



SINAPSE

**ANNUAL
REPORT
2023**

A WORD FROM THE DIRECTOR

The Scottish Imaging Network: A Platform for Scientific Excellence, SINAPSE, began 15 years ago and has become a trusted part of the imaging research landscape within Scotland. Its name alludes to its original focus on Neuroimaging. Over time we've listened to the interests of our community and expanded to include imaging of the whole body.

Championing the interests of our community and changing to meet the needs of the time is a key part of SINAPSE's approach to operating a research pool in imaging.

Significant changes happened during 22-23, with the Scottish Funding Council no longer matching the contributions made by the SINAPSE partners. We are delighted that following a period of consultation on the future of SINAPSE with the universities they agreed to back our new strategy and and continue to fund SINAPSE. This has helped secure the network and gives us stability to continue to grow and meet the needs of our members.

This period has also seen a resurgence in research awards, with the network securing at least £76m from various sources, and consequently we're also seeing a growth in ECRs and PhDs that these funds have allowed. Significant projects were awarded because SINAPSE offers so much to the community that the funders saw the obvious benefits of the research occurring within the network, ensuring positive outcomes of the work they are funding. We are also focussing even more on the needs of these PhDs and ECRs and support for their careers. The formation of an ECR and PhD Committee which in turn has representatives participate as equals in the

Executive decision making ensures their needs are heard and being met.

Matching this growth, our Annual Scientific Meeting in the University of Glasgow was oversubscribed, and a busy and worthwhile event for all. Looking ahead we will be meeting in larger venues to ensure more can attend, with the 2024 meeting being held in the Pathfoot Building at the University of Stirling.

As clinical and academic workloads increase, budgets tighten and competition for funding becomes increasingly competitive, SINAPSE strives to be a network of collaboration and support across its partners. We offer opportunities for our members to build their own networks to further their research interests and career prospects. We provide a platform for them to disseminate their work to an audience of their peers, those from other disciplines, the media and commercial colleagues, which encourages them to hone their communication skills to achieve maximum impact.

Some of the benefits we add to imaging research in Scotland can be difficult to quantify, but the SINAPSE community is a strong one which adds real value. We look forward to growing that community as we move forward.

This is a new and exciting phase for SINAPSE and I hope you see the opportunities reported here as just the start.

JEN MACFARLANE
DIRECTOR



OVERVIEW OF THE YEAR

Our biggest success in the period 22-23 was securing new support from the SINAPSE partner universities after SFC withdrew the contribution they had been making since the pooling initiative started. The partners have agreed in this current round to fund SINAPSE until 2028. This was agreed on the basis of SINAPSE committing to new goals supporting researchers and the imaging community. Our report is structured around showing what we achieved against these goals

SINAPSE supports the career development of researchers, increasing the engagement of ECRs with the network through direct participation in SINAPSE at the Executive level via the new Early Career Researcher committee with PhD and Post-doctoral representatives from the SINAPSE partner universities.

Our 2022/23 PhD Welcome Event was attended by 27 PhD students from across the network and featured training in EDI, entrepreneurial skills, and team building exercises at the request of ECRs.

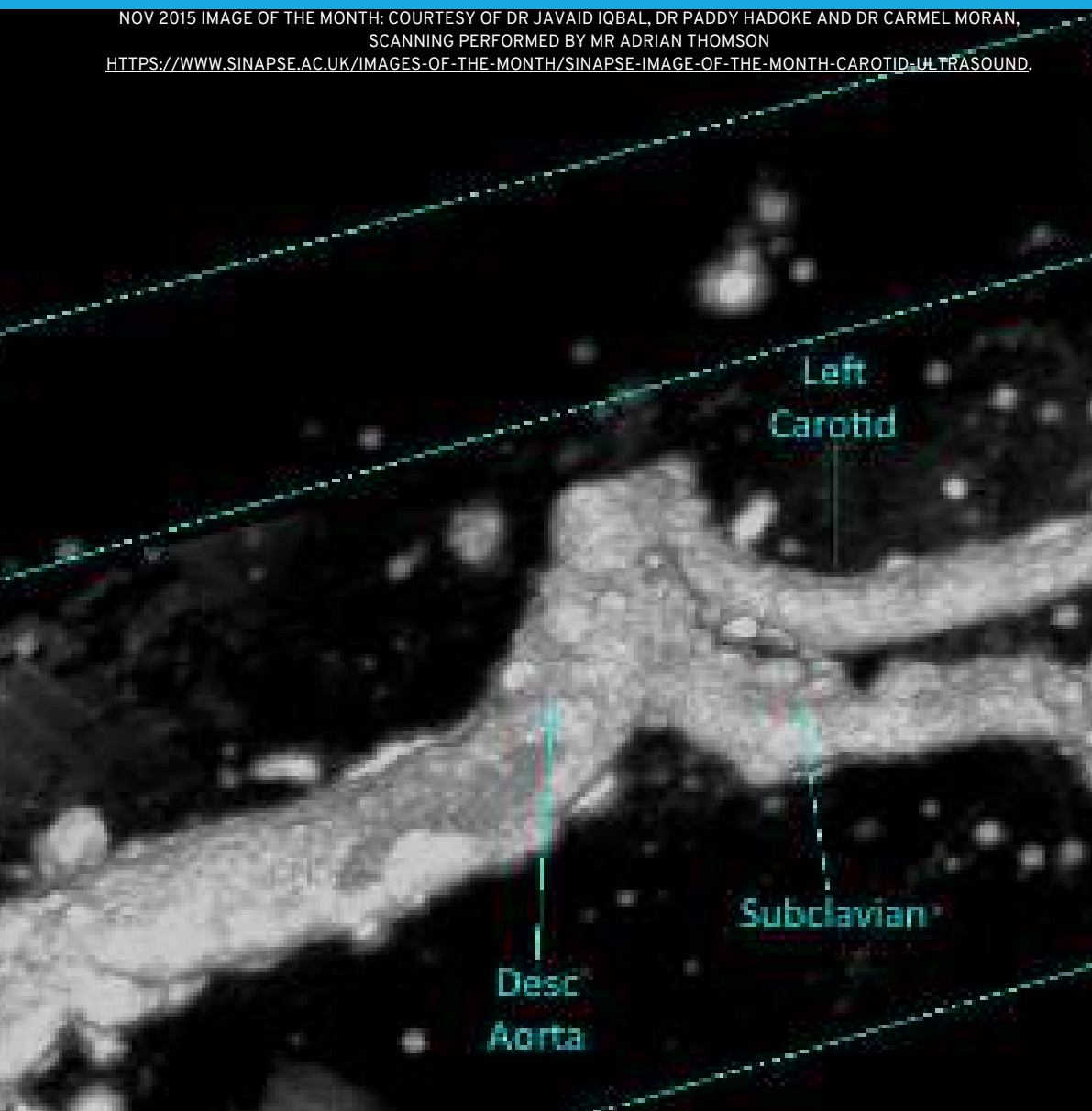
The 2023 SINAPSE ASM was held at the University of Glasgow and demand was higher than the capacity, with a full 150 attendees and guest speakers from Europe, with 30 proffered talks and 30 posters. Feedback from registrants and speakers was very positive. Engagement with colleagues and exhibitors was enthusiastic.

