How can the Science Council support benchmarking data on diversity?

8th December 2014

Diana Garnham

Internal Benchmarking Questionnaire 2012

- Gender split
  - Overall 71.31% male, 32.74% female
  - Male: Highest 96.79%, lowest 24.47%
  - Female: Highest :75.53% Lowest: 3.21%
- Average percentage of student members is 13.31%
  - Highest is 49.45%; Lowest is 0%
- Average of 65+ = 11.81%, highest 27.43%
- Average 25-34 = 21.24%, highest 43.29%
- Average professional (Fellowship) membership fee is £90.89
- Average student member fee is £18.76, highest is £45, lowest free

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Metropolitan Policy Program
at BROOKINGS

The Hidden STEM Economy

Jonathan Rothwell

Findings

Workers in STEM (science, technology, engineering, and math) fields play a direct role in driving economic growth. Yet, because of how the STEM economy has been defined, policymakers have mainly focused on supporting workers with at least a bachelor's (BA) degree, overlooking a strong potential workforce of those with less than a BA. An analysis of the occupational requirements for STEM knowledge finds that:

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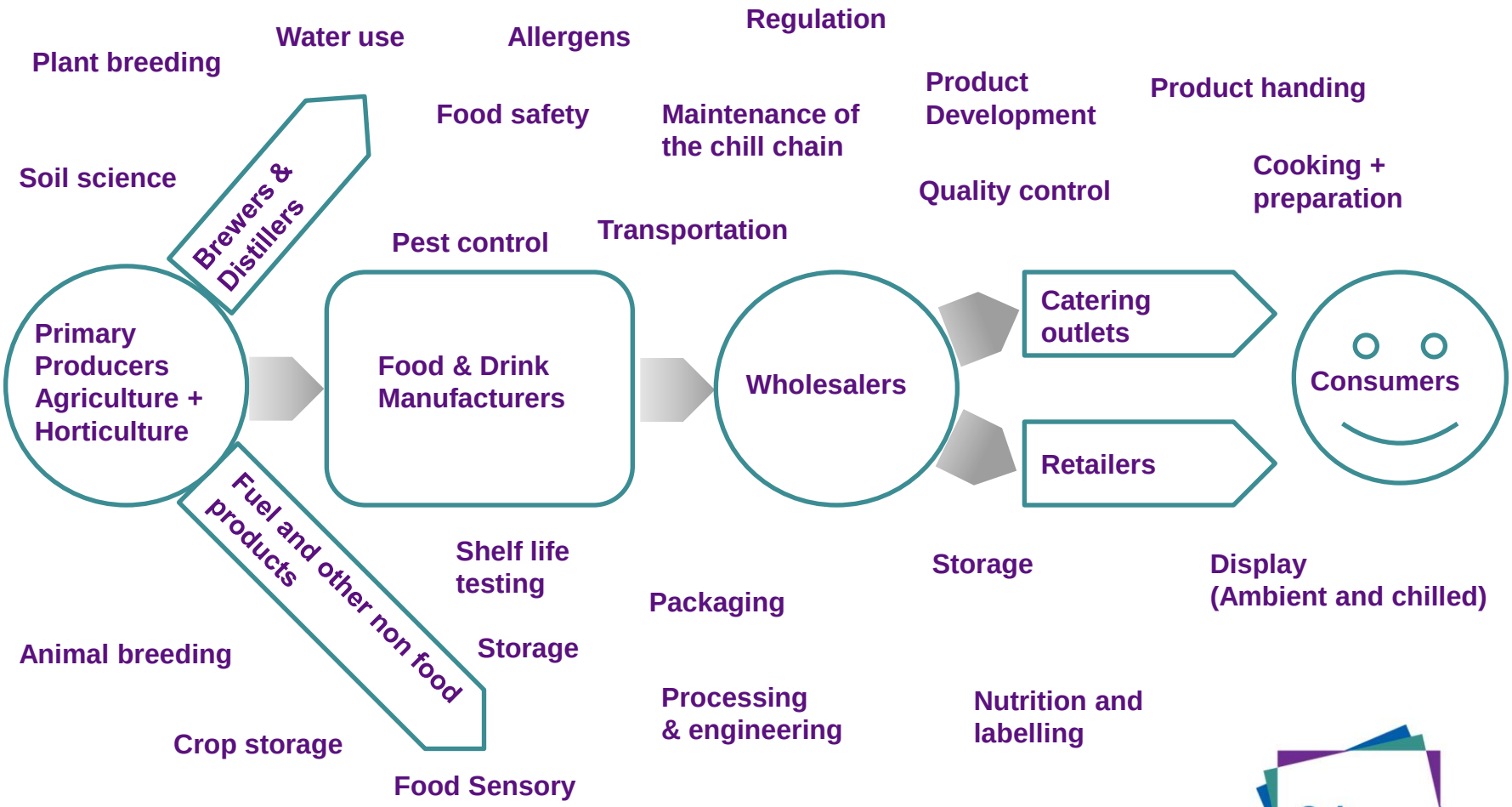
From farm to fork – an overview of the food sector



