

David Westergaard, PhD

HEALTH DATA SCIENTIST · RESEARCH LEADER · WOMEN'S HEALTH

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Summary

I am a Senior Researcher and the Head of the Data Science group in the Department of Gynecology and Obstetrics at University Hospital Hvidovre, as well as an Associate Professor at the Technical University of Denmark. My expertise lies in women's health, with a particular focus on reproductive disorders.

I lead a multidisciplinary research group focused on advancing women's health, with a particular emphasis on reproductive disorders and pregnancy complications. Our approach integrates Bayesian statistics, machine learning, text mining, and multi-omics data (genomics, proteomics, metabolomics, metagenomics) to decipher complex biological mechanisms. Our mission is to develop clinically actionable tools that elevate patient care and enhance health outcomes for women.

Work Experience

Associate Professor

Lyngby, DK

DEPARTMENT OF HEALTH TECHNOLOGY, TECHNICAL UNIVERSITY OF DENMARK

Feb. 2025 -

- Employed under the new Technical University Hospital, a strategical collaboration between the Technical University of Denmark and the University Hospitals in the Capital Region of Denmark

Chief Data officer, Co-founder

Copenhagen, DK

WOMEN'S HEALTH TECH

2025 -

- The Future of Menstrual Cycle Tracking

Chief Technical officer, Co-founder

Copenhagen, DK

WOMEN'S HEALTH BIOTECH

2024 -

- Company based on four patents obtained in the BioInnovation project "Early diagnosis of pregnancy loss"

Senior Researcher and Head of Statistics & Data Science

Copenhagen, DK

DEPARTMENT OBSTETRICS AND GYNECOLOGY, COPENHAGEN UNIVERSITY HOSPITAL-HVIDOVRE

Sep. 2022 -

- Multi-omics biomarker discovery using advanced statistical and machine learning to identify novel biomarkers for pregnancy complications, leveraging genetics, metabolomics, metagenomics, and proteomics data integrated with electronic health records for developing predictive models and personalized treatment strategies
- Established a robust research infrastructure enabling efficient data management, analysis, and collaboration
- Providing comprehensive training and mentorship to students at all levels, supervising research projects, and fostering collaborative research environments
- 4 patents pending and >10 articles published / in revision since employment

Guest Researcher

Copenhagen, DK

DATA SCIENCE LAB, STATISTICS DENMARK

Mar. 2019 -

- Co-developed a comprehensive pregnancy registry by integrating diverse datasets, and validating the registry using patient databases. The plan is that the registry will be available through Statistics Denmark.
- Developed methods for rapid analysis of nation-scale registry data
- Advised on the implementation of best practices for data management and analysis, leading to the secure and efficient storage of genetics data.

BRIDGE Translational Excellence Postdoctoral Fellow

Copenhagen, DK

NOVO NORDISK FOUNDATION CENTER FOR PROTEIN RESEARCH, UNIVERSITY OF COPENHAGEN AND RECURRENT PREGNANCY

2019-2021

LOSS UNIT, CAPITAL REGION, RIGSHOSPITALET / HVIDOVRE HOSPITAL, CAPITAL REGION

- Project: Translational aspects of fertility genetics to improve patient stratification and long term health
- Focusing on bridging the gap between clinical observations and actionable insights through data-driven research
- Mentored by Prof. Søren Brunak and Prof. Henriette Svarre Nielsen

PhD Student, Postdoctoral Fellow, Assistant Professor

Copenhagen, DK

TRANSLATIONAL DISEASE SYSTEMS BIOLOGY, NOVO NORDISK FOUNDATION CENTER FOR PROTEIN RESEARCH, UNIVERSITY OF

Feb. 2015 - May. 2024

COPENHAGEN

- PhD Student 2015-2018. First authored seminal papers in using full text articles for text mining, disease differences between men and women, and comorbidities of recurrent pregnancy loss. Part of the NIH funded project "Illuminating the Druggable Genome". HPC Infrastructure design and testing
- BRIDGE Translational Excellence Postdoctoral Fellow 2019-2021.
- Part-time/full leave due to illness Nov 2020-May 2022