SINAPSE supported the ERASMUS Basic MRI Physics Course, held in Dundee, which attracted students from across Europe. The course was designed to enrich their understanding of MRI Physics for their clinical and/or research ambitions.

A number of national and international conferences were supported by SINAPSE and we also had stands at MIUA 2023 and BIC-ISMRRM 2023, both held in Aberdeen, and SCCT STOA Cardiovascular CT 2023 in Edinburgh.

Our online training courses, commissioned early in SINAPSE, have been reworked to function in modern browsers and are now publicly available as a resource used to teach NHS staff, imaging students, and the public, in the operation of most imaging methods.

NOV 2015 IMAGE OF THE MONTH: COURTESY OF DR JAVAID IQBAL, DR PADDY HADOKE AND DR CARMEL MORAN,
SCANNING PERFORMED BY MR ADRIAN THOMSON
[HTTPS://WWW.SINAPSE.AC.UK/IMAGES-OF-THE-MONTH/SINAPSE-IMAGE-OF-THE-MONTH-CAROTID-ULTRASOUND.](https://www.sinapse.ac.uk/images-of-the-month/sinapse-image-of-the-month-carotid-ultrasound)



SINAPSE supports interdisciplinary cross-site bids for funding calls, with SINAPSE partners collaborating on a successful bid for the Scottish Total Body PET Facility, which will see one of the first Total Body PET scanners in the UK being located in Scotland, continuing Scotland's leading international PET research. Good networking and collaboration across Scotland, as evidenced by SINAPSE was reported to be persuasive. Ongoing support is being provided by the SINAPSE Director chairing the Board of Governance and a commitment to making the facility a truly national resource.

SINAPSE links industry partners with academic partners and supports improving entrepreneurial outcomes across the sector, with a number of SINAPSE Early Career Researcher Exchange (SECRE) Fund placements in Europe and North America, industry participation in the PhD Student Welcome event, and development of an entrepreneurial skills course as part of a series of seminars.

SINAPSE seeks external funding from bodies such as SFC, UKRI and Horizon Europe. We are a partner in the Brain Health Alliance for Research Challenges (ARC) which was funded by SFC and will see new opportunities for SINAPSE researchers in the coming years. We are also working with our colleagues in SULSA on a project matching Scottish researchers with those in Germany, especially helpful now the UK has rejoined the Horizon Europe programme.

This year was one of the most successful in SINAPSE's history with considerable grant funding awarded ~£76m. Significant funding was awarded for: the establishment of the Scottish Total Body PET facility from the MRC (£17m, Edinburgh and Glasgow jointly); from charitable sources, investigations into cachexia (£20m, Glasgow) and dementia (£20m, Edinburgh); other large funding awards were made for dementia research, cardiology (Dundee, Edinburgh and Glasgow) and using digital twins in surgical procedures.



SINAPSE seeks financial support from, and grows our connections with, our commercial partners. 7 exhibitors supported the ASM, and Canon sponsored the Student Welcome Event.

SINAPSE raises awareness of Scottish imaging and its benefits to the nation. We worked with a TV production company on a forthcoming series with Dr Michael Mosely on the effects of aging. We highlighted particular developments within Scotland such as MRgFUS, mobile EEG, ultrasound capsule scanning and more. We have rebranded/refreshed our website and training portal.

SINAPSE seeks new academic, public body, and charity partners. We are currently working with SULSA on an application for funding from the RS Macdonald Charitable Trust, who fund research into neurological conditions and visual impairment. If successful, this will allow SULSA and SINAPSE members to bid for funds to access Scottish Imaging and Life Sciences facilities.

Other significant highlights include:

The launch of the Tayside Innovation Medtech Ecosystem (TIME), which has become the first training centre globally for Stroke Thrombectomy by the World Federation for Interventional Stroke Treatment (WIST).