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Workforce Research methodology

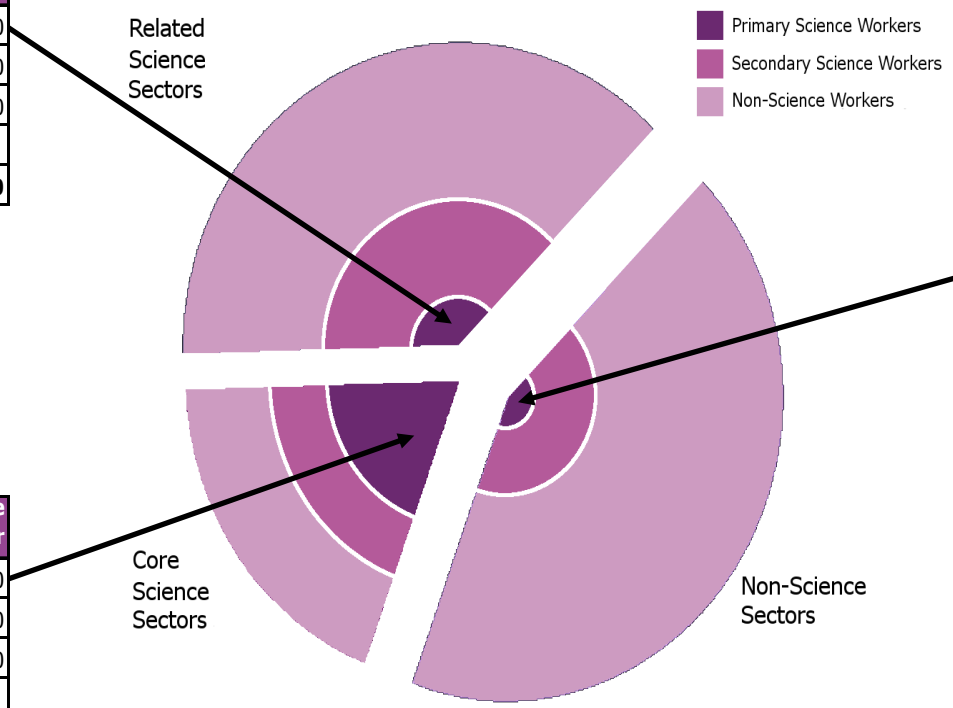
- **Core science sectors** are sectors that are primarily science based in their core activity.
- **Related science sectors** are sectors in which the primary activity is not necessarily science based, but has a strong relationship to science.
- **Non science sectors** are those which have no science based or related activity.

Workforce Research methodology

- **Primary science workers –** workers in occupations that are purely science based and require the consistent application of scientific knowledge and skills in order to execute the role effectively.
- **Secondary science workers –** workers in occupations that are science related and require a mixed application of scientific knowledge and skills alongside other skill sets, which are often of greater importance to executing the role effectively.
- **Non-science workers –** workers in occupations that are not science based and have no requirement for science based knowledge or skills.

