

Markets and Materials: exploring the economies of laboratory animal breeding, banking, and supply

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Breeding, banking and supply as challenges for animal research

Managing the numbers of laboratory animals is an ongoing challenge in animal research. Contemporary biotechnologies enable the faster and more efficient creation of animal models. The life sciences industry sells a wide range of products and services. Meanwhile researchers must ensure the timely availability of laboratory animals while minimising surplus, for welfare and efficiency. They are encouraged to replace 'tick over' colonies with cryopreservation, and maximise the value of their work by storing and sharing tissues and/or embryos. Hence, new materials and markets are shaping the production, accumulation and circulation of research animals.

Our research explores how animals are embedded in broader economies of science. We study how its logics and practices conceive animals as resources yielding social and economic value, and how this influences their care in the laboratory.



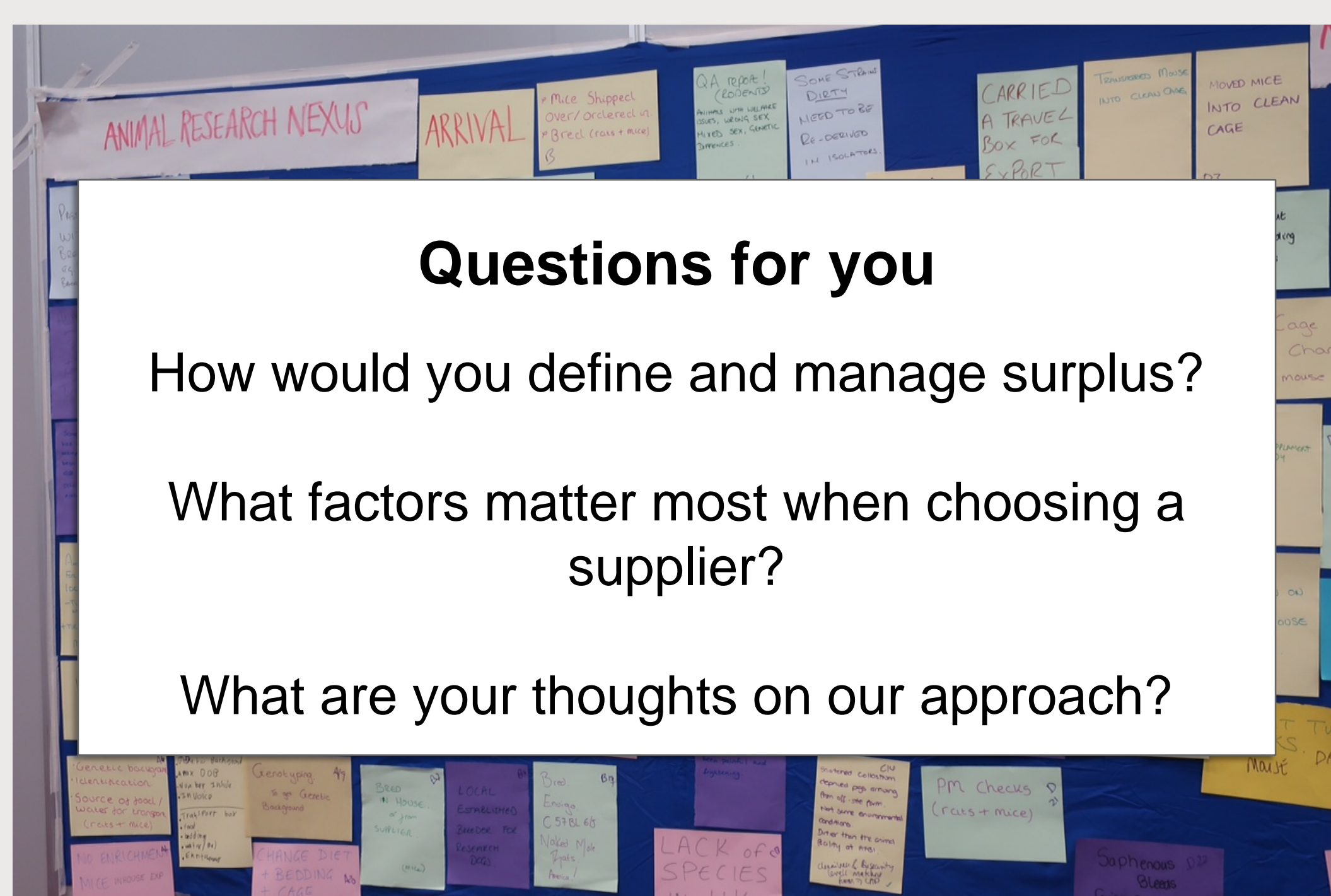
Research Questions

How is the breeding and supply of laboratory animals shaped by economic logics and practices (e.g. surplus, efficiency, investment)?

What can we learn about how laboratory animals are valued through the study of biobanking practices?