The establishment of the Centre for Medical Engineering and Technology (CMET), both in Dundee.

Commissioning is well underway on the world-first next generation field-cycling imaging scanner at Aberdeen. The 3-tonne magnet was delivered in June and has since been assembled and tested. Meanwhile, the renovation of the biomedical physics building which will contain the lab space for the new Adaptable MRI Technology (AMT) Centre and Field-Cycling Imaging research groups is due to complete in December.

Additionally, the NHS Tayside team is now certified to perform MRgFUS Thalamotomies, independently of manufacturer InSightec, which means that more suffers of Essential Tremor in Scotland can now be treated. Increased experience opens up avenues for researching the possibilities of MRgFUS treatment. Throughout the year there have been regular visits from colleagues across SINAPSE, Scotland and the UK to see the implementation of the treatment from clinical, technical, and practical aspects.

SINAPSE SUPPORTS THE CAREER DEVELOPMENT OF RESEARCHERS

ECR Committee SINAPSE Early Career Researcher Committee (ECRC), comprising of PhD and post-doctoral representatives from each of our partner universities, was formed following feedback from the 21/22 PhD Welcome Event. The ECRC is self-organising and through determines a PhD and a post-doc to attend the SINAPSE Executive Committee meetings. This provides direct participation in the decision-making process of SINAPSE, and a direct line of communication from ECRs to the Executive team.

A key request from our ECR Committee was for support in dealing with the mental health concerns of fellow students and ECRs. In 22-23, SINAPSE responded by organising a Mental Health First Aid course open to all within SINAPSE, which took place Nov 23. Feedback was very encouraging, and we aim to repeat this offering.

2022/23 PhD Welcome Event In early December we held our Student Welcome Event for 1st and 2nd year PhD students to meet others from across SINAPSE, sponsored by Canon MRE. This year we had a 2-day meeting in Perth with 27 students signed up and 6 speakers.

As well as showing what SINAPSE has to offer, talks introduced the Scottish Core Image Analysis Facility being developed in the Living Lab from Dr Kristin Flegal, we had teambuilding exercises from Roly Reid a former rugby player, an introduction to EDI in higher education from Dr Jodi Watt, an industry talk from Dr Keith Goatman from



TEAM BUILDING AT PHD WELCOME EVENT: IMAGE COURTESY OF ROLY REID

Canon MRE, an introduction to starting a health-tech business from Dr Isla Barnard of Dundee University, and a career retrospective from Dr Sydney Williams of the University of Glasgow.

Feedback from the event was enthusiastic and constructive. As in previous years, the event proved successful in building community and allowed SINAPSE to listen carefully to the needs of our ECRs. Connections were established that have since allowed students to work with colleagues from other institutions.

ERASMUS Basic MRI Physics Course

SINAPSE supported the ERASMUS Basic MRI Physics Course, held in Dundee, which attracted students from across Europe. The course was designed to enrich their understanding of MRI Physics for their clinical and/or research ambitions. The course organiser was Dr Stephen Gandy from NHS Tayside & University of Dundee.

Online Training Our online training courses, commissioned early in SINAPSE, have been reworked to function in modern browsers and are now publicly available resource used to teach NHS staff, imaging students, and the public in the operation of most imaging methods.

MIUA 2023 SINAPSE sponsored the 27th Conference on Medical Image Understanding and Analysis 2023, held in Aberdeen. MIUA is a UK-based international conference for the communication of image processing and analysis research and its application to medical imaging and biomedicine.

Job Adverts A number of vacancies relevant to medical imaging research were advertised through SINAPSE, with roles being listed on the website, twitter feed, and email/newsletter.

eLearning courses

How medical imaging techniques work and what they can be used for.

Welcome to eLearning @ SINAPSE

SINAPSE is a partnership involving seven Scottish Universities - Aberdeen, Dundee, Edinburgh, Glasgow, St Andrews, Stirling and Strathclyde - that was formed with support from the Scottish Funding Council and the Chief Scientist Office. A key objective is to make best use of Scottish facilities and expertise in medical imaging and to develop skills for the next generation of professionals working in this field. Most of those working in SINAPSE are either involved in health care delivery or have close links to health care teams.

There is currently a welcome shift in emphasis in health care from the notion that health care professionals are responsible for your health and well-being, to the concept that you are responsible for your health and well-being and health care professionals are there to help you. This can be described as Patient Centred Care. For Patient Centred Care to work, information is needed on a vast range of subjects. The SINAPSE group includes experts from around Scotland in a range of medical imaging techniques. We have selected the best experts to develop 10 modules that explain in non-technical ways how medical imaging techniques work and what they can be used for.

Available courses

MRI Basics

MRI gives superb contrast between different types of tissue within the human body. MRI stands for Magnetic Resonance Imaging.

Clinical MRI

By completing this module, you will learn how magnetic resonance imaging (MRI) is used in the diagnosis of many common neurological disorders, how MRI is used in imaging breast cancer, the heart, blood vessels, bile ducts and joints, and what normal and abnormal scans look like and the causes of abnormalities.

ANNUAL SCIENTIFIC MEETING



DR MARIO PARRA RODRIGUEZ AT 2023 ASM : IMAGE COURTESY OF DR RICHARD MOSSES

The 15th SINAPSE ASM was a one-day event on the 14th of June 2023 . We were hosted by the University of Glasgow in the new Mazumdar Shaw Advanced Research Centre (ARC). The full agenda, abstracts and keynote speaker biographies are available in the [2023 programme](#).

