

Marjon de Vos
Assistant Professor
De Vos lab
Email: M.G.J.de.Vos@rug.nl
Phone: +31 50 363 2169



Research outputs

An eco-evolutionary perspective on antimicrobial resistance in the context of One Health

Bustamante, M., Mei, S., Daras, I. M., van Doorn, G. S., Falcao Salles, J. & de Vos, M. G. J., 17-Jan-2025, In: *iScience*. 28, 1, 11 p., 111534.

Community context influences the conjugation efficiency of *Escherichia coli*

Bustamante, M., Koopman, F., Martens, J., Brons, J. K., DelaFuente, J., Hackl, T., Kuipers, O. P., van Doorn, G. S. & de Vos, M. G. J., 27-Jul-2024, In: *FEMS Microbes*. 5, xtae023.

Metabolic interactions shape a community's phenotype

Melkonian, C., Seidl, M. F., van der Hooft, J. J. J. & de Vos, M. G. J., Jul-2022, In: *Trends in Microbiology*. 30, 7, p. 609-611 3 p.

Eco-evolutionary interactions and the spread of antimicrobial resistance in pathogenic microbial communities

Bustamante Ordonez, M., van Doorn, S., Weissing, F., Daras, I., Kuipers, O. & de Vos, M., 28-Jun-2022.

Eco-evolutionary interactions in polymicrobial infections

Zandbergen, L., van den Heuvel, J., Zwaan, B., de Visser, A. & de Vos, M., 28-Jun-2022.

Iron regulates contrasting toxicity of uropathogenic *Escherichia coli* in macrophages and epithelial cells

Dabral, D., Ghosh, H., Niwa, M., Hirayama, T., de Vos, M. & van den Bogaart, G., 29-May-2022, (Submitted) *BioRxiv*, (BioRxiv).

Using functional annotations to study pairwise interactions in urinary tract infection communities

Lara, E. G., van der Windt, I., Molenaar, D., de Vos, M. G. J. & Melkonian, C., Aug-2021, In: *Genes*. 12, 8, 1221.

The good and the bad: Ecological interaction measurements between the urinary microbiota and uropathogens

Zandbergen, L., Brons, J., Halverson, T., Wolfe, A. J. & de Vos, M., 10-May-2021, In: *Frontiers in Microbiology*. 12, 659450.

Polymicrobiële infecties: Invloeden van de ecologische gemeenschap op het verloop van infecties

Zandbergen, L. & de Vos, M., 5-Dec-2020, In: *Tijdschrift voor Infectieziekten*. 15, 6, p. 221-226 6 p.

Characterization of fosfomycin heteroresistance among multidrug-resistant *Escherichia coli* isolates from hospitalized patients in Rio de Janeiro, Brazil

Campos, A. C. C., Andrade, N. L., Couto, N., Mutters, N. T., de Vos, M., Rosa, A. C. P., Damasco, P. V., Foe, J. R. L. T., Friedrich, A. W., Flissikowska, M. A.C. & Rossen, J. W. A., Sept-2020, In: *Journal of Global Antimicrobial Resistance*. 22, p. 584-593 10 p.

Predicting evolution using regulatory architecture

Nghe, P., de Vos, M., Kingma, E., Kogenaru, M., Poelwijk, F. J., Laan, L. & Tans, S. J., 6-May-2020, In: *Annual Review of Biophysics*. 49, p. 181-197 17 p., 49.

Fast identification of *Escherichia coli* in urinary tract infections using a virulence gene based PCR approach in a novel thermal cycler

Brons, J., Vink, S. N., de Vos, M., Reuter, S., Dobrindt, U. & van Elsas, J. D., Feb-2020, In: Journal of microbiological methods. 169, 105799.

Microbial evolutionary medicine: From theory to clinical practice

Andersen, S. B., Shapiro, B. J., Vandenbroucke-Grauls, C. & de Vos, M. G. J., Aug-2019, In: Lancet Infectious Diseases. 19, 8, p. e273-e283

Ecology dictates evolution? About the importance of genetic and ecological constraints in adaptation

de Vos, M. G. J., Schoustra, S. E. & de Visser, J. A. G. M., 17-Jul-2018, In: EPL. 122, 5, 6 p., 58002.

