Data Science Center in Health

Embedding data science and AI in the DNA of the UMCG

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Preface

For the Data Science Center in Health (DASH), 2024 was an eventful year.

Elections at the end of 2023, followed by the formation of a new cabinet in 2024 and the General Agreement resulted in very unfavorable outcomes for DASH, as funding for the sector plans would lapse from 1 January 2026. The board of the UMCG decided on a 'take a step back' policy. After many general protests, the cabinet decided to keep the investments in the sector plans after all, but that does not, however, ease the pain of the budget cuts on research (funding) and education in general. Budget cuts to research and education are still substantial.

In 2024, DASH team members have been involved in the organization of a multitude of awareness-raising and research-related activities, which are further highlighted in this annual report. The set-up of the DASH IT lab is also nearing completion, offering students, researchers and employees a secure, cloud-based IT environment to work on simple to very complex data science, machine learning and AI-related challenges.

Within the framework of a UMCG educational innovation project, DASH experts, junior lecturers, education coordinators and experts, brought together in the UMCG 'Digital Health Care Education Team', worked together with faculty members of the Medicine, Dentistry and Movement Sciences programmes to further develop an UMCG-wide teaching line 'Data Science, AI and eHealth'. This teaching line should become an integral part of the various UMCG bachelor and (research) master programmes.

The ChatGPT project group assisted in the development of general rules for the use of ChatGPT and other Large Language Models (LLMs) at UMCG, wrote an advisory report on 'LLMs and AI in the UMCG' for the deans of Research and Education, and produced a video on how these models work and how to use them safely with the UMCG.

In the field of research, we continued to supervise and support various projects and studies, often in close cooperation with colleagues from inside and outside the UMCG.

We look to the future with confidence and hope that 2025 will be an equally successful year.

Michiel Hooiveld
Programme Manager a.i

Embedding Data Science and AI in the DNA of the UMCG

We live in an era of rapidly growing health data and increasing use of (generative) AI tools. Data-driven innovations make it possible to bridge the gap between insights from these data and applications in healthcare. As Data Science Centre in Health (DASH) we aim to accelerate this revolution in healthcare and act as a central hub for Health Data Science within the University Medical Center Groningen (UMCG).

We follow five strategic lines, each led by a DASH expert - an experienced researcher and thought leader in the industry committed to advancing UMCG in his or her field.

Machine Learning | Peter van Ooijen
Focused on advanced machine learning technologies, including federated learning and synthetic data, to foster collaboration.

Clinical Application of AI | Job Doornberg
Addressing technical, organizational, and legal challenges in implementing (generative) AI in clinical settings, with a focus on creating streamlined solutions for improved patient care and medical decision making.

eHealth | Esther Metting
Focusing on optimizing existing tools and aligning implementation processes with the needs of patients and professionals to ensure accessible, effective, and user-centered integration of AI and digital health innovations into clinical practice.

Clinical Cohort Data | Rozemarijn Vliegenthart
Ensuring high-quality data as the basis for data science through involvement in various clinical and population-based cohort studies.

Ethical, Legal and Social Aspects (ELSA) of AI | Mirjam Plantinga
Promote responsible development and implementation of artificial intelligence in healthcare through the ELSA AI lab North Netherlands (ELSA-NN).

Activities 2024

Below you will find a summary of the activities that DASH organized and participated in. An extensive list of activities can be found in the Appendix.

Collaborations incubator

Our involvement extends to the Dutch AI Coalition, AI Hub North Netherlands, Health-RI and the national ELSA Labs where we actively participated and contributed to the broader debate on the application and ethical and societal implications of (generative) AI in healthcare. Our collaboration with the Jantina Tammes School of Digital Society, Technology, and AI has grown by launch of the Digital Healthcare Community, led by theme coordinator Peter van Ooijen. On his behalf, the symposium on 'Innovations in AI for Healthcare Illuminating the future of Medical Imaging and Radiotherapy' took place at the UMCG, followed by Peters inaugural lecture as a full professor in AI in Radiotherapy. In November, we brought the MIT Hacking Medicine event from Boston to Groningen. One hundred creative minds signed up to tackle big and relevant healthcare challenges.

