

#### Preparing the roadmap: Prioritising cross-disciplinary training needs with industry

#### Industry Workshop 19 January 2023

Facilitated by: Dr. Emily Woollen Institute for Academic Development University of Edinburgh

IAD INSTITUTE FOR ACADEMIC DEVELOPME



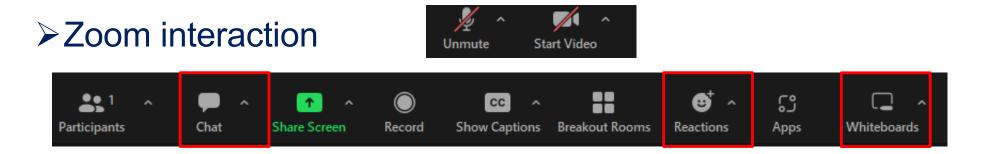


13:00	Welcome and introductions	(30 min)
13:30	Speaker - Prof Rory Duncan	(20 min)
13:50	Lowering barriers to collaborations	(30 min)
14:20	Break	(20 min)
14:40	Industry requirements & preferences	(30 min)
15:10	Understanding the skills gap	(70 min)
16:20	Wrap up	(10 min)





### Workshop etiquette



## We will be using Whiteboards and Padlet to capture group outputs

Any contributions today will be quotable and will be revisable before publication

#### ➤We are recording the session for accuracy







## Goal: remove barriers for researchers crossing disciplines



www.ed.ac.uk/iad

https://x-net.bio/



#### Aims of X-Net:



Draw up a roadmap for interdisciplinary research careers by gathering data from the network on career success stories and pitfalls. Consult and involve industry, patients and the public.

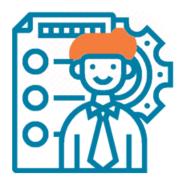


Establish training standards, curricula, required competencies and best practices for discipline hopping.





#### Aims of the online industry workshop (19 Jan 2023):



Explore how academia does, or does not, currently provide industry hires with sufficient interdisciplinary skills to perform roles in this sector.



Via X-Net's future Roadmap, influence UKRI's future training strategy.





## **UK Research** and Innovation

"We will support and empower multi- and interdisciplinary networks that enable diverse research and innovation communities to exchange knowledge and ideas and build new collaborative partnerships".

UKRI Strategy 2022-2027 (2022)



#### Introductions









## Industry-academia interdisciplinary collaborations





## Prof Rory Duncan FRSE



Sheffield Hallam University Pro-Vice Chancellor (Research and Innovation)

Previously the UK Research and Innovation (UKRI) Director of Talent and Skills



www.ed.ac.uk/iad

https://www.shu.ac.uk/about-us/our-people/universityexecutive-board/professor-rory-duncan#firstSection



## Lowering barriers to collaboration In groups, discuss:

- 1. One key challenge or barrier (if any) to interdisciplinary industry-academia collaborations (10 min)
- One change that would strengthen links between industry and academia, and/or enable collaborations (10 min)

#### Add ideas to this Padlet:

https://padlet.com/ewoollen/kcsigm79safbtkdc





#### **Break!**







## Industry requirements & preferences



# Industry requirements & preferences of new recruits



#### Whiteboard Activity:

- What key skills do you value the most in new recruits?
- Preferences for other key characteristics

#### **Plenary discussion:**

- Are these skills/ preferences similar across companies?
- What factors might influence any differences?
- What are the main skills missing in new recruits?