Education

PhD degree in Biostatistics and Bioinformatics

UNIVERSITY OF COPENHAGEN, FACULTY OF HEALTH SCIENCES

- Thesis: Modeling Temporality in Healthcare Data
- Supervisors: Prof. Søren Brunak & Prof. Lars Juhl Jensen

Copenhagen, DK

May 2018

MSc.Eng in Bioinformatics and Systems Biology

TECHNICAL UNIVERSITY OF DENMARK

- Honors Program, GPA: 11.1 (Danish Scale) (A)

Copenhagen, DK

Jan. 2015

Science studies, Exchange programme

HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY

- Research project: Investigation of gender sensitivity of Single Nucleotide Polymorphisms. Supervisor: Prof. Hannah H. Xue

Hong Kong, HK

Sep. 2011 - Dec. 2011

BSc.Eng, Chemical Engineering

TECHNICAL UNIVERSITY OF DENMARK

Copenhagen, DK

Jul. 2012

Leadership

Mentored and supervised 10+ undergraduate and graduate students with diverse backgrounds in biology, bioinformatics, and medicine, guiding their research projects and thesis development, resulting in multiple publications and conference presentations. Former students and mentees have diverse careers in industry (e.g. Novo Nordisk, Quantify Research), academia (e.g. PhD scholarship at EMBL), or are in clinical training (e.g. obstetrics, cardiology).

Scientific focus

With more than ten years of experience working with big data and developing advanced statistical models and machine learning, I have dedicated my focus to understanding complications in pregnancy and how it affects women's health. Due to my initial training as an engineer, I am focused on translating knowledge into clinically applicable tools, demonstrated by my publication record, with an eye for commercialization to reach as wide an audience as possible.

- 1. Population-Based Studies of Health and Disease:** *Extensive experience leveraging Danish national health registries to conduct large-scale epidemiological studies, investigating the interplay of reproductive health, chronic diseases, and mortality across the lifespan.*
 - Westergaard D, et al. Population-wide analysis of differences in disease progression patterns in men and women. *Nature Communications*. 2019.
 - Kolte, AM and Westergaard D, et al. Chance of live birth: a nationwide, registry-based cohort study. *Human Reproduction*. 2021.
 - Egerup P, et al. Pregnancy loss is associated with type 2 diabetes: a nationwide case-control study. *Diabetologia*. 2020.
 - Westergaard D, et al. Phenome-Wide Analysis of Short- and Long-Run Disease Incidence Following Recurrent Pregnancy Loss Using Data From a 39-Year Period. *Journal of the American Heart Association*. 2020
- 2. Biomarker discovery and Molecular underpinnings of complex traits in pregnancy and women's health:** *Employing genomic and clinical data to identify novel biomarkers and elucidate the molecular mechanisms underlying pregnancy complications and women's health conditions.*
 - Westergaard D, et al. Genome-wide association meta-analysis identifies five loci associated with postpartum hemorrhage. *Nature Genetics*. 2024.
 - Westergaard D, et al. Immune Changes in Pregnancy: Associations with Pre-existing Conditions and Obstetrical Complications at the 20th Gestational Week - A Prospective Cohort Study. *medRxiv, in review*. 2024
 - Hartwig T, et al. Cell-free fetal DNA for genetic evaluation in Copenhagen Pregnancy Loss Study (COPL): a prospective cohort study. *Lancet*. 2023
- 3. Methods and Tools development within Data Science:** *Development of innovative computational methods and tools for analyzing large-scale genomic and clinical data, with applications in disease prediction, biomarker discovery, and drug repurposing.*
 - Westergaard D, et al. Uncovering the Heritable Components of Multimorbidities and Disease Trajectories: A Nationwide Cohort Study. *Nature Communications, in press*. 2024.
 - Lundgaard AT, et al. BALDR: A Web-based platform for informed comparison and prioritization of biomarker candidates for type 2 diabetes mellitus. *PLOS Computational Biology*. 2023
 - Westergaard D, et al. A comprehensive and quantitative comparison of text-mining in 15 million full-text articles versus their corresponding abstracts. *PLOS Computational Biology*. 2018
 - Oprea T, et al. Unexplored therapeutic opportunities in the human genome. *Nature reviews Drug discovery*. 2018
 - Sigurdsson AI, et al. Deep integrative models for large-scale human genomics. *Nucleic Acids Res*. 2023

- Holm, PC, et al. Development and validation of a neural network-based survival model for mortality in ischemic heart disease. *medrxiv*, in review. 2023.