Symposium 'Innovations in AI for Healthcare, Illuminating the future of Medical Imaging and Radiotherapy' on 21-22 October at the UMCG, with about 170-180 participants attending each day. Following the symposium, Peter van Ooijen gave his inaugural lecture as a full professor in AI in Radiotherapy.

Impact and outreach

DASH experts were actively involved in numerous media appearances and lectures at home and abroad, contributing to increased visibility, and our LinkedIn community expanded to almost 4000 followers. We launched our new DASH video in which we explain our core business. In addition, we focused on knowledge sharing via various webinars and informative explainer videos about (generative) AI and the use of large language models. Moreover, we organized interactive workshops and lectures for patients on digital healthcare and we have organized an interdisciplinary eHealth conference for Groningen researchers in the House of Connections of the Univeristy of Groningen.

Our event on 27 June focused on the rapid technological advancements, the integration large language models (LLMs) into healthcare. The event spotlighted the use of LLM's to significantly reduce the administrative load, improve the quality of care, and strengthen patient communication.

Education

DASH and the Department of Epidemiology have established a 'Digital Health Care Education Team'. Three aspiring junior lecturers from this team developed and organised several specialised courses for Bachelor students through the Junior Scientific Masterclass. Furthermore, the science truck was present at the Dutch AI Coalition congress to conduct three interactive workshops, using our AI Hospital serious board game. We also organized our annual Summer School 'Data Science and AI in Health', welcoming students from around the world. In autumn, the second edition of the exquAIro AI & Data Bootcamp started and DASH team members were involved in providing the education programme. Participants of the first edition showcased innovative projects in healthcare, demonstrating the power of AI in enhancing diagnostics and treatment. We were also involved in several educational programs for healthcare professionals regarding eHealth implementation. Master thesis and bachelor thesis students from different faculties were interested in performing their research in DASH projects.

Healthcare is undergoing a rapid digital transformation, demanding that care professionals excel in a data-driven environment. To address this need, DASH and the Department of Epidemiology have launched the 'Digital Health Education Team'.

Project support

From the ChatGPT working group, we drafted the advisory report 'LLMs and AI in the UMCG'. Our recommendation of a dedicated team will hopefully be followed up in the new '(Gen)AI in Research and Education' working group. Also, this year's DASH project grant has been awarded to Ligia Cayres Ribeiro for her project 'Generating synthetic patients from UMCG medical records to support the development of clinical reasoning'. By collaborating with DASH, this research will receive not only financial support of up to €15,000, but also specialized expertise.

The Summer School 'Data Science and AI in Health' covered key topics such as data preparation, the ethical and legal dimensions of AI and the use of AI models in clinical settings. In the exciting serious game 'AI Hospital', participants made decisions on the implementation of AI for a fictitious patient.

Secured grants

Our application 'Integrating Digital Health Education into Faculty of Medical Sciences curricula: a comprehensive approach' was submitted to the (Education) Innovation Fund and awarded. Furthermore, the Citrien Fund programme 'Digital Inclusion in Care' was officially launched, a collaboration between ZonMw and the NFU. Over the next four years, technology and processes related to digital healthcare in each region will be redesigned to make them accessible to a wider audience. DASH experts Esther Metting and Mirjam Plantinga play key roles in this project. Esther Metting also received the JTS Early Career Researcher Prize and she obtained a 1 million Grant from the province of Groningen (NPG) for the Living Lab accessible digital care. She was also one of the project leaders who obtained a large grant from SNN to work on the implementation of a telemonitoring box for patients with high risk for cardiovascular diseases in primary care.

Experts from different backgrounds came together on 7 March at the House of Connections, University of Groningen, to explore the complex landscape of eHealth research. Led by Esther Metting, this eHealth event served as a dynamic hub for exchanging ideas and promoting digital health.

Secured grants

Facilities

AI Think Tank
Our AI Think Tank brings together leaders in the field of data science and AI and offers ideas and advice on data science and AI policy in research and clinical practice. The DASH IT Lab initiative has its origin in the Think Tank.