How are economies of lab animal research shaping the translation of the 3Rs into practice?

Our strategy



Questions for you

How would you define and manage surplus?

What factors matter most when choosing a supplier?

What are your thoughts on our approach?

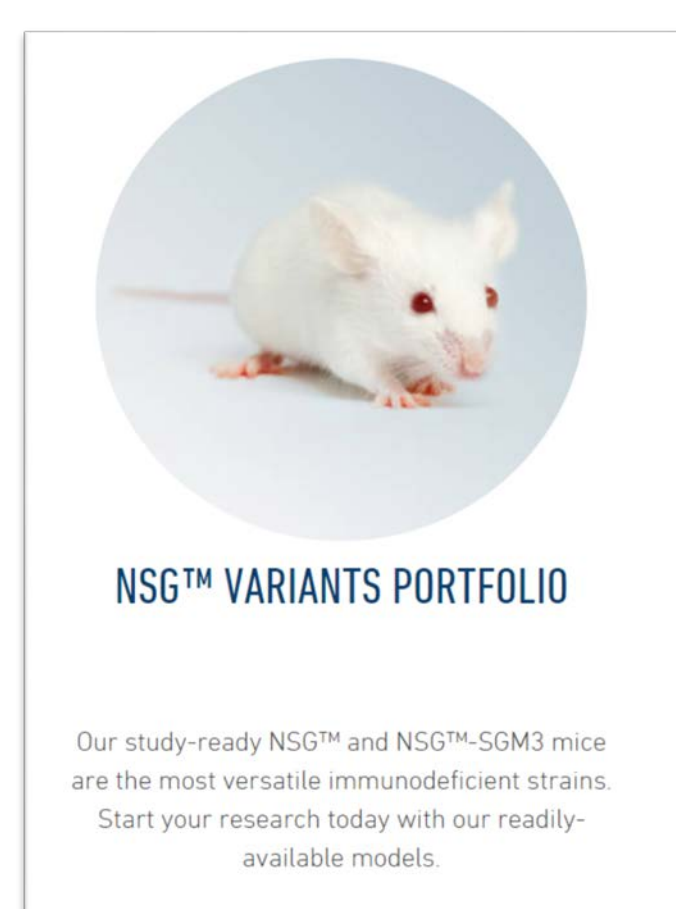
We seek to...

- Carry out semi-structured interviews, ethnographic research, participatory approaches and documentary analysis.
- Be attentive to the practices, technologies and concepts in lab animal economies.
- Speak to stakeholders across the industry, from commercial suppliers to admin staff, scientists, funders, welfare organisations, animal technologists and NGOs.
- Support dialogue between the industry and publics.

Preliminary findings

Mice are 'valued' as resources, and that shapes how they circulate. Their creation, maintenance and consumption has costs, and they can yield social and economic values.

'But of course [...] a lot of times talking about these things morally doesn't quite work. It doesn't have the same impact. Unfortunately that's the world we live in. So you have to sort of explain it in terms of, well [...] how long? how much money you spent keeping this animal? Most of the animals we use are about [...] anywhere between 8 to 12 weeks. Experiments go on for 6 months. So that's about an 8 month old animal. You've kept this mouse going knowing that it's not going to work—, You know, for 8 months. What for? (Researcher)



Arguments for saving and sharing strains are economic as well as ethical. Ideas of efficiency and maximising value are important.

'... there are 1000s upon 1000s of mice being generated. [...] depending on your perspective, but the community really does have an obligation to share this resource for ethical reasons as well as financial reasons. Because it takes many thousands of pounds to generate a mouse, depending what technology you use. It also takes time. And it doesn't make sense in this environment that we're working for [...] a laboratory in [a UK institution] to generate a mouse line, and a laboratory, I don't know, it might be [an Other UK institution] or it might be in [an Asian country], to develop the same mouse line and not talk to each other.' (Biobank manager)



We have identified **commercial and welfare values assembled the services** on offer to researchers.

'- I suppose, one of the key [arguments for an institutional biobank] is to prove you can actually justify from a financial perspective that it's very likely that you're going to break even I suppose. And it's also kind of providing a better service for [A University]'s users to make [the University], from a research perspective, more attractive. If you can provide a reliable service in house it's better than someone going and using an external provider who charges 10 times the amount for the same amount of work [...]. (Facilities manager)

- Yeah. Convenience I guess. Ethically it's better to do stuff where you are, instead of sending 5 animals around or additional material that then needs to be recovered again at a new university or research facility.' (Embryologist)



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References and Image credits, from top down, L-R: Charles River Laboratories (2015) *You're virtually here*. Advert in Lab Animal, 15(5): back page. Photographs by the authors. The Jackson Laboratory (2018) <https://www.jax.org/jax-mice-and-services/find-and-order-jax-mice/nsg-portfolio>. RSPCA Working Group on Archiving Genetically Altered Mice (2009). Photograph: open creative commons.