

# Challenges and opportunities for implementing NAMs in a regulatory context: Perspectives from current research initiatives:

## An Academic's Viewpoint

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# Discussion topics

- **General** reflection on challenges for **academics** to contribute to NAMs 'pipeline'
- **Focus** on '**omics to support grouping/read-across** to highlight progress and challenges in the NAMs pipeline
- 3 take-home messages

# NAMs pipeline



# NAMs pipeline



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2003-present

Develop & apply metabolomics to (eco)toxicology

- Academic **funders** – almost exclusively fund innovative research, not applied
- Expected **products** – research discoveries, high impact-factor papers (*Nature, Science*)
- Personal **motivation** – curiosity for blue-skies innovative research
- Academics prefer to ask deeper questions, not provide definitive answers!
- **How do some academics genuinely cross that chasm?...**



# NAMs pipeline



spin-out company



2018-present

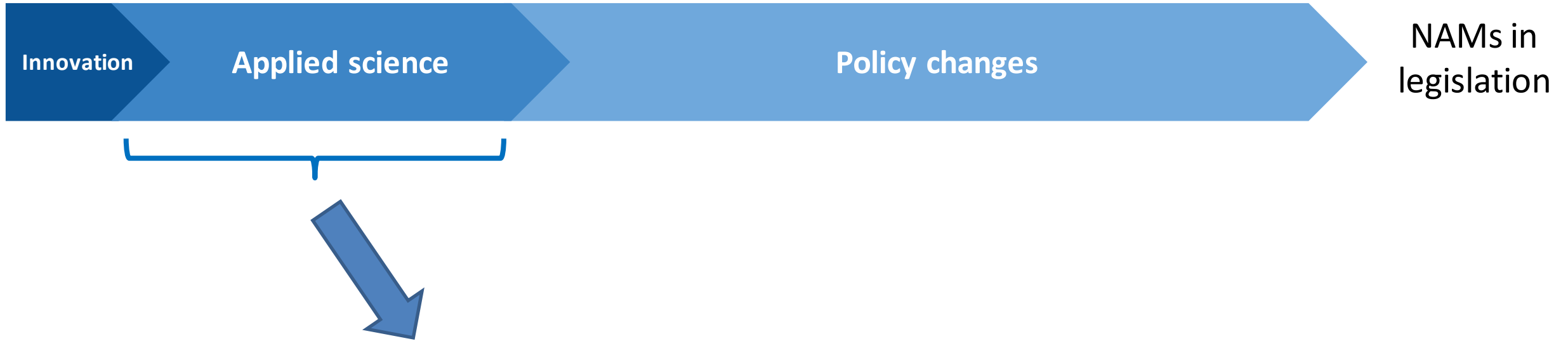
Evaluate 'omics approaches in regulatory (eco)toxicology

- Contracts with progressive companies/REACH consortia
- Contracts with regulators – e.g. *Services related to metabolomics measurements and multi-omics data interpretation (2018-2023)*



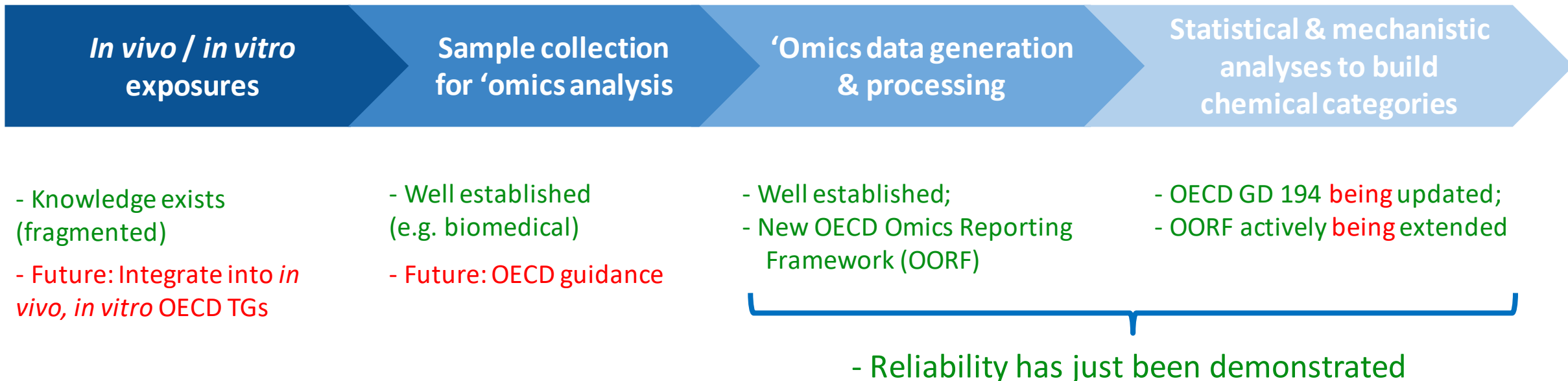
- **Message 1:** 99% of academics 'locked' in innovation zone (most are happy with that!)
- Illusion (through grant proposals) of considerable academic focus on applied NAM science

# NAMs pipeline



Challenges and opportunities in application of  
'omics to support chemical grouping

# 'Omics to support chemical grouping: progress in the 'process'



**LRI C8 – MATCHING**

**MetAbolomics ring-Trial for CHemical groupING**

Five of 6 *blinded* ring-trial participants derived an identical set of results



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**BASF**  
We create chemistry



**syngenta**

Imperial College  
London

**VU**  
VRIJE UNIVERSITEIT  
AMSTERDAM



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# From 'process' to NAMs in legislation

- **Challenge arises** when we attempt to embed the 'applied science process' into an existing regulatory 'machine'
  - Regulatory machine already has its own processes, outputs, legal timelines
- It's new (**NAM**), so by definition, insufficient **exemplar regulatory case studies**
- Remains unclear what adaptations (REACH Annex XI) may be assessed as (in)sufficient
- Lack of transparency – but expected for a **new** approach...
- **Message 2:** We need exemplar case studies
- **Message 3 (to 'early adopter' companies/REACH consortia using NAMs):** Keep taking risks, your role in advancing NAMs is essential!