Natal A W Van Riel

List of Publications by Year
in descending order

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113 papers	2,953 citations	201674 27 h-index	182427 51 g-index
117 all docs	117 docs citations	117 times ranked	4084 citing authors

#	Article	IF	Citations
1	A Markov model for inferring event types on diabetes patients data. Healthcare Analytics, 2022, 2, 100024.	4.3	2
2	Kinetic Modeling of Saccharomyces cerevisiae Central Carbon Metabolism: Achievements, Limitations, and Opportunities. Metabolites, 2022, 12, 74.	2.9	7
3	Fecal microbiota transplantation as tool to study the interrelation between microbiota composition and miRNA expression. Microbiological Research, 2022, 257, 126972.	5.3	5
4	OUP accepted manuscript. journal of applied laboratory medicine, The, 2022, , .	1.3	1
5	Left atrial reservoir strain as a predictor of cardiac outcome in patients with heart failure: the HaFaC cohort study. BMC Cardiovascular Disorders, 2022, 22, 104.	1.7	10
6	pH dependencies of glycolytic enzymes of yeast under in vivoâ€like assay conditions. FEBS Journal, 2022, 289, 6021-6037.	4.7	7
7	The Physical Activity and Nutritional INfluences in Ageing (PANINI) Toolkit: A Standardized Approach towards Physical Activity and Nutritional Assessment of Older Adults. Healthcare (Switzerland), 2022, 10, 1017.	2.0	1
8	Altered bile acid kinetics contribute to postprandial hypoglycaemia after Roux-en-Y gastric bypass surgery. International Journal of Obesity, 2021, 45, 619-630.	3.4	16
9	Aging and Allostasis: Using Bayesian Network Analytics to Explore and Evaluate Allostatic Markers in the Context of Aging. Diagnostics, 2021, 11, 157.	2.6	6
10	Personalized computational model quantifies heterogeneity in postprandial responses to oral glucose challenge. PLoS Computational Biology, 2021, 17, e1008852.	3.2	8
11	Intronic variant screening with targeted next-generation sequencing reveals first pseudoexon in LDLR in familial hypercholesterolemia. Atherosclerosis, 2021, 321, 14-20.	0.8	10
12	Simulating Metabolic Flexibility in Low Energy Expenditure Conditions Using Genome-Scale Metabolic Models. Metabolites, 2021, 11, 695.	2.9	1
13	Metabolic Health Index (MHI): Assessment of Comorbidity in Bariatric Patients Based on Biomarkers. Obesity Surgery, 2020, 30, 714-724.	2.1	5
14	A Distance-Based Framework for the Characterization of Metabolic Heterogeneity in Large Sets of Genome-Scale Metabolic Models. Patterns, 2020, 1, 100080.	5.9	10
15	Use of deep learning methods to translate drug-induced gene expression changes from rat to human primary hepatocytes. PLoS ONE, 2020, 15, e0236392.	2.5	3
16	The Impact of Amino Acids on Postprandial Glucose and Insulin Kinetics in Humans: A Quantitative Overview. Nutrients, 2020, 12, 3211.	4.1	20
17	Modelâ€based data analysis of individual human postprandial plasma bile acid responses indicates a major role for the gallbladder and intestine. Physiological Reports, 2020, 8, e14358.	1.7	6
18	Detecting patients with PMI post-CABG based on cardiac troponin-T profiles: A latent class mixed modeling approach. Clinica Chimica Acta, 2020, 504, 23-29.	1.1	3

