at a Corridor-scale?
- Where might collaboration lead to increasing returns to scale or more effective solutions?

- Why bother listening?
- Some messages
- Understanding the workforce
- Benchmarking what . . . clusters versus nations
- What can we do better?
- Where is the policy space?

Why Bother Listening?

- A bruised skills practitioner



Science Industry Partnership



**new
economy**



- Academically minded (a long time ago)
- A BIS, CLG labour market economist
- A strong and established Regeneris skills practice
- The SIP Skills Strategy
- **But most importantly, an unpredictable and rapidly evolving policy environment**

Skills are the “Oxygen of Innovation”

A redefinition of the Science workforce is needed to recognize the transformative potential of people

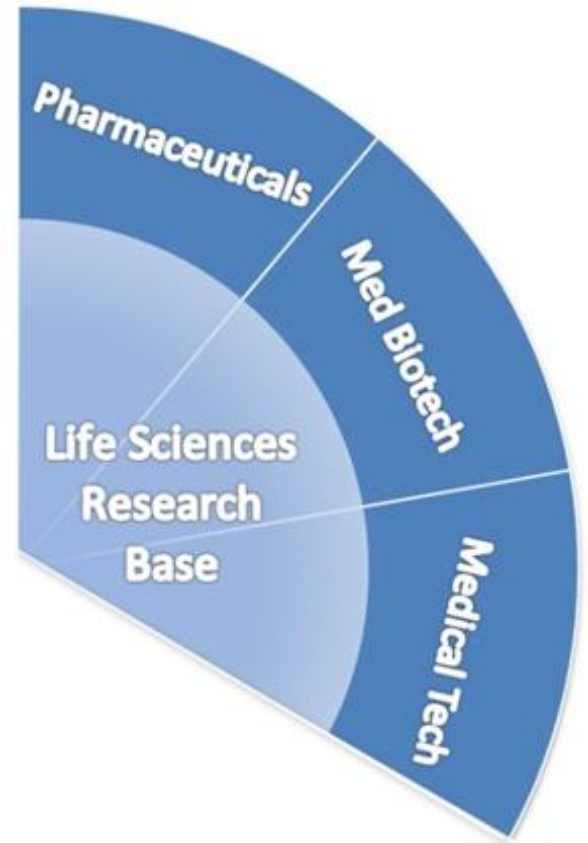
All about allowing breakthroughs in one sector to fuel growth elsewhere

There is no laissez faire or free market alternative



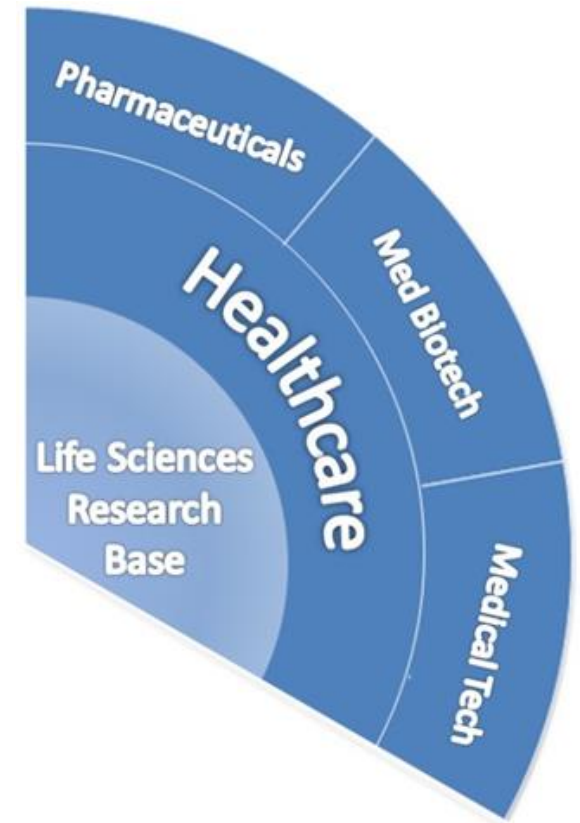
Some Workforce Definitions

- A narrow definition:
 - SIC based
 - Policy based
 - The research base isn't a separate entity, but part of the whole