Digital Healthcare Community
The Machine Learning Lab community has merged with the Digital Healthcare Community at the Jantina Tammes School. Led by theme coordinator Peter van Ooijen, this community is an interdisciplinary network dedicated to transforming the potential of AI into healthcare. In the Living Lab researchers, policymakers, societal, healthcare and IT organisations work together to enhance the accessibility of digital care in the Eastern part of Groningen. In the Citrien 3 project, the UMCG collaborates with all Dutch academic hospitals, the ministry and healthcare insurance companies to work on projects to expand the implementation of digital health in poor digital literate patients.

IT-Lab
The DASH IT Lab supports healthcare researchers in innovative data science, AI and eHealth projects. It provides IT facilities, including high-performance workstations and public cloud services, with future developments supported by public-private partnerships.

ELSA AI Lab Northern Netherlands (ELSA-NN)
ELSA-NN, a consortium led by Mirjam Plantinga, focuses on the ethical, legal and societal implications of AI in healthcare, involving 24 quadruple helix partners. Public activities such as interactive AI cafés and workshops were organised in 2024, including the launch of the educational programme 'Your Technology of Tomorrow' a milestone for the years to come.

Data Science and AI Education
We formed the Digital Healthcare Education Team, consisting of DASH experts and junior lecturers and colleagues of the Epidemiology Department, who developed the first Digital Health Education courses that are now offered to Bachelor students through the Junior Scientific Masterclass.

Communities
DASH recognises that progress in data science and (generative) AI thrives in diverse communities. By being visible at meetings and conferences, DASH connects people, facilitates knowledge sharing and expands networks. We unite data science, AI and eHealth communities within the UMCG.

The DASH team

DASH team members work part-time, as they also have different roles in the UMCG. Despite the limited time available, significant results have been achieved in 2024.

- Michiel Hooiveld | Programme manager a.i.
- Frank Schröer | Policy advisor
- Natasha Maurits | Advisor
- Peter van Ooijen | Expert Machine Learning
- Esther Metting | Expert eHealth
- Rozemarijn Vliegenthart | Expert Clinical Cohort Data
- Job Doornberg | Expert Clinical Application of AI
- Mirjam Plantinga | Expert Ethical, Legal and Societal Aspects (ELSA) of AI
- Bart Scheerder | Business Developer
- Noha el Baz | Lecturer and Education Coordinator
- Kai Yu Ma | Academic Teacher
- Jan Jurjen Uitterdijk | Project Portfolio Manager
- Johanneke Wijbenga | Office Manager
- Rik Wisselink-Bijker | Junior Lecturer
- Wieke Bouwes | Junior Lecturer
- Dorien Neijzen | Junior Lecturer
- Tanja de Vries | Data Scientist
- Femke van der Bij | Communication Officer
- Krista Meijer | Communication Officer

DASH is (co-)funded by the sector plan for Medicine and Health Sciences, theme 'Data-driven innovation' of the Ministry of Education, Culture and Science.

