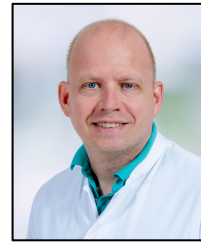


Personal details

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Current positions

2022 -present : Tenure track adjunct professor in artificial intelligence approaches for precision oncology University Medical Center Groningen, University of Groningen, Groningen, the Netherlands.

2016 -present : Board-certified internist and medical oncologist, involved in care, teaching and research, Department of Medical Oncology, University Medical Center Groningen, Groningen, the Netherlands.

2014 -present : Principal investigator at the Cancer Research Center Groningen, University Medical Center Groningen, Groningen, The Netherlands.

Education

2014 -2016 : Residency training in Medical Oncology, University Medical Center Groningen, Groningen, The Netherlands.

2012 - 2014 : Residency training in Internal Medicine, University Medical Center Groningen, Groningen, The Netherlands.

2010 - 2012 : Residency training in Internal Medicine, Scheper Hospital, Emmen, The Netherlands.

2006 - 2010 : MD/PhD joint program, Junior Scientific Masterclass, University Medical Center Groningen, University of Groningen, Groningen, The Netherlands, MD degree January 29th 2010 and PhD degree February 3th 2010.

2002 - 2006 : MSc degree in Medicine, August 31th 2006, Faculty of Medical Science, University of Groningen, Groningen, The Netherlands.

1998 - 2002 : MSc degree in Cognitive Science and Engineering (Artificial Intelligence), August 26th, 2002, Faculty of Mathematics and Natural Sciences, University of Groningen, Groningen, The Netherlands.

1997 - 1998 : Propaedeutic examination in Computer Science, February 29th, 2002, Faculty of Mathematics and Natural Sciences, University of Groningen, Groningen, The Netherlands.

1991 - 1997 : Pre-university education (VWO), Courses: geography, chemistry, mathematics A and B, physics, Dutch, English, Ubbo Emmius, Stadskanaal, The Netherlands.

Research experience

- 2016** : Basic course on Regulations and Organisation for clinical investigators (BROK), updated in 2021, University Medical Center Groningen, Groningen, The Netherlands.
- 2014 - present** : Principal investigator at the Cancer Research Center Groningen, University Medical Center Groningen, Groningen, The Netherlands.
- 2015** : Participant in The 17th ECCO-AACR-EORTC-ESMO Workshop on Methods in Clinical Cancer Research, Switzerland (20 until 26 June 2015).
- 2010 - 2013** : In parallel to my training in Internal Medicine/Medical Oncology: Affiliated as post-doctoral fellow, Departments of Genetics and Medical Oncology, University Medical Center Groningen, Groningen, The Netherlands.
- 2013** : Visiting scientist (Jun-Sep); Subject: Personalized medicine, Supervisor: Prof. Scott Weiss, Partners Healthcare Center for Personalized Genetic Medicine, Harvard Medical School, Boston, MA, USA.
- 2006 - 2010** : PhD research, Supervisors: Prof. A.G.J. van der Zee, Prof. E.G.E. de Vries, Dr. Ir. G.J. te Meerman, Dr. S. de Jong, Title: *High dimensional data analysis for new insight in ovarian cancer phenotypes*, Departments of Gynecologic Oncology, Medical Oncology and Genetics, University Medical Center Groningen, Groningen, The Netherlands.
- 2009** : Visiting scientist (Sep-Dec); Subject: Translational Oncology, Supervisors: Prof. Stan B. Kaye and Prof. Robert Brown, Institute of Cancer Research and Drug Development Unit, The Royal Marsden Hospital, London, United Kingdom.
- 2006** : Visiting scientist (3 weeks), supported by a personal grant of the Dutch Cancer Society, Subject: Statistical analysis of microarray expression data, Supervisor: Dr. Richard Simon, Biometric Research Branch, National Cancer Institute (NCI), Bethesda, MD, USA.
- 2006** : MSc thesis, Title: *Analysis of ovarian cancer microarray data*, Supervisor: Dr. Ir. G.J. te Meerman; Department of Genetics, University Medical Center Groningen, Groningen, The Netherlands.
- 2002 - 2006** : In parallel to my medical study: Bio-informatician (8 hours/week), Department of Genetics, University Medical Center Groningen, Groningen, The Netherlands.
- 2002** : MSc thesis, Title: *Cognitive navigation modeling of robots*, Supervisor: Prof. L. Schomaker; Cognitive Science and Engineering (Artificial Intelligence), Faculty of Mathematics and Natural Sciences, University of Groningen, Groningen, The Netherlands.

Teaching experience

- 2023 - 2024** : Supervisor for competency training (science), Bachelor of Medicine year 1 Faculty of Medical Sciences, University of Groningen, Groningen, The Netherlands.

- 2022** : Teach the Teacher part III. Supervise, test, and assess. Wenckebach Institute, University Medical Center Groningen (November).
- 2022** : University Teaching Qualification (UTQ), University of Groningen, The Netherlands. The UTQ is a mark of quality used by all Dutch universities. It functions as a reliable frame of reference with respect to didactic skills. The BKO track consists of a series of modules, allowing lecturers to assess and develop all facets of teaching.
- 2021 - 2022** : Supervisor for competency training (science), Bachelor of Medicine year 2 Faculty of Medical Sciences, University of Groningen, Groningen, The Netherlands.
- 2021** : Teach the Teacher part II. Education in daily practice. Wenckebach Institute, University Medical Center Groningen (June).
- 2020** : Member of working group responsible for drafting a vision document for the learning line 'Datascience in Biomedicine' for master tracks in the Faculty of Science and Engineering Sciences, University of Groningen, Groningen, The Netherlands.
- 2018 - present** : Lecturer in Current Themes in Oncology, Medical and Pharmaceutical Drug Innovation Master and Faculty of Science and Engineering Sciences, University of Groningen, Groningen, The Netherlands.
- 2018 - present** : Lecturer in Summer School: Fundamentals of Biobanking and Cohort Research, University Medical Center Groningen, The Netherlands.
- 2016 – present** : Member of training team for fellows Internal Medicine/Medical Oncology at the University Medical Center Groningen, Groningen, The Netherlands.
- 2014 - present** : Lecturer in Biology of Cancer; Faculty of Mathematics and Natural Sciences, University of Groningen, Groningen, The Netherlands.
- 2016 - 2020** : Lecturer in genetics course, The International Master in Innovative Medicine (IMIM), University Medical Center Groningen, Groningen, The Netherlands.
- 2014** : Lecturer in system biology; Medical Sciences Summer School Oncology 2014; University Medical Center Groningen, Groningen, The Netherlands.
- 2013** : Lecturer in integrative genomics; Educational session for residents Gastroenterology and Hepatology; University Medical Center Groningen, Groningen, The Netherlands.
- 2011** : Teach the Teacher part I. Teaching basics. Wenckebach Institute, University Medical Center Groningen.
- 2002 - 2005** : Teaching assistant in statistics (6 weeks annually), Institute for Medical Education, Faculty of Medical Sciences, University of Groningen, Groningen, The Netherlands.