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19	Metabolic Modeling Combined With Machine Learning Integrates Longitudinal Data and Identifies the Origin of LXR-Induced Hepatic Steatosis. Frontiers in Bioengineering and Biotechnology, 2020, 8, 536957.	4.1	7
20	In Silico Clinical Studies on the Efficacy of Blue Light for Treating Psoriasis in Virtual Patients. Systems Medicine (New Rochelle, N Y), 2019, 2, 10-18.	1.1	1
21	Improved quantification of muscle insulin sensitivity using oral glucose tolerance test data: the MISI Calculator. Scientific Reports, 2019, 9, 9388.	3.3	18
22	Characterization of disease-specific cellular abundance profiles of chronic inflammatory skin conditions from deconvolution of biopsy samples. BMC Medical Genomics, 2019, 12, 121.	1.5	19
23	A computational model of postprandial adipose tissue lipid metabolism derived using human arteriovenous stable isotope tracer data. PLoS Computational Biology, 2019, 15, e1007400.	3.2	11
24	Deep Learning with Convolutional Neural Networks for Histopathology Image Analysis. Computational Biology, 2019, , 453-469.	0.2	8
25	Computational modelling of energy balance in individuals with Metabolic Syndrome. BMC Systems Biology, 2019, 13, 24.	3.0	6
26	Visible Blue Light Therapy: Molecular Mechanisms and Therapeutic Opportunities. Current Medicinal Chemistry, 2019, 25, 5564-5577.	2.4	50
27	Model-based analysis of postprandial glycemic response dynamics for different types of food. Clinical Nutrition Experimental, 2018, 19, 32-45.	2.0	23
28	Domain intelligible models. Methods, 2018, 149, 69-73.	3.8	4
29	In Silico Analysis Identifies Intestinal Transit as a Key Determinant of Systemic Bile Acid Metabolism. Frontiers in Physiology, 2018, 9, 631.	2.8	18
30	Physical Activity and Nutrition INfluences In ageing (PANINI): consortium mission statement. Aging Clinical and Experimental Research, 2018, 30, 685-692.	2.9	17
31	In vivo and in silico dynamics of the development of Metabolic Syndrome. PLoS Computational Biology, 2018, 14, e1006145.	3.2	12
32	Methodologies for Quantitative Systems Pharmacology (QSP) Models: Design and Estimation. CPT: Pharmacometrics and Systems Pharmacology, 2017, 6, 496-498.	2.5	29
33	Dietary nitrate does not reduce oxygen cost of exercise or improve muscle mitochondrial function in patients with mitochondrial myopathy. American Journal of Physiology - Regulatory Integrative and Comparative Physiology, 2017, 312, R689-R701.	1.8	8
34	Identifying User Preferences for a Digital Educational Solution for Young Seniors With Diabetes. Diabetes Spectrum, 2017, 30, 182-187.	1.0	8
35	A Dynamic Model for Prediction of Psoriasis Management by Blue Light Irradiation. Frontiers in Physiology, 2017, 8, 28.	2.8	3
36	An In Vivo Magnetic Resonance Spectroscopy Study of the Effects of Caloric and Non-Caloric Sweeteners on Liver Lipid Metabolism in Rats. Nutrients, 2017, 9, 476.	4.1	10