Appendix - List of DASH activities 2024

Collaborations incubator

- January 9 | Co-organiser & lecturer at educational day RUG, course Datascience 'AI for lung CT', Groningen | Rozemarijn Vliegenthart
- January 20 | Lecture 'AI and the Future of Healthcare' at AstraZeneca from A to Z | Peter van Ooijen
- January 23 | Lecture 'AI in Radiotherapy' at ExquAIro | Peter van Ooijen
- January 27 | Keynote 'Clinical Applications of Artificial Intelligence in Surgery' at symposium Surgical Evolution & Revolution, Dutch National Association for Surgery by Medical Students (VCMS), Anatomy Lecture Hall, Utrecht | Job Doornberg
- January 29 | Invited lecture at 24th Total Radiology conference, Arab Health 'AI in cardiac radiology: ready for clinical use?', Dubai | Rozemarijn Vliegenthart
- January 29-30 | Language models in Dutch healthcare, Health-RI, Utrecht | Natasha Maurits
- Februari 1 | Keynote 'Innovations in Healthcare' at J&J Medtech Annual Kick-Off Meeting, Healthcare investments and innovation from University Hospital, Amersfoort | Job Doornberg
- February 8 | Third collaborative gathering DASH and Hanze University of Applied Sciences fostering a dynamic AI community in and around Groningen | Michiel Hooiveld | Peter van Ooijen
- February 22 | Lecture 'AI in Medicine' at Junior Scientific Masterclass (JSM) Programme| Peter van Ooijen
- March 7 | Keynote 'Clinical Applications of Artificial Intelligence in the Operating Theatre' at 37th Annual Congress Dutch National Operating Room Assistants (LVO), Grand Café Gooiland, Hilversum | Job Doornberg
- March 7 | Symposium 'eHealth Connect: Bridging Disciplines for Scientific Research' at the House of Connections | Esther Metting | Wieke Bouwes
- March 8-10 | Keynote 'Clinical Applications of Artificial Intelligence in Medicine' at Annual Symposium Dutch Medical Students 2024, Egmond aan Zee | Job Doornberg
- March | Reading and assessment committee PhD defence, Leiden | Esther Metting
- April 8 | Discussion panel AI PhD day at UMCG | Esther Metting
- April 8 | Lectures on 'DASH on-going research' at Oldenburg UMO meeting | Peter van Ooijen | Michiel Hooiveld
- April 9 | Lecture 'Academic-Industry AI Fusion' at Philips Voice of the Expert session | Peter van Ooijen
- April 11 | Keynote 'AI in Healthcare' at Annual Night of Science Gelre Ziekenhuizen, Apeldoorn | Job Doornberg
- April 18 | Presentation on 'responsible development and implementation of AI in Healthcare' for medical secretaries at UMCG | Mirjam Plantinga
- April 19 | Lecture Grand Round 'Artificial Intelligence in Healthcare' at Tonsley Faculty of Engineering, Adelaide Australia | Job Doornberg
- April 19 | Lecture Grand Round 'Clinical Applications of Artificial Intelligence in Medicine' at Flinders Medical Centre, Adelaide Australia | Job Doornberg
- April 24 | Contribution of 'Your technology of tomorrow program' at NLAIC conference, Amersfoort | Mirjam Plantinga
- April 24 | Lecture 'AIProHealth Summerschool' at EIT Health webinar | Peter van Ooijen
- April 25 | Lecture 'Digital Healthcare Introduction' at PRECISION Scientific day | Peter van Ooijen

- May | Presentation International Primary Care Resiratory Group conference, Athens | Esther Metting
- May 21 | (Online) presentation on 'responsible development and implementation of AI in Healthcare' for Dutch alliance for health literacy | Mirjam Plantinga
- May 21 | NVPHBV meeting at House of Connections | Peter van Ooijen
- May 29 | Kick-off Digital Healthcare community at House of Connections | Peter van Ooijen
- May 30 | Presentation 'Culture matters: findings from international focus groups with COPD patients regarding digital health' | Esther Metting
- June 7 | Knowledge Network AI Implementation in Healthcare Isala/DASH (UMCG), Zwolle | Michiel Hooiveld | Jan Jurjen Uitterdijk | Tanja de Vries | Christiaan Steenkist
- June 10 | Lecturer, RUG Honours college discussion evening FSE (Faculty Science Engineering): 'AI: role in diagnostic radiology?', Groningen | Rozemarijn Vliegenthart
- June 11 | Host of panel discussion on responsible use of AI at Regulatory Science Network Netherlands and workshop on AI in regulatory innovation | Mirjam Plantinga
- June 12 | Teachable Machine / AI Serious Game workshop at Martini Hospital, Groningen | Tanja de Vries | Wieke Bouwes | Michiel Hooiveld
- June 12-14 | Keynote 'Clinical Applications of Artificial Intelligence in Orthopaedic Surgery' at Combined Meeting 61st Nordic Orthopedic Federation (NOF) and Dutch Orthopaedic Association (NOV), World Trade Centre, Rotterdam | Job Doornberg
- June 25 | Presentation 'Responsible development and implementation of AI in Healthcare' for nurses and project managers at UMCG | Mirjam Plantinga
- June 27 | Plenary lecture Dutch Lung Congress 'AI in thoracic imaging: where do we stand?', Utrecht | Rozemarijn Vliegenthart
- June 27 | Symposium 'The transformative impact of LLM's in healthcare' at UMCG | Job Doornberg | Bart Scheerder
- July 8 | Invited speaker at the eHealth Lifestyle symposium | Esther Metting
- July 23 | Presentation 'Responsible development and implementation of AI in Healthcare' for DASH Summerschool on AI at UMCG | Mirjam Plantinga
- July 22-26 | Summer School AI and Data Science in Health at UMCG | Peter van Ooijen | Dorien Neijzen | Wieke Bouwes | Bart Scheerder | Michiel Hooiveld
- August 7 | Invited Lecture for Dutch Ministry of Health and Vice-Prime Minister Fleur Agema 'Generative AI: No More Keyboards!' at Elizabeth TweeSteden Ziekenhuis, Tilburg | Job Doornberg
- September 9 | European Respiratory Society Vienna, Poster Focusgroup results COPD patients on digital healthcare | Esther Metting
- September 10 | (Online) presentation 'AI actueel lunchsessie' at Samenwerking Noord | Mirjam Plantinga
- September 26 | TeraRecon Visit at UMCG to Boost AI Collaboration Rozemarijn Vliegenthart | Jan Jurjen Uitterdijk | Peter van Ooijen | Michiel Hooiveld | Bart Scheerder
- September 26 | Presentation in cultural difference in technology acceptance in COPD, at Wonca Europe, Dublin | Esther Metting