Science workforce at a glance

Workers	In the related sector
Primary	335,410
Secondary	2,624,170
Non-Science	7,974,400
Total	**10,933,980**



Workers	In the non-science sector
Primary	135,170
Secondary	584,150
Non-Science	11,610,100
Total	**12,329,420**

Workers	In the core sector
Primary	733,980
Secondary	1,378,490
Non-Science	3,267,710
Total	**5,380,180**

Shape of the UK Science Workforce

2010

- **20%** of the workforce is employed in science roles
  - **5.6 million people**
  - **1.2m** primary science workers, **4.6m** secondary science workers

2014

- **21%** of the workforce is employed in science roles
  - **6.1 million people**
  - **1.3m** primary science workers, **4.8m** secondary science workers

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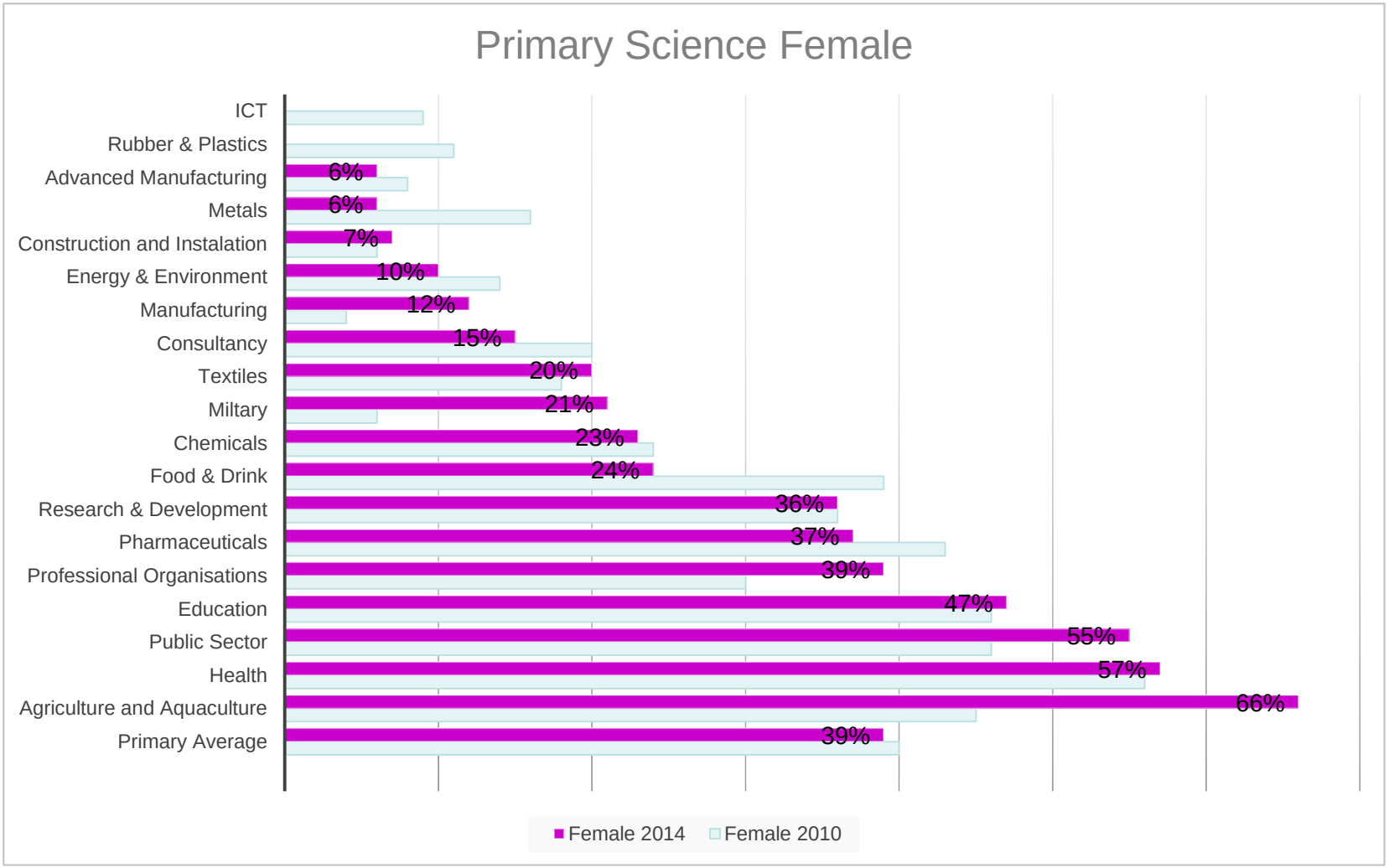
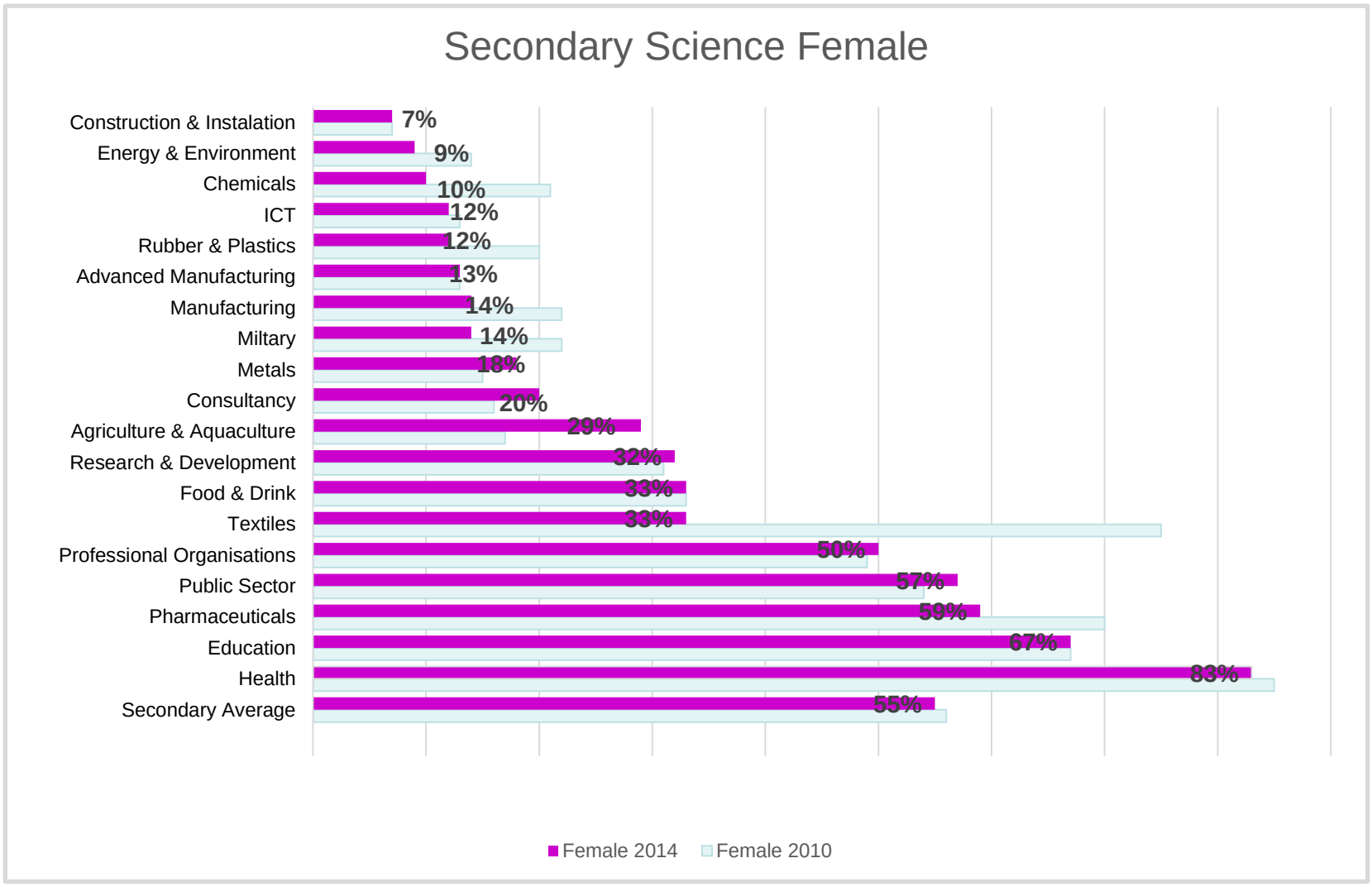
Geography