Selected lectures and presentations

- 2025** : Brengt AI de medische oncologie vooruit? (Does AI advance medical oncology?), Oral presentation at the 11th Therapie op Maat 2025, Arnhem, the Netherlands (February 7th).
- 2024** : Using machine learning to unravel the ‘cancer-immune setpoint’ in rare cancers (SETPPOINT). Oral presentation at 1th Hanarth symposium, AI innovations in (rare) tumor oncology. 2024, Utrecht, the Netherlands (November 26th).
- 2024** : Toward a fully automatized AI driven pipeline? Session chair at the 36th EORTC-NCI-AACR SYMPOSIUM on molecular targets and cancer therapeutics 2024, Barcelona, Spain (September 15th).
- 2024** : Novel AI-enabled strategies in biomarker-informed clinical trials. Oral presentation at the ESMO Congress 2024, Barcelona, Spain (September 15th).
- 2023** : Where are we in oncology in relation to developments in digital health, big data, artificial intelligence - challenges / opportunities. Session chair and oral presentation at the ESMO Congress 2023, Madrid, Spain (October 21th).
- 2023** : Thema-avond AI in de gezondheidszorg - De jonge specialist (Theme Night AI in healthcare - The Young Specialist). Invited speaker, Utrecht, the Netherlands (September 19th).
- 2023** : Artificial Intelligence: How to use technology to obtain the truth. Session chair and oral presentation at the ESMO Targeted Anticancer Therapies Congress (TAT), Paris, France (March 7th).
- 2022** : The road towards clinical implementation of artificial intelligence (AI) in oncology; Perspectives: which transformations are expected? Session chair and oral presentation at the ESMO Congress 2022, Paris, France (September 11th).
- 2021** : Artificial Intelligence in de Zorg (Artificial Intelligence in Health care); Broadcast on MEDTalks.nl, Hilversum, the Netherlands (August 27th).
- 2020** : Artificial intelligence lessons outside pathology; Oral presentation at the 32nd Congress of the European Society of Pathology, Glasgow, UK (December).
- 2020** : AI in Healthcare; Oral presentation at the EMBL | Stanford Life Science Alliance symposium, Heilbronn, Germany (October 27th).
- 2020** : Integrating artificial intelligence in patient care; Oral presentation at the 2nd ESMO Breast Cancer Congress, Berlin, Germany (May 8th). Due to the Covid 19 infection the format was changed to ESMO Breast Cancer Virtual Meeting (May 23-24).
- 2019** : How to determine the cancer-immune setpoint in patients; Oral presentation at the 25th Oncologiedagen voor Nederland en Vlaanderen, Arnhem, the Netherlands (November 14th).
- 2019** : Artificial Intelligence in Medicine; Workshop at the Antonius Deusing symposium 2019, Groningen, The Netherlands (November 2th).

- 2019** : The medical oncologist perspective: What is the future role of artificial intelligence in medical oncology?; Session chair and oral presentation at the ESMO Congress 2019, Barcelona, Spain (September 29th).
- 2019** : Towards targeted therapy using publicly available omics data; Oral presentation at the 13th training targeted therapy of the Dutch Society of Medical Oncology (NVMO), Utrecht, The Netherlands (May 17th).
- 2018** : Short overview of factors that influence the cancer-immune set point; Oral presentation at the 4th Multidisciplinary Immuno-Oncology Symposium, Driebergen, The Netherlands (September 18th).
- 2017** : Harnessing transcriptomic tumour profiles from the public domain; Oral presentation at the East-West Alliance Symposium on big data in health, University of Oxford, United Kingdom (September 12th).
- 2017** : Identification of novel therapeutic targets in glioblastoma with functional genomic mRNA profiling; Poster Discussion Session (presented by C.G. Brahm) at the 2017 ASCO Annual Meeting, Chicago, IL, USA (June 5th).
- 2017** : Tumor profiling (breast cancer immunoinfiltrations); Oral presentation at the 11th training targeted therapy of the Dutch Society of Medical Oncology (NVMO), Driebergen, The Netherlands (March 31th).
- 2017** : Target finding and role of imaging agents in drug discovery; Plenary oral presentation at the International symposium on Molecular Imaging Agents in Medicine 2017, Groningen, The Netherlands (February 13th).
- 2016** : Immune cell type fractions and gene expression in inflammatory breast cancer; Poster and oral presentation (presented by C.P. Schröder) at the 5th International Inflammatory Breast Cancer Conference, Boston, MA, USA (July 10th).
- 2016** : The Identification of novel biomarkers for therapeutic and diagnostic goals in anaplastic thyroid carcinoma using functional genomic mRNA profiling; Oral presentation (presented by P.K.C. Jonker) at AAES 37th Annual Meeting, Baltimore, MD, USA (April 11th).
- 2015** : Inverse relationships between high somatic copy number load and immune phenotypes in breast cancer; Poster presentation at 38th Annual CTRC-AACR San Antonio Breast Cancer Symposium, San Antonio, TX, USA (December 10th).
- 2015** : In silico immune analysis in breast cancer; Jules Bordet Cancer Institute, Brussels, Belgium (October 5th).
- 2015** : 'Van expressieanalyse naar kankertherapie' (Expression analysis to cancer therapy). Oral presentation in honor of retirement of dr. ir. G.J. te Meerman, Groningen, the Netherlands (September 25th).
- 2014** : Multidisciplinaire (inter)nationale benadering op-maat van de kankerpatiënt verbetert behandelresultaten. Avond van Wetenschap & Maatschappij, The Hague, the Netherlands (October 6th).
- 2013** : Functional Genomic mRNA profiling; Center for Functional Cancer Epigenetics, Dana-Farber Cancer Institute, Boston, MA, USA (August 8th).

- 2013** : ‘Voor een dubbeltje op de eerste rang’ (For a dime at ring side); J.W.R. Nortier lecture at the NABON-BOOG symposium, Utrecht, the Netherlands (April 11th).
- 2011** : Integrative genomics approach in oncology: towards personalized medicine; Oral presentation at the Oncologiedagen voor Nederland en Vlaanderen, Arnhem, the Netherlands (November 18th)
- 2011** : Towards personalized medicine in oncology: an integrative genomics approach to identify molecular subtypes and to guide treatment choice. Jules Bordet Cancer Institute, Brussels, Belgium (October 31th)
- 2011** : On the brink of control and total chaotic collapse: Analysis of gene expression of 55,000 human samples reveals the cytogenetic architecture of human cancer; Oral presentation at the Second Symposium of Systems Genetics: from man to microbe, from genotype to phenotype, University Medical Center Groningen, Groningen, The Netherlands (September 29th).
- 2009** : Novel approach to identify genes and pathways related to platinum resistance in ovarian cancers; E-Poster Presentation at the 16th International Meeting (ESGO 16), European Society for Gynecological Oncology, Belgrade, Serbia (October 11th).
- 2009** : An integrated bio-informatics and functional approach to identify genes and pathways related to platinum resistance in ovarian cancer; Oral presentation at the 100th Annual Meeting, American Association for Cancer Research, Colorado Convention Center, Denver, CO, USA (April 22th).

Scholarships, grants and prizes

- 2025** : **Title:** Computer-aided polyp detection technology, powered by artificial intelligence (AI) **Funding source:** Health Science & Technology Ecosystem call UMCG (€150,000). **Role:** project leader.
- 2025** : **Title:** Large Language Models for Symptom Monitoring in Cancer: A Study on Patient Outcomes and Experiences. **Funding source:** Rottinghuisfonds (€30,000). **Role:** principal investigator.
- 2024** : **Title:** InSilicoGeneModulator: virtual gene transcription modulation **Funding source:** Netherlands Organization for Scientific Research; Open Competition Domain Science – XS (€ 50,000). **Role:** project leader.
- 2024** : **Title:** Spatially-resolved multi-OMIC analysis of the tumor micro-environment **Funding source:** University Medical Center Groningen Cancer Research Fund (€ 75,000). **Role:** principal investigator.
- 2024** : **Title:** OPTIMlization of symptom management through implementation of structural Symptom Monitoring (OPTIMISM). **Funding source:** Dutch Cancer Society (€ 3.957.793). **Role:** principal investigator.
- 2023** : **Title:** Characterizing the interaction between neurons and ovarian cancer cells in high-grade serous ovarian cancer. **Funding source:** MMIT/IMIM PhD competition University Medical Center Groningen (€ 250,000). **Role:** principal investigator.