The first Plenary Session was opened by Dr Sydney Williams welcoming the delegates to Glasgow on behalf of the Organising Committee, followed by an introduction from SINAPSE Director, Dr Jennifer Macfarlane.

Our first Keynote presentation was from Dr Gaël Chételat (Normandie University, GIP Cyceron, Caen) on “Neuroimaging in AD diagnosis”. This was followed by an introduction to the EuroLaD-EEG consortium from Dr Mario Parra Rodriguez (University of Strathclyde).

Three parallel sessions followed a tea break – Parallel 1: Psychology, Psychiatry & Preclinical, chaired by Dr Magdalena Ietswaart (University of Stirling); Parallel 2: Clinical Applications, chaired by Dr Ammad Mahmood (University of Glasgow); Parallel 3: Methods Development, chaired by Dr Jennifer Macfarlane (NHS Tayside).

Following lunch was another series of Parallel Sessions – Parallel 4: Neuroimaging, chaired by Dr Sin Yee Foo (NHS Greater Glasgow & Clyde); Parallel 5: Image Analysis, chaired by Dr Gordon Waiter (University of Aberdeen). Plenary Session 2 followed a tea break, chaired by Dr Graeme Keith (University of Glasgow). This opened with this year’s ECR Rising Star talk, given by Dr Mark MacAskill (University of Edinburgh) “Illuminating adverse cardiovascular remodelling through the development of translational molecular imaging approaches”

Our second and final Keynote was from Prof Iris Grunwald (University of Dundee) “The future of CT on Mobile Stroke Units”.

Dr Jennifer Macfarlane announced the prize winners, for the best presentation in each Parallel Session, best poster, and best runner-up poster and closed the event for this year.

The exhibition featured stands and representatives from Siemens Healthineers, NordicNeuroLab, GE Healthcare, MR CoilTech, NVIDIA, Tayside Innovation Medtech Ecosystem, and Ballater Medical.

We’d like to thank our volunteers for making the event run so well Amnah Alamri, Zhengshuyi Feng, Sara Scarfo, Jenny Waymont, and Steven Winata.

The organising committee comprised: Dr Sydney Williams, Dr Graeme Keith, Dr Ammad Mahmood, and Dr Sin Yee Foo.



PROF IRIS GRUNWALD AT 2023 ASM:
IMAGE COURTESY OF DR RICHARD MOSSES

Prize Winners:

Parallel 1: Psychology, Psychiatry & Preclinical Imaging – Kelly Panichnantakul, University of Edinburgh

Parallel 2: Methods Development – Hannah Thomson, University of Glasgow

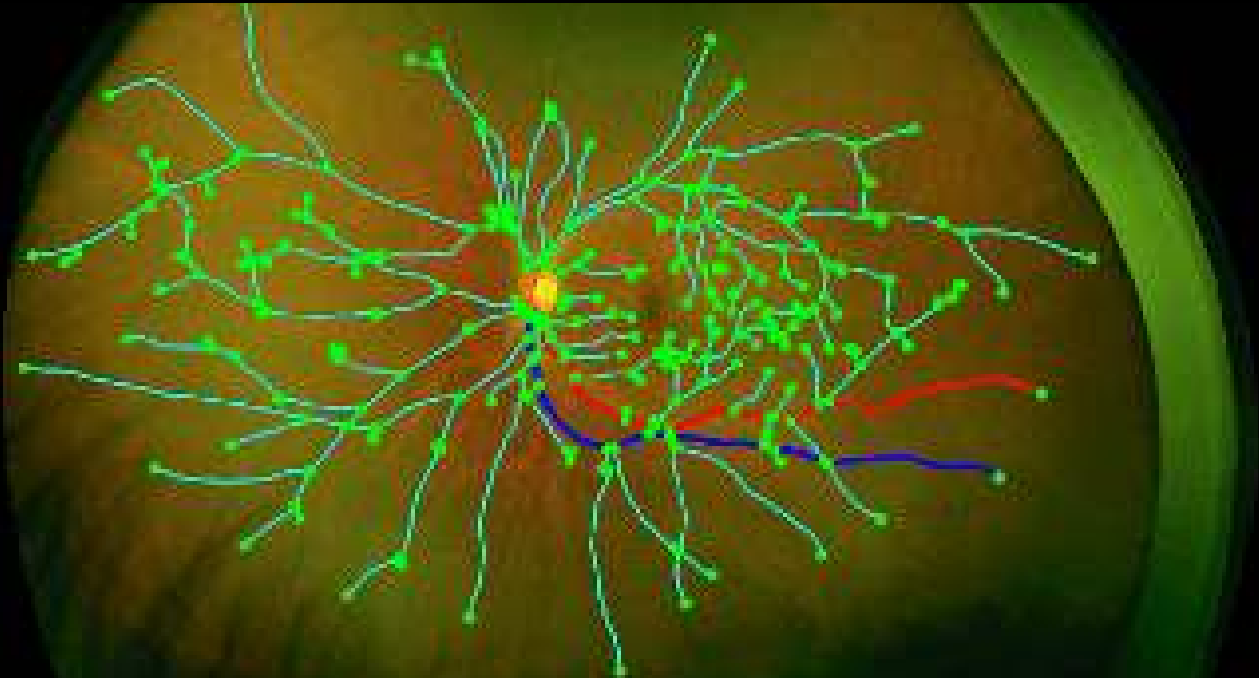
Parallel 3: Clinical Applications – Abeer Alhusaini, University of Dundee

Parallel 4: Neuroimaging – Divya Baskaran, University of Glasgow

Parallel 5: Image Analysis – Leah White, University of Dundee

Best Poster: Yingying Huang, University of Glasgow

Poster Runner-up: James Dowsett, University of Stirling



MAY 2018 IMAGE OF THE MONTH: COURTESY DR TOM MACGILLIVRAY
[HTTPS://WWW.SINAPSE.AC.UK/IMAGES-OF-THE-MONTH/SINAPSE-IMAGE-OF-THE-MONTH-RETINAL-VASCULAR-PARAMETERS/](https://www.sinapse.ac.uk/images-of-the-month/sinapse-image-of-the-month-retinal-vascular-parameters/)

Student and Staff Recruitment This year saw a large increase in students with 62 PhD students recruited across the network.