The Knowledge Network on AI Implementation in Healthcare, co-hosted with Isala Hospital in Zwolle on 7 June, aimed to exchange knowledge, experiences and insights on AI implementations in healthcare and focused on 'Real-world data and AI for data-driven and personalised care'.

- October | Key note lecturer eHealth in youth care Arkin, Amsterdam | Esther Metting
- October | Workshop Aletta dive 'Samen sterker: technologie als bondgenoot voor een gezonder leven voor kwetsbare individuen' | Esther Metting
- October 5 | Zpannend Zernike at UMCG, workshop on Machine Learning for children | Natasha Maurits | Wieke Bouwes | Rik Wisselink-Bijker | Michiel Hooiveld
- October 7 | (Online) presentation for Bioethics seminar series at Centre for Biomedical Ethics and Law, University of Leuven | Mirjam Plantinga
- October 11 | Teachable Machine workshop during Treant Compagnon course, Apeldoorn | Michiel Hooiveld
- October 21 | Workshop 'AI tools' and support Hackathon at ExquAIro | Jan Jurjen Uitterdijk, Christiaan Steenkist
- October 22 | Presentation 'Responsible development and implementation of AI in Healthcare' for elderly conference, Pekela | Mirjam Plantinga
- October 23 | Working visit by a delegation from Isala Hospital, including Michèle Blom (Chair of the Board of Directors, Isala), to DASH | Job Doornberg | Jan Jurjen Uitterdijk | Esther Metting | Natasha Maurits | Michiel Hooiveld
- October 24 | Symposium ELSA AI lab Northern Netherlands 'Responsible AI innovation is a joint effort', Groningen | Mirjam Plantinga | Michiel Hooiveld
- October 24 | Invited lecture opening session ESCR 2024 'Cardiovascular imaging: what to expect in the future', Dubrovnik | Rozemarijn Vliegenthart
- October 26 | Invited lecture at ESCR 2024 'AI in cardiac CT acquisition', Dubrovnik | Rozemarijn Vliegenthart
- October 29 | Contribution to AI and society workshop NLAIC, Amsterdam | Mirjam Plantinga
- November 4 | Invited Lecture 'GenAi – No More Keyboard' at Dutch Federation of Medical Specialist (FMS) AI Committee, Domus, Utrecht | Job Doornberg
- November 12 | Keynote 'Clinical Applications of Artificial Intelligence in Surgery' at Artificial Intelligence Luncheon Hospital MST, Medisch Spectrum Twente, Enschede | Job Doornberg
- November 12 | Contribution to panel discussion workshop 'Auditing Accountability in Trustworthy AI with applications in personalised medicine' at Centre for Personalized Medicine, Oxford | Mirjam Plantinga
- November 21-22 | Innovations in AI for Healthcare Symposium at UMCG | Peter van Ooijen
- November 29-December 1 | MIT Hacking Medicine Groningen Hackathon: LLMs in Healthcare at House of Connections, Groningen | Bart Scheerder | Peter van Ooijen | Job Doornberg
- December 2 | Panel member 'AI after dark' at TeraRecon event during RSNA 2024, Chicago | Rozemarijn Vliegenthart

The ELSA AI Lab Northern Netherlands (ELSA-NN) Symposium on 24 October delved into the ethical, legal and social aspects (ELSA) of AI in healthcare. Participants experienced high-profile keynotes, project updates and engaging roundtable discussions, all focused on responsible AI innovation.