- 2022** : **Title:** VOICE: Vaccination against cOvid In CancEr. Subproject: Predictors vaccination response and insight into long-term immunity against SARS CoV-2 variants in patients with cancer who receive chemotherapy and/or immunotherapy. **Funding source:** Netherlands Organization for Scientific Research (€ 249,659). **Role:** principal investigator.
- 2022** : **Title:** Mechanistic understanding and therapeutic targeting of immune evasion in triple-negative breast cancer. **Funding source:** Dutch Cancer Society (€ 1,022,831). **Role:** principal investigator.
- 2022** : **Title:** IMAGing Features Associated with Immune Response. **Funding source:** University Medical Center Groningen, PUSH Fund (€ 250,000). **Role:** project manager.
- 2021** : **Title:** Predicting the tumor response for patients treated with an immune checkpoint inhibitor using transcriptional patterns in whole-blood. **Funding source:** University Medical Center Groningen Cancer Research Fund (€ 35,000). **Role:** principal investigator.
- 2021** : **Title:** VOICE: Vaccination against cOvid In CancEr. **Funding source:** Netherlands Organization for Scientific Research (€ 3.274.780). **Role:** consortium member, involved in protocol writing, responsible for biostatistical analyses.
- 2021** : **Title:** Infrastructure fOr rare Cancers in the Netherlands: Towards a comprehensive platform for early detection and treatment of rare cancers: FORCE. **Funding source:** Dutch Cancer Society (€ 3,649,241). **Role:** principal investigator.
- 2020** : **Title:** Using machine learning to unravel the 'cancer-immune setpoint' in rare cancers. **Funding source:** Hanarth Fonds (Budget € 400,000). **Role:** principal investigator.
- 2019** : **Title:** Specific imaging of immune cell dynamics using novel tracer strategies (Immune-Image) **Funding source:** European commission Horizon 2020 (Budget UMCG € 2,424,208). **Role:** team member involved in WP2: data storage and analysis enablement. Responsible for managing, coordinating, collecting and sharing multi-center (clinical) research data in an optimized and standardized way.
- 2018** : **Title:** N-CIA: Netherlands facility for Cancer-Immune Analysis. **Funding source:** Dutch Cancer Society (€ 3,648,086). **Role:** head of the working group responsible for data management and integration.
- 2017** : **Title:** POINTING: Towards patient-tailored cancer immunotherapy supported by a multifaceted predictive signature composed of integrative omics and molecular imaging. **Funding source:** Dutch Cancer Society (€ 1,988,916). **Role:** Principal investigator.
- 2017** : **Title:** Novel tools to dissect and monitor tumor metabolism in melanoma patients. **Funding source:** Young Academy Groningen (€ 200,000). **Role:** Principal investigator.
- 2016** : The Young Leader's Fellowship Grant, European CanCer Organisation (ECCO), European Cancer Congress 2017, Amsterdam, The Netherlands.

- 2016** : **Title:** Towards a hub for personalized medicine. **Funding source:** University Medical Center Groningen institutional funding (€ 478,000). **Role:** principal investigator.
- 2016** : **Title:** Towards use of gut microbiome analysis to predict tumor response of patients on immune checkpoint inhibitors: initiating a cohort of patients with advanced solid tumors as a critical first step. **Funding source:** University Medical Center Groningen Cancer Research Fund (€ 42,000). **Role:** principal investigator.
- 2015** : **Title:** Mining big data to improve biologically personalized therapeutics for cancer patients. **Funding source:** Netherlands Organization for Scientific Research; VENI starting grant (€ 250,000 + € 40,000). **Role:** Principal investigator.
- 2015** : Selected as participant in the 17th ECCO-AACR-EORTC-ESMO Workshop on Methods in Clinical Cancer Research, an educational program that introduces junior clinical oncologists in any oncology subspecialty to the principles of good clinical trial design, Switzerland (20 until 26 June 2015).
- 2015** : Rosenstein award 2014 for the publication Fehrmann *et al.* "Gene expression analysis identifies global gene dosage sensitivity in cancer" in Nature Genetics. This prize is awarded to a medical specialist in training (Internal Medicine) in the region North and East Netherlands with the best research publication in the last year.
- 2013** : **Title:** The next step towards improved outcome for patients with genomically unstable tumors (NEXT-GEAR). **Funding source:** Alpe d'HuZes/Dutch Cancer Society (€ 817,000). **Role:** Principal investigator.
- 2013** : The J.W.R. Nortier lecture. Dutch Breast Cancer Trialists' Group. This lecture is awarded to a young and talented researcher to present their research to a large audience with scientific interest in breast cancer and its treatment at the annual NABON-BOOG symposium.
- 2012** : **Title:** Mandema-stipendium. **Funding source:** University Medical Center Groningen (€ 65,000). **Description:** The UMCG awards yearly 1 or 2 'Mandema-stipendia' to enable young physician-scientists (MD/PhD) to combine their medical specialist training with research and to establish their own line of research.
- 2011** : **Title:** Pieter de Mulder award. **Funding source:** Dutch Association for Medical Oncology (€ 6,000). **Description:** The objective of this award is to allow a young and talented researcher in the field of oncology to spend a period at a renowned institution abroad for the purpose of promoting his or her research. This grant partially financed my visit to the Partners Healthcare Center for Personalized Genetic Medicine, Harvard Medical School, Boston, MA, USA.
- 2006 - 2010** : **Title:** MD/PhD scholarship. **Funding source:** Junior Scientific Master class, University Medical Center Groningen (€ 100,000). **Description:** This program offers students the opportunity to combine their Master's phase with PhD training to obtain both an MD and a PhD upon completion. In this program students spend an additional two years on scientific research subsequent to their regular medical education.

2006 : **Title:** Travel grant. **Funding source:** Dutch Cancer Society (€ 6,000).
Description: This grant enabled me to visit Dr. Richard Simon at the Biometric Research Branch, National Cancer Institute (NCI), Bethesda, Maryland, USA.

Committees

2016 -2021 : Selected member of the Young Academy of Groningen (YAG). The YAG is a diverse group of early career research scientists from a wide range of disciplines at the University of Groningen. In addition to excellence in research, members have a passion for contributing to issues related to science, policy, diversity, interdisciplinarity and science and society.

2013 - 2022 : Member of the Ubbo Emmius Fonds (UEF) - Junior Scientific Master class (JSM) Talent Grant Committee, Faculty of Medical Sciences, University of Groningen.

People

Postdocs

2024 – present : Itske Fraterman, project: OPTIMization of symptom management through implementation of structural Symptom Monitoring (OPTIMISM).

2023 – present : Tristan V. de Jong: bioinformatician.

2022 – present : Arkajyoti Bhattacharya: bioinformatician, statistician, machine learner.

PhD-student's

2025 – present : António Costa de Pina, PhD-student, project: spatial transcriptomics & functional analysis of gastrointestinal disease.

2025 – present : Floortje van de Geest, PhD-student, project: OPTIMization of symptom management through implementation of structural Symptom Monitoring (OPTIMISM).

2025 – present : Ayari Perez Mendez, PhD-student, project: OPTIMization of symptom management through implementation of structural Symptom Monitoring (OPTIMISM).

2024 – present : Wissal Ramchi, PhD-student, project: automated segmentation FES PET.

2024 – present : Ilektra Koliaki, MD/PhD-student, project: Deciphering the Role of Leukocytes in Sepsis-Induced Acute Lung Injury: Pathogenesis, Biomarkers, and Therapeutic Implications.

2023 – present : Chantal Stappenbelt, PhD-student, project: Mechanistic understanding and therapeutic targeting of immune evasion in triple-negative breast cancer.

2023 – present : Mirela Perla, PhD-student, project: Characterizing the interaction between neurons and ovarian cancer cells in high-grade serous ovarian cancer.

2022 – present : Fleur L. van Doorn, PhD-student, project: Imaging in HNSCC.

