



# Meeting Report NCad Stakeholder Meeting on ‘Science in Motion: the Road to an Animal testing-Free Scientific System’

On 27 October 2025, a group of stakeholders attended the online NCad Stakeholder Meeting on ‘Science in Motion: the Road to an Animal testing-Free Scientific System’, which lasted for two hours. This was the fourth meeting in a series of five meetings, held to gather input for the Transition Policy Advice 2.0 that the NCad is working towards. The day consisted of a presentation, plenary discussion and subgroup sessions on this topic.

## Introduction and welcome

The moderators Kees Le Blansch (bureau KLB) and Daan Schuurbijs (De Proeffabriek) opened the meeting, welcomed all participants, and outlined its purpose and structure. The session focused on the science system and the extent to which it enables or constrains the development, acceptance, and application of animal-free innovations.

Three guiding questions were introduced:

1. What barriers in the current science system hinder the development, acceptance, and implementation of animal-free innovations?
2. Where is progress already visible, and how can it be strengthened?
3. What actions and conditions are needed to enable structural change?

The discussion addressed both system-level factors and the role of people within that system, including how routines, beliefs, and responsibilities shape the pace of change.

Before the meeting, participants completed a short mini-survey. Its results were presented during the session and helped to frame the subsequent discussion.

## Presentation scientific system

Michelle Habets from the Rathenau Institute presented an analysis of the science system and the choices embedded in research practices. She began by sharing an example from her PhD research in medical ethics, where she examined how high risks in first-in-human trials can be ethically justified. These trials typically offer no direct benefit to participants, as they focus on testing safety at low doses rather than efficacy. The main ethical justification therefore lies in the potential benefit for future patients.

For the purposes of this meeting, Michelle introduced a simplified framework of the science system (see Appendix 1). She distinguished three levels of actors:

1. the policy level;
2. the policy implementation level;
3. the level of science practice.

She emphasised the importance of considering not only the introduction of new methods but also the phasing out of animal research. Challenges and areas of progress can be found at each level.

She also outlined three domains relevant to the transition:

- The regulatory and institutional domain – for example, extensive validation requirements for new approach methodologies (NAMs) can be slow and costly.
- The domain of scientific careers – funding structures, competition, and publication pressure often favour the continued use of established animal models.

- The cultural and epistemic domain – decades of accumulated expertise and large existing datasets make it difficult to shift away from animal-based approaches.

Together, these levels and domains provide a lens for identifying where change is needed or already occurring. During the discussion, it was noted that reviewers were mentioned as a distinct stakeholder group, while in practice reviewers are often the same scientists who operate elsewhere in the system. This overlap may influence how committee decisions support or hinder change.

## Pitches on practical barriers and emerging progress in animal-free innovation

After the introductory presentation, two pitches illustrated how researchers navigate practical opportunities and constraints when working toward more animal-free innovation.

Else Tolner (LUMC), a medical biologist working on epilepsy and migraine, explained how her group combines patient-derived insights with in vitro models, while still relying on rodent models for questions that require invasive measurements or more complex network-level readouts. She stressed the need for open and transparent dialogue about the strengths and limitations of each research modality to improve readouts, strengthen validation and promote complementary research that can reduce animal use where possible. She also emphasised the importance of developing new methodologies that enable more mechanistic research directly in humans. In her field, she noted, a society entirely free of animal testing is currently unrealistic, and methodological nuance is essential: animal models have clear limitations, yet remain relevant for specific aspects of complex brain research.

Frank Staal (LUMC) shared his perspective on the immunology and gene-therapy field. In his work on severe combined immunodeficiency (SCID), in vitro systems inform early exploratory stages. At the same time animal studies remain essential both for mechanistic understanding and to meet international safety requirements, and have directly supported a gene-therapy approach that is now benefiting patients. He described systemic pressures that make it difficult to reduce animal use in practice: funding reviews, regulatory expectations and journal standards often demand additional in vivo data, even when well-designed in vitro systems could meaningfully replace (early-stage) animal work. This can lead to extra animal experiments and career disadvantages for researchers who pursue alternative paths.

