

# Raising our game

Skills and innovation in the process industries



David Brown, IChemE



# UK chemicals and pharmaceuticals

- 158,000 direct jobs
- 500,000 indirect jobs
- 30,000 employed in related R&D
- £12.5 billion p.a. to the UK economy
- £60m a day to the balance of payments
- £24.7 billion chemicals exports
- £20.7 billion pharmaceuticals exports

*Source: Chemical Industries Association*



# Making the case for the process industries



- Aerospace
- Automotive
- Chemicals....



# Nicola Blackwood to Sajid Javid, 13 May 2016

“Addressing key concerns of the science and innovation community, the Government response should include a **refreshed industrial strategy** approach for all key research intensive sectors, mirroring the enhanced strategy approach that has been followed for the aerospace and automotive sectors. .... The Government could put a condition on the sectors that might seek such an enhanced strategy approach that they commit to providing similarly significant investment in research, including in their sectors' supply chains.”



# Chemistry Growth Partnership

## Priorities

- Securing competitive energy and feedstocks
- Rebuilding UK chemistry supply chains
- Accelerating innovation
- Skills
- Climate change solutions





Slide 7

**ChemE** ADVANCING  
CHEMICAL  
ENGINEERING  
WORLDWIDE

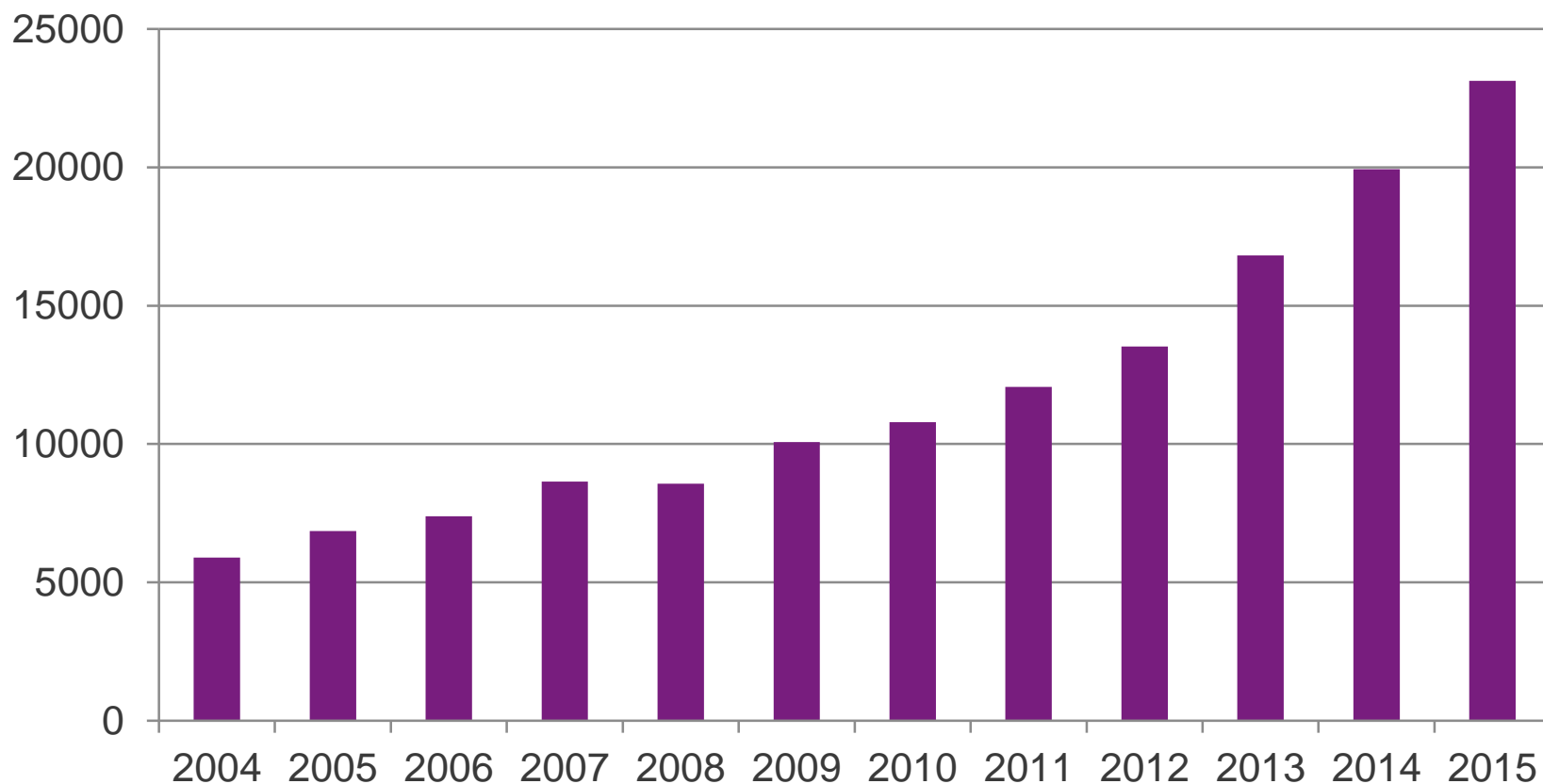
# Innovate to survive



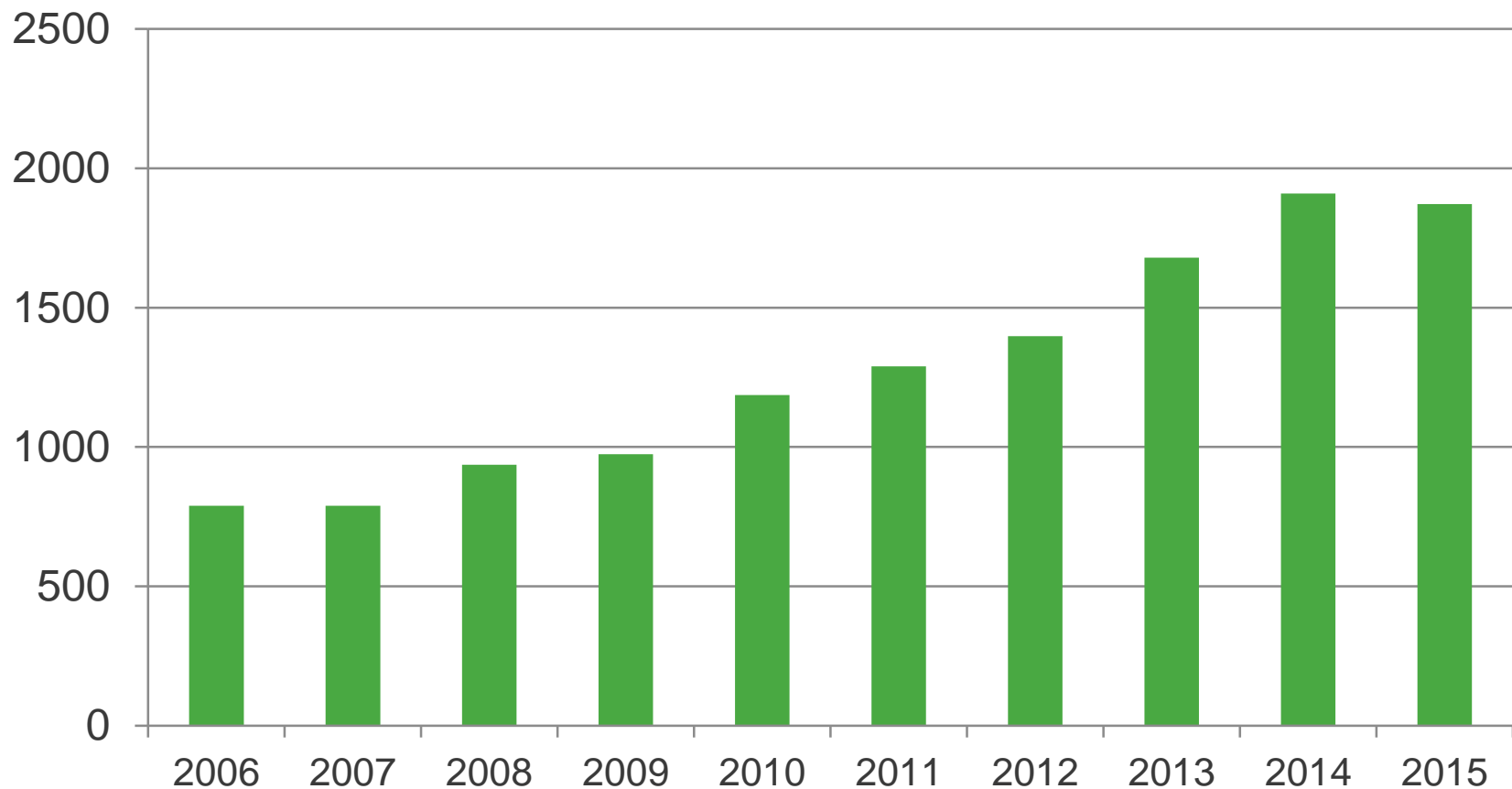
*Sources; Tata, CSIRO*



# University applications for chemical engineering



# Chemical engineering graduates



# Student placements and internships



*Source; AstraZeneca*



*Source; University of Birmingham*

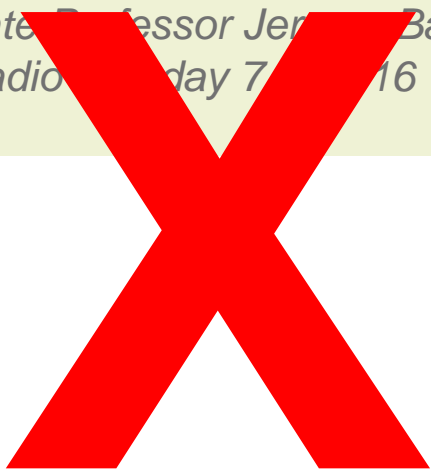


