

National Nuclear User Facility

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Nuclear R&D Facilities

- Collaboration in research is strong
- Growing, but fragmented nuclear R&D facilities
- Major existing nuclear R&D facilities include
 - NNL
 - DCF (brand new)
 - CCFE
- Distributed small facilities across UK

Laboratories
Active laboratories
MOX fuel laboratories
High active cells
Large rig halls

National Nuclear Laboratory



Central Laboratory

Academic access to 10% CL

- No experimental overhead
- NNL safety case support
- NNL training & supervision

More to follow...



The University of Manchester
Dalton Nuclear
Institute

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Dalton Cumbrian Facility



The University of Manchester
Dalton Nuclear
Institute

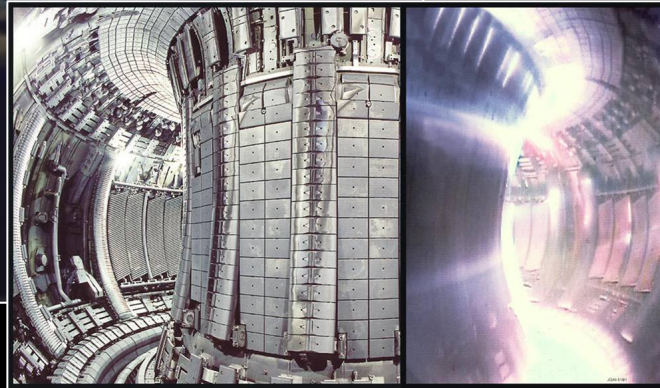
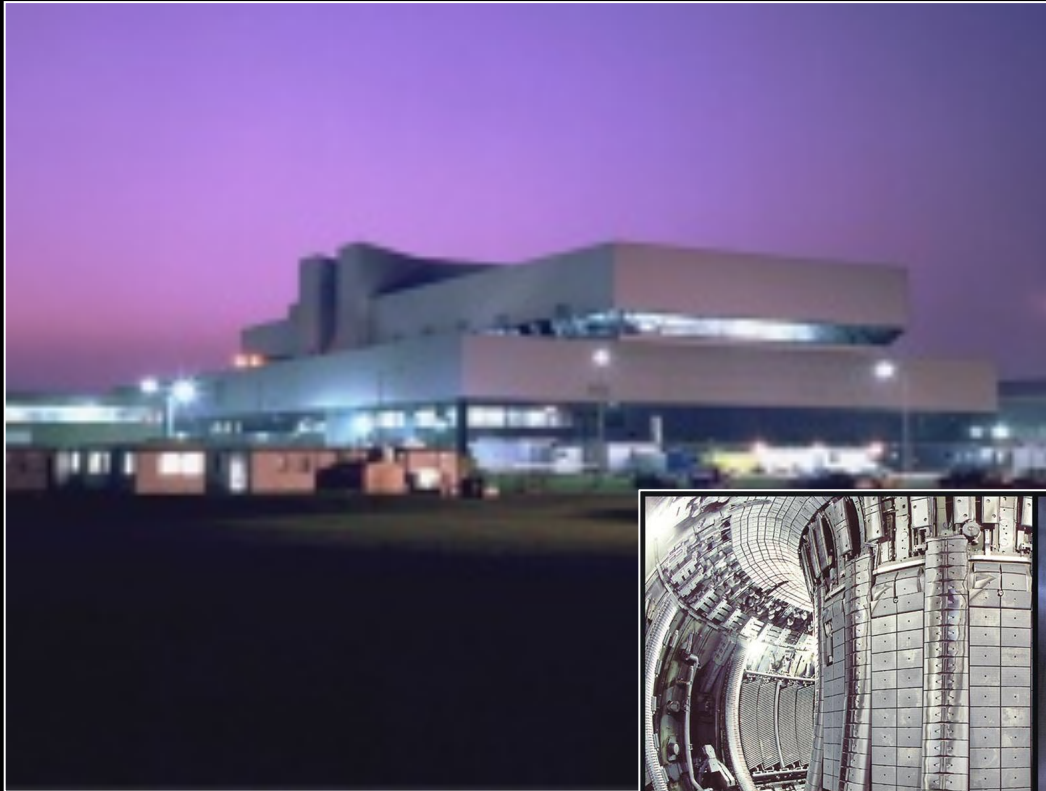
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Self-shielded Cobalt 60 irradiator 5MV ion-beam accelerator