In Aberdeen: Dr Edit Franko joined the University of Aberdeen as a SCREDS clinical lecturer. Dr Clarisse DeVries and Dr Nicholas Senn were employed as PDRAs.

In Dundee: NHS Tayside has appointed a new Head of Nuclear Medicine, Dr Victoria Bassett-Smith, who comes from NHS Lothian with extensive experience in running PET research. Dr Bhushan Thakkar has been appointed as a PDRA working on PAINSTORM study.

In Edinburgh: 12 Research Fellows were recruited: Dr Anna Barton, Mr Samuel Debono, Dr Shruti Joshi, Dr Kri Loganath, Dr Michael MacDermott, Ms Jennifer Nash, Dr Neil Craig, Dr Kang-Ling Wang, Dr Beth Whittington, Dr Craig Balm forth, Dr Phi Kiang, Dr Robert Shaw.

In Glasgow: Dr Sydney Williams was promoted to Lecturer and Dr Graeme Keith was promoted to Research Fellow in MRI Physics.

Teaching/Training Facilities

Dundee's Tayside Innovation Medtech Ecosystem (TIME) team has been accredited as the 1st training centre globally for Stroke Thrombectomy by the World Federation for Interventional Stroke Treatment (WIST) Prof Graeme McLeod has created Augmented Reality (AR) courses for advanced anaesthetic training using imaging data from Thiel cadavers. This addresses a skills gap which, once addressed, permits patients shorter post-surgical hospital stays.

