The PhD of the Future

Industry Roundtable Discussion, July 2025

Background

The model of the PhD has changed relatively little over recent decades, yet many industries in which PhD graduates find employment have changed a great deal, and will change further in relation to AI, climate change, global politics, and other drivers. We want to anticipate industry needs as, and ideally before, they emerge and develop our approach to doctoral training to ensure that Bristol PhD graduates have the skills and attributes that employers need.

This provocation was used to convene a roundtable discussion including senior industry partners alongside University of Bristol academics, professional services staff, and PGR and prospective PGR students to engage in creative and practical discussions about the format and nature of future PhD offerings.

Executive summary of findings

Key Themes and Insights

1. Rethinking the PhD Model

- **Flexibility and Customisation:** A strong consensus emerged around the need to move away from a "one-size-fits-all" PhD. Participants advocated for flexible entry points, durations, and exit routes (e.g., MRes), as well as varied thesis formats including portfolios and multimedia outputs.
- **Team-Based and Interdisciplinary Approaches:** Solo research was less valued by industry. Instead, PhDs that recognise and reward collaborative, interdisciplinary, and team-based activities were seen as more aligned with real-world challenges and industry practices.

2. Industry Engagement and the PhD value proposition

- **Co-Supervision and Co-Design:** Industry partners expressed interest in deeper involvement, including co-supervision, participation in assessment processes, and helping shape research questions.

- **Return on Investment (ROI):** There was a call for clearer articulation of the value proposition of a PhD—for students, universities, and industry. The PhD could be framed as a toolkit for applying deep expertise to broad challenges.

3. Skills and Training

- **Human Skills Over "Soft Skills":** Communication, leadership, teamwork, critical thinking, and project management were identified as essential. The term "soft skills" was rejected in favour of "human skills."
- **Commercial and Contextual Awareness:** Training could include financial literacy, stakeholder engagement, and understanding organisational dynamics.
- **Micro-Credentials and Assessment:** Skills development could be formally recognised through micro-credentials and integrated into assessment frameworks.

4. Structural and Cultural Shifts

- **Supervisor Development:** Calls were made for improved supervisor training, especially around industrial engagement and broader student development.
- **Equity and Accessibility:** Suggestions included paid internships, pensions, childcare support, and part-time options for those with caring responsibilities.
- **Eliminating Academic Elitism:** Participants urged a reduction in academic snobbery, siloed thinking, and outdated assumptions about thesis formats and career trajectories.

Concrete Proposals with Strong Support

- **3-Month Industry Internship:** Highly favoured across stakeholder groups, this proposal includes competitive selection, company-supported training, and integration into professional teams.
- **Challenge-Based Learning:** Embedding real-world challenges into training and thesis work was popular, especially among university participants.
- **Industry-Determined Skills Framework:** A structured approach to defining, training, and assessing industry-relevant skills throughout the PhD lifecycle.
- **Chartered Researcher Status:** A proposed recognition for well-rounded researchers, focusing on personal and professional development rather than solely research output.

Conclusion

The roundtable revealed a strong appetite for reforming the PhD to better reflect contemporary needs and opportunities. Key recommendations include diversifying formats, embedding industry engagement, prioritising transferable skills, and redefining success metrics. These insights will inform future doctoral training strategies at Bristol and potentially across the sector.

Format

The day was structured around two morning panels of provocateurs: first from industry representatives who employ PhDs, then current and prospective PhD students, followed by discussion where participants were asked what they would either create as new, enhance of the existing model, reduce of the existing model or eliminate entirely.

In the afternoon we introduced the supposed 'non-negotiable' elements of what a PhD requires to be a qualification of its level, and then we asked mixed teams to identify and draft up specific proposals that responded to the challenges and opportunities elicited by previous sessions.