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37	Flux Balance Analysis of Plant Metabolism: The Effect of Biomass Composition and Model Structure on Model Predictions. Frontiers in Plant Science, 2016, 7, 537.	3.6	32
38	A genomeâ€scale metabolic network reconstruction of tomato (Solanum lycopersicum L.) and its application to photorespiratory metabolism. Plant Journal, 2016, 85, 289-304.	5.7	66
39	Concept Development of the Eindhoven Diabetes Education Simulator Project. Games for Health Journal, 2016, 5, 120-127.	2.0	5
40	Requirements for multi-level systems pharmacology models to reach end-usage: the case of type 2 diabetes. Interface Focus, 2016, 6, 20150075.	3.0	21
41	Altered Energetics of Exercise Explain Risk of Rhabdomyolysis in Very Long-Chain Acyl-CoA Dehydrogenase Deficiency. PLoS ONE, 2016, 11, e0147818.	2.5	35
42	Effects of low-stearate palm oil and high-stearate lard high-fat diets on rat liver lipid metabolism and glucose tolerance. Nutrition and Metabolism, 2015, 12, 57.	3.0	11
43	Model-Based Quantification of the Systemic Interplay between Glucose and Fatty Acids in the Postprandial State. PLoS ONE, 2015, 10, e0135665.	2.5	15
44	A systems biology approach reveals the physiological origin of hepatic steatosis induced by liver X receptor activation. FASEB Journal, 2015, 29, 1153-1164.	0.5	18
45	A Physiology-Based Model Describing Heterogeneity in Glucose Metabolism. Journal of Diabetes Science and Technology, 2015, 9, 282-292.	2.2	15
46	Muscle-Type Specific Autophosphorylation of CaMKII Isoforms after Paced Contractions. BioMed Research International, 2014, 2014, 1-20.	1.9	8
47	A Computational Model for the Analysis of Lipoprotein Distributions in the Mouse: Translating FPLC Profiles to Lipoprotein Metabolism. PLoS Computational Biology, 2014, 10, e1003579.	3.2	15
48	Optimal experiment design for model selection in biochemical networks. BMC Systems Biology, 2014, 8, 20.	3.0	31
49	Parameter uncertainty in biochemical models described by ordinary differential equations. Mathematical Biosciences, 2013, 246, 305-314.	1.9	153
50	Parameter Trajectory Analysis to Identify Treatment Effects of Pharmacological Interventions. PLoS Computational Biology, 2013, 9, e1003166.	3.2	27
51	PS15 - 1. Incorporating different food products and composite meals in the Eindhoven Diabetes Education Simulator. Nederlands Tijdschrift Voor Diabetologie, 2013, 11, 187-188.	0.0	0
52	Applications of analysis of dynamic adaptations in parameter trajectories. Interface Focus, 2013, 3, 20120084.	3.0	6
53	PS5 - 27. In vivo magnetic resonance spectroscopy of lipid handling in steatotic rat liver. Nederlands Tijdschrift Voor Diabetologie, 2012, 10, 116-116.	0.0	0
54	PS9 - 44. Unravelling the kinetics of insulin signalling in skeletal muscle cells. Nederlands Tijdschrift Voor Diabetologie, 2012, 10, 129-129.	0.0	0

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55	An integrated strategy for prediction uncertainty analysis. Bioinformatics, 2012, 28, 1130-1135.	4.1	59
56	A Bayesian approach to targeted experiment design. Bioinformatics, 2012, 28, 1136-1142.	4.1	79
57	Prediction of Muscle Energy States at Low Metabolic Rates Requires Feedback Control of Mitochondrial Respiratory Chain Activity by Inorganic Phosphate. PLoS ONE, 2012, 7, e34118.	2.5	26
58	In vivo magnetic resonance spectroscopy of lipid handling in steatotic rat liver. FASEB Journal, 2012, 26, 242.7.	0.5	0
59	Computational Modeling of Mitochondrial Energy Transduction. Critical Reviews in Biomedical Engineering, 2011, 39, 363-377.	0.9	8
60	Parameter adaptations during phenotype transitions in progressive diseases. BMC Systems Biology, 2011, 5, 174.	3.0	22
61	PS12 - 60. The effects of skin composition on glucose sensing. Nederlands Tijdschrift Voor Diabetologie, 2011, 9, 132-132.	0.0	0
62	Systems biology from micro-organisms to human metabolic diseases: the role of detailed kinetic models. Biochemical Society Transactions, 2010, 38, 1294-1301.	3.4	22
63	The influence of temporal resolution in determining pharmacokinetic parameters from DCE-MRI data. Magnetic Resonance in Medicine, 2010, 63, 811-816.	3.0	63
64	Silencing of glycolysis in muscle: experimental observation and numerical analysis. Experimental Physiology, 2010, 95, 380-397.	2.0	25
65	Quantifying the Composition of Human Skin for Glucose Sensor Development. Journal of Diabetes Science and Technology, 2010, 4, 1032-1040.	2.2	52
66	The use of a reference tissue arterial input function with low-temporal-resolution DCE-MRI data. Physics in Medicine and Biology, 2010, 55, 4871-4883.	3.0	24
67	Prediction of murine liver kinetics from plasma lipoprotein distributions. FASEB Journal, 2010, 24, 1065.11.	0.5	0
68	Relating muscle phenotype to in vivo mitochondrial function. FASEB Journal, 2010, 24, 1045.10.	0.5	0
69	Regulation of Force Dynamics in Fast Twitch Muscle. FASEB Journal, 2010, 24, 801.1.	0.5	0
70	Intra-voxel heterogeneity influences the dose prescription for dose-painting with radiotherapy: a modelling study. Physics in Medicine and Biology, 2009, 54, 2179-2196.	3.0	55
71	Magnitude and control of mitochondrial sensitivity to ADP. American Journal of Physiology - Endocrinology and Metabolism, 2009, 297, E774-E784.	3.5	41
72	Reliability of pharmacokinetic parameters: Small vs. mediumâ€sized contrast agents. Magnetic Resonance in Medicine, 2009, 62, 779-787.	3.0	30