Impact and outreach

- The LinkedIn account has expanded from over 3.000 to almost 4.000 followers
- DASH Webinar: Unlocking the potential of machine learning in health predictions
- Bridging healthcare gaps through digital innovation
- Enhancing data literacy: UMCG launches Digital Healthcare Education Team
- DASH Webinar: Navigating AI Regulations in Healthcare Innovation
- Integrating Digital Health Education into the Faculty of Medical Sciences' curricula
- DASH Webinar: Neuroinsights: Unravelling disease pathways with AI
- Bridging expertise and practice: Data science in healthcare
- JTS viert verjaardag met prijzen voor jonge onderzoekers
- Eerste werkbezoek Minister Agema: AI en innovatie bij het ETZ
- Lung Nodules in Non-Smokers: New Insights
- Kritisch leren werken met AI begint met onderwijs
- UMCG innoveert zorg met AI en ChatGPT
- Responsible AI innovation is a joint effort
- Celebration of AI-Driven Healthcare Innovations at exquAIro Pilot Grant Ceremony and Symposium
- AI and radiotherapy: defining boundaries and predicting the future | Peter van Ooijen - Oratio minute
- DASH Mini Lecture: Large Language Models
- Ideas, Innovation, and Impact: MIT Hacking Medicine Groningen edition
- Dit weekend grote hackaton over AI in de zorg
- Generatieve AI | Hoe kun je grote taalmodellen het beste gebruiken?
- Generative AI and Large Language Models: this is how it works

Led by Bart Scheerder, we brought Boston's MIT Hacking Medicine on 29 November to Groningen. Incredible minds tackled real challenges in healthcare. After three days of hard work, team 'TBC' was voted the winner with their idea for preventing the development of late-stage tuberculosis in South Africa.

Project support

- DASH project grant 2024 has been awarded to Ligia Cayres Ribeiro for her project 'Generating synthetic patients from UMCG medical records to support the development of clinical reasoning'. Under the supervision of Noha El-Baz, she receives support from DASH for her project.
- Data scientist Tanja de Vries provided support on various projects within the UMCG. For the CONCRETE study (scientific research on diagnosis of chest pain), she performed data analyses on patient questionnaires. As part of the Learning Health System (LHS) project she trained a simple model on data from our Electronic Health Record (EHR) system ensuring proper functioning of the model.

Education

- Participated in meetings of the Education and Training Region North and East Netherlands (forerunner project 'fit for the future') and drafted and delivered advice/draft for an education module.
- The Digital Health Education team was formed. Also three junior teachers have been appointed. They all successfully completed the Basic Teaching Qualification (BKO) programme, and are now teaching.
- Regular workshops digital healthcare for patients from the Dutch Lung foundation by Wieke Bouwes and Esther Metting.
- Two courses have taken place within the Junior Scientific Masterclass (JSM) programme of Medical Science: 'Introduction to AI in Healthcare' and 'Introduction to eHealth, Digital Innovations in Patient Care'. The course 'Bridging Statistics and Machine Learning in Medical Research' is designed and will start at in 2025.
- Summer School on Data Science and AI in Healthcare 2024, with a program covering essential topics such as data preparation, ethical and legal aspects of AI and AI models in clinical settings.
- ExquAIro UMCG bootcamp (first and second edition): unique blend of theory and practical experience, designed for healthcare professionals who want to harness the power of AI in their work.
- The 'Your Technology of Tomorrow' educational programme has engaged different audiences (primary schools, middle schools, adult audiences) at more than 25 different occasions and places.
- AI and medicalisation, guest lecture by Mirjam Plantinga at Sociology faculty, master course 'Medicalization' University of Groningen.
- Two workshops on digital innovation management were provided by Esther Metting for medical professionals from different northern hospitals (program strategic leadership for medical specialists).
- Two workshops were provided by Esther Metting on eHealth implementation for medical professionals in the program management and economics in care and wellbeing.
- Wieke Bouwes and Esther Metting developed, organised and provided the course 'Ehealth and implementation' for medical students in the UMCG.