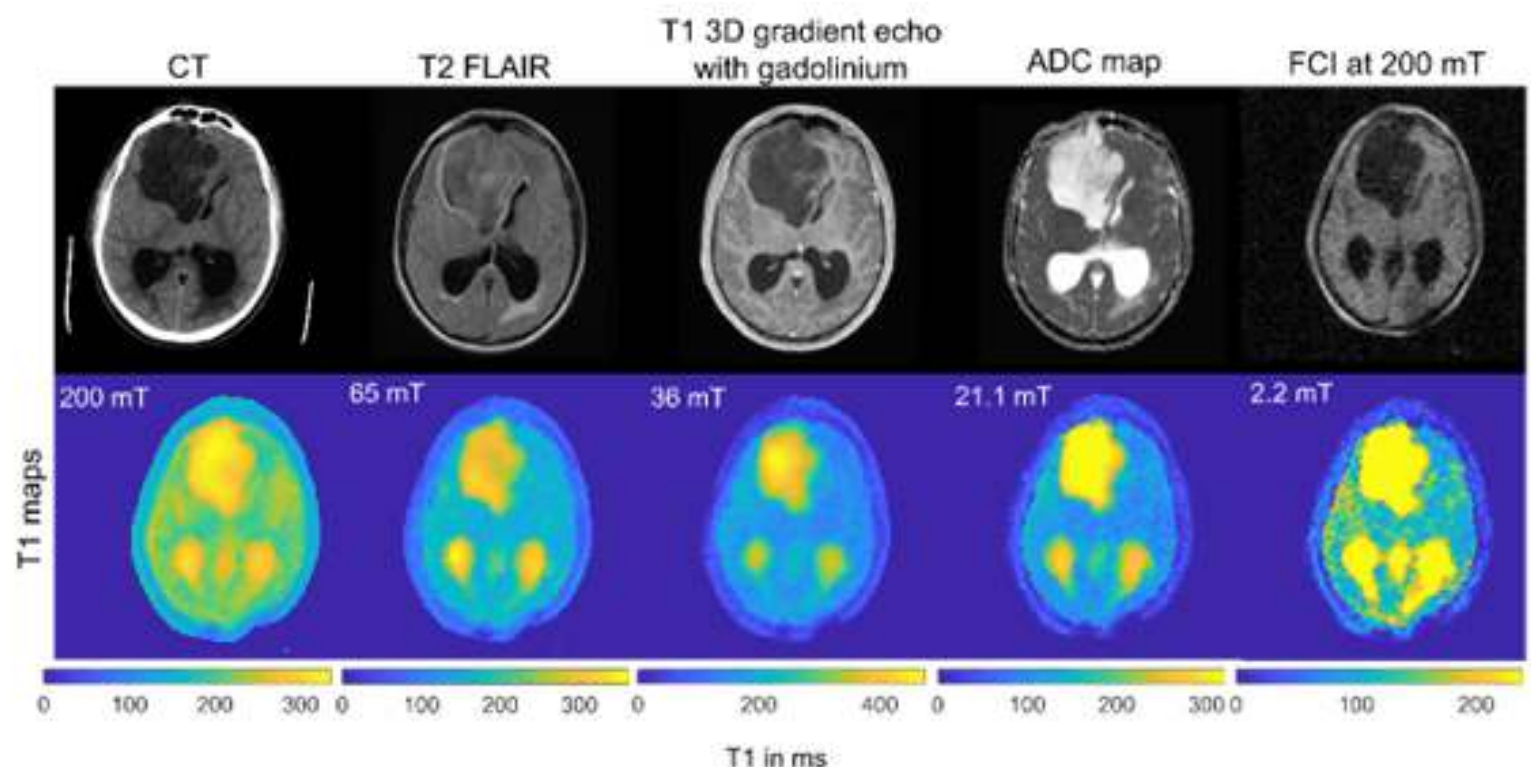
SINAPSE SUPPORTS INTERDISCIPLINARY CROSS-SITE BIDS FOR FUNDING CALLS

Total Body PET SINAPSE supported the successful application for a Scottish Total Body PET facility. The scanner will be a national resource open to all, with local researchers in Scotland and Northern England expected to use it the most. The SINAPSE Director chairs the Governance Board, and we are responsible for ensuring open access.

AI CDT Bids We also supported two AI CDT bids led by Aberdeen and St Andrews. The bid for a CDT in AI for Medical Imaging was led by Dr Gordon Waiter in Aberdeen. The AI CDT in Multi-modal Imaging: Inclusive AI for the Arts

and Sciences, led by St Andrews, was invited to submit an outline proposal. Both would see SINAPSE providing support to the CDT PhD students participating in SINAPSE programmes.

Letters of Support SINAPSE wrote letters of support for a further 5 research proposals this year.



SINAPSE LINKS INDUSTRY WITH ACADEMICS AND SUPPORTS IMPROVING ENTREPRENEURIAL OUTCOMES



NNL WORKSHOP NOV 2023: IMAGE COURTESY OF GABRIEL ARAOZ-ZAPATA

SECRE 2022 The SINAPSE Early Career Researcher Exchange Fund 2022 was able to fund 5 projects, sending students from Dundee, Edinburgh, Stirling, and Strathclyde on visits to industry and academic institutions in Germany, Sweden, USA and Wales. These projects are detailed in the Success Stories section of the SINAPSE website.

Student Welcome Event Our thanks to Canon Medical Research Europe who sponsored our PhD Welcome Event and Dr Keith Goatman attended, speaking about the company and the opportunities there, taking part in the day and talking further with the attendees.

Entrepreneurial Training Development began on coursework to provide entrepreneurial training through our Seminar Series. We are also working with colleagues to signpost other existing materials and support for SINAPSE members looking to start their own business.

Across the network In Dundee a portable OCT-based probe for dermatology assessment is in development. Optos are funding an EngD.

In Glasgow a patent application has been made for a new neurovascular coil for use in MRI, with the company MRCoilTech, based on work funded by SINAPSE 2 years ago.



DEC 2023 IMAGE OF THE MONTH: COURTESY PROF MICHELLE WILLIAMS, DALL.E GENERATED IMAGE
[HTTPS://WWW.SINAPSE.AC.UK/IMAGES-OF-THE-MONTH/SINAPSE-IMAGE-OF-THE-MONTH-DECEMBER-2023/](https://www.sinapse.ac.uk/images-of-the-month/sinapse-image-of-the-month-december-2023/)

£76M

Value of awards won across
SINAPSE 2022-2023

£26M

Value of awards won across
SINAPSE 2021-2022

£46.5M

Awards from Charity sector 2022-2023

£26.6M

Grants from RCUK 2022-2023

SINAPSE SEEKS EXTERNAL FUNDING FROM BODIES SUCH AS SFC, UKRI AND HORIZON EUROPE

ARC Brain Health SINAPSE was a partner in the application to SFC for a new Alliance for Research Challenges (ARC) in Brain Health. This was successful and is now up and running. We continue to support and participate in the Brain Health ARC and will keep SINAPSE members updated on progress and opportunities, such as the current call for access to the Bio-Hermes dataset with support for researchers, and further funding opportunities being sought amongst the global Brain Health community.

Matchmaking Programme Working with our colleagues in SULSA, we are involved in a project to matchmake German researchers with Scottish ones. There is funding available to help bring interested researchers from both nations together around the topic of healthcare. A number of programmes and an automated web-based system will be launched in 2024. With the re-opening of access to Horizon Europe funding this would be an excellent opportunity to find new consortium partners.

Research Funding 2023 was a very successful year for SINAPSE partners, with £76m in funding being won from a number of sources, but mainly research councils and charities.

UKRC funding was awarded from BBSRC (to Glasgow for international partnerships and Edinburgh for the Lothian Birth Cohort 1936 Wave 6 and 7 research), MRC (to Edinburgh and Glasgow for a Scottish Total Body PET Facility, Edinburgh for PET Pharmaceutical development and radiotracer development, and Strathclyde for Ultrasound-Guided Activation and Imaging of Engineered Bacteria for Stroma Reprogramming), EPSRC (to Edinburgh for AI learning imaging), ERC (to Strathclyde for training to support health cognitive ageing) and UKRI (to Aberdeen awarding match funding for EU project involvement)

Scottish Government funding included an award to Dundee as part of Phase 2 of MDMC. UK Government funding went to Aberdeen as part of an NIHR AI award.

Industry funding was for EngD support to Dundee from Optos.

