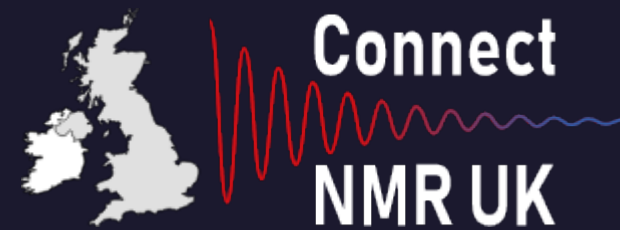




UK NMR
Landscape
Update



Team



Fred Blanc

PI



Ben Duff

Manager



Christina Redfield

Co-I



Craig Butts

Co-I



New things NMR....

1 GHz – Solids and Liquids

950 MHz – Liquids for Physical Scientists

UK DNP MAS NMR Facility

GMP compliant NMR service

A bunch of cool probes and other stuff



Warwick

1 GHz Solid-state probes

- 7mm X-broadband (8 kHz spinning)
- 3.2 HCN E-Free (24 kHz spinning)
- 3.2 HX
- 1.9 HXY Trigamma (42 kHz spinning)
- 1.9 HX
- 1.3 HCN (67 kHz spinning)
- 1.3 HX
- 0.7 HCDN (110 kHz spinning)
- 0.51 HCN (170 kHz spinning)

850 Solid-State probes (New, since 2017):

- 1.3 mm HXY (67 kHz spinning)
- 7 mm LASER probe (600 C max temperature)
- 4 mm High T (300 C max temperature)
- 1.9 mm HXY (42 kHz spinning)
- 1.6 mm HFX (−125 to +125 C; 8-40 kHz MAS)
- 0.7 mm HXY (110 kHz spinning)



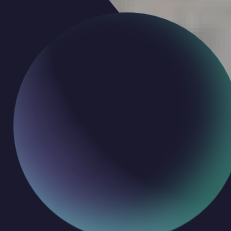
Birmingham

1 GHz Solution-state NMR (relaxation dynamics, IDPs, high M_R molecules)

900MHz 0.7mm and 3.2mm CPMAS ($^1\text{H} + ^{13}\text{C} + ^{15}\text{N}$ observe biosolids)

900MHz Shielded Aeon magnet

800MHz 1.7mm TCI cryoprobe (mass-limited samples)