Polymicrobiële infecties: Ecosystemen met bijzondere eigenschappen

de Vos, M. G. J., de Visser, J. A. G. M., Rossen, J. W. A. & Zwaan, B. J., 13-Mar-2018, In: Nederlands Tijdschrift voor Geneeskunde. 162, 4 p., D2224.

Interaction networks, ecological stability, and collective antibiotic tolerance in polymicrobial infections

de Vos, M. G. J., Zagorski, M., McNally, A. & Bollenbach, T., 3-Oct-2017, In: Proceedings of the National Academy of Sciences of the United States of America. 114, 40, p. 10666-10671 6 p.

Breaking evolutionary constraint with a tradeoff ratchet

de Vos, M. G. J., Dawid, A., Sunderlikova, V. & Tans, S. J., 1-Dec-2015, In: Proceedings of the National Academy of Sciences of the United States of America. 112, 48, p. 14906-14911 6 p.

Suppressive drug interactions between antifungals

de Vos, M. G. J. & Bollenbach, T., 24-Apr-2014, In: Chemistry & Biology. 21, 4, p. 439-440 2 p.

Optimality in evolution: New insights from synthetic biology

de Vos, M. G. J., Poelwijk, F. J. & Tans, S. J., Aug-2013, In: Current Opinion in Biotechnology. 24, 4, p. 797-802 6 p.

Environmental dependence of genetic constraint

de Vos, M. G. J., Poelwijk, F. J., Battich, N., Ndika, J. D. T. & Tans, S. J., Jun-2013, In: PLoS genetics. 9, 6, 8 p., 1003580.

Optimality and evolution of transcriptionally regulated gene expression

Poelwijk, F. J., Heyning, P. D., de Vos, M. G. J., Kiviet, D. J. & Tans, S. J., 16-Aug-2011, In: BMC Systems Biology. 5, 12 p., 128.

Tradeoffs and optimality in the evolution of gene regulation

Poelwijk, F. J., de Vos, M. G. J. & Tans, S. J., 5-Aug-2011, In: Cell. 146, 3, p. 462-470 9 p.

Multiple peaks and reciprocal sign epistasis in an empirically determined genotype-phenotype landscape

Dawid, A., Kiviet, D. J., Kogenaru, M., de Vos, M. & Tans, S. J., Jun-2010, In: Chaos. 20, 2, 7 p., 026105.

Revealing evolutionary pathways by fitness landscape reconstruction

Kogenaru, M., de Vos, M. G. J. & Tans, S. J., 2009, In: Critical reviews in biochemistry and molecular biology. 44, 4, p. 169-174 6 p.

Diversity of *nifH* gene pools in the rhizosphere of two cultivars of sorghum (*Sorghum bicolor*) treated with contrasting levels of nitrogen fertilizer

Coelho, M. R. R., de Vos, M., Carneiro, N. P., Marriel, I. E., Paiva, E. & Seldin, L., Feb-2008, In: FEMS Microbiology Letters. 279, 1, p. 15-22 8 p.

Identification of the missing links in prokaryotic pentose oxidation pathways: Evidence for enzyme recruitment

Brouns, S. J. J., Walther, J., Snijders, A. P. L., de Werken, H. J. G. V., Willemsen, H. L. D. M., Worm, P., de Vos, M. G. J., Andersson, A., Lundgren, M., Mazon, H. F. M., van den Heuvel, R. H. H., Nilsson, P., Salmon, L., de Vos, W. M., Wright, P. C., Bernander, R. & van der Oost, J., 15-Sept-2006, In: Journal of Biological Chemistry. 281, 37, p. 27378-27388 11 p.

Reconstruction of central carbon metabolism in *Sulfolobus solfataricus* using a two-dimensional gel electrophoresis map, stable isotope labelling and DNA microarray analysis
Snijders, A. P. L., Walther, J., Peter, S., Kinnman, I., de Vos, M. G. J., van de Werken, H. J. G., Brouns, S. J. J., van der Oost, J. & Wright, P. C., Mar-2006, In: Proteomics. 6, 5, p. 1518-1529 12 p.