Industry-Provoked Discussion Themes:

- **One size does not fit all:**
    - **broadening the measurement of what counts towards the PhD:** new models of thesis included: portfolio-based or 'aggregate' PhDs consisting of multiple elements (papers, skills learning, patent filings etc) as opposed to a singular monolithic thesis. The sole pursuit of academic papers was largely regarded as unhelpful, especially where this appeared to be labour for the supervisor's benefit. Impact might play a role in future measurement.
    - **Creating flexible routes to a PhD:** team-based, interdisciplinary, and collaborative PhDs were discussed whilst 'solo pursuits' were seen as something to be discouraged. Optionality in terms of starts, durations, and exit routes (e.g. MRes) were also discussed as a positive development.
- **Diversifying who 'steers' the process:**
    - **Enlarging the role of industry:** suggestions for greater industry engagement included: helping set the research questions, co-supervising, participation within annual progress monitoring processes, teaching and co-delivery of training, and roles as external examiners.

    - **Directly addressing the ROI of a PhD:** through industry engagement the 'value proposition' or 'return on investment' (ROI) should be more explicitly discussed and articulated for the benefit of the student, the focus of study, the university and any external partners. The whole team should be able to make clear statement of "why?" and "so what?". The framing of a PhD as a toolkit to "use their depth in service of a broad challenge" encapsulates some of this.
    - **Adding 'Experience' elements to the PhD:** engaging directly in industry was a very popular theme with suggestions ranging from 'challenges', through 3-month internships, to insisting on a 'year in industry' prior to starting the PhD.

- **Giving the training more status:**
    - **Developing the 'Training' element of the PhD ('human' skills):** various skills were highlighted as important to the training provided within the PhD experience. Foremost of these was communication skills, particularly presentation skills within a company context. Teamwork/Collaboration, Leadership, Critical Thinking (understood broadly rather than narrow within discipline), and Project Management were also mentioned. 'Soft skills' felt to be an unhelpful term for these critical 'human' skills.
    - **Developing the 'Training' element of the PhD (contextual awareness):** linked to the above elements the development of 'commercial awareness' was frequently cited as essential to helping PhD graduates translate their value quickly into the workplace.
    - **Micro-credentialling elements within the PhD:** the value of elements within the PhD (e.g. skills development) might carry micro-credentials to make their value more explicit.

The Discussion:

Initially presented as lightly ordered lists with most-mentioned at the top. There is considerable overlap across the four sections. Most lines are transcribed as written, but closely related or duplicate remarks have been conflated together, and a scale of repetition (mentions) is given.

Create:

- 'Aggregrate/Portfolio PhDs' – built from smaller parts (4)
- Co-supervision by Industry (3)
- "so what?" mindset (3)

- ‘Development’-oriented PhDs (e.g. the ‘D’ bit of R&D is probably 70% of the function)(2)
- More flexible routes through the PhD – starts, durations, increments (2)
- Micro-credentials within the PhD (2)
- Teamworking/Collaboration (2)
- Critical Thinking training (2)
- ROI justification of PhDs (2)
- Team-based PhDs (2)
- ‘Future’-focused insights/skills (i.e. not analysis of the past)(2)
- Agile/Flexible programmes – mirroring Industry practice
- New models of Thesis
- Industry input into question design
- Designing the PhD training for people with 10 years work experience
- Recording and reporting failures
- Project Management training
- Context-sensitive communication
- New measures of success fit for the 21st century
- Shaping a great quest
- Better supervisors
- Programmes that maximise PhD value for specific customers
- Multiple ‘exit routes’ (e.g. MRes)
- PhD as apprenticeship for Research career
- “tools to use their depth in service of a broad challenge”
- Tiers of skills development acquired in each year.
- Cash reward for completion.

Enhance:

- Communication/Presentation skills – understanding context, time-pressure, and audience. need (e.g. start with the conclusion, then explain how you got there). (6)
- Real-world experiences (3 month internship/year in industry before the PhD)(5)
- Commercial awareness training for PGRs (‘Contextual understanding’ of their ideas and role in the organisation) and opportunities to practice this (4)
    - Financial knowledge about value of work (2)
- Encourage their curiosity and creativity. (3)
    - Reward a creative approach over ‘new knowledge’
- Autonomy (may be an issue of articulating what they already have as being of value to industry, may require nuance)(2)