4. **Patent application:** *Translating research findings into practical applications through the development of innovative diagnostic and therapeutic tools for pregnancy-related complications.*

- ELECTRONIC DEVICE FOR PREGNANCY LOSS CLASSIFICATION AND RELATED METHODS (2023).
- PREDICTION OF THE FOETAL FRACTION OF cfDNA (2024).
- PREDICTION OF THE LIKELIHOOD OF OCCURRENCE OF AN OVULATION AFTER MISCARRIAGE (2024).
- MANAGEMENT OF MISCARRIAGE FOR INCREASED ODDS OF SUBSEQUENT OVULATION (2024).

Presentations

Data Science for Planetary and Human Health - The True Life Cycle of Multi-omics Data

DK

INVITED PRESENTATION: UNCOVERING THE HERITABLE COMPONENTS OF MULTIMORBIDITIES AND DISEASE TRAJECTORIES: A NATIONWIDE COHORT STUDY

2024

CLIME Seminar: Omics Technologies in Women's Health

DK

INVITED PRESENTATION: THE COPENHAGEN PREGNANCY LOSS PROJECT

2024

Novo Nordisk Fondation Challenge Symposium

DK

INVITED PRESENTATION: UNCOVERING THE HERITABLE COMPONENTS OF MULTIMORBIDITIES AND DISEASE TRAJECTORIES: A NATIONWIDE COHORT STUDY

2023

Life cycle in Medicine Symposia

DK

INVITED PRESENTATION: BIG DATA - DISEASE TRAJECTORIES

2022

Librarians in Health, Medicine, and Society Biannual Meeting

DK

INVITED PRESENTATION: AN INTRODUCTION TO TEXT MINING

2019

Union of Young Obstetricians and Gynaecologists

DK

INVITED PRESENTATION: RECURRENT PREGNANCY LOSS AND RISK OF LATER DISEASE

2019

Extracurricular Activity

SELECTED COLLABORATIONS

- Valgerdur Steinthorsdottir, Hákon Jónsson, Kári Stefánsson, deCODE Genetics, Iceland
- Laust Hvas Mortensen, Statistics Denmark, DK
- Ewan Birney, Tom Fitzgerald, EBI, Cambridge, UK
- Mette Nyegaard, Henrik Ullum, Statens Serum Institute, DK
- Triin Laisk, University of Tartu, EE
- Bo Jacobsson, University of Gothenburg, SE
- Cecilia Lindgren, Oxford University, UK
- Eva Hoffmann, Søren Brunak, Thomas Moritz, University of Copenhagen, DK
- Sisse Rye Ostrowski, Thomas Folkmann Hansen, Rigshospitalet, DK
- Pia Kamstrup, Herlev Hospital, DK
- Lars Engstrand, Karolinska Institute, SE
- Markus Herrgård, BioInnovation Institute, DK

COMMISSION OF TRUST

- 2019-now: Member of the Nordic Collaboration on Women's Health and Reproduction
- 2018-now: Steering group member in the Copenhagen Hospital Biobank Working Group on Reproduction

REVIEW EXPERIENCE

- I am a reviewer for: Nature Communications, Bioinformatics (Oxford), npj Digital Medicine, PLoS Computational Biology, IEEE/ACM Transactions on Computational Biology and Bioinformatics, European Journal of Human Genetics, Journal of Biomedical Informatics, Computational and Structural Biotechnology Journal, and Journal of Clinical Medicine