# Student placements and internships

How not to view placements

*“My children, they did internships, they weren't paid and they made coffee”*

Associate Professor Jeremy Baker  
BBC Radio 4, Monday 7 July 2016



Industrial placements in  
chemical engineering

*Guidance and best practice for industry*

September 2014



# Good placements: what employers say

“Industrial placements provide students with real job responsibility and employers with an excellent opportunity to assess emerging talent through challenging and meaningful assignments, solving real problems in the work place. This is a true win-win scenario and serves to produce high quality engineers with a more rounded perspective...” - John Gunner, Exxon

“We also support industrial placements and often recruit graduates with industrial experience (one year or summer placements) over graduates with purely academic experience. The difference in capability is often obvious from the job interview alone.’ - Lee Greenlees, Rolls Royce

“We value our interns - they do useful work, bring a fresh perspective and energise the teams they work with.’ - Jane Measures, BP







*“At the heart of the Dutch chemical ecosystem are robust public-private partnerships, cutting-edge open innovation R&D centers and world-class education institutes that encourage intercompany collaboration and innovation.”*

[www.investinholland.com](http://www.investinholland.com)





## In summary

- Speak up for the chemicals and process industries
  - use the Chemistry Growth partnership
- Invest in the next generation for skills and innovation
  - work with universities and innovation centres
- Collaborate!
  - benefit from mutual support in the North East