- 10 MeV protons
- 15 MeV He ions
- Heavy ions

Analytical facilities

CCFE



International prototype fusion reactor (JET)
MAST
Tritium handling facility
Modelling and simulation
Neutronics and activation



Smaller nuclear R&D facilities distributed across the UK

- Materials characterisation at all scales
- Autoclaves and corrosion facilities
- Manufacturing facilities
- Chemistry and radiochemistry
- Geological disposal
- Nuclear Physics Facilities
- Nuclear fuels
- Radionuclide biogeochemistry

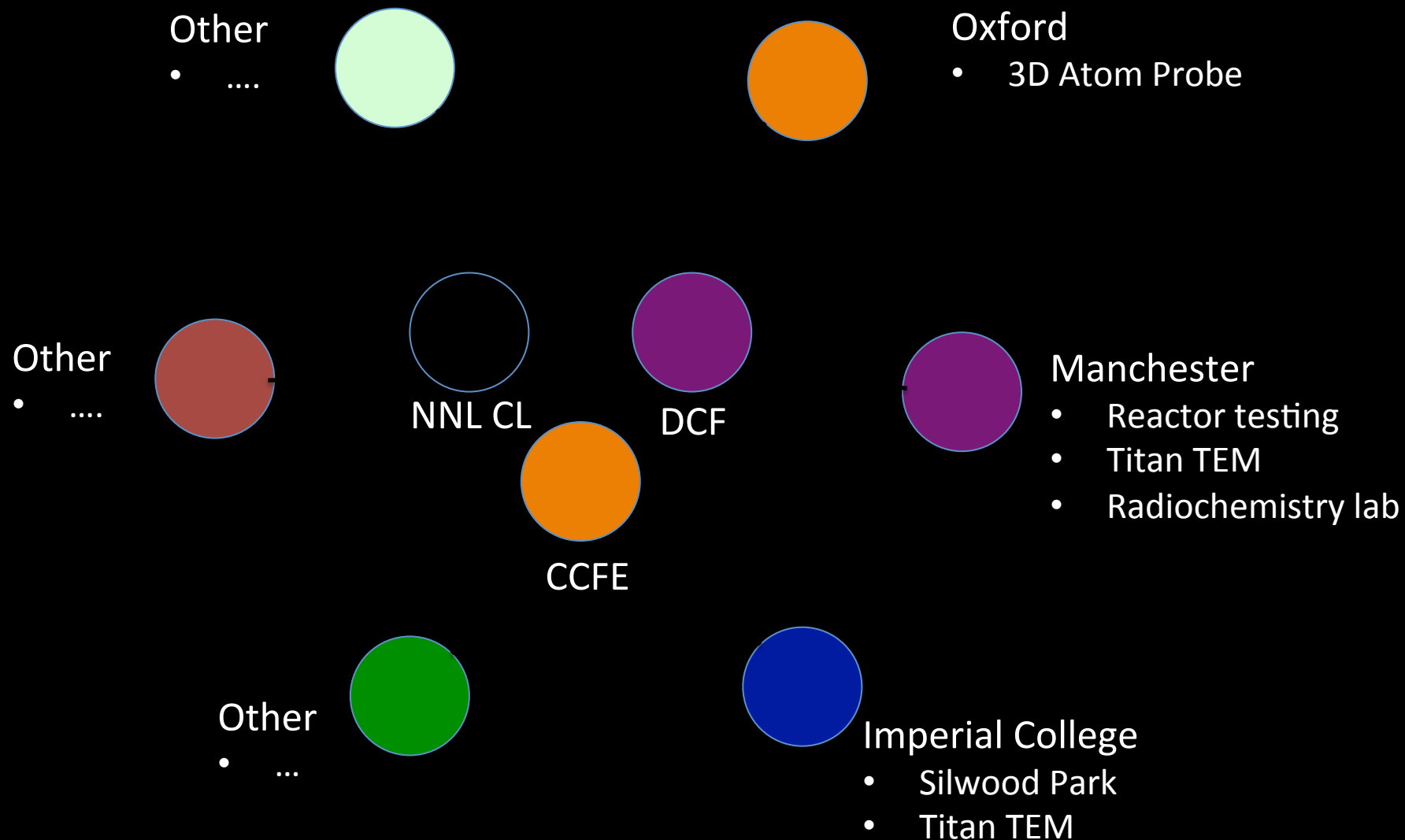
Opportunity

- Not always effectively integrated
- Not optimised for R&D Grand Challenges
- Talent of UK academia not fully utilised
- Opportunity to align more closely for impact
 - One example could be...