INTERNATIONAL EXPERIENCE

- 2019-: Nordic Collaboration on Women's Health and Reproduction. Collaboration between Oxford University (UK), FIMM (FI), Tartu University (EE), deCODE Genetics (IS), and Gothenburg University (SE) with a focus on genetics and reproduction. Flagship paper on postpartum hemorrhage in review, led by me
- 2015-2018: Part of the NIH funded project "Illuminating the Druggable Genome", coordinated by Prof. Tudor Oprea (UNM, USA). Flagship paper published in Nature Reviews Drug Discovery
- 2016: External stay with Professor Pierre Baldi, University of California Irvine. Ended early due to medical reasons.
- 2013: Research assistant at University of Hong Kong. Hosted by Dr. Gianni Panagiotou. Project has been published in BMC Genomics
- 2013: Member of the Danish Pan Genome Consortium. Articles published in Genome Research, Nature Communications, Nature Genetics, and Nature
- 2013: Internship at the EMBL-EBI in Cambridge

Funding

- 2024 **Maskinrummet bag dansk Excellencecenter for kvinde- og reproduktionssygdomme (11.6M DKK)**, A.P. Møller Fonden. Co-applicant.
- 2024 **Towards a mechanistic understanding and prediction of pregnancy complications through integration of biochemical measurements, inflammation markers, and patient data (350,000 DKK)**. Co-applicant., Region Hovedstaden. Co-applicant.
- 2024 **Non-Diabetic Endocrinology – Collaborative Project Grants (10M DKK)**, Novo Nordisk Foundation. Partner.
- 2023 **Non-Diabetic Endocrinology – Collaborative Project Grants (25M DKK)**, Novo Nordisk Foundation. Partner.
- 2020 **PREGCO: Consequences of COVID-19 infections for pregnant women and their newborn babies (5.8 million DKK)**, Danish Ministry of Health. Co-applicant.
- 2019 **DeiC Pilot Project (150.000 DKK)**, Two HPC pilot projects on text mining and precision medicine in autoimmune disease. Co-applicant
- 2019 **BRIDGE Translational Excellence Programme (Two year postdoc)**, The University of Copenhagen.
<https://bridge.ku.dk/>

Publications

PEER-REVIEWED PUBLICATIONS >50 peer-reviewed articles, 2,688 citations, H-index 22 (Google scholar)

Prospective reproductive outcomes according to sperm parameters, including DNA fragmentation, in recurrent pregnancy loss.

Krog, Maria Christine, Josefine Reinhardt Nielsen, Anna Slot, Kathrine Vauvert Hviid, Astrid Marie Kolte, **David Westergaard**, Sofie Bliddal, Kristian Almstrup, and Henriette Svarre Nielsen

Reproductive biomedicine online 49.2 (Aug. 2024) p. 103773. 2024

Genome-wide association meta-analysis identifies five loci associated with postpartum hemorrhage.

Westergaard, David, Valgerdur Steinthorsdottir, Lilja Stefansdottir, Palle Duun Rohde, Xiaoping Wu, Frank Geller, Jaakko Tyrmi, Aki S. Havulinna, Pol Solé-Navais, Christopher Flatley, Sisse Rye Ostrowski, Ole Birger Pedersen, Christian Erikstrup, Erik Sørensen, Christina Mikkelsen, Mie Topholm Bruun, Bitten Aagaard Jensen, Thorsten Brodersen, Henrik Ullum, Per Magnus, Ole A. Andreassen, Pål R. Njolstad, Astrid Marie Kolte, Lone Krebs, Mette Nyegaard, Thomas Folkmann Hansen, Bjarke Feenstra, Mark Daly, Cecilia M. Lindgren, Gudmar Thorleifsson, Olafur A. Stefansson, Gardar Sveinbjornsson, Daniel F. Gudbjartsson, Unnur Thorsteinsdottir, Karina Banasik, Bo Jacobsson, Triin Laisk, Hannele Laivuori, Kari Stefansson, Søren Brunak, and Henriette Svarre Nielsen

Nature genetics 56.8 (Aug. 2024) pp. 1597–1603. 2024

Longitudinal metabolite and protein trajectories prior to diabetes mellitus diagnosis in Danish blood donors: a nested case-control study.