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73	Prediction of Twitch and High Frequency Local Calcium Dynamics in Mouse EDL Fibers at 15-35Â°C. Biophysical Journal, 2009, 96, 233a.	0.5	0
74	System identification theory in pharmacokinetic modeling of dynamic contrastâ€enhanced MRI: Influence of contrast injection. Magnetic Resonance in Medicine, 2008, 59, 1111-1119.	3.0	39
75	Mathematical modelling of the calciumâ€“left ventricular pressure relationship in the intact diabetic rat heart. Acta Physiologica, 2008, 193, 205-217.	3.8	4
76	Computational modelling identifies the impact of subtle anatomical variations between amphibian and mammalian skeletal muscle on spatiotemporal calcium dynamics. IET Systems Biology, 2008, 2, 411-422.	1.5	8
77	Modeling Glucose and Water Dynamics in Human Skin. Diabetes Technology and Therapeutics, 2008, 10, 283-293.	4.4	30
78	Systems biology of the mammalian Unfolded Protein Response. FASEB Journal, 2008, 22, 1021.1.	0.5	0
79	Computational modelling identifies impact of subtle anatomical variation on skeletal muscle local calcium dynamics. FASEB Journal, 2008, 22, 756.11.	0.5	0
80	Computational modeling indicates anaerobic glycogenolytic ATP synthesis contributes little to quadriceps energy balance during exhaustive bicycling exercise. FASEB Journal, 2008, 22, 756.1.	0.5	0
81	In vitro and in silico experiments to identify the influence of temperature on skeletal muscle calcium and force dynamics. FASEB Journal, 2008, 22, 756.5.	0.5	0
82	Leukocytes of exceptionally old persons display ultra-short telomeres. American Journal of Physiology - Regulatory Integrative and Comparative Physiology, 2007, 293, R2210-R2217.	1.8	52
83	Qualitative Analysis of Nonlinear Biochemical Networks with Piecewise-Affine Functions. Lecture Notes in Computer Science, 2007, , 727-730.	1.3	2
84	On the identifiability of pharmacokinetic parameters in dynamic contrastâ€enhanced imaging. Magnetic Resonance in Medicine, 2007, 58, 425-429.	3.0	53
85	Dynamic modelling and analysis of biochemical networks: mechanism-based models and model-based experiments. Briefings in Bioinformatics, 2006, 7, 364-374.	6.5	220
86	Computational evidence for protein-mediated fatty acid transport across the sarcolemma. Biochemical Journal, 2006, 393, 669-678.	3.7	11
87	Altered calcium handling is an early sign of streptozotocin-induced diabetic cardiomyopathy. International Journal of Molecular Medicine, 2006, 17, 1035.	4.0	14
88	HYBRID IDENTIFICATION OF NONLINEAR BIOCHEMICAL PROCESSES. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2006, 39, 350-355.	0.4	3
89	Computational model of excitable cell indicates ATP free energy dynamics in response to calcium oscillations are undampened by cytosolic ATP buffers. IET Systems Biology, 2006, 153, 405.	2.0	12
90	Parameter estimation in models combining signal transduction and metabolic pathways: the dependent input approach. IET Systems Biology, 2006, 153, 263.	2.0	36