## Mini survey results

As a short introduction to the subgroup discussions, Kees presented the results of the mini-survey completed by participants (see Appendix 2). The survey asked which obstacles and drivers in the science system most affect progress toward animal-free research. Participants identified five main obstacles, which were ranked at similar levels of importance: validation requirements, cultural norms and historical reliance on animal testing, trust in non-animal methods, the research funding system, and scientific competition and publication pressure.

For the main drivers of progress, the top answers were the research funding system, trust in non-animal methods, knowledge of available methods, availability of expertise and datasets, and the academic reward system. Several additional reflections were also shared, including the importance of education, strengthening NAMs, and avoiding polarisation.

## Subgroup discussion

The survey results were used to organise participants into four subgroups, based either on the obstacle they had ranked as most important or on their scientific area of expertise. All groups addressed the central question: What can you and your peers do to break down barriers and promote a movement towards animal-free research? Each group focused on different aspects of the scientific system related to animal-free innovation.

## Group A : Validation, Trust and Knowledge (fundamental/translational research-oriented participants)

Group A highlighted that fully animal testing-free research is not yet feasible in many research domains, due to remaining methodological gaps and internationally entrenched expectations for animal data. Participants emphasised that the transition must be gradual and grounded in the rigorous application of the 3Rs (replacement, reduction, refinement), while also avoiding habitual or unjustified use of in vivo experiments, by both researchers and reviewers. Several argued for taking human-based measurements as the primary reference point, especially in neuroscience, and only turning to animal models where human-relevant data cannot answer the question. The group identified a need for stronger interaction between researchers using animal models and developers of non-animal methods, and more structural education on NAMs at all career stages. It was also noted that in fields such as ecology and veterinary science, animals are the subject of study rather than a model for humans, which raises different challenges for reduction and replacement.

## Group B: Trust, Validation Requirements and Shared Responsibility (safety/efficacy research-oriented participants)

Education and mutual learning were recurring themes. Trust emerged as a central issue, trust in results, trust between researchers and funders, and trust between regulators and applicants, each of which requires explicit discussion rather than assumptions. Participants stressed the importance of bringing the right stakeholders, including regulators, to the table and working with concrete examples rather than abstract debates. Stakeholder groups should clarify what they can each contribute, rather than only identifying what others must change. Clearer validation requirements were seen as essential for developers of new models. Ethical perspectives emphasised the need to keep the interests and moral status of animals visible in discussions dominated by human-centred reasoning. Small steps forward, even unsuccessful ones, were considered important to acknowledge.

## Group C: Cultural Norms, Implicit Assumptions and New Research Logics

Group C focused on cultural and epistemic factors that sustain reliance on animal models. Animal testing continues to function as a 'gold standard' in scientific training and practice, shaping expectations and habits. Participants noted that many researchers are unaware of available tools for addressing complex questions without animals. Collaboration between animal-based and NAM-based researchers was seen as crucial, but innovation can feel risky and should not rely on individual bravery; institutional support is needed. Terminology was discussed as well: thinking in terms of 'human-relevant models' rather than 'non-animal models' may better reflect the scientific aim and shift mindsets. The group highlighted that transitioning to NAMs requires a transition to innovative science as one model does not simply replace another. Scientists therefore also need to rethink research questions. Regulatory and publication structures still favour animal data internationally, reinforcing existing norms.

## Group D: Funding, Reward Systems and Scientific Incentives

Group D examined how funding structures, academic reward systems, publication pressure and practical constraints shape methodological choices. Participants stressed that meaningful change requires funding to align with NAM development and to support emerging techniques through targeted calls and partnerships. Multidisciplinary collaboration was considered essential but initiatives are required to bring a wide range of expertise together; teams must establish common ground, shared goals and a shared vocabulary. Participants noted that researchers often follow incentives tied to established models, unless clear scientific reasons compel change (e.g., pathogens that cannot be studied in mice). Several initiatives, such as broader assessment frameworks, preregistration and registered reports, were seen as promising ways to reduce pressure to provide in vivo data for publication.

## Plenary discussion

After the subgroup discussions, each group shared key highlights in the plenary session. This part of the meeting aimed to identify cross-cutting themes and explore points that required further collective reflection.

Several participants emphasised the need to be attentive to framing: single examples or strong statements can disproportionately shape the discussion, and nuance is essential when considering both the strengths and limitations of animal-based and non-animal approaches. Education again emerged as a central lever for change. Participants noted the importance of integrating a broader range of models into university curricula across disciplines, and of involving actors such as animal welfare bodies more actively in dialogue with established researchers.