Lundgaard, Agnete T., **David Westergaard**, Timo Röder, Kristoffer S. Burgdorf, Margit H. Larsen, Michael Schwinn, Lise W. Thørner, Erik Sørensen, Kaspar R. Nielsen, Henrik Hjalgrim, Christian Erikstrup, Bertram D. Kjerulff, Lotte Hindhede, Thomas F. Hansen, Mette Nyegaard, Ewan Birney, Hreinn Stefansson, Kári Stefánsson, Ole B. V. Pedersen, Sisse R. Ostrowski, Peter Rossing, Henrik Ullum, Laust H. Mortensen, Dorte Vistisen, Karina Banasik, and Søren Brunak

Diabetologia (July 2024). 2024

Evaluating risk factors in recurrent pregnancy loss: A prospective cohort study and its impact on live birth outcomes.

Nielsen, Josefine Reinhardt, Astrid Marie Kolte, Sofie Bliddal, Henrik Løvendahl Jørgensen, Morten Guldborg Johnsen, Maria Christine Krog, **David Westergaard**, and Henriette Svarre Nielsen

Journal of reproductive immunology 165 (July 2024) p. 104297. 2024

SMIM1 absence is associated with reduced energy expenditure and excess weight.

Stefanucci, Luca, Camous Moslemi, Ana R. Tomé, Samuel Virtue, Guillaume Bidault, Nicholas S. Gleadall, Laura P. E. Watson, Jing E. Kwa, Frances Burden, Samantha Farrow, Ji Chen, Urmo Võsa, Keith Burling, Lindsay Walker, John Ord, Peter Barker, James Warner, Amy Frary, Karola Renhstrom, Sofie E. Ashford, Jo Piper, Gail Biggs, Wendy N. Erber, Gary J. Hoffman, Nadia Schoenmakers, Christian Erikstrup, Klaus Rieneck, Morten H. Dziegiel, Henrik Ullum, Vian Azzu, Michele Vacca, Hugo Javier Aparicio, Qin Hui, Kelly Cho, Yan V. Sun, Peter W. Wilson, Omer A. Bayraktar, Antonio Vidal-Puig, Sisse R. Ostrowski, William J. Astle, Martin L. Olsson, Jill R. Storry, Ole B. Pedersen, Willem H. Ouwehand, Krishna Chatterjee, Dragana Vuckovic, Mattia Frontini, and **Danish Blood Donor Study Genomic Consortium**

Med (New York, N.Y.) (June 2024). 2024

GWAS meta-analysis reveals key risk loci in essential tremor pathogenesis.

Skuladottir, Astros Th, Lilja Stefansdottir, Gisli H. Halldorsson, Olafur A. Stefansson, Anna Bjornsdottir, Palmi Jonsson, Vala Palmadottir, Thorgeir E. Thorgeirsson, G. Bragi Walters, Rosa S. Gisladdottir, Gyda Bjornsdottir, Gudrun A. Jonsdottir, Patrick Sulem, Daniel F. Gudbjartsson, Kirk U. Knowlton, David A. Jones, Aigar Ottas, Ole B. Pedersen, Maria Didriksen, Søren Brunak, Karina Banasik, Thomas Folkmann Hansen, Christian Erikstrup, **Danish Blood Donor Study Genomic Consortium**, Jan Haavik, Ole A. Andreassen, David Rye, Jannicke Iglund, Sisse Rye Ostrowski, Lili A. Milani, Lincoln D. Nadauld, Hreinn Stefansson, and Kari Stefansson

Communications biology 7.1 (Apr. 2024) p. 504. 2024

Variant in the synaptonemal complex protein SYCE2 associates with pregnancy loss through effect on recombination.

Steinthorsdottir, Valgerdur, Bjarni V. Halldorsson, Hakon Jonsson, Gunnar Palsson, Asmundur Oddsson, **David Westergaard**, Gudny A. Arnadottir, Lilja Stefansdottir, Karina Banasik, M. Sean Esplin, Thomas Folkmann Hansen, Søren Brunak, Mette Nyegaard, Sisse Rye Ostrowski, Ole Birger Vesterager Pedersen, Christian Erikstrup, Gudmar Thorleifsson, Lincoln D. Nadauld, Asgeir Haraldsson, Thora Steingrimsdottir, Laufey Tryggvadottir, Ingileif Jonsdottir, Daniel F. Gudbjartsson, Eva R. Hoffmann, Patrick Sulem, Hilma Holm, Henriette Svarre Nielsen, and Kari Stefansson

Nature structural & molecular biology 31.4 (Apr. 2024) pp. 710–716. 2024

Lifestyle and demographic associations with 47 inflammatory and vascular stress biomarkers in 9876 blood donors.