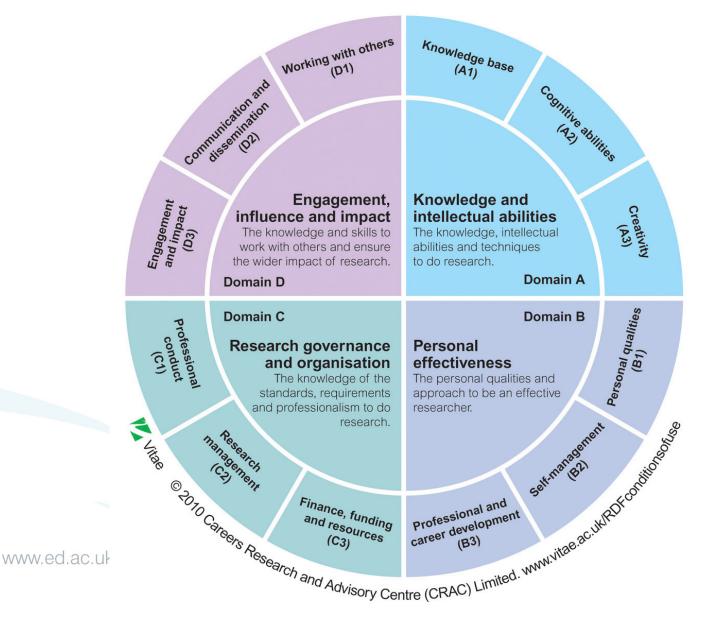




### Understanding the skills gap



## The Researcher Development **\***-**NET** Framework (RDF)



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FOR **IIC** PMENT Collegiality The Full RDF Subject knowledge Team working Research methods: theoretical knowledge People management Research methods: practical application Supervision Information seeking Mentorina Information literacy and management Influence and leadership Languages https://www.vitae.ac.uk/researchers-professional-development/about-the-vitae. Collaboration Academic literacy and numeracy Equality and diversity Working with others Knowledge base (A1) Analysing ication and Cognitize abilities Communication methods Synthesising Critical thinking Communication media Publication Evaluating Problem solving Teaching Inquiring mind Engagement, Knowledge and Public engagement Intellectual insight Creativity (A3) Intellectual abilities Influence and Impact Enterprise Innovation The knowledge and skills to The knowledge, intellectual Policy (EQ) Argument construction work with others and ensure abilities and techniques Society and culture Intellectual risk the wider impact of research. to do research. Global citizenship Domain A Domain D Health and safety Domain C Domain B qualities pro Enthusiasm Ethics, principles and Perseverance sustainability Research governance Personal Legal requirements Integrity and organisation effectiveness 9 Self-confidence IPR and copyright The knowledge of the The personal qualities and Self-reflection Respect and confidentiality standards, requirements approach to be an effective Attribution and co-authorship and professionalism to do researcher. Responsibility research. Appropriate practice Preparation and prioritisation Research strategy Commitment to research Project planning and delivery Time management Professional and Finance, funding **Risk management** Responsiveness to change career development and resources Work-life balance (C3) Income and funding generation Career management Financial management Infrastructure and resources © 3070 Career Management Infrastructure and resources © 3070 Career Management Responsiveness to opportunities Networking Reputation and esteem Vitae.ac.uk/RDFconditions/USP WW

researcher-development-framework/vitae-researcher-development-framework-rdfull-content-graphic-2011 ipg