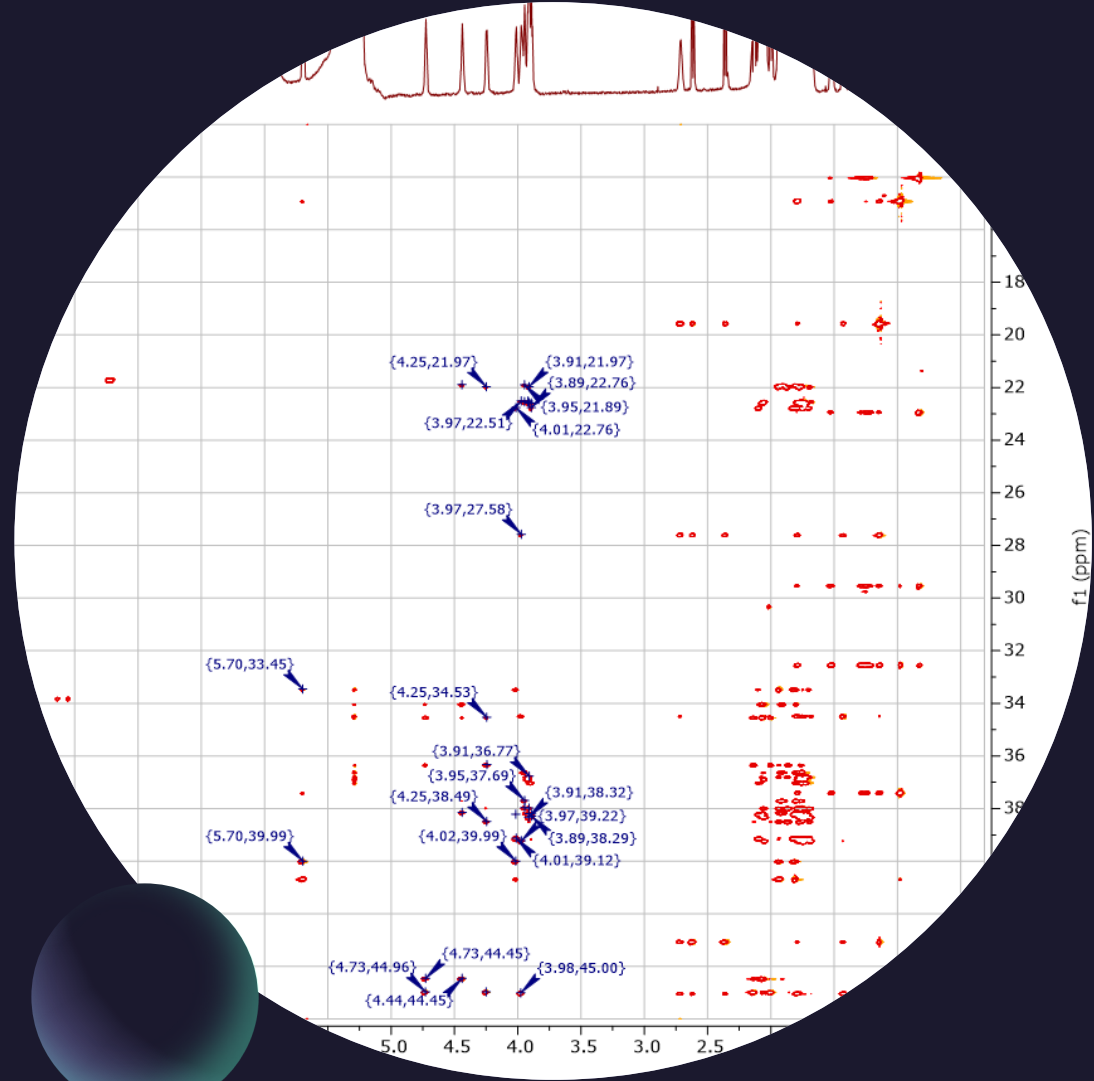


Oxford

950MHz 5mm TCI cryoprobe + SampleJet

Biomolecular NMR

Available for Physical Sciences (free until
Dec 2022)



UK DNP MAS Facility

Hyperpolarised NMR of solids for materials science and biochemistry (etc.) alike.