Kjerulff, Bertram, Joseph Dowsett, Rikke Louise Jacobsen, Josephine Gladov, Margit Hørup Larsen, Agnete Troen Lundgaard, Karina Banasik, **David Westergaard**, Susan Mikkelsen, Khoa Manh Dinh, Lotte Hindhede, Kathrine Agergård Kaspersen, Michael Schwinn, Anders Juul, Betina Poulsen, Birgitte Lindegaard, Carsten Bøcker Pedersen, Clive Eric Sabel, Henning Bundgaard, Henriette Svarre Nielsen, Janne Amstrup Møller, Jens Kjærgaard Boldsen, Kristoffer Sølvsten Burgdorf, Lars Vedel Kessing, Linda Jenny Handgaard, Lise Wegner Thørner, Maria Didriksen, Mette Nyegaard, Niels Grarup, Niels Ødum, Pär I. Johansson, Poul Jennum, Ruth Frikke-Schmidt, Sanne Schou Berger, Søren Brunak, Søren Jacobsen, Thomas Folkmann Hansen, Tine Kirkeskov Lundquist, Torben Hansen, Torben Lykke Sørensen, Torben Sigsgaard, Kaspar René Nielsen, Mie Topholm Bruun, Henrik Hjalgrim, Henrik Ullum, Klaus Rostgaard, Erik Sørensen, Ole Birger Pedersen, Sisse Rye Ostrowski, and Christian Erikstrup

Communications medicine 4.1 (Mar. 2024) p. 50. 2024

Genome-wide analyses identify 21 infertility loci and over 400 reproductive hormone loci across the allele frequency spectrum.

Venkatesh, Samvida S., Laura B. L. Wittemans, Duncan S. Palmer, Nikolas A. Baya, Teresa Ferreira, Barney Hill, Frederik Heymann Lassen, Melody J. Parker, Saskia Reibe, Ahmed Elhakeem, Karina Banasik, Mie T. Bruun, Christian Erikstrup, Bitten A. Jensen, Anders Juul, Christina Mikkelsen, Henriette S. Nielsen, Sisse R. Ostrowski, Ole B. Pedersen, Palle D. Rohde, Erik Sørensen, Henrik Ullum, **David Westergaard**, Asgeir Haraldsson, Hilma Holm, Ingileif Jonsdottir, Isleifur Olafsson, Thora Steingrimsdottir, Valgerdur Steinthorsdottir, Gudmar Thorleifsson, Jessica Figueredo, Minna K. Karjalainen, Anu Pasanen, Benjamin M. Jacobs, Nikki Hubers, Margaret Lippincott, Abigail Fraser, Deborah A. Lawlor, Nicholas J. Timpson, Mette Nyegaard, Kari Stefansson, Reedik Magi, Hannele Laivuori, David A. van Heel, Dorret I. Boomsma, Ravikumar Balasubramanian, Stephanie B. Seminara, Yee-Ming Chan, Triin Laisk, and Cecilia M. Lindgren

medRxiv : the preprint server for health sciences (Mar. 2024). 2024

Variants at the Interleukin 1 Gene Locus and Pericarditis.

Thoroldsdottir, Rosa B., Andrea B. Jonsdottir, Gardar Sveinbjornsson, Hildur M. Aegisdottir, Asmundur Oddsson, Olafur A. Stefansson, Gisli H. Halldorsson, Saedis Saevarsdottir, Gudmar Thorleifsson, Lilja Stefansdottir, Ole B. Pedersen, Erik Sørensen, Jonas Ghouse, Anna Axelsson Raja, Chaoqun Zheng, Elvira Silajdzija, Søren Albertsen Rand, Christian Erikstrup, Henrik Ullum, Christina Mikkelsen, Karina Banasik, Søren Brunak, Erna V. Ivarsdottir, Asgeir Sigurdsson, Doruk Beyter, Arni Sturluson, Hafsteinn Einarsson, Vinicius Tragante, Hannes Helgason, Sigrun H. Lund, Bjarni V. Halldorsson, Brynja D. Sigurpalsdottir, Isleifur Olafsson, David O. Arnar, Gudmundur Thorgeirsson, Kirk U. Knowlton, Lincoln D. Nadauld, Solveig Gretarsdottir, Anna Helgadottir, Sisse R. Ostrowski, Daniel F. Gudbjartsson, Ingileif Jonsdottir, Henning Bundgaard, Hilma Holm, Patrick Sulem, Kari Stefansson, and **Danish Blood Donor Study Genomic Consortium**