2022 – present : Lotte M. Smit, PhD-student, project: Immune imaging.

- 2022 – present** : Lissane E. van Heijst, MD/PhD-student, project: Imaging strategies in esophageal cancer.
- 2021 – present** : Manasa Lanka, PhD-student, project: Using machine learning to unravel the ‘cancer-immune setpoint’ in cancer.
- 2020 – 2025** : Stefan Loipfinger, PhD-student, project: Using machine learning to unravel the ‘cancer-immune setpoint’ in cancer.
- 2020 – 2021** : Kaustav Datta, PhD-student, project: Using machine learning to unravel the ‘cancer-immune setpoint’ in cancer.
- 2019 – 2024** : Setareh Rezaeeoshternian, PhD-student, project: Unraveling cancer biology using machine learning on big data.
- 2017 – 2024** : Vincent Leeuwenburgh, PhD-student, project: Developing Activity-Based Probes to Dissect and Monitor Altered Metabolism in Cancer Cells.
- 2016 – 2024** : Pascal K.C. Jonker, PhD-student, project: The identification and validation of new biomarkers in thyroid carcinoma and melanoma.
- 2015 – 2024** : Thijs T. Wind, PhD-research; Supervisors: G.A.P. Hospers, R.S.N. Fehrmann, M. Jalving; Title of thesis: Biomarkers for response to immune checkpoint inhibitors in metastatic melanoma.
- 2017 – 2023** : Laura Kist de Ruijter, PhD-research; Supervisors: E.G.E. de Vries, R.S.N. Fehrmann, S.F. Oosting; Title of thesis: Clinical insights into the efficacy of immune checkpoint inhibitors in patients with cancer.
- 2019 – 2023** : Daan G. Knapen, PhD-research; Supervisors: E.G.E. de Vries, R.S.N. Fehrmann, D.A.J. de Groot; Title of thesis: Search for novel cancer treatments and reducing their side effects.
- 2015 – 2023** : Saskia H. Hanemaaijer, PhD-research; Supervisors: B.F.A.M. van der Laan, R.S.N. Fehrmann, B.E.C. Plaat, B. van der Vegt; Title of thesis: Clinical challenges in systemic treatment and treatment response in head and neck squamous cell carcinoma.
- 2017 – 2022** : Carlos G. Urzua, PhD-research; Supervisors: E.G.E. de Vries, R.S.N. Fehrmann; Title of thesis: In silico dissection of transcriptomes with a tumor immunology focus.
- 2016 – 2022** : Xiaojuan Zhao, PhD-research; Supervisors: W.B. Nagengast, M.A.T.M. van Vugt, R.S.N. Fehrmann; Title of thesis: Developments in molecular and advanced endoscopic imaging in esophageal cancer.
- 2016 – 2022** : Arkajyoti Bhattacharya, PhD-research; Supervisors: M.A.T.M. van Vugt, R.S.N. Fehrmann; Title of thesis: Mining high dimensional transcriptomic data to unravel the causes and consequences of genomic instability in cancers.
- 2016 – 2020** : Cyrillo Brahm, PhD-research; Supervisors: H.M.W. Verheul, A.M.E. Walenkamp, R.S.N. Fehrmann, A. Westerman; Title of thesis: Improving the standard of care in glioblastoma: a challenging search for novel treatments.

- 2015 – 2020** : Thijs Stutvoet, PhD-research; supervisors: S. de Jong, E.G.E. de Vries, R.S.N. Fehrmann; Title of thesis: Identification and modulation of drug targets for precision medicine in breast, lung and ovarian cancer subtypes.
- 2016 – 2019** : Rico D. Bense, PhD-research; Supervisors: E.G.E. de Vries, C.P. Schröder, R.S.N. Fehrmann; Title of thesis: In silico strategies to improve insight in breast cancer.
- 2015 – 2019** : Sergi Guerrero, PhD-research; Supervisors: M.A.T.M. van Vugt, R.S.N. Fehrmann; Title of thesis: Exploiting genomic instability as an Achilles' heel in cancer.
- 2015 – 2019** : Kirsten L. Moek, PhD-research; Supervisors: E.G.E. de Vries, D.J.A. de Groot, R.S.N. Fehrmann; Title of thesis: PET imaging and in silico analyses to support personalized treatment in oncology.
- 2014 – 2018** : Stephanie van Gijn, PhD-research; Supervisors: M.A.T.M. van Vugt, R.S.N. Fehrmann; Title of thesis: Towards new personalized treatment options for patients with genomically unstable tumors.
- 2014 – 2017** : Elmira Hartmans, PhD-research; Supervisors: J.H. Kleibeuker, G.M. van Dam, R.S.N. Fehrmann, W.B. Nagengast; Title of thesis: A new frontier in the field of gastroenterology: Fluorescence Molecular Endoscopy.

Technicians

- 2015 - 2019** : Elles Wierenga, lab technician. Continued in the van Vugt lab at the UMCG.

Research clerkships guidance

- 2024** : Feija Somefun; University of Groningen, Medicine; Master thesis; Supervisors: R.S.N. Fehrmann, A Bhattacharya; Title: Unravelling specific copy number alterations in endometrial cancer using independent transcriptional components and spatial transcriptomics.
- 2024** : Argyro Anagnostopoulou; University of Groningen, Biomedical Sciences; Master thesis; Supervisors: R.S.N. Fehrmann, A Bhattacharya; Title: Investigating the relation between copy number and immune transcriptional footprints in the context of spatial transcriptomics of cancer.
- 2023** : Tomas Vogels; University of Groningen, Biomedical Sciences, colloquium Biomedical Sciences; Supervisors: R.S.N. Fehrmann, A Bhattacharya; Title: The promise of synthetic data.
- 2023** : Dennis Wiersma; Hanze University of Applied Sciences, Bioinformatics, internship; Supervisors: R.S.N. Fehrmann, A. Bhattacharya; Title: Machine learning driven tissue prediction.
- 2023** : Feija Somefun; University of Groningen, Medicine, Pilot project Junior Scientific Masterclass; Supervisors: R.S.N. Fehrmann, M. de Bruyn, A Bhattacharya; Title: Unraveling the biological mechanisms behind TLS in EC using independent transcriptional components and spatial transcriptomics.
- 2023** : Luca Lichner; University of Groningen, Medicine, Pilot project Junior Scientific Masterclass; Supervisors: M. Jalving, J.J. de Haan, R.S.N. Fehrmann; Title: Whole-blood RNA sequencing to predict response to immune checkpoint inhibition.