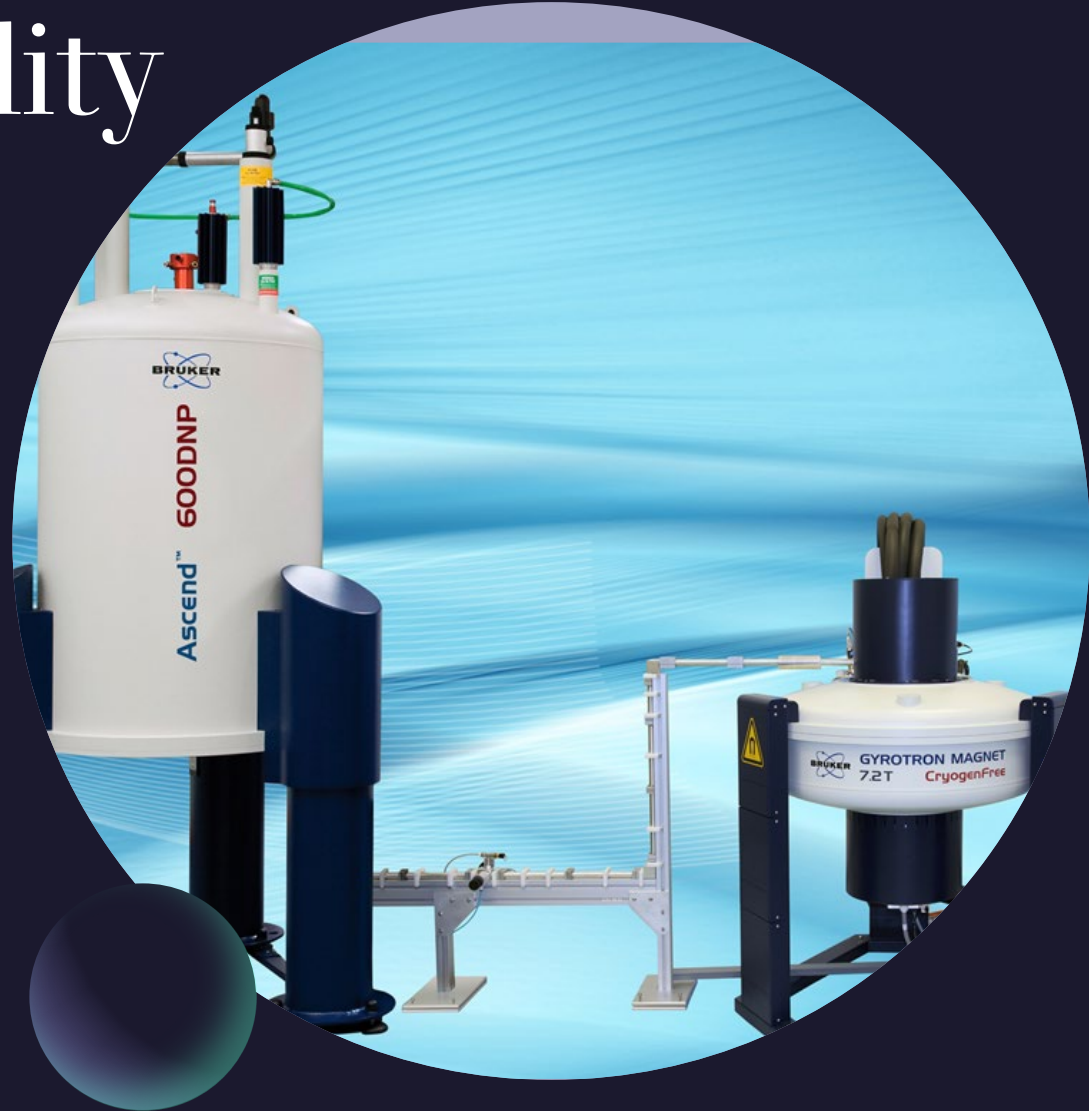
UoManchester (new 400 MHz)

UoNottingham (refurbished 600 MHz)

UoCambridge (access to existing 400 MHz)

Observe (almost) any nucleus, HXY 3.2 and 1.3 mm, moderate-to-fast spinning

100 - 300 K



GMP-Compliant NMR

- For Quality/Regulatory work requiring compliant/audited operation
- 600MHz
 - iProbe and TXI RT probes
 - ^1H and $^{19}\text{F}+^{31}\text{P}-^{15}\text{N}$



CRUK Cambridge

Imaging Core Facility

- 600MHz 4mm HRMAS (clinical cancer biopsies, preclinical tissues and cell studies)
- 600MHz Metabolomics
- 600MHz ^{13}C hyperpolarised NMR for drug detection in extracts



Bristol

600MHz ^{19}F -enabled TXO

^{19}F 4122:1

^1H 3570:1 (790:1 sucrose)