JAMA cardiology 9.2 (Feb. 2024) pp. 165–172. 2024

A genome-wide association study of social trust in 33,882 Danish blood donors.

Sequeros, Celia Burgos, Thomas Folkmann Hansen, **David Westergaard**, Ioannis Louloudis, Sebastian Kalamajski, Timo Röder, Palle Duun Rohde, Michael Schwinn, Line Harder Clemmensen, Maria Didriksen, Mette Nyegaard, Henrik Hjalgrim, Kaspar René Nielsen, Mie Topholm Bruun, Sisse Rye Ostrowski, Christian Erikstrup, Susan Mikkelsen, Erik Sørensen, Ole Birger Vestager Pedersen, Søren Brunak, Karina Banasik, and Giuseppe Nicola Giordano

Scientific reports 14.1 (Jan. 2024) p. 1402. 2024

Uncovering the heritable components of multimorbidities and disease trajectories: a nationwide cohort study

Westergaard, David, Frederik Hytting Jørgensen, Jens Waaben, Mette Lademann, Thomas Folkmann Hansen, Jolien Cremers, Sisse Rye Ostrowski, Ole Birger Vesterager Pedersen, **Danish Blood Donor Study Genomic Consortium**, Roc Requant, Isabella Friis Jørgensen, Tom Fitzgerald, Ewan Birney, Karina Banasik, Laust Mortensen, and Søren Brunak

Nature Communications (in press) (2024). 2024

Genome-wide association study of placental weight identifies distinct and shared genetic influences between placental and fetal growth.

Baumont, Robin N., Christopher Flatley, Marc Vaudel, Xiaoping Wu, Jing Chen, Gunn-Helen Moen, Line Skotte, Øyvind Helgeland, Pol Solé-Navais, Karina Banasik, Clara Albiñana, Justiina Ronkainen, João Fadista, Sara Elizabeth Stinson, Katerina Trajanoska, Carol A. Wang, **David Westergaard**, Sundararajan Srinivasan, Carlos Sánchez-Soriano, Jose Ramon Bilbao, Catherine Allard, Marika Groleau, Teemu Kuulasmaa, Daniel J. Leirer, Frédérique White, Pierre-Étienne Jacques, Haoxiang Cheng, Ke Hao, Ole A. Andreassen, Bjørn Olav Åsvold, Mustafa Atalay, Laxmi Bhatta, Luigi Bouchard, Ben Michael Brumpton, Søren Brunak, Jonas Bybjerg-Grauholm, Cathrine Ebbing, Paul Elliott, Line Engelbrechtsen, Christian Erikstrup, Marisa Estarlich, Stephen Franks, Romy Gaillard, Frank Geller, Jakob Grove, David M. Hougaard, Eero Kajantie, Camilla S. Morgen, Ellen A. Nohr, Mette Nyegaard, Colin N. A. Palmer, Ole Birger Pedersen, Fernando Rivadeneira, Sylvain Sebert, Beverley M. Shields, Camilla Stoltenberg, Ida Surakka, Lise Wegner Thørner, Henrik Ullum, Marja Vaarasmaki, Bjarni J. Vilhjalmsen, Cristen J. Willer, Timo A. Lakka, Dorte Gybel-Brask, Mariona Bustamante, Torben Hansen, Ewan R. Pearson, Rebecca M. Reynolds, Sisse R. Ostrowski, Craig E. Pennell, Vincent W. V. Jaddoe, Janine F. Felix, Andrew T. Hattersley, Mads Melbye, Deborah A. Lawlor, Kristian Hveem, Thomas Werge, Henriette Svarre Nielsen, Per Magnus, David M. Evans, Bo Jacobsson, Marjo-Riitta Järvelin, Ge Zhang, Marie-France Hivert, Stefan Johansson, Rachel M. Freathy, Bjarke Feenstra, and Pål R. Njølstad

Nature genetics 55.11 (Nov. 2023) pp. 1807–1819. 2023

Rare variants with large effects provide functional insights into the pathology of migraine subtypes, with and without aura.