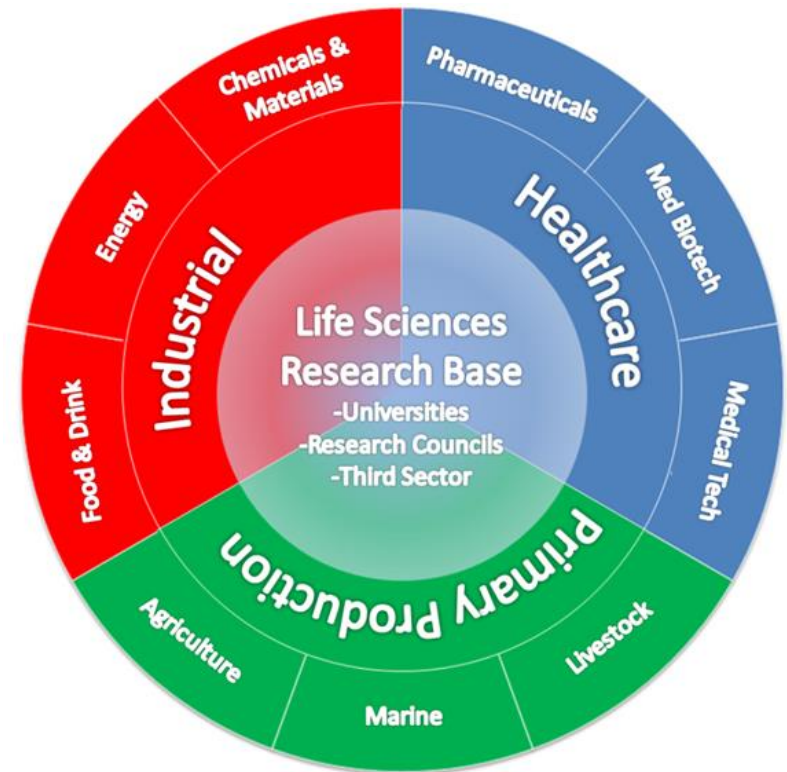
Some Workforce Definitions

- An expanded view
 - The enormous potential of innovation throughout the NHS
 - But what about industrial processes and primary production?



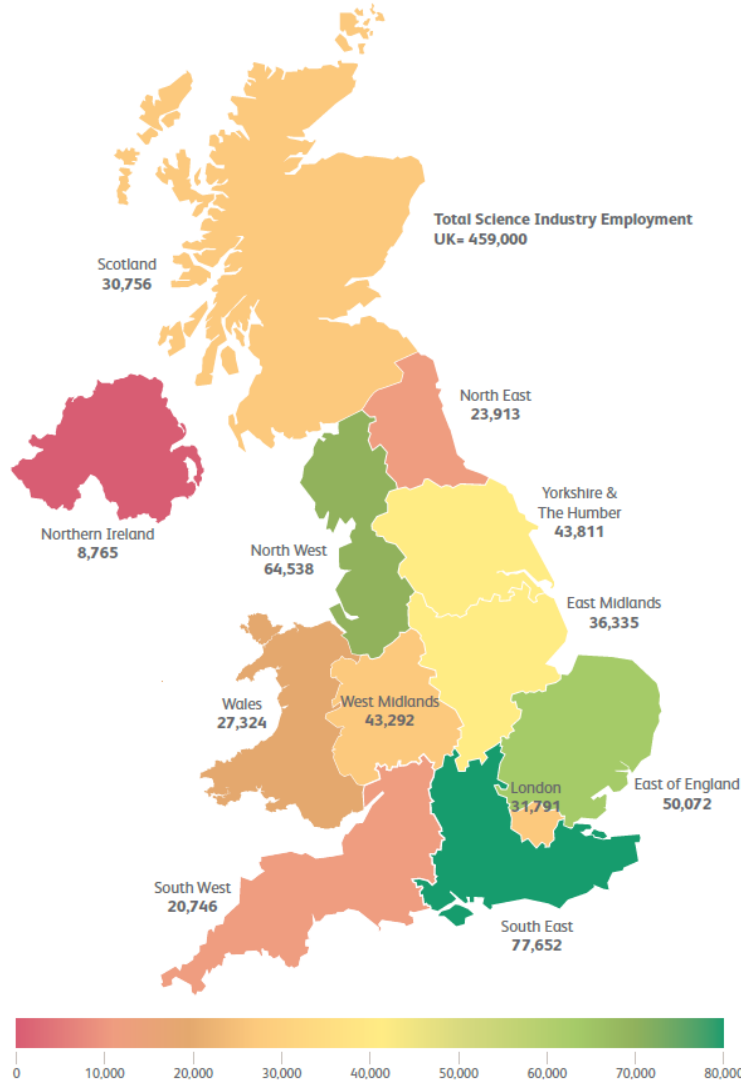
Some Workforce Definitions

- A Universal Life Sciences Workforce
 - Those innovating throughout the BioEconomy
 - Inclusive not restrictive
 - Recognising the role of people as agents of change



The SIP Skills Strategy and Evidence Base

Place



The skills needs of the future will be driven by the adoption of scientifically focused key enabling technologies, the evolving industrial context and the need for underpinning core scientific skills.

The KETs are:

- Informatics and big data
- Synthetic biology and biotechnology
- Advanced manufacturing
- Formulation technology
- Materials science

Future Skills Need: Quality

- A supply of qualified and motivated staff throughout the BioEconomy and wider
- These should be:
 - statistically adept
 - practical and commercial
 - flexible and transportable
- Roles that links functions and sectors
- Doers and Thinkers able to spread and adapt Key Enabling Technologies
- But also informaticians, computational scientists, formulation scientists, health economists, process safety engineers, QPs, control and instrumentation engineers, technicians . . .