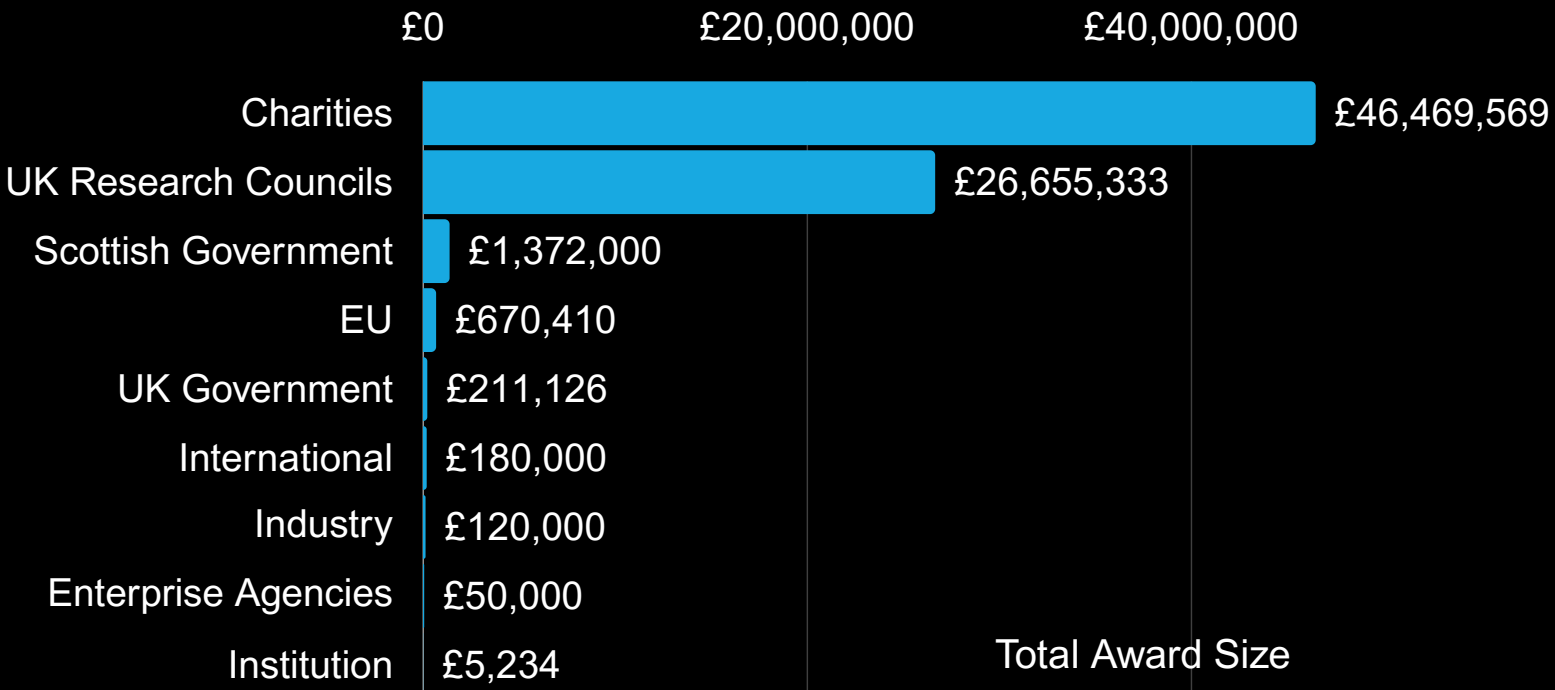


Charity funding includes awards from Alzheimer’s Research UK, the British Heart Foundation, Cancer Grand Challenges, Dunhill Medical Trust, Friends of ANCHOR, Heart Research UK, Kidney Research, NHS Grampian Endowments, Medical Research Scotland, Melville Trust, Penguins Against Cancer, the Royal Society Edinburgh, Society of Radiation Protection, UK Dementia Research Institute.

EU funding went to Glasgow, for the FC-RELAX programme, and Stirling for a Fellowship from the Belgian Government.

International Sources Edinburgh received PhD Studentship funding from the Turkish Health Ministry.

SINAPSE FUNDING SOURCES



Equipment The 3-tonne magnet for Aberdeen's next generation field-cycling scanner has been installed and is being tested.

Dundee received a Siemens Artic Icono DSA Angiosuite for research and training, 1 x IR3D tracking camera (Optitrack), 3 x HPC (containing 6x A1000 Nvidia GPUs), 1 x High-Precision Indentation Testing machine and a Neurologica Photon Counting CT Scanner for research use.

Edinburgh has acquired one of two in the UK Total Body MR PET systems and a BIOPAK system.

Research Facilities Dundee's Photon Counting CT Scanner is now in place, thanks to alliance with Neurologica/Samsung. The NHS Tayside team is now certified to perform MRgFUS Thalamotomies, independently of manufacturer InSightec.

Stirling's Mobile EEG was upgraded for the use with children, and equipment such as eye-trackers was bought to integrate with Stirling's imaging facilities, as part of the launch of Stirling's Life Span Lab.

Buildings Renovation of biomedical physics building in Aberdeen well underway, currently slated for completion in December. The renovated building will host teaching space for the medical physics and medical imaging taught Masters programs and lab space for the new Adaptable MRI Technology (AMT) Centre (low-field whole body system; low-field extremity MRI system & low-field animal MRI system) and Field-Cycling Imaging research groups.

In Dundee the TIME refurbishment is ongoing. This collaborative facility with NHS Tayside will host 1st mobile PCD scanner in Europe.

SINAPSE SEEKS FINANCIAL SUPPORT FROM, AND GROWS OUR CONNECTIONS WITH, OUR COMMERCIAL PARTNERS

ASM Sponsors Our thanks to the sponsors of the ASM, Siemens Healthineers, NordicNeuroLab, GE Healthcare, MR CoilTech, NVIDIA, Tayside Innovation Medtech Ecosystem, and Ballater Medical who all took exhibition spaces.

