

THE BRITISH MASS SPECTROMETRY SOCIETY

Delivering World-Class
Science with British
Mass Spectrometry...
Looking to the Future!

BMS
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This vision is based on a summary of responses from three rounds of a DELPHI study which included direct inputs from a panel of leading British Mass Spectrometrists, and stakeholders in the wider community, who were asked to comment on the following:

- (i) the future of MS in the UK,*
- (ii) future requirements for UK mass spectrometry and,*
- (iii) how future MS infrastructure may be best deployed to leverage the British research base and deliver ROI to UK society.*

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“Mass spectrometry is an axiomatic component of the national science portfolio and essential to sustain world-class research in the United Kingdom”

“The community highlight that UK R&D requires sustainability in instrumentation and people, including access to key, advanced instrumentation and laboratories that include subject-specific experts”

“Mass spectrometry is critical for British scientists in their delivery of world-class science”

“UK scientists have played and will continue to play a leading role in delivering mass spectrometry solutions to the world”

“Strategic, stable and long term investment is essential to realise sustainable access to world-class mass spectrometry in Britain”

Quotations extracted from the BMSS DELPHI study (2019-2020)

THE BRITISH MASS SPECTROMETRY SOCIETY

OUR VISION ♦ ***LEVERAGING STRATEGIC RESEARCH PRIORITIES IN THE UK***

MASS SPECTROMETRY
Leveraging Health & Life Science



MASS SPECTROMETRY
Leveraging Food Science & Safety



MASS SPECTROMETRY
Leveraging Environment & Climate Science

MASS SPECTROMETRY
Leveraging BioManufacturing



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OUR VISION ♦ **THE BRITISH MASS SPECTROMETRY LANDSCAPE**

HEALTH & LIFE SCIENCES
BIOTECHNOLOGY
CLINICAL DIAGNOSTICS

ENVIRONMENTAL
ENERGY & CLIMATE

MATERIALS SCIENCE

MANUFACTURING
QA/QC PROCESS CONTROL

FOOD SAFETY
FORENSICS & SECURITY



NATIONAL MS FACILITIES
ADVANCED RESEARCH
COLLABORATIONS

REGIONAL MS FACILITIES
SKILLED ROUTINE
ANALYSIS

TARGETED MS RESEARCH
GROUPS

OPEN ACCESS BLACK BOX
MS ANALYSIS

Schematic summary of key applications for mass spectrometry in the UK and the community vision for the MS landscape that will enable world-class science for the future.

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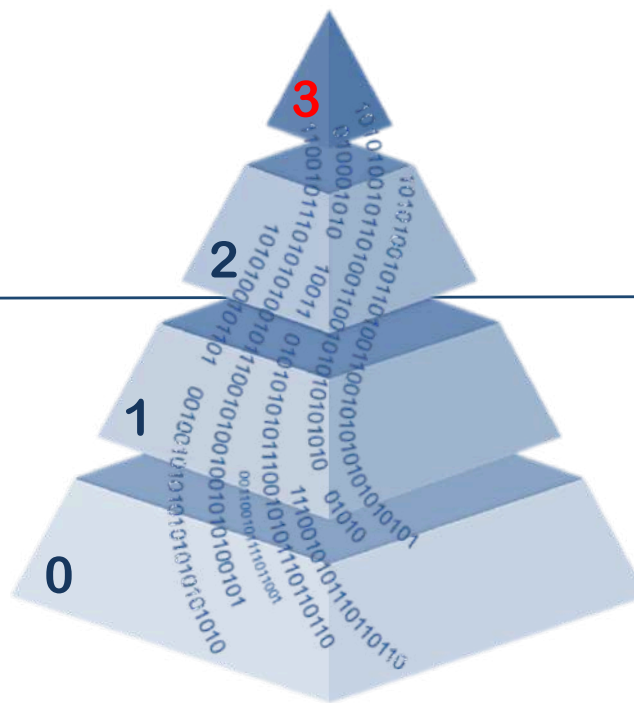
OUR VISION ♦ CASCADING EXCELLENCE & BEST PRACTICE

TIER 3: *Advanced MS National Research Facilities. Providing access to world-leading specialists, technology and knowhow.*

TIER 2: *Regional MS Research facilities. Collaborative research and development of innovative MS approaches. Supporting the lower tiers.*

TIER 1: *Targeted MS Research Groups. Tightly focusing on a specialist area of study. Providing specialised and in depth advice within the MS cascade landscape.*

TIER 0: *Remote Access MS Facilities. Supported on-line by staff in the higher tiers with an experiment design and data interpretation advice service.*