- Resilience (may be an issue of articulating what they already have as being of value to industry, may require nuance)(2)
- Resourcefulness (may be an issue of articulating what they already have as being of value to industry, may require nuance)(2)
- Clearer value-proposition for PGR over and above PGT/UG (2)
- Supervisor training for industrial links (2)
- Applying skills (2)
- Expectation management (students anticipating industry)
- Expectation management (industry anticipating students)
- Planning for whole-career trajectory not just joining industry
- Actionable insights from research
- PhDs for employees who've come from apprenticeships (2)
- Impact measurement as a KPI for PhDs
- Technical excellence
- Sharing skills/knowledge
- Leadership development
- Style of supervision more akin to business where the manager is not necessarily more expert than the staff member being managed.
- External examiners from Industry
- PhD as 'bridge' to research group
- Explore the link between sponsoring a PhD and recruiting them – should this always follow or might it not be the expectation?
- Mindset – building their 'verbs' and questions
- APM focused on skills
- Ecosystems and partnerships
- Part-time opportunities for people with caring responsibilities
- Emotional intelligence

Reduce:

- Academic snobbery
- Technical excellence
- Expectation of academic papers
- Assumption that PhD is 'pre professional experience'
- Knowledge as a commodity
- Negative view of impact/practice
- Given a single question (and the assumption that this is given to them)
- Scale of thesis
- Love of detail
- 'sausage-factory' PhD questions

- Commitment to thesis at expense of other opportunities

Eliminate:

- PhDs as a 'solo' pursuit (4)
- Bulk-writing Thesis as the only output (3)
- Supervisors who've only experienced academia.
- Peer-reviewed papers as the only KPI
- One-size PhD fits all
- Silos
- Single-domain studies.
- Predestined research questions.
- Crap supervisors
- PhDs as a resource for the supervisor.
- 3-minute presentations – false expectation of short 'soundbites'
- Acronyms
- 'Elite' vocabulary
- Academic-led teaching of PhDs

Student-Provoked Discussion Themes:

- **Rethinking the Value Proposition of PhD study:**
    - **PGRs as an 'accelerator' for ideas + individuals**
        - PGR as a period of exploration and growth – of both the individual and their ideas.
        - Holistic rather than two-tier approach to academic and professional/personal development (e.g. actively supervisor-supported, workload-enabled, time-allocated, 'badged')
        - Increase role of non-academics (in supervision, training, mentoring, APM, Viva)
    - **Thinking of PhDs as more akin to jobs:**
        - Paid/Financially supported (e.g. Pensions, Childcare)
        - Professionally managed and supported
        - Team-based
        - Legitimising skills gained as 'Experience' on a CV rather than 'Education'.

- **Rethinking the 'route map':**

    - **Creating variations and pathways within PhD offerings and structures to reflect different types of outcomes (e.g. industry, academia, public service etc)**
        - Could include variances in PhD format (e.g. process, outcomes)
        - Could include variances in title
        - Might include flexibility to shift 'in flight'
    - **Revisiting the MRes:**
        - Valuable on its own terms ('enough' research experience for some participants and their employers)
        - As a distinct step on the route to PhD (but other routes are available and PhD not assumed to be the only viable next step)

- **Skills and Supervision**
    - **Note:** Not 'soft skills' – but 'human skills' – soft/hard language not helping the significance of skills like communication, leadership, problem solving, and teamwork.
    - **Skills are already present in or adjacent to many programmes but often framed as optional and are not assessed as part of the PhD:**
        - Some students will maximise these opportunities
        - Some students will not take up these opportunities
        - Supervisor attitudes and awareness of wider offerings play a role
    - **Opportunities to gain and showcase skills in alternative settings (e.g. in a business or through a challenge) are particularly important**
    - **Consistency and professionalism of supervisors:**
        - Better incentivised and equipped to prioritise wider student development not just seen as a resource
        - And/or provide Advice/Mentoring/Coaching from wider non-academic sources.
        - Advice (academic and non-academic)

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Create:

- Thesis variations/pathways: industry, academic, public service etc (5)
    - Demonstrate development of knowledge to a high academic level
    - Not just subject knowledge but broad skillset (2)
- Means to assess wider skills gain (2)