Student Welcome Event was sponsored by Canon Medical Research Europe.

SINAPSE RAISES AWARENESS OF SCOTTISH IMAGING AND ITS BENEFITS TO THE NATION

TV Series We worked with a TV production company on a forthcoming series with Dr Michael Mosely on the effects of aging. With the production team we helped identify imaging opportunities to demonstrate the points they were looking to make. We highlighted particular developments within Scotland such as MRgFUS, mobile EEG, ultrasound capsule scanning and more. Filming took place in the MRgFUS unit at Ninewells hospital during the summer.

Website and Branding Our logo and livery have been refreshed. In parallel our website has been redesigned and arranged as well as moved to a modern platform on the backend. We feel this makes the site clearer and easier to use and navigate.

Online Imaging Training Our short eLearning courses have been updated and modernised to run in current web browsers. These are open to use by anyone from clinical staff to undergraduate students.

Press Coverage Aberdeen's projects received a lot of press coverage, particularly the GEMINI project, appearing in The Times, BBC news and radio. The iCAIRD project was on BBC Click and Al-Jazeera. The Radiology: AI paper "Impact of Different Mammography Systems on Artificial Intelligence Performance in Breast Cancer Screening" featured in The Herald, Press and Journal, Aberdeen Live, Yahoo!Sport and others.

Strathclyde and Edinburgh's ultrasound work featured in CRUK Glasgow Race for Life press and articles in Glasgow Live, STV Online, The National and The Glasgow Times. Abertay featured in an STV News article on dance and music helping people with Parkinson's.

Public engagement activity included Explorathon 2022 in Aberdeen, hands on use of ultrasound scanners in discussion with 166 high school pupils in Edinburgh, and STEM Futures in Precision Medicine resources for secondary school pupils developed in Glasgow, along with participation in Science Lates at the Glasgow Science Centre.

SINAPSE SEEKS NEW ACADEMIC, PUBLIC BODY, AND CHARITY PARTNERS

RS Macdonald Working with SULSA, we have started discussions with RS Macdonald Charitable trust around an application for support, which would see funding for accessing Scottish facilities for work meeting the goals of the charity. (Update as of Feb 2024 – this bid has been successful and a call for funding will be issued later in 2024).

Brain Health Scotland SINAPSE contributed to Scottish Brain Health Summit in St Andrews, July 2023, bringing an imaging perspective and understanding to an active area of investment in Brain Health and Dementia research in Scotland. SINAPSE's extended body of knowledge and expertise is recognised as being key to understanding the imaging landscape in Scotland and advising on future plans.

Brain Health ARC We are working with the BrainHealth ARC to create opportunities to access new international study datasets for researchers in SINAPSE and other interested sphere and are critically involved in securing funding from international investors to support the initiative.

Networks SINAPSE continued participation in the FUSE (Future Ultrasonic Engineering) Centre for Doctoral Training, the cross-pool Research Innovation Scotland initiative, and Scottish Dementia Research Consortium, exhibiting at the SDRC annual meeting.

Stirling's collaboration with Glasgow, Jülich and Aachen, and Messina has been taken forward, bringing together expertise in football heading (Stirling), INM-4 Physics of Medical Imaging (Jülich), newly developed MR sequences in 7T scanner (Glasgow) with biomarkers (Messina).

SINAPSE PECRE funding of Dr Magda Mustile has led to her leading a collaboration with Université Catholique de Louvain and several hospitals in and around Brussels looking in imaging of Parkinson's patients in motion using EEG to understand why they have difficulty in getting around, backed by a fellowship from Belgian government.

Aberdeen organised the 27th Medical Imaging Understanding and Analysis (MIUA), 19-21 July 2023 at Suttie Centre for Teaching and Learning, attended by 120 participants.

Aberdeen also has an ongoing collaboration with David O'Hagan (St Andrews) for the preparation of radiotracers exploiting fluorinase enzyme.

Dundee has begun a collaboration of G Smith and D. Sung, Physics Department, St Andrews University, looking at DNP enhancement for MRI.

Edinburgh ran both the PET is Wonderful 2022 and Total Body PET 2022 event, with marketing assistance from SINAPSE.

OTHER NEWS AND ACTIVITY

In Aberdeen, the GEMINI study, a prospective trial of AI use in mammography in NHS Grampian funded by Kheiron Medical Technologies, trial due to complete end May 2024 and LUNIT study, a retrospective evaluation of AI breast screening tool, also industry funded, is underway.

In Dundee, the Centre for Medical Engineering and Technology (CMET) has been established, a joint unit with Schools of Medicine and Engineering. A project using Machine Learning to predict treatment location in MRgFUS Thalamotomies has begun. Several projects on developing protocols, radiation reduction, image resolution, analysis and material decomposition using the novel PCD-CT scanner are underway.

In Glasgow, the first transport of a carbon-11 radiopharmaceutical from Glasgow to Edinburgh for a pre-clinical PET imaging study has taken place and a new 68-Gallium-Edotreotide clinical service is being provided by the West of Scotland PET Centre.

At Strathclyde Dr William McGeown's Leverhulme Trust and BIAL Foundation funded projects on hypnotic suggestibility- that used fMRI (data acquired at Edinburgh Imaging Facility QMRI) and EEG (acquired at University of Strathclyde) concluded in Jan 2023.