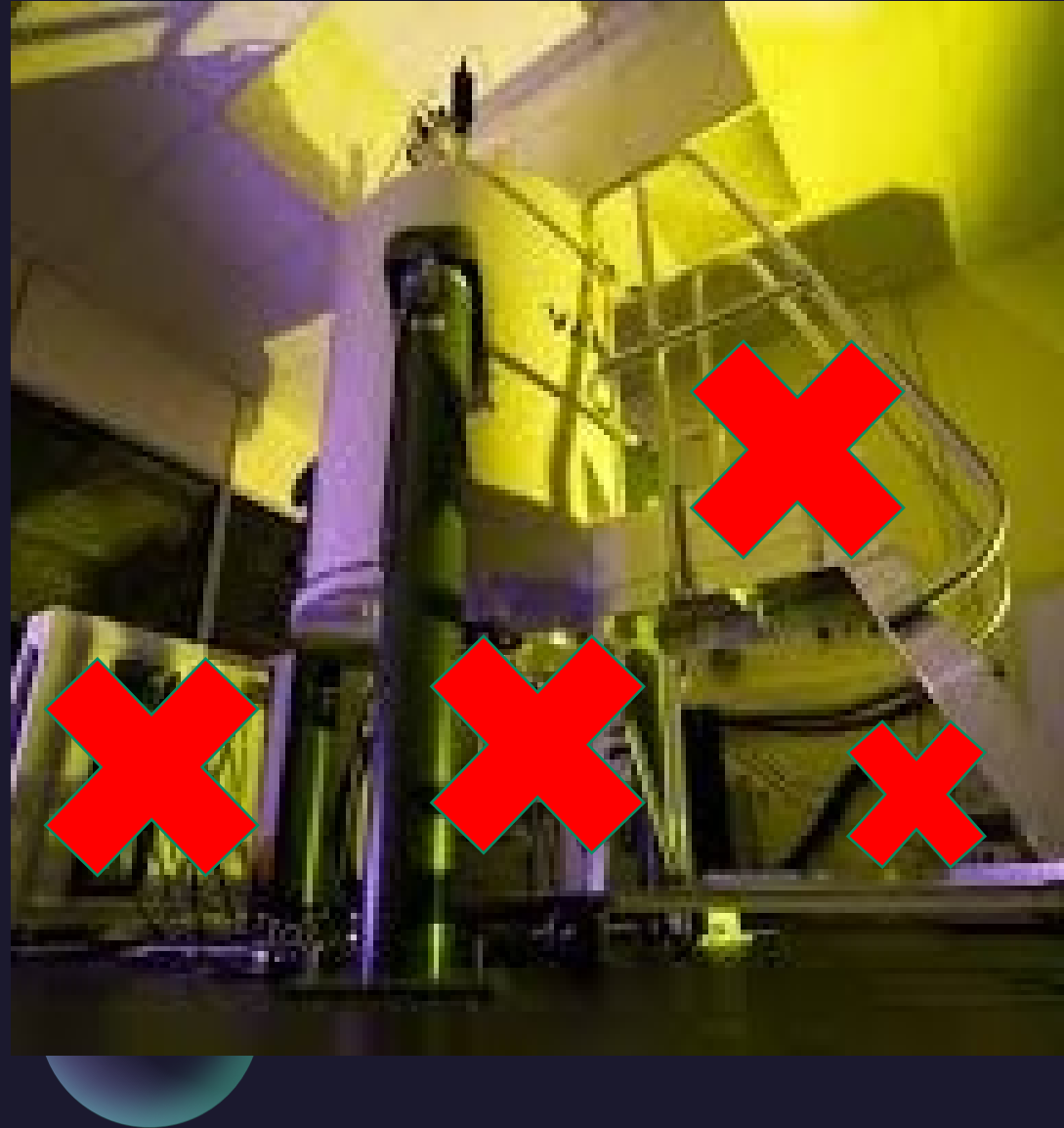
^{15}N 164:1

^{13}C 2569:1

^1H sucrose 790:1

Focussed on ^{19}F -observe + ^{13}C -observe

For physical and biomolecular sciences



Oxford

- 600MHz Broadband cryoprobe
- -40°C to +150°C
- Organic/inorganic/polymer characterization



Kent

- Insight Flow NMR cell
- In-cell NMR
Bioreactor studies



Southampton

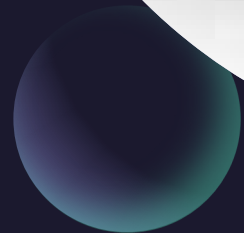
- 500MHz BBFO cryoprobe
- Broad-band tuneable
- Access to ${}^{19}\text{F}\{^1\text{H}\}$ and ${}^1\text{H}\{^{19}\text{F}\}$
- Installation: Q3 2022.