- Bjornsdottir, Gyda, Mona A. Chalmer, Lilja Stefansdottir, Astros Th Skuladottir, Gudmundur Einarsson, Margret Andresdottir, Doruk Beyter, Egil Ferkingstad, Solveig Gretarsdottir, Bjarni V. Halldorsson, Gisli H. Halldorsson, Anna Helgadottir, Hannes Helgason, Grimur Hjorleifsson Eldjarn, Adalbjorg Jonasdottir, Aslaug Jonasdottir, Ingileif Jonsdottir, Kirk U. Knowlton, Lincoln D. Nadauld, Sigrun H. Lund, Olafur Th Magnusson, Pall Melsted, Kristjan H. S. Moore, Asmundur Oddsson, Pall I. Olason, Asgeir Sigurdsson, Olafur A. Stefansson, Jona Saemundsdottir, Gardar Sveinbjornsson, Vinicius Tragante, Unnur Unnsteinsdottir, G. Bragi Walters, Florian Zink, Linn Rødevand, Ole A. Andreassen, Jannicke Igland, Rolv T. Lie, Jan Haavik, Karina Banasik, Søren Brunak, Maria Didriksen, Mie T Bruun, Christian Erikstrup, Lisette J. A. Kogelman, Kaspar R. Nielsen, Erik Sørensen, Ole B. Pedersen, Henrik Ullum, **Danish Blood Donor Study Genomic Consortium**, Gisli Masson, Unnur Thorsteinsdottir, Jes Olesen, Petur Ludvigsson, Olafur Thorarensen, Anna Bjornsdottir, Gudrun R. Sigurdardottir, Olafur A. Sveinsson, Sisse R. Ostrowski, Hilma Holm, Daniel F. Gudbjartsson, Gudmar Thorleifsson, Patrick Sulem, Hreinn Stefansson, Thorgeir E. Thorgeirsson, Thomas F. Hansen, and Kari Stefansson
Nature genetics 55.11 (Nov. 2023) pp. 1843–1853. 2023
- Pancreatic cancer symptom trajectories from Danish registry data and free text in electronic health records.
Hjaltelin, Jessica Xin, Sif Ingibergsdóttir Novitski, Isabella Friis Jørgensen, Troels Siggaard, Siri Amalie Vulpus, **David Westergaard**, Julia Sidenius Johansen, Inna M. Chen, Lars Juhl Jensen, and Søren Brunak
eLife 12 (Nov. 2023). 2023
- A second update on mapping the human genetic architecture of COVID-19.
Nature 621.7977 (Sept. 2023) E7–E26. 2023
- Drug dosage modifications in 24 million in-patient prescriptions covering eight years: A Danish population-wide study of polypharmacy.
Leal Rodríguez, Cristina, Amalie Dahl Haue, Gianluca Mazzoni, Robert Eriksson, Jorge Hernansanz Biel, Lisa Cantwell, **David Westergaard**, Kirstine G. Belling, and Søren Brunak
PLOS digital health 2.9 (Sept. 2023) e0000336. 2023
- Reply of the Authors: Endometriosis and pregnancy loss: the importance of mitigating sources of bias.
Boje, Amalie Dyhrberg, Pia Egerup, **David Westergaard**, Marie-Louise Mathilde Friis Bertelsen, Mette Nyegaard, Dorte Hartwell, Øjvind Lidegaard, and Henriette Svarre Nielsen
Fertility and sterility 120.2 (Aug. 2023) pp. 393–394. 2023
- BALDR: A Web-based platform for informed comparison and prioritization of biomarker candidates for type 2 diabetes mellitus.
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