Funding was discussed from a systems perspective; participants noted that funders may permit animal experiments in proposals while simultaneously declining to finance them, creating inconsistencies. In publishing, some researchers reported continued pressure to include animal data, while others emphasised that approval requirements (e.g. through Medical Ethics Committees) can in practice weigh more heavily than journal expectations.

Across groups, trust surfaced as a recurring theme: trust in methods, in results, and in the intentions of different stakeholders. Participants highlighted that current structures often facilitate debate more than dialogue, and that building trust requires bringing the right individuals, not just institutions, to the table. The absence of the animal's perspective in the workshop was explicitly noted as something that should be addressed in future discussions.

The plenary discussion also underscored that transitioning towards more human-relevant science is not simply a matter of replacing animal models. It involves rethinking research questions to clarify what one truly aims to understand (while letting go of animal testing as the default point of reference), acknowledging when animal models remain necessary, and defining where and how non-animal methods can meaningfully add value. Systemic factors, such as regulatory expectations, disciplinary cultures, and publication/promotion systems, shape what is possible, but participants also pointed to promising developments, nationally and internationally, that can support gradual yet significant change.

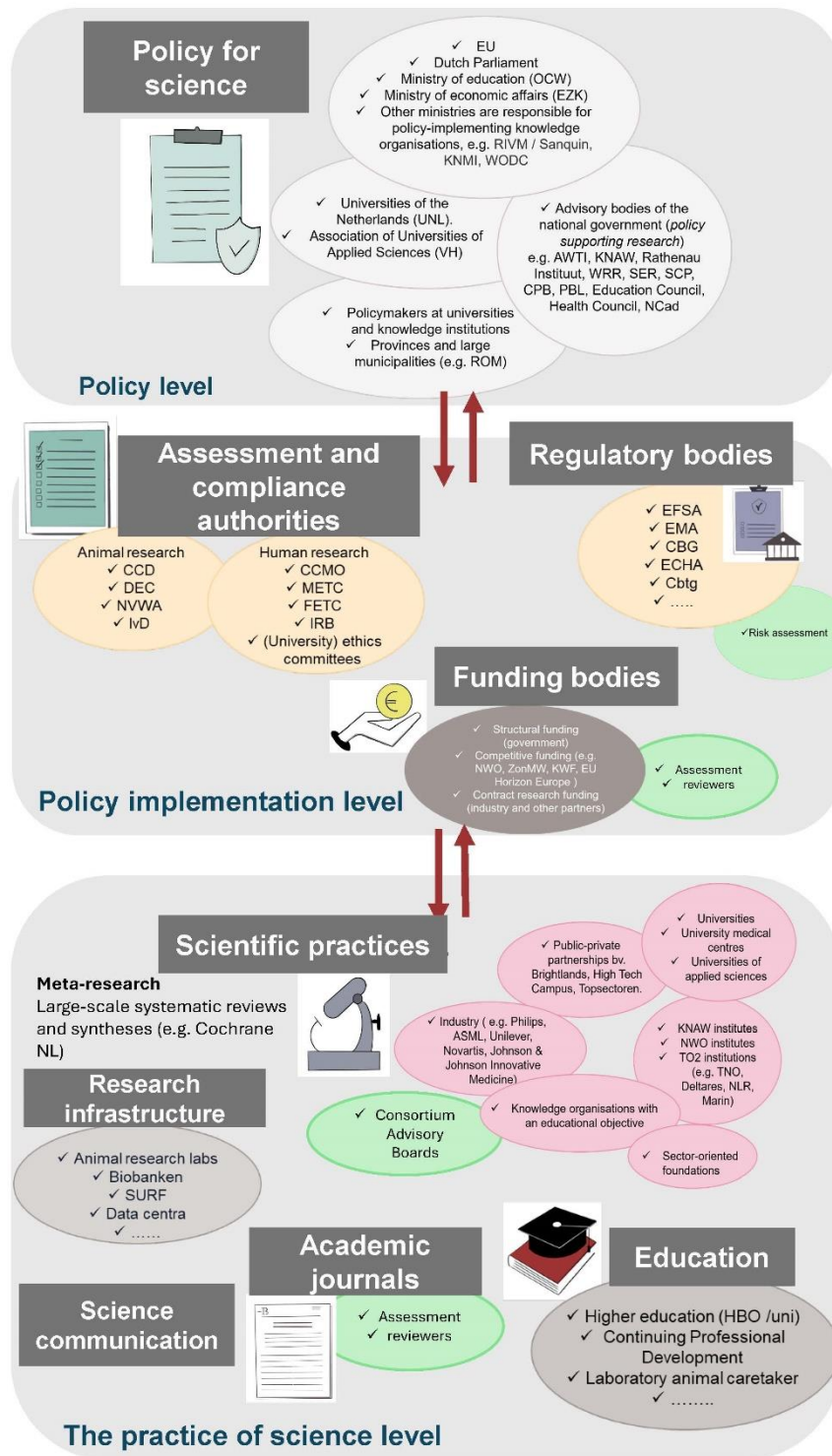
## Closing statements

In the final session NCad Vice Chair Wim de Leeuw shared his reflections on the day. He noted that the discussions had been vivid and constructive, with recurring themes such as the importance of careful framing and the need for open interdisciplinary dialogue. He also highlighted that uncertainties remain about how the NCad's long-term goal is defined and emphasised that this will require further clarification as the Transition Policy Advice 2.0 develops.