- 2022** : Floris van Eisdén; University of Groningen, Biomedical Sciences, colloquium Biomedical Sciences; Supervisors: R.S.N. Fehrmann; Title: Machine learning in Oncology.
- 2022** : Alexandra Kolle; University of Groningen, Biomedical Sciences, Research Project; Supervisors: R.S.N. Fehrmann, A. Bhattacharya; Title: Classifying cancer patients based on survival information and expression levels of oncogene-induced replication stress signature genes.
- 2022** : Kieron Mayle; University of Groningen, Biomedical Sciences, Research Project; Supervisors: R.S.N. Fehrmann, A. Bhattacharya; Title: Classifying cancer patients based on survival information and expression levels of oncogene-induced replication stress signature genes.
- 2021** : Zoë Verstappen; Hanze University of Applied Sciences, Bioinformatics, internship; Supervisors: R.S.N. Fehrmann, A. Bhattacharya; Title: Gene set enrichment drive batch correction.
- 2021** : Mark Frederiks; Hanze University of Applied Sciences, Data Science for Life Sciences, Master thesis; Supervisors: R.S.N. Fehrmann, A. Bhattacharya; Title: Harmonize and infer missing values in large-scale gene-expression datasets.
- 2021** : Thanh Pham; University of Groningen, Biomedical Sciences, Research Project; Supervisors: R.S.N. Fehrmann, A. Bhattacharya; Title: Exploring association between tumor-microenvironment and clinic pathological information of patients with breast cancer.
- 2021** : Malou Oude Vrielink; University of Groningen, Biomedical Sciences, Research Project; Supervisors: R.S.N. Fehrmann, A. Bhattacharya; Title: Exploring association between tumor-microenvironment and clinic pathological information of patients with breast cancer.
- 2021** : Bas Kasemir; Hanze University of Applied Sciences, Bioinformatics, Bachelor thesis; Supervisors: R.S.N. Fehrmann; Title: Feature extracting from images.
- 2021** : Rik van de Pol; Hanze University of Applied Sciences, Bioinformatics, Bachelor thesis; Supervisors: R.S.N. Fehrmann; Title: Inferring and harmonizing expression profiles with deep learning.
- 2021** : Liesje Bloembergen; Hanze University of Applied Sciences, Bioinformatics, Bachelor thesis; Supervisors: R.S.N. Fehrmann; Title: Inferring and harmonizing expression profiles with consensus independent components.
- 2020** : Shanlin Tong, Medicine, Touch-Try-Teach (TTT) project, Junior Scientific Masterclass, Supervisors: R.S.N. Fehrmann, Arkajyoti Bhattacharya; Title: Removing batch effects in survival data.
- 2020** : Daan Potijk; University of Groningen, Medicine, scientific assay; Supervisors: R.S.N. Fehrmann; Title: Deep learning in health care and science.
- 2020** : Liesje Bloembergen; Hanze University of Applied Sciences, Bioinformatics, internship; Supervisors: R.S.N. Fehrmann; Title: Exploring the immunosuppressive effect of SCNAs.

- 2020** : Rik van de Pol; Hanze University of Applied Sciences, Bioinformatics, internship; Supervisors: R.S.N. Fehrmann; Title: The association between different types of SCNA and immune phenotypes.
- 2020** : Dylan Mezach, University of Groningen, Faculty of Science and Engineering, internship; Supervisors: R.S.N. Fehrmann; Title: Extracting a biological relevant latent space from a large number of transcriptomes using a generative adversarial network (GAN).
- 2019** : Jeffry Shu, University of Groningen, The International Master in Innovative Medicine (IMIM), Master thesis; Supervisor: R.S.N. Fehrmann; Title: A machine learning approach to predict anticancer drug sensitivity.
- 2019** : Willemijn F Oudijk; Hanze University of Applied Sciences, Bioinformatics, internship; Supervisors: R.S.N. Fehrmann; Title: Using gene expression data to gain insight into genes involved in Microsatellite Instability.
- 2019** : Dylan Mezach, Hanze University of Applied Sciences, Life Science and Technology, Bachelor thesis; Supervisors: R.S.N. Fehrmann, S. de Jong; Title: Improving immunotherapy by altering glucose metabolism and target discovery using gene expression profiles of cutaneous melanoma samples.
- 2017** : Jorrit Bakker, University of Groningen, Medicine and Information Science, Master thesis; Supervisors: B. Plank, R.S.N. Fehrmann; Title: Predicting the primary origin of Cancer of Unknown Primary using mRNA expression profiles and machine learning.
- 2016** : Carlos G. Urzua Traslavina, University of Groningen, The International Master in Innovative Medicine (IMIM), Master thesis; Supervisor: R.S.N. Fehrmann; Title: Transcriptional profiles of cancers with unknown primary tumor. (continued as PhD student)
- 2015** : Rico D. Bense, University of Groningen, Medicine, Master thesis; Supervisors: C.P. Schröder, R.S.N. Fehrmann; Title: Target-finding in Triple-Negative Breast Cancer based on Genomic Instability: a Meta-Analysis. (continued as PhD student)
- 2014** : Christiaan Serbanescu-Kele, University of Groningen, Medicine, Master thesis; Supervisors: B.E.C. Plaat, S.F. Oosting, R.S.N. Fehrmann; Title: Genomic instability is a prognostic marker in head and neck cancer.

Visiting scientist

- 2015** : Anurag Kumar Srivastava, PhD-student. Joined the lab for 6 months to learn the basics of bioinformatics.

Research guidance

- 2015 – 2106** : Pascal K.C. Jonker, MD, project: The identification and validation of new targets in thyroid carcinoma and melanoma. (continued as PhD-student).

Professional memberships:

- 2016 - present** : Member of the European Society for Medical Oncology (ESMO).

- 2016 - present** : Full member of the American Society of Clinical Oncology (ASCO).
- 2016 - present** : Active member of the American Association for Cancer Research (AACR).
- 2014 - present** : Member of the Dutch Society of Medical Oncology (NVMO).
- 2010 - present** : Member of the Dutch Society of Internal Medicine (NIV).

Commissions of trust:

Ad hoc reviewing

Theranostics, Clinical Cancer Research, JCO Clinical Cancer Informatics, Systematic Reviews, Oncotarget, Bioinformatics, npj Breast Cancer, Oncoimmunology, iScience, Aging, Human Mutation, European Journal of Cancer, and Journal for ImmunoTherapy of Cancer, Lancet Oncology.

Grant reviewing

Dutch Cancer Society (KWF Kankerbestrijding), the European Research Council (ERC), UK Research Innovation (UKRI) scheme, Swiss National Science Foundation (SNF), and Hanarth Fund.

Think-thanks

Member of think-thank 'ICT and innovation' of the Netherlands Cancer Registry (NCR)

Member of think-thank 'Artificial Intelligence' of the University Medical Center Groningen

AI working group in oncology of the Dutch Association for Medical Oncology.

Scientific Committees

- 2025–present** : Steering committee member of FORESIGHT, the FORESIGHT PPP Program, revolutionizing drug development through molecular imaging for faster, more effective, and personalized treatments
- 2025–present** : Council member of ESMO. The ESMO Council supports and advises the Executive Board and proposes strategic topics for discussion at the annual strategy meeting.
- 2025–present** : Chair of the ESMO Digital Education Committee. The Committee oversees and advances ESMO's digital education portfolio, ensuring that it reflects best practices, scientific integrity, and user needs.
- 2024 – present** : Member of expert panel for the EBAI - ESMO Scale of Minimum Requirements for AI Biomarkers in Oncology.
- 2024 – present** : Scientific Committee Co-Chair of the ESMO AI and Digital Oncology Congress.
- 2024 – present** : Member of the scientific review committee Exploration of the Dutch Cancer Society.
- 2023 – present** : Member of AI working group of the Dutch Society for Medical Oncology.

- 2023** : ESMO 2023 Scientific Committee as a Member of the Policy and preventive strategies (Track).
- 2022** : ESMO 2022 Scientific Committee as a Member of the Policy and preventive strategies (Track).
- 2021** : ESMO 2021 Scientific Committee as a Member of the Public Policy Sub-Committee (Track).

Editorial boards

- 2023 – present** : Member of editorial board ESMO Real World Data and Digital Oncology.

Public outreach

2013:

- Alpe d’HuZes and Dutch Cancer Society press release Bas Mulder Award.
 - Link: <https://www.perssupport.nl/persbericht/75272/alpe-d-huzes-reikt-bas-mulder-award-uit>
- ‘Voor een dubbeltje op de eerste rang’ (For a dime at ring side); J.W.R. Nortier lecture at the NABON-BOOG symposium, Utrecht, the Netherlands (April 11th).