- Opportunities for PhDs to showcase transferable skills in an enterprise setting before completing the PhD (2)
- Encouraging the use of the MRes as PhD 'practice'?
- More escape routes and pivot-points
- Include a non-expert in the Viva
- Include non-academic supervision
- Additional deliverables: grant writing, entrepreneurship skills
- Adaptability to size of organisation
- Expectation of individual diversity and growth
- More industry mentors
- Assessment of skills from Day 1
- Alternative CDT models
- From 'Dr.' to 'Dr+.' – signifying different 'flavours' of PGR qual.
- Alternative assessment formats – e.g. video/podcasts
- Flexibility re: public sector PhD funds
- PhDs as jobs
- An employability skills programme
- A research skills framework – and a PhD assessment framework
- Develop a shared understanding of leadership between academia and industry
- Adjacent domain collaboration to make use of individual excellence
- More value for time and effort
- Clear desired outcomes

Enhance:

- Identification and Articulation of skills (3)
    - Examples of application of skills
- PGR as an 'accelerator' of individuals and ideas (2)
- Industry exposure
- Changemaking capacity
- Value proposition of PGR study
    - Love of topic
    - Career enhancement
    - Its hard to do – so it's a badge of excellence
    - Expertise gain
- Time to 'explore' (ideas and careers)
- Ability to question
- Communication of expectations early
- Translatable skills awareness

- Examination changes
- Sharing knowledge
- Transparency of what industry actually wants
- PGR ‘aftercare’ – changing course direction and flexibility
- Exposure to industry challenges
- Translation skills
- Access – are the right people getting to do PhDs?
- Advice for prospective PhD students to make informed decisions
- Careers advice
- Incentives for supervisors to support training
- Enhanced supervisor capability and reward mechanisms
- Salary
- Teamwork skills
- Assess value for money for different outcomes
- More masters funding
- Formal training for wider skills in the CDTs
- Recognisable external value
- Expectation that having done a PhD is akin to having had a job
- Confidence gain
- Diverse soft skills
- Placements
- Enhance the MRes ‘product’
- Interdisciplinary skills training
- Leadership skills should be prioritised
- Actionable insights from skills in action – what have you done?
- Supervision for breadth of experience
- Financial support – pensions, NI contributions, childcare

Reduce:

- Variation in supervision approaches
- “chapters” – to make space for other elements
- Academic snobbery
- Perception of PhD as next logical step
- Knowledge as product

Eliminate:

- Rubbish supervision (2)
- One size fits all approach

- Need to write the thesis yourself but know the context – makes PhD more equitable and accessible
- Thesis as a status object
- Approach careers as a 'job for life'
- Any talk of 'soft skills' in the PGR lexicon
- Wholly theoretical information without a way to use it

The 'How Might We' (HMW) Questions

The morning's discussions produced a series of HMW questions for the afternoon's creative problem-solving. Not all were tackled in the time available, they are presented here in thematic clusters:

- Stakeholder 'Return On Investment' (ROI):
    - HMW get the optimum ROI for all PhD stakeholders?
    - HMW create PhD students who will deliver impact for industry from day one?
    - HMW fund a programme of industrially-relevant PhDs?
    - HMW design a PhD that will be more attractive to candidates and more effective for industry?
    - HMW develop a framework which allows for students' own aspirations in industry and/or academia?

- Changing the shape and scope of PhDs:
    - HMW we move to an 'outcome-based' PhD rather than a 'process-based' PhD?
    - HMW better assess project outcomes where the scope is adapted over time?
    - HMW adjust the length of study to account for project-specific factors?
    - HMW scale the benefits of the CDT model to other PGRs?

- Skills & Training for PhDs:
    - HMW reward industry-ready future skills?
    - HMW ensure 'training' is valued even if the thesis is not completed?
    - HMW ensure doctoral training reflects a 'rounded' researcher?
    - HMW successfully consider professional research and skills in research degrees?

Final Concrete Proposals and Voting

This last section followed a discussion of 'non-negotiable' elements of the PhD as an academic qualification. Groups formed around the challenges and opportunities elicited earlier in the day and developed proposals as a response.

Note: every individual had 3 *Likes* and a single *Invest*.

The list is ranked with the most *invested* first, using *likes* as a tie-break.

Headings are as-written by facilitator interpreting verbal summaries.