Wim briefly explained how this meeting fits into the broader advisory process and noted that participants would receive a draft report for review before publication. He closed by thanking the presenters, the organising team and all participants for their openness and valuable contributions and encouraged everyone to stay informed via the NCad's communication channels as work progresses.

## Appendix 1 simplified framework of the science system

In preparing this session, the scientific system was considered across several interconnected levels, ranging from policy and institutional structures to research careers and scientific culture. The figure prepared by dr. Michelle Habets (Rathenau Instituut) illustrates this approach.



# Appendix 2 Presentation mini-survey results

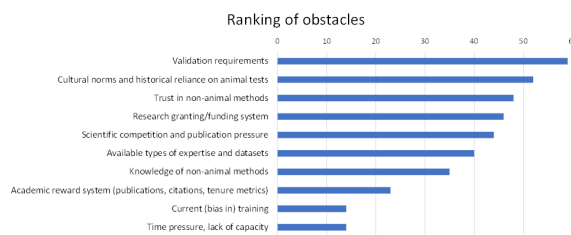


## About the mini survey

- Four questions (mainly asked for agenda purposes):
  1. What is your name?
  2. What are main obstacles and
  3. main drivers in science system for moving towards animal-free research?
  4. Any other aspects/reflections you want to share?
- Respondents: 25
  - (Other aspects/reflections: 21)

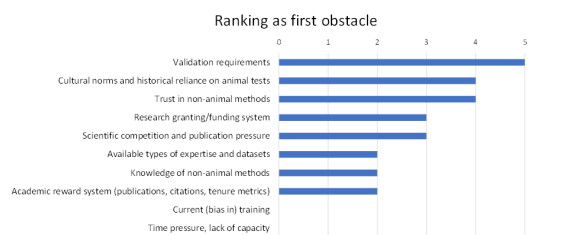
## Main obstacles

“In your experience, which elements of the scientific system currently stand the most in the way of moving towards animal-free research? Please, select a top 5.”



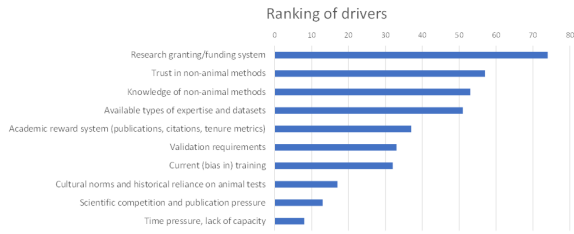
## No 1 obstacles

“In your experience, which elements of the scientific system currently stand the most in the way of moving towards animal-free research?”



## Main drivers

“And, in your experience, which (changes in) elements of the scientific system currently promote the most a movement towards animal-free research? Please, select a top 5”



## No 1 drivers

“And, in your experience, which (changes in) elements of the scientific system currently promote the most a movement towards animal-free research? Please, select a top 5”



## Any other aspects/reflections you want to share?