2014:

- Multidisciplinaire (inter)nationale benadering op-maat van de kankerpatiënt verbetert behandelresultaten. Avond van Wetenschap & Maatschappij, The Hague, the Netherlands (October 6th).
 - Link: https://www.avondwenm.nl/images/downloads/programmaboekje/programmaboekje_2014.pdf

2015:

- Press releases related to our publication ‘Fehrmann *et al.* Gene expression analysis identifies global gene dosage sensitivity in cancer. Nat Genet. 2015; 47:115-25’.
 - Newspaper NRC
 - Link: <https://www.nrc.nl/nieuws/2014/01/11/draaien-aan-de-knoppen-van-de-genexpressie-1336685-a1146045>
 - Magazine Skipr
 - Link: <https://www.skipr.nl/nieuws/umcg-hergebruikt-data-voor-kankeronderzoek/>
 - Groninger Internet Courant
 - Link: <https://www.gic.nl/innovatie/umcg-nieuwe-methode-maakte-grootste-studie-naar-ontstaan-kanker-m>
 - Radio interview with Lude Franke (collaborator) about our work (in Dutch) RTV Noord (go to 20-1-2015, then to time lock 12.00, then to 12.41, and then you'll come to the interview).
 - Link: <https://www.rtvnoord.nl/radiogemist>

2016:

- Video on the Young Academy of Groningen (YAG) of which I’m founding member. The YAG works independently as an organization to create awareness about science and scholarship matters that are important to early career researchers.
 - Link: <https://youtu.be/C4imYAg7MzY>

2017:

- Speaker at Early Career Research Lunches (organized by the Young Academy of Groningen). Subject: work/life balance.
 - Link: <https://www.rug.nl/research/young-academy/activities/looking-back -ecr-lunch-on-work- -life-balance>

2018:

- Press release by RTVNOORD related to funding obtained from the Dutch Cancer Society for N-CIA: Netherlands facility for Cancer-Immune Analysis.
 - Link: <https://www.rtvnoord.nl/nieuws/182223/UMCG-krijgt-subsidie-voor-onderzoek-naar-kanker>
- Video of Young Academy of Groningen members Marthe Walvoort (Science and Engineering) and Rudolf Fehrmann (UMCG), and PhD student Vincent Leeuwenburgh on their project "Novel tools to dissect and monitor tumor metabolism in melanoma patients" and interdisciplinary research.
 - Link: <https://www.youtube.com/watch?v=GulzoH6rV84>
- Organizer of Early Career Research Lunches (on behalf of the Young Academy of Groningen). Subject: Applying for interdisciplinary grants.

2019:

- Workshop on 'Artificial Intelligence in Medicine' at the Antonius Deusing symposium 2019 (Health care of the future).
 - Link: <https://www.antoniusdeusing.nl/evenementen/antonius-deusingdag-2019-zorg-van-de-toekomst>

2020:

- Interview in monthly magazine of the Dutch Society of Medical Oncology (NVMO) on Artificial Intelligence in Medical Oncology.
 - Link: <https://medischeoncologie.nl/jaargangen/2020/6-aug/artificial-intelligence-gaat-de-arts-niet-vervangen.html>

2021:

- Participated in the program on Artificial Intelligence in health care at MedTalks.
 - Link: <https://www.medtalks.nl/ai2021>
- Interview on DOQC on Artificial Intelligence in Medical Oncology
 - Link: <https://www.doqc.nl/prangende-vragen-en-antwoorden-over-artificial-intelligence-in-de-zorg/?hash=5e7f2e8ff45b2e7c879e010041cc0d29>

2023:

- Book chapter "Toepassing kunstmatige intelligentie in de oncologie" in "Kanker: Over de laatste ontwikkelingen in het kankeronderzoek".
- Artsen Podcast, The Royal Dutch Medical Association (RDMA) "AI in health care" (in Dutch).
 - Link: [https://omny.fm/shows/artsen-podcast-1/22-kansen-en-Valkuilen-van-ai](https://omny.fm/shows/artsen-podcast-1/22-kansen-en- Valkuilen-van-ai)

Publications

contributed equally

* corresponding author

- 1) Yu S, Stappenbelt C, Chen M, Dekker M, Bhattacharya A, van der Sluis T, Zwager MC, Schröder CP, **Fehrmann RSN**, van Vugt MATM, van der Vegt B. Cyclin E1 overexpression triggers interferon signaling and is associated with antitumor immunity in breast cancer. J Immunother Cancer. 2025; 13:e009239.
- 2) **Fehrmann RSN**, van Kruchten M, de Vries EGE. How to critically appraise and direct the trajectory of AI development and application in oncology. ESMO Real World Data and Digital Oncology. 2024; 5:100066.
- 3) Chen M, van den Tempel N, Bhattacharya A, Yu S, Rutgers B, **Fehrmann RSN**, de Haas S, van der Vegt B, van Vugt MA. Functional ex vivo DNA fibre assay to measure replication dynamics in breast cancer tissue. J Pathol. 2024; 264:90-100.

- 4) Rezaee Oshternian S, Loipfinger S, Bhattacharya A, **Fehrmann RSN**. Exploring combinations of dimensionality reduction, transfer learning, and regularization methods for predicting binary phenotypes with transcriptomic data. *BMC Bioinform.* 2024; 25:167.
- 5) van Schaik JE, van der Vegt B, Slagter-Menkema L, Hanemaaijer SH, Halmos GB, Witjes MJH, van der Laan BFAM, **Fehrmann RSN**, Oosting SF, Plaat BEC. Potential imaging targets in primary head and neck squamous cell carcinoma and lymph node metastases. *Am J Otolaryngol.* 2024; 45:104298.
- 6) Knapen DG, Hone Lopez S, de Groot DJA, de Haan JJ, de Vries EGE, Dienstmann R, de Jong S, Bhattacharya A, **Fehrmann RSN**. Independent transcriptional patterns reveal biological processes associated with disease-free survival in early colorectal cancer. *Commun Med.* 2024; 4:79.
- 7) van Schaik JE, van der Vegt B, Slagter-Menkema L, van der Laan BFAM, Witjes MJH, Oosting SF, **Fehrmann RSN**, Plaat BEC. Identification of new head and neck squamous cell carcinoma molecular imaging targets. *Oral Oncol.* 2024; 151:106736.
- 8) Björk JR, Bolte LA, Maltez Thomas A, Lee KA, Rossi N, Wind TT, Smit LM, Armanini F, Asnicar F, Blanco-Miguez A, Board R, Calbet-Llopart N, Derosa L, Dhomen N, Brooks K, Harland M, Harries M, Lorigan P, Manghi P, Marais R, Newton-Bishop J, Nezi L, Pinto F, Potrony M, Puig S, Serra-Bellver P, Shaw HM, Tamburini S, Valpione S, Waldron L, Zitvogel L, Zolfo M, de Vries EGE, Nathan P, **Fehrmann RSN**, Spector TD, Bataille V, Segata N, Hospers GAP, Weersma RK. Longitudinal gut microbiome changes in immune checkpoint blockade-treated advanced melanoma. *Nat Med.* 2024; 30:785-796.
- 9) Metman MJH, Jonker PKC, Sondorp LHJ, van Hemel BM, Sywak MS, Gill AJ, Jansen L, van Diest PJ, van Ginhoven TM, Löwik CWGM, Nguyen AH, Robinson DJ, van Dam GM, Links TP, Coppes RP, **Fehrmann RSN**, Kruijff S. MET-receptor targeted fluorescent imaging and spectroscopy to detect multifocal papillary thyroid cancer. *Eur J Nucl Med Mol Imaging.* 2023; 51:2384-2394.
- 10) van Breugel M, **Fehrmann RSN**, Bügel M, Rezwan FI, Holloway JW, Nawijn MC, Fontanella S, Custovic A, Koppelman GH. Current state and prospects of artificial intelligence in allergy. *Allergy.* 2023; 78:2623-2643.
- 11) Oosting SF#, van der Veldt AAM#, **Fehrmann RSN**, Bhattacharya A, van Binnendijk RS, GeurtsvanKessel CH, Dingemans AC, Smit EF, Hiltermann TJN, den Hartog G, Jalving M, Westphal TT, de Wilt F, Ernst SM, Boerma A, van Zijl L, Rimmelzwaan GF, Kvistborg P, van Els CACM, Rots NY, van Baarle D, Haanen JBAG, de Vries EGE. Factors associated with long-term antibody response after COVID-19 vaccination in patients treated with systemic treatment for solid tumors. *ESMO Open.* 2023; 8:101599.
- 12) Stok C, Tsaridou S, van den Tempel N, Everts M, Wierenga E, Bakker FJ, Kok Y, Alves IT, Jae LT, Raas MWD, Huis In 't Veld PJ, de Boer HR, Bhattacharya A, Karanika E, Warner H, Chen M, van de Kooij B, Dessapt J, Ter Morsche L, Perepelkina P, Fradet-Turcotte A, Guryev V, Tromer EC, Chan KL, **Fehrmann RSN**, van Vugt MATM. FIRR1/C1orf112 is synthetic lethal with PICH and mediates RAD51 dynamics. *Cell Rep.* 2023; 42:112668.
- 13) van Not OJ, Wind TT, Ismail RK, Bhattacharya A, Jalving M, Blank CU, Aarts MJB, van den Berkmortel FWPJ, Boers-Sonderen MJ, van den Eertwegh AJM, de Groot JWB, Haanen JB, Kapiteijn E, Bloem M, Piersma D, van Rijn RS, Stevensen-den Boer M, van der Veldt AAM, Vreugdenhil G, Wouters MWJM, Blokk WAM, Suijkerbuijk KPM, **Fehrmann RSN**, Hospers GAP. A Survival Tree of Advanced Melanoma Patients with Brain Metastases Treated with Immune Checkpoint Inhibitors. *Cancers.* 2023; 15:2922
- 14) Visconti A, Rossi N, Deriš H, Lee KA, Hanić M, Trbojević-Akmačić I, Thomas AM, Bolte LA, Björk JR, Hooiveld-Noeken JS, Board R, Harland M, Newton-Bishop J, Harries M, Sacco JJ, Lorigan P, Shaw HM, Vries EGE de, **Fehrmann RSN**, Weersma RK, Spector TD, Nathan P, Hospers GAP, Sasieni P, Bataille V, Lauc G, Falchi M. Total serum N-glycans associate with response to immune checkpoint inhibition therapy and survival in patients with advanced melanoma. *Bmc Cancer.* 2023; 23:166.