- Distribution of science workforce across UK similar to total economy averages
  - 38% of science workforce located in East, South East and London (37%)
  - 35% of primary science workers – 457,000 workers
  - 39% of secondary science workers – 1.8m
  - 11% primary science in NW (10.8%)
  - 10% primary science workforce in Scotland (8.4%)

Qualifications and non traditional routes to science

- Education, Research and Development and Consultancy have higher that average proportion of science workers qualified to post-graduate level (55%, 37% and 30%)
- All also have lowest proportion of pre-graduate and unknown qualifications
- Manufacturing, Rubber & Plastics, Agriculture and Aquaculture, Food and Drink, Metals – Higher levels of pre-graduate employment (45% of science workforce)


Primary Science Female
ICT
Rubber & Plastics
Advanced Manufacturing
Metals
Construction and Instalation
Energy & Environment
Manufacturing
Consultancy
Textiles
Miltary
Chemicals
Food & Drink
Research & Development
Pharmaceuticals
Professional Organisations
Education
Public Sector
Health
Agriculture and Aquaculture
Primary Average
6%
6%
7%
10%
12%
15%
20%
21%
23%
24%
36%
37%
39%
47%
55%
57%
66%
39%
Female 2014
Female 2010



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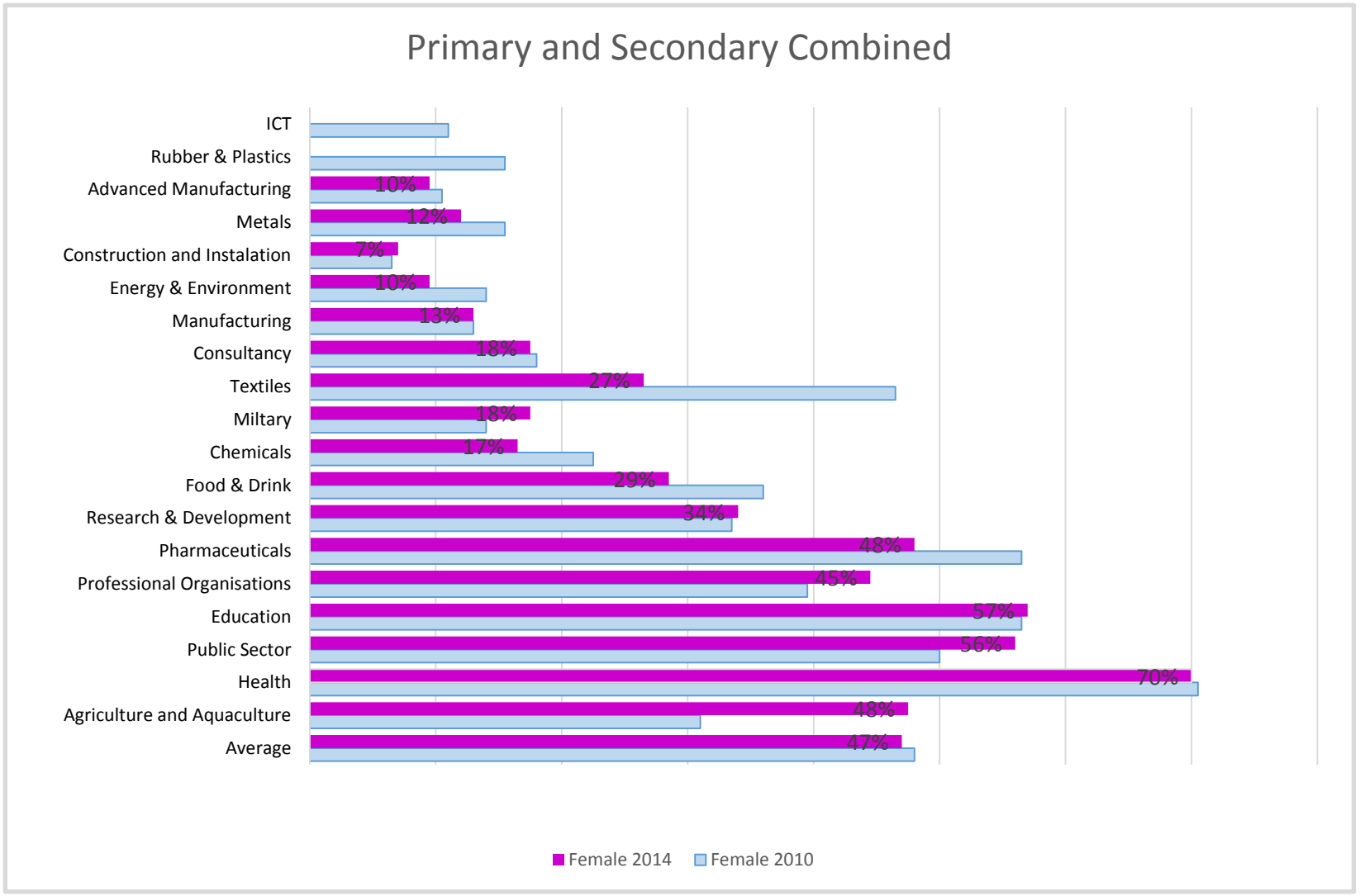
Primary and Secondary Combined
ICT
Rubber & Plastics
Advanced Manufacturing
Metals
Construction and Instalation
Energy & Environment
Manufacturing
Consultancy
Textiles
Miltary
Chemicals
Food & Drink
Research & Development
Pharmaceuticals
Professional Organisations
Education
Public Sector
Health
Agriculture and Aquaculture
Average
10%
12%
7%
10%
13%
18%
27%