Secured grants

- Grant application Citrien 3 Fund 2024-2028 'Digitally along in care' by Esther Metting and Mirjam Plantinga awarded by ZonMw.
- The Learning Community 'Coding for Cure and Care (C3)', led by the Hanze University of Apllied Sciences, focuses on the use of AI in the patient's care journey, from prevention to treatment and aftercare. This project was granted an AiNed Learning Community Grant 2024, with DASH as co-applicant.
- The 'Integrating Digital Health Education into Faculty of Medical Sciences curricula: a comprehensive approach' project proposal was awarded funding by the (Education) Innovation Fund, an educational innovation project of the Medical Faculty of the UMCG.
- The Netherlands Organisation for Scientific Research (NWO) has selected the consortium grant 'Artificial intelligence-powered, data-driven ORgan Allocation and Biomarker LEverage to improve kidney transplant outcomes' (ADORABLE) for funding, with Mirjam Plantinga as co-applicant.
- The National Program Groningen provided us with 1 million euro's for the living lab accessible digital care, chaired by Esther Metting.
- With the department of primary and long term and ANCORA healthcare, we received funding for the implementation and evaluation of a lifestyle box in primary care. The PI of this project is Esther Metting.

Publications

- AI-Inclusivity in Healthcare: Motivating an Institutional Epistemic Trust Perspective | Cambridge Quarterly of Healthcare Ethics | Cambridge Core
- Enhancing medical education with serious gaming
- Integrating Digital Healthcare Education in the medical curriculum
- Recommendations for the creation of benchmark datasets for reproducible artificial intelligence in radiology
- Effect of emphysema on AI software and human reader performance in lung nodule detection from low-dose chest CT
- Enhancing a deep learning model for pulmonary nodule malignancy risk estimation in chest CT with uncertainty estimation
- A framework to integrate artificial intelligence training into radiology residency programs: preparing the future radiologist
- Explainable machine learning model based on clinical factors for predicting the disappearance of indeterminate pulmonary nodules
- Lung Nodule Management in Low-Dose CT Screening for Lung Cancer: Lessons from the NELSON Trial
- Reference formulas for chest CT-derived lobar volumes in the lung-healthy general population
- Exploration of the relationship between general health-related problems and subclinical coronary artery disease: a cross-sectional study in a general population
- Association between skin autofluorescence and coronary calcification in the general population
- Distribution of Solid Lung Nodules Presence and Size by Age and Sex in a Northern European Nonsmoking Population
- Low-Dose CT-derived Bronchial Parameters in Individuals with Healthy Lungs
- Ct-defined emphysema prevalence in a Chinese and Dutch general population
- Who is at risk of lung nodules on low-dose CT in a Western country? A population-based approach
- The relationship of fat and muscle measurements with emphysema and bronchial wall thickening in smokers
- Bronchiectasis is associated with lower lung function in lung cancer screening participants
- Automated evaluation of diaphragm configuration based on chest CT in COPD patients
- Endobronchial valve treatment improves chest-CT diaphragm configuration in COPD
- Phase angle and donor type are determinants of coronary artery calcification in stable kidney transplant recipients at twelve months after transplantation
- CT Myocardial Perfusion and CT-FFR versus Invasive FFR for Hemodynamic Relevance of Coronary Artery Disease
- A Delphi consensus to identify the key screening tests/questions for a digital neurological examination for epidemiological research
- Correction to: eHealth tools to assess the neurological function for research, in absence of the neurologist – a systematic review, part I
- Effectiveness of a COVID-19 contact tracing app in a simulation model with indirect and informal contact tracing
- eHealth tools to assess the neurological function for research, in absence of the neurologist: a systematic review, part I (software)
- Outside the digital bubble: digital illiteracy is common and deserves more attention when implementing eHealth