- 15) Bolte LA, Lee KA, Björk JR, Leeming ER, Campmans-Kuijpers MJE, de Haan JJ, Vila AV, Maltez-Thomas A, Segata N, Board R, Harries M, Lorigan P, de Vries EGE, Nathan P, **Fehrmann R**, Bataille V, Spector TD, Hospers GAP, Weersma RK. Association of a mediterranean diet with outcomes for patients treated with immune checkpoint blockade for advanced melanoma. *JAMA Oncol.* 2023; 9:705-709.
- 16) van der Veldt AAM#, Oosting SF#, **Fehrmann RSN**, GeurtsvanKessel CH, van Binnendijk RS, Dingemans AC, Smit EF, Hiltermann TJN, Hartog GD, Jalving M, Westphal TT, Bhattacharya A, de Wilt F, Ernst SM, Boerma A, van Zijl L, Rimmelzwaan GF, Kvistborg P, van Els CACM, Rots NY, van Baarle D, Haanen JBAG, de Vries EGE. One-year data on immunogenicity and breakthrough infections in patients with solid tumors vaccinated against COVID-19 during systemic cancer treatment. *ESMO Open.* 2023; 8:100785.
- 17) Knapen DG, de Haan JJ, **Fehrmann RSN**, de Vries EGE, de Groot DJA. Opportunities on the horizon for the management of early colon cancer. *Crit Rev Oncol Hematol.* 2023; 183:103918.
- 18) Kist de Ruijter L, van de Donk PP, Hooiveld-Noeken JS, Giesen D, Elias SG, Lub-de Hooge MN, Oosting SF, Jalving M, Timens W, Brouwers AH, Kwee TC, Gietema JA, **Fehrmann RSN**, Fine BM, Sanabria Bohórquez SM, Yadav M, Koeppen H, Jing J, Guelman S, Lin MT, Mamounas MJ, Eastham JR, Kimes PK, Williams SP, Ungewickell A, de Groot DJA, de Vries EGE. Whole-body CD8+ T cell visualization before and during cancer immunotherapy: a phase 1/2 trial. *Nat Med.* 2022; 28:2601-2610.
- 19) Zimmerli D, Brambillasca CS, Talens F, Bhin J, Linstra R, Romanens L, Bhattacharya A, Joosten SEP, Da Silva AM, Padrao N, Wellenstein MD, Kersten K, de Boo M, Roorda M, Henneman L, de Bruijn R, Annunziato S, van der Burg E, Drenth AP, Lutz C, Endres T, van de Ven M, Eilers M, Wessels L, de Visser KE, Zwart W, **Fehrmann RSN**, van Vugt MATM#, Jonkers J#. MYC promotes immune-suppression in triple-negative breast cancer via inhibition of interferon signaling. *Nat Commun.* 2022; 13:6579.
- 20) Rossi N, Lee KA, Bermudez MV, Visconti A, Thomas AM, Bolte LA, Björk JR, de Ruijter LK, Newton-Bishop J, Harland M, Shaw HM, Harries M, Sacco J, Board R, Lorigan P, de Vries EGE, Segata N, Taams L, Papa S, Spector TD, Nathan P, Weersma RK, Hospers GAP, **Fehrmann RSN**, Bataille V, Falchi M. Circulating inflammatory proteins associate with response to immune checkpoint inhibition therapy in patients with advanced melanoma. *EBioMedicine.* 2022; 83:104235.
- 21) Zois CE, Hendriks AM, Haider S, Pires E, Bridges E, Kalamida D, Voukantsis D, Lagerholm BC, **Fehrmann RSN**, den Dunnen WFA, Tarasov AI, Baba O, Morris J, Buffa FM, McCullagh JSO, Jalving M, Harris AL. Liver glycogen phosphorylase is upregulated in glioblastoma and provides a metabolic vulnerability to high dose radiation. *Cell Death Dis.* 2022; 13:573.
- 22) Zhao X, Gabriëls RY, Hooghiemstra WTR, Koller M, Meersma GJ, Buist-Homan M, Visser L, Robinson DJ, Tenditnaya A, Gorpas D, Ntziachristos V, Karrenbeld A, Kats-Ugurlu G, **Fehrmann RSN**, Nagengast WB. Validation of Novel Molecular Imaging Targets Identified by Functional Genomic mRNA Profiling to Detect Dysplasia in Barrett's Esophagus. *Cancers.* 2022; 14:2462.
- 23) Hone Lopez S, Jalving M, **Fehrmann RSN**, Nagengast WB, de Vries EGE, de Haan JJ. The gut wall's potential as a partner for precision oncology in immune checkpoint treatment. *Cancer Treat Rev.* 2022; 107:102406.
- 24) Oosting SF#, van der Veldt AAM#, **Fehrmann RSN**, GeurtsvanKessel CH, van Binnendijk RS, Dingemans AC, Smit EF, Hiltermann TJN, den Hartog G, Jalving M, Westphal TT, Bhattacharya A, de Wilt F, Boersma A, M, van Zijl L, Rimmelzwaan GF, Kvistborg, van Els CACM, Rots NY, van Baarle D, Haanen JBAG, de Vries EGE. Immunogenicity after second and third mRNA-1273 vaccination doses in patients receiving chemotherapy, immunotherapy, or both for solid tumours. *Lancet Oncol.* 2022; S1470-2045(22)00203-0.
- 25) Jonker PKC, Metman MJH, Sondorp LHJ, Sywak MS, Gill AJ, Jansen L, Links TP, van Diest PJ, van Ginhoven TM, Löwik CWGM, Nguyen AH, Coppes RP, Robinson DJ, van Dam GM, van Hemel BM, **Fehrmann RSN**, Kruijff S. Intraoperative MET-receptor targeted fluorescent imaging and spectroscopy for lymph node

detection in papillary thyroid cancer: novel diagnostic tools for more selective central lymph node compartment dissection. *Eur J Nucl Med Mol Imaging*. 2022; 49:3557-3570.