18%
17%
29%
34%
48%
45%
57%
56%
70%
48%
47%
Female 2014
Female 2010

Gender

- Primary Science Workforce is 41% female (47% in total workforce)
  - When Health excluded then only 25% of primary science workers are female
- A higher proportion of women take up secondary science roles – 55% of secondary science workers are female.
  - When Health is excluded then only 25% of secondary science workforce is female

Age

- 77% of science workforce are 25-54 (70%)
- 6% of science workforce aged 16-24 (12%)
- A higher proportion of primary than secondary scientists are aged between 16-34
- Agriculture & Aquaculture, Professional Organisations and Consultancy have a higher proportion of workers aged of 65

Continuity

- Research & Development has the largest proportion of science workers who have been in their current job for less than a year
- 28% of science workforce has been in their role for 1-5 years
- Military has the highest proportion of science workers employed in current position for over 20 years

Pay – does gender have an impact?

- On average science workers are more highly paid than non-science workers, but it depends on sector
- Core science sectors pay primary workers more than secondary science workers
- Highest paid primary science are in health (£28.23ph)
- Lowest paid secondary science are in health, significantly lower (£14.03)
- In some sectors primary science workers have much lower pay than secondary science workers – consultancy, construction

Benchmarking the wider context

- Availability of part-time working
- Proportions who have taken a career break
- Explore sub-sectors or regions
- Explore transition between primary and secondary