Future Skill Needs: Quantity

The forecasts show:



180,000 to 260,000

Overall the science industries cumulative demand for staff between 2015 and 2025 will be in the range of 180,000 to 260,000.



Up to **142,000**
professional level jobs

Within these totals, between 96,000 to 142,000 are professional level jobs (broadly equating to graduate entry roles).



Up to **73,000**
technical level jobs

50,000 to 73,000 are technical level jobs (broadly apprentice entry roles).

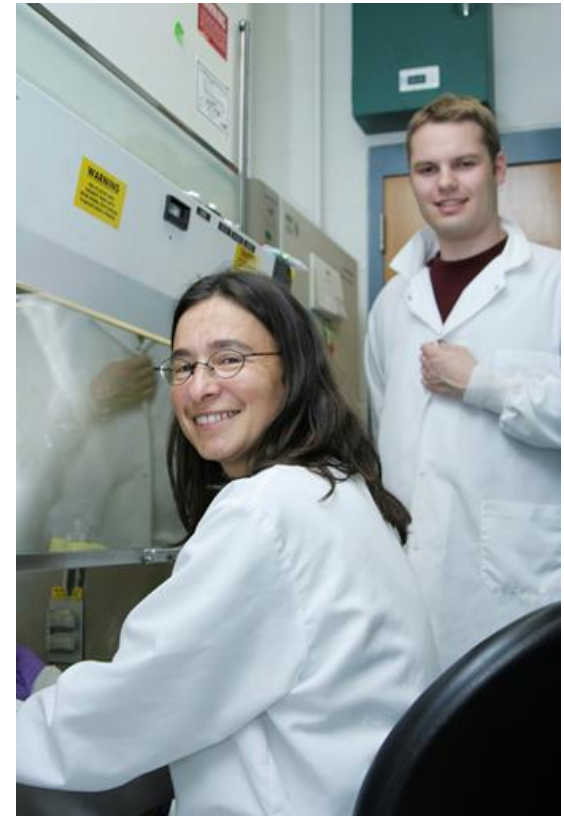


Up to **77,000**
new jobs created

The majority of demand will be replacement demand for people leaving the industry (largely due to retirement) accounting for between 177,000 to 185,000 jobs across the science industries by 2025. New jobs created due to growth will account for up to 77,000 jobs.

The US and UK in Context

- The US Life Sciences Industry has advantages of scale and scope:
 - The biggest market of the Triad (US, EU, Japan)
 - Seven of the top ten research universities.
 - 6,200 biotech firms
 - \$22b on biotech R&D alone.
- Other qualitative advantages . . .



What is the US Advantage?



- Clusters above country
- State Incentives
- K12 Education (primary & secondary)
- Links between employers, educators and policy
- Different layers of technical education

- Strong advocates
- Neo-Corporatism - states, colleges and businesses working together

What can the Corridor Emulate?

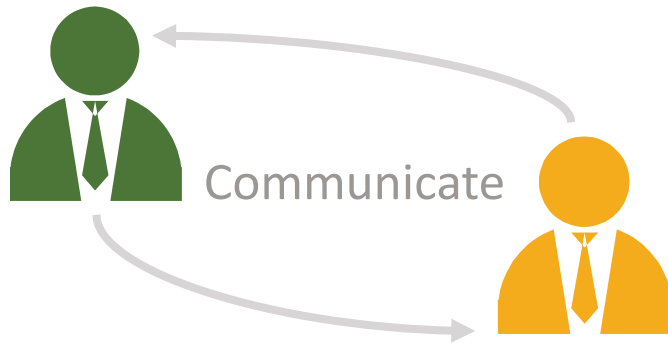
- Some perspective on UK's position
- Growth institutions (MassBio)
- Technical & vocational strength
- Employer engagement
- Hospitals as part of the solution
- Aligning money to skills delivery.
- A stable policy environment



What the corridor can do

You should:

- ✓ Listen to employers, not just 'consult'
- ✓ Talk to learners as well



- ✓ Get providers talking to firms
- ✓ Get employers leading the work

You should not:

- ✗ Reinvent the wheel
- ✗ Make it a competition between sector based (national) solutions and local solutions
- ✗ Think that all employers are the same
- ✗ Think that all providers are the same

What you can and can't do

- Don't expect employer engagement to be easy
- Surveys don't necessarily count
- Critical mass
- Falsely raising expectations that can't be met is suicidal
- Follow the money . . . some things can be funded, others can't
- A stable policy framework is one of employers' major issues
- Understand your policy levers

Some Things that do Work

- SMART apprenticeships
- Traineeships (but a hassle)
- Higher Level Apprenticeships
- The importance of workforce development programmes
- SMEs are time poor
- SME's like money **£££**
- Putting employers in the driving seat



Policy Space – a useful concept

- Initiatives should not be constrained by previous institutional and policy boundaries
 - New initiatives should prioritise areas where the rewards are greatest
 - Where the policy space is crowded, we should not add complexity
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- **But initiatives based on a more comprehensive understanding of common workforce issues raises new possibilities**

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