Manchester

700MHz Broadband cryoprobe

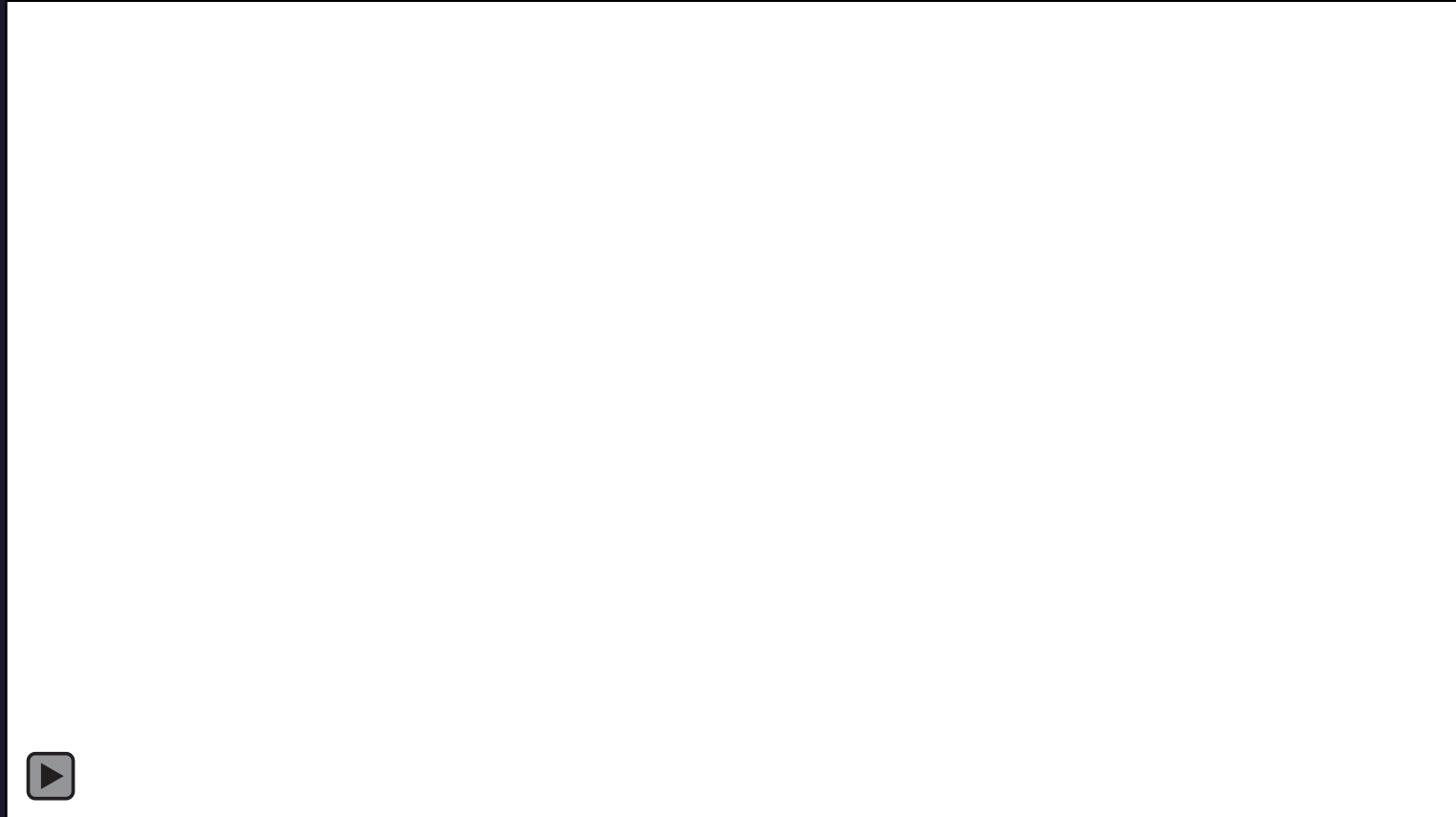
Installation: Q3 2022



KCL

400MHz Microimaging probe

- Range of 10 and 15mm volume resonators for NMR and MRI (^1H , ^{31}P , ^{23}Na , ^{13}C).
- Probe for multinuclear rodent MRI in vivo, 30mm volume coils and 15mm surface coils (^1H , ^{31}P , ^{23}Na , ^{13}C).
- perfusion rig allowing ex vivo NMR in perfused mouse or rat heart
- All appropriate licenses for animal, human and radiation work





Summary

The ConnectNMR website will be updated with these details soon.

Slides will be circulated to UKMRM as an aide memoire

Get in touch with the Facilities and use them!

Images with kind permission of Prof Goran Karlsson, Director of the Swedish NMR Facility