- 26) Lee KA, Thomas AM, Bolte LA, Bjerk JR, Kist de Ruijter L, Armanini F, Asnicar F, Blanco-Miguez A, Board R, Calbet-Llopart N, Derosa L, Dhomen N, Brooks K, Harland M, Harries M, Leeming ER, Lorigan P, Manghi P, Marais R, Newton-Bishop J, Nezi L, Pinto F, Potrony M, Puig S, Serra-Bellver P, Shaw HM, Tamburini S, Valpione S, Vijay A, Waldron L, Zitvogel L, Zolfo M, de Vries EGE, Nathan P, **Fehrmann RSN**, Bataille V, Hospers GAP, Spector TD#, Weersma RK#, Segata N#. Cross cohort gut microbiome associations with immune checkpoint inhibitor response in advanced melanoma. *Nat Med*. 2022; 28: 535–544.
- 27) Llobet SG, Bhattacharya A, Everts M, van der Vegt B, **Fehrmann RSN#**, van Vugt MATM#. An mRNA expression-based signature for oncogene-induced replication-stress. *Oncogene*. 2022; 41:1216-1224.
- 28) Oosting SF#, van der Veldt AAM#, GeurtsvanKessel CH, **Fehrmann RSN**, van Binnendijk RS, Dingemans AC, Smit EF, Hiltermann TJN, den Hartog G, Jalving M, Westphal TT, Bhattacharya A, van der Heiden M, Rimmelzwaan GF, Kvistborg P, Blank CU, Koopmans MPG, Huckriede ALW, van Els CACM, Rots NY, van Baarle D, Haanen JBAG, de Vries EGE. mRNA-1273 COVID-19 vaccination in patients receiving chemotherapy, immunotherapy, or chemoimmunotherapy for solid tumours: a prospective, multicentre, non-inferiority trial. *Lancet Oncol*. 2021; 22:1681-1691.
- 29) Kuipers H, de Bitter TJJ, de Boer MT, van der Post RS, Nijkamp MW, de Reuver PR, **Fehrmann RSN**, Hoogwater FJH. Gallbladder Cancer: Current insights in genetic alterations and their possible therapeutic implications. *Cancers* 2021; 13: 5257.
- 30) Leeuwenburgh VC, Urzúa-Traslaviña CG, Bhattacharya A, Walvoort MTC, Jalving M, de Jong S, **Fehrmann RSN***. Robust metabolic transcriptional components in 34,494 patient-derived cancer-related samples and cell lines. *Cancer Metab*. 2021; 9:35.
- 31) Zhao X, Huang Q, Koller M, Linssen MD, Hooghiemstra WTR, de Jongh SJ, van Vugt MATM, **Fehrmann RSN**, Li E, Nagengast WB. Identification and Validation of Esophageal Squamous Cell Carcinoma Targets for Fluorescence Molecular Endoscopy. *International Journal of Molecular Sciences*. 2021; 22:9270.
- 32) Urzúa-Traslaviña CG, Leeuwenburgh VC, Bhattacharya A, Loipfinger S, van Vugt MATM, de Vries EGE, **Fehrmann RSN***. Improving gene function predictions using independent transcriptional components. *Nat Commun*. 2021; 12:1464.
- 33) van der Veldt AAM, Oosting SF, Dingemans AC, **Fehrmann RSN**, Geurts van Kessel C, Jalving M, Rimmelzwaan GF, Kvistborg P, Blank CU, Smit EF, Lemmens VEEP, Hiltermann TJN, Koopmans MPG, Huckriede ALW, Rots NY, van Els CACM, van Baarle D, Haanen JBAG & de Vries EGE. COVID-19 vaccination: the VOICE for patients with cancer. *Nat Med* 2021; 27:568-569.
- 34) van Praagh JB, de Wit JG, Olinga P, de Haan JJ, Nagengast WB, **Fehrmann RSN**, Havenga K, Colorectal anastomotic leak: transcriptomic profile analysis, *British Journal of Surgery*, 2021; znaa066.
- 35) Brahm CG, Kulsoom Abdul U, Houweling M, van Linde ME, Lagerweij T, Verheul HMW, Westerman BA, Walenkamp AME, **Fehrmann RSN***. Data-driven prioritization and preclinical evaluation of therapeutic targets in glioblastoma. *Neuro-Oncology Advances*. 2020; vdaa151.
- 36) Kok YP, Guerrero Llobet S, Schoonen PM, Everts M, Bhattacharya A, **Fehrmann RSN**, van den Tempel N, van Vugt MATM. Overexpression of Cyclin E1 or Cdc25A leads to replication stress, mitotic aberrancies, and increased sensitivity to replication checkpoint inhibitors. *Oncogenesis*. 2020; 9:88.

- 37) Steggink LC, Boer H, Meijer C, Lefrandt JD, Terstappen LWMM, **Fehrmann RSN**, Gietema JA. Genome-wide association study of cardiovascular disease in testicular cancer patients treated with platinum-based chemotherapy. *Pharmacogenomics J* 2021; 21:152-164.
- 38) Guerrero Llobet S, van der Vegt B, Jongeneel Evelien, Bense RD, Zwager MC, Schröder CP, Everts M, **Fehrmann RSN**, de Bock GH, van Vugt MATM. Cyclin E expression is associated with high levels of replication stress in triple-negative breast cancer. *npj Breast Cancer* 2020; 6:40.
- 39) Tamminga M, Hilterman TJN, Schuurung E, Timens W, **Fehrmann RSN**, Groen HJM. Immune microenvironment composition in non-small cell lung cancer and its association with survival. *Clin Transl Immunol* 2020; 9:e1142.
- 40) Workel HH, van Rooij N, Plat A, Spierings DCJ, **Fehrmann RSN**, Nijman HW, de Bruyn M. Transcriptional Activity and Stability of CD39+ CD103+ CD8+ T Cells in Human High-Grade Endometrial Cancer. *Int J Mol Sci* 2020; 21, 3770.
- 41) Hanemaaijer S, Kok I, **Fehrmann RSN**, van der Vegt B, Gietema J, Plaat B, van Vugt MATM, Vergeer M, Leemans RC, Langendijk JA, Voortman J, Buter J, Oosting JF. Comparison of carboplatin with 5-fluorouracil versus cisplatin as concomitant chemoradiotherapy for locally advanced head and neck squamous cell carcinoma. *Front Oncol* 2020; 10, 761.
- 42) Knapen DJ, Kwee TC, Meijne EIM, **Fehrmann RSN**, de Vries EGE. Reconsider radiation exposure from imaging during immune checkpoint inhibitor trials to reduce risk of secondary cancers in long-term survivors? *Cancer Treat Rev.* 2020; 87:102027.
- 43) Boonstra PA, Wind TT, van Kruchten M, Schuurung E, Hospers GAP, van der Wekken AJ, de Groot DJ, Schröder CP, **Fehrmann RSN**, Reyners AKL. Clinical utility of circulating tumor DNA as a response and follow-up marker in cancer therapy. *Cancer Metastasis Rev.* 2020; 39:999-1013.
- 44) Bhattacharya A, Bense RD, Urzúa-Traslaviña CG, de Vries EGE, van Vugt MATM, **Fehrmann RSN***. Transcriptional effects of copy number alterations in a large set of human cancers. *Nat Commun* 2020; 11:715.
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