1. **3-month internship in a company. Competitive interview but company-supported and training provided.**
    a. 8 likes (4 Industry, 4 University)
    b. 6 invests (3 Industry, 2 University, 1 Student)
    c. *Note: Joint-favourite for Industrial voters*.
2. **Challenge-Based Learning (training, portfolio, chapter in thesis, APM engagement)**
    a. 12 likes (5 Industry, 5 University, 2 Student)
    b. 5 invests (3 University, 2 Industry)
    c. *Note: Favourite for University voters*.
3. **Industry-determined PGR Skills Framework (including training, supervision, demonstrated through APM)**
    a. 15 likes (6 Industry, 6 University, 3 Student)
    b. 4 invests (2 Industry, 1 University, 1 Student)
4. **Chartered Researcher status.**
    a. 6 likes (3 Industry, 2 University, 1 Student)
    b. 4 invests (2 University, 1 Industry, 1 Student)
5. **Periodic reviews (including multiple academics and industry) to determine progress towards being a well-rounded researcher.**
    a. 13 likes (6 Industry, 5 University, 2 Student)
    b. 3 invests (3 Industry)
    c. *Note: Joint-favourite for Industrial voters*.
6. **Allocating time for industry-endorsed training (80% academic, 20% industrial) – and make it assessed.**
    a. 9 likes (5 University, 3 Industry, 1 Student)
    b. 2 invests (1 Industry, 1 Student)
7. **Changing the KPIs/Promotion Criteria for Supervisors**
    a. 6 likes (3 Industry, 2 University, 1 Student)
    b. 1 invest (1 University)
8. **Student-maintained portfolio of skills evidence**
    a. 4 likes (2 Industry, 1 University, 1 Student)

    b. No invests
9. **Defining (qualifying/quantifying) the actual skills of value.**
    a. 3 likes (2 University, 1 Industry)
    b. No invests

Observations:

There is some potential overlap in the list; if **Defining the actual skills of value** were combined with the **Industry-determined PGR Skills Framework** it would be the *most-liked* proposal (but not the *most invested*).

If the **Student-maintained portfolio of skills evidence** was also combined with the **Skills Framework** that *most-liked* status would be higher still.

A grander bundling of **Challenge-based Learning**, **Skills Framework**, **Periodic Review**, **Allocated Time**, **Portfolio**, and **Defining actual skills of value** has 56 likes and 13 invests, although had it been presented as such it may not have been as popular.

Appendices

Concrete Proposals in more detail

Some of the groups provided extensive notes as they worked up their ideas. Where possible this has been captured and summarised:

'Rounded Researchers' and the Chartered Researcher status:

Developing 'Rounded Researchers' involves both 'scientific'/'technical' skills and 'soft'/'communication' skills relevant to industry (e.g. finance, project management, leadership, stakeholder management).

'Rounded' researchers have an aspect of transferability to them; they can be deployed and redeployed across a variety of projects; early experience of interdisciplinary work would be a benefit.

Option: The Researcher becomes the output of the PhD, not the Research. The research might 'fail' but the researcher can still gain a PhD by demonstrating their learning and development.

Option: And/or the Researcher is rewarded with 'Chartered Researcher' status for their account of the process and their development.

Proposal: The thesis might include ‘extra chapters’ contributing to the award (or to additional qualifications):

- Offering ‘context’ for their research; why was it important? What is the big picture this informs?
- ‘Impact’ elements such as business plans, bids for future funding, policy adoption recommendations etc.
- Reflecting on and demonstrating their personal and professional development and the viva would also encompass this.
- A process reflection on the ‘pivots’ or changes in direction the research took over time and why.
- Interdisciplinary activity and commentary on application of outputs or processes for other fields of research.
- Inclusion of portfolio elements and/or formative mini-reviews.

3-Month Company Internship

Ambition is to build networks between industry and academic, and directly for the student as an emerging prospective employee.

Selected by interview then co-designing a project between student, academic supervisor and industry sponsor. Need not be specifically related to the PhD but should be in adjacent academic or professional space.

Intern will work in a team, line-managed as a member of staff, and paid by the company. Might be part of cohort of PhD interns across both universities and disciplines.

‘Onboarding’ carefully developed to integrate into workforce.