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91	Integration of the metabolic and cardiovascular effects of exercise. Essays in Biochemistry, 2006, 42, 193-210.	4.7	25
92	Identification of sources and functions of metabolic capacitance in the ATP metabolic network in muscle. FASEB Journal, 2006, 20, A410.	0.5	0
93	Altered calcium handling is an early sign of streptozotocin-induced diabetic cardiomyopathy. International Journal of Molecular Medicine, 2006, 17, 1035-43.	4.0	40
94	ONE-STEP AHEAD PREDICTION FOR PARAMETER ESTIMATION IN PHYSIOLOGICAL HYBRID MODELS. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2005, 38, 43-48.	0.4	1
95	Poly(ADP-ribose) polymerase regulates myocardial calcium handling in doxorubicin-induced heart failure. Biochemical Pharmacology, 2005, 69, 725-732.	4.4	56
96	In vivo heat shock preconditioning mitigates calcium overload during ischaemia/reperfusion in the isolated, perfused rat heart. Pflugers Archiv European Journal of Physiology, 2005, 449, 518-525.	2.8	3
97	Î²-Adrenergic activation reveals impaired cardiac calcium handling at early stage of diabetes. Life Sciences, 2005, 76, 1083-1098.	4.3	22
98	Identification of a switching model of calcium cycling in isolated rat hearts. , 2004, 2004, 841-4.		1
99	Mathematical modeling of vascular endothelial layer maintenance: the role of endothelial cell division, progenitor cell homing, and telomere shortening. American Journal of Physiology - Heart and Circulatory Physiology, 2004, 287, H2651-H2658.	3.2	74
100	Mathematical modeling confirms the length-dependency of telomere shortening. Mechanisms of Ageing and Development, 2004, 125, 437-444.	4.6	52
101	Identifiability analysis of the standard pharmacokinetic models in DCE MR imaging of tumours. , 2004, 2004, 1040-3.		0
102	System identification to analyse changed kinetics of SERCA in intact rat heart. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2003, 36, 123-128.	0.4	1
103	Computational modeling of cardiac fatty acid uptake and utilization. Advances in Molecular and Cell Biology, 2003, 33, 173-221.	0.1	0
104	The glutamate synthase (GOGAT) of plays an important role in central nitrogen metabolism. FEMS Yeast Research, 2001, 1, 169-175.	2.3	25
105	The glutamate synthase (GOGAT) ofSaccharomyces cerevisiaeplays an important role in central nitrogen metabolism. FEMS Yeast Research, 2001, 1, 169-175.	2.3	18
106	Metabolic Modeling of Saccharomyces cerevisiae Using the Optimal Control of Homeostasis: A Cybernetic Model Definition. Metabolic Engineering, 2000, 2, 14-33.	7.0	21
107	Dynamic Optimal Control of Homeostasis: An Integrative System Approach for Modeling of the Central Nitrogen Metabolism in Saccharomyces cerevisiae. Metabolic Engineering, 2000, 2, 49-68.	7.0	16
108	An interlaboratory comparison of physiological and genetic properties of four Saccharomyces cerevisiae strains. Enzyme and Microbial Technology, 2000, 26, 706-714.	3.2	488

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109	The role of ammonia metabolism in nitrogen catabolite repression inSaccharomyces cerevisiae. FEMS Microbiology Reviews, 2000, 24, 67-83.	8.6	187
110	The role of ammonia metabolism in nitrogen catabolite repression in Saccharomyces cerevisiae. FEMS Microbiology Reviews, 2000, 24, 67-83.	8.6	65
111	The cell factory needs a model of a factory. Trends in Biotechnology, 1999, 17, 383-384.	9.3	3
112	A Structured, Minimal parameter Model of the Central Nitrogen Metabolism inSaccharomyces cerevisiae: the Prediction of the Behaviour of Mutants. Journal of Theoretical Biology, 1998, 191, 397-414.	1.7	28
113	Computational analysis of calcium transients in the intact rat heart; model identification. , 0, , .		1