Matthew G Vander Heiden

List of Publications by Year
in descending order

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136 papers	54,717 citations	7672 79 h-index	12638 137 g-index
158 all docs	158 docs citations	158 times ranked	66645 citing authors

#	Article	IF	Citations
1	Interactions with stromal cells promote a more oxidized cancer cell redox state in pancreatic tumors. Science Advances, 2022, 8, eabg6383.	4.7	20
2	Ketogenic HMGâ€CoA lyase and its product Î²â€hydroxybutyrate promote pancreatic