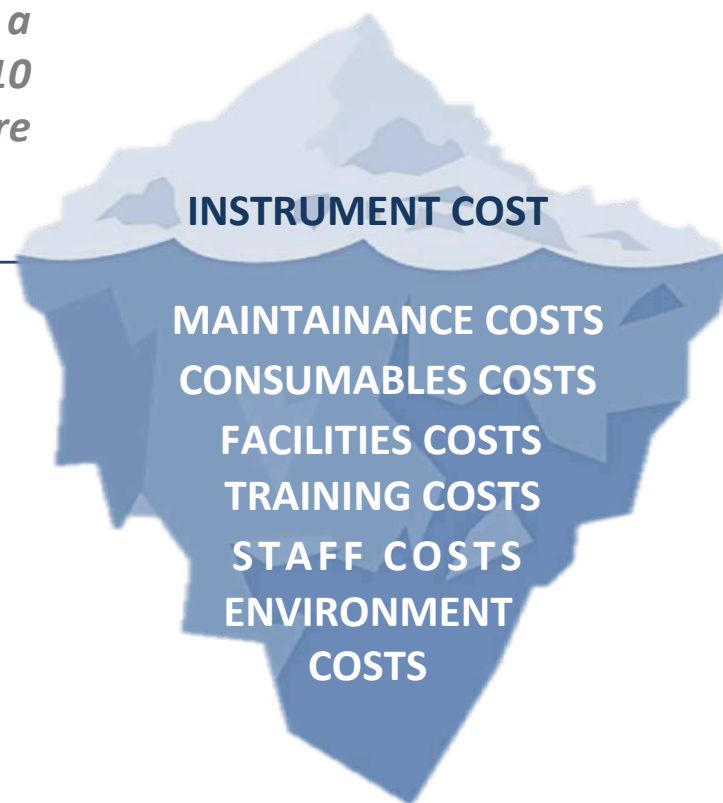
WORLD-LEADING RESEARCH ♦ KNOWHOW ♦ ACCESSIBILITY ♦ TRAINING ♦ ANALYTICS ♦ BEST PRACTICE



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OUR VISION ♦ SUSTAINABLE FUNDING IS CRUCIAL

The true cost of ownership of a MS instrument, with a productive lifetime of 7-10 years, is significantly more than the purchase price!



As a nation we should proactively manage the true cost of ownership of strategic MS instrumentation, over a 10 year horizon, and thus maximise ROI to the UK taxpayer.

THE BRITISH MASS SPECTROMETRY SOCIETY

OUR VISION ♦ **ADVANCED MS NATIONAL RESEARCH FACILITIES**

World-leading research aligned to national priorities e.g. vaccines, biologics, zero-carbon. Advancement of technology, methods and fundamentals of MS

Deliver national MS research consultation service. Support and assist the lower tiers. Set quality standards & protocols in partnership with all stakeholders.



Maximise ROI on advanced technology & world-leading expertise. Leverage research aligned with UK PLC priorities.

Drive advanced training programmes and promote best practice. Advance MS based research throughout academia and industry.

WORLD-LEADING RESEARCH ♦ **KNOWHOW** ♦ **ACCESSIBILITY** ♦ **TRAINING** ♦ **ANALYTICS** ♦ **BEST PRACTICE**



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SUSTAINABILITY IS UNACHIEVABLE WITHOUT HIGHLY SKILLED PEOPLE

A grand piano without a skilled player is just an expensive piece of furniture gathering dust...



MS training has been identified as a significant and persistent problem in the UK.

To deliver ROI on strategic MS deployments we must train a sustainable cohort of professionals to 'play the instruments'.

Training across the cascade with hands-on/expert-led teaching and e-learning will be essential to sustain ROI.

WORLD-LEADING RESEARCH ♦ KNOWHOW ♦ ACCESSIBILITY ♦ TRAINING ♦ ANALYTICS ♦ BEST PRACTICE



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OUR VISION ♦ BRITISH MS TRAINING & ANALYTICS HUB

National MS training programs are required to integrate best practice in academia and industry, and bridge gaps at UG/ PG levels.

Host a national MS data repository enabling storage of open data (as required by UKRI). Address lack of open-source software for data viewing and analysis.

WORLD-LEADING RESEARCH ♦ KNOWHOW ♦ ACCESSIBILITY ♦ TRAINING ♦ ANALYTICS ♦ BEST PRACTICE



Focal point of a new UK-wide MS Doctoral Training Centre (DTC). Platform to facilitate ECR engagement with the global MS community.

Training across the cascade with hands-on/expert-led teaching and e-learning will be essential to sustain ROI.



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THE BMSS

The British Mass Spectrometry Society is a UK registered charity, founded in 1964. The BMSS strives to encourage participation in all aspects of mass spectrometry on the widest basis, to promote knowledge and advancement in the field and to provide a forum for the exchange of views and information. The BMSS is committed to ensuring equal opportunities and reflecting the diversity of British society as a whole.

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