A fast method for quantitative proteomics based on a combination between two-dimensional electrophoresis and ^{15}N -metabolic labelling
Snijders, A. P. L., de Vos, M. G. J., de Koning, B. & Wright, P. C., Aug-2005, In: Electrophoresis. 26, 16, p. 3191-3199 9 p.

Novel approach for peptide quantitation and sequencing based on ^{15}N and ^{13}C metabolic labeling
Snijders, A. P. L., de Vos, M. G. J. & Wright, P. C., Mar-2005, In: Journal of Proteome Research. 4, 2, p. 578-585 8 p.

Interaction networks, ecological stability, and collective antibiotic tolerance in polymicrobial infections

MGJ de Vos, M Zagorski, A McNally, T Bollenbach. 2017
Proceedings of the National Academy of Sciences 114 (40), 10666-10671

Breaking evolutionary constraint with a tradeoff ratchet

MGJ De Vos, A Dawid, V Sunderlikova, SJ Tans. 2015
Proceedings of the National Academy of Sciences 112 (48), 14906-14911

Suppressive drug interactions between antifungals

MGJ de Vos, T Bollenbach. 2014
Chemistry & biology 21 (4), 439-440

Optimality in evolution: new insights from synthetic biology

MGJ de Vos, FJ Poelwijk, SJ Tans. 2013
Current opinion in biotechnology 24 (4), 797-802

Environmental dependence of genetic constraint

MGJ de Vos, FJ Poelwijk, N Battich, JDT Ndika, SJ Tans. 2013
PLoS genetics 9 (6), e1003580

Optimality and evolution of transcriptionally regulated gene expression

FJ Poelwijk, PD Heyning, MGJ de Vos, DJ Kiviet, SJ Tans. 2011
BMC systems biology 5 (1), 128

Tradeoffs and optimality in the evolution of gene regulation

FJ Poelwijk, MGJ De Vos, SJ Tans. 2011
Cell 146 (3), 462-470

Multiple peaks and reciprocal sign epistasis in an empirically determined genotype-phenotype landscape

A Dawid, DJ Kiviet, M Kogenaru, M de Vos, SJ Tans. 2010
Chaos 20 (2), 02xxxx

Revealing evolutionary pathways by fitness landscape reconstruction

M Kogenaru, MGJ de Vos, SJ Tans. 2009
Critical reviews in biochemistry and molecular biology 44 (4), 169-174

Diversity of nifH gene pools in the rhizosphere of two cultivars of sorghum (*Sorghum bicolor*) treated with contrasting levels of nitrogen fertilizer

Marcia Reed Rodrigues Coelho, Marjon De Vos, Newton Portilho Carneiro, Ivanildo Evódio Marriel, Edilson Paiva, Lucy Seldin. 2008
FEMS microbiology letters 279 (1), 15-22

Identification of the missing links in prokaryotic pentose oxidation pathways evidence for enzyme recruitment

Stan JJ Brouns, Jasper Walther, Ambrosius PL Snijders, Harmen JG van de Werken, Hanneke LDM Willemsen, Petra Worm, Marjon GJ de Vos, Anders Andersson, Magnus Lundgren, Hortense FM Mazon, Robert HH van den Heuvel, Peter Nilsson, Laurent Salmon, Willem M de Vos, Phillip C Wright, Rolf Bernander, John van der Oost. 2006
Journal of Biological Chemistry 281 (37), 27378-27388

Reconstruction of central carbon metabolism in *Sulfolobus solfataricus* using a two-dimensional gel electrophoresis map, stable isotope labelling and DNA microarray analysis

Ambrosius PL Snijders, Jasper Walther, Stefan Peter, Iris Kinnman, Marjon GJ De Vos, Harmen JG Van de Werken, Stan JJ Brouns, John Van der Oost, Phillip C Wright. 2006
Proteomics 6 (5), 1518-1529

A fast method for quantitative proteomics based on a combination between two-dimensional electrophoresis and ^{15}N -metabolic labelling

APL Snijders, MGJ de Vos, B de Koning, PC Wright. 2005
Electrophoresis 26 (16), 3191-3199

Novel approach for peptide quantitation and sequencing based on ^{15}N and ^{13}C metabolic labeling

APL Snijders, MGJ de Vos, PC Wright. 2005