NNUF concept

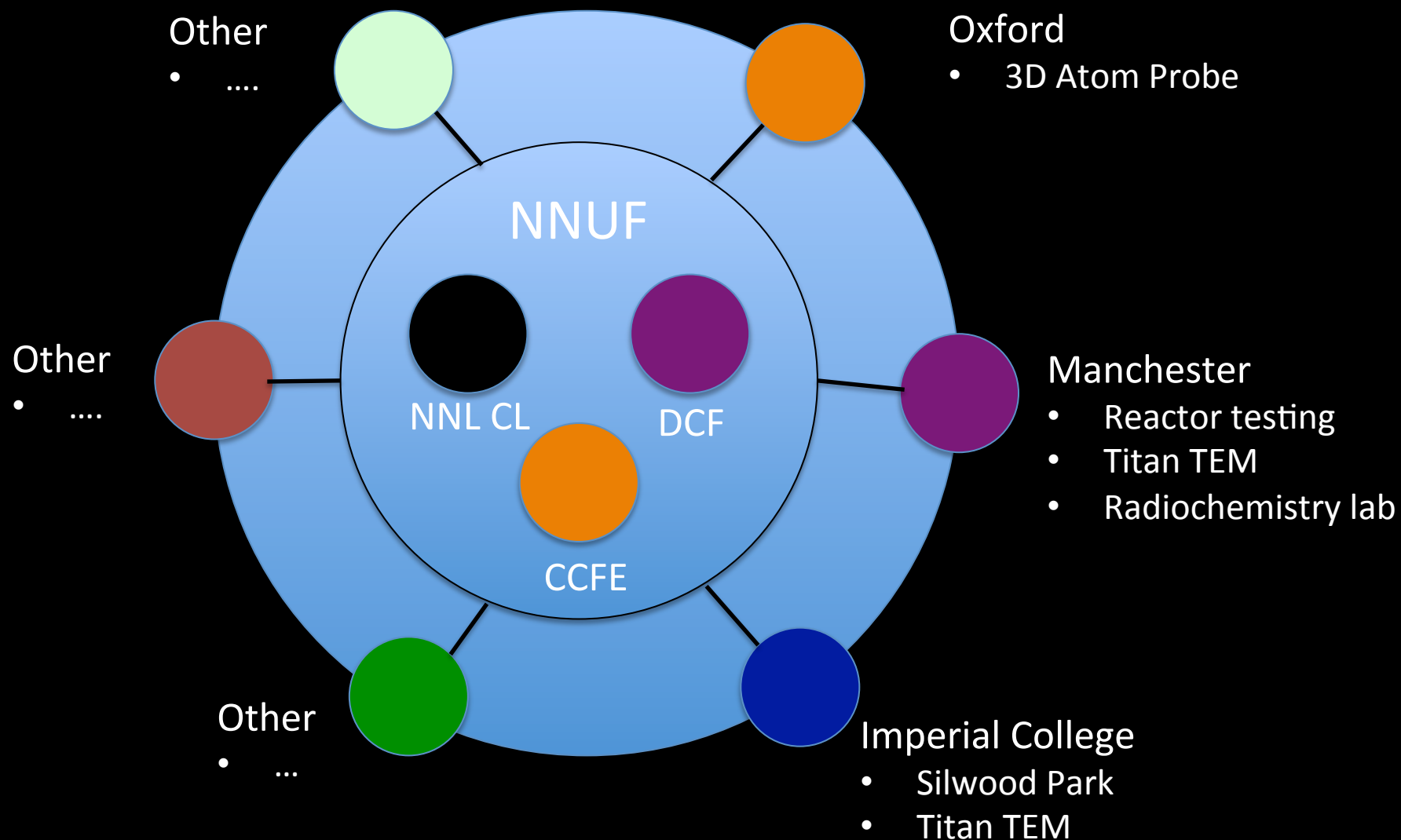
- Network large-scale nuclear R&D facilities alongside smaller distributed projects
 - Optimise facilities for UK nuclear R&D
 - Facilitate access for UK research community
- Building on access agreement into NNL to widen access to major nuclear R&D facilities and optimise use of what we already have
- We are developing a proposal to:
 - optimise facilities (capital investment) and
 - utilise facilities (revenue)to better address nuclear grand challenges

NNUF concept



NNUF concept

We are looking for the
broadest possible participation



We are looking for the broadest possible participation