#### Example lens on the RDF

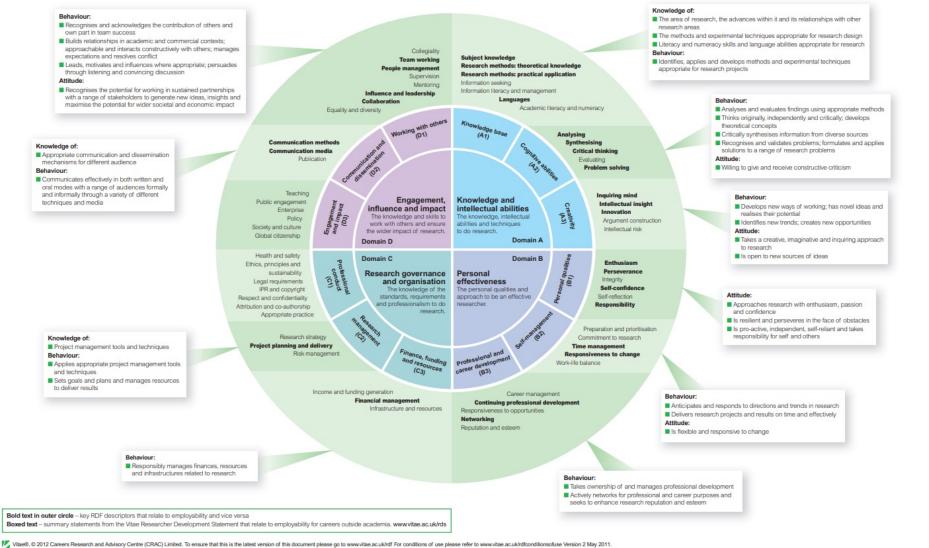
#### **Employability lens**

on the Vitae Researcher Development Framework for careers outside academia



#### Researcher Development Framework

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# Mapping skills and competencies



Analysing Synthesising Critical thinking Evaluating Problem solving

Inquiring mind

Innovation

Intellectual insight

Intellectual risk

Argument construction

#### Knowledge and intellectual abilities

Knowledge base

The knowledge, intellectual abilities and techniques to do research

**Domain A** 

Cognitive abilities

Creativity (A3)



#### Key skills:

- Research methods: practical application
- Information literacy and management

#### **Key competencies:**

- Can use a centrifuge and pipette correctly
- Can manage large data sets and perform appropriate statistical analyses

#### Key skills:

Problem solving

#### **Key competencies:**

 Uses multiple methods and approaches to solve complex problems



## Group activity – part 1

#### In your groups:

- For your domain, specify which key skills and competencies are required in the biomedical industry
- Write these into the Padlet
  <u>https://padlet.com/ewoollen/quyuvd6gs90q601j</u>





## Group activity – part 2

#### Looking at the full RDF, in your groups discuss:

- Do new recruits have these skills?
  - If no, give it a thumbs down, if yes give it a thumbs up
  - Provide comments to clarify your choices if needed

Padlet is here: <a href="https://padlet.com/ewoollen/quyuvd6gs90q601j">https://padlet.com/ewoollen/quyuvd6gs90q601j</a>



## Outcomes of the workshop



- Contributions and outputs will be collated into a report
- All participants will be given the opportunity to review their contributions before it is disseminated
- X-Net will take these forward to inform the Roadmap for interdisciplinary careers to influence UKRI future training strategy





#### **Further resources**

#### **Experiences from biomedicine**

- Gilliland, D.G., Regev, A., Schadt, E.E. *et al.* (2022) Traversing industry and academia in biomedicine: the best of both worlds?. *Nat Rev Genet* 23, 461–466 (2022). <u>https://doi.org/10.1038/s41576-022-00486-5</u>
- Knapp B, Bardenet R, Bernabeu MO, Bordas R, Bruna M, Calderhead B, et al. (2015) Ten Simple Rules for a Successful Cross-Disciplinary Collaboration. *PLoS Comput Biol*, 11(4): e1004214. <u>https://doi.org/10.1371/journal.pcbi.1004214</u>
- Ponting C. P. (2020) Genetics Needs Non-geneticists. *Trends in genetics*, 36(9), 629–630. <u>https://doi.org/10.1016/j.tig.2020.06.015</u>

#### **For collaborations**

- Bennett et al. (2018) Collaboration and Team Science: A Field Guide (2<sup>nd</sup> ed). National Cancer Institute, US Department of Health & Human Services. Available at <u>https://www.cancer.gov/about-nci/organization/crs/research-initiatives/team-science-field-guide/collaboration-team-science-guide.pdf</u>
- Gadlin, H. & Jessar, K., Pre-empting Discord: Prenuptial Agreements for Scientists, NIH Ombudsman. Available at <u>https://ori.hhs.gov/preempting-discord-prenuptial-agreements-scientists</u>





#### X-Net Contact

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X-Net slack Channel to keep in touch with other interdisciplinary researchers <u>https://join.slack.com/t/x-net-workspace/shared\_invite/zt-</u> <u>1c2eg08pw-adsu5TzP2o~d7miZ20zUXw</u>





# Thank you!



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www.ed.ac.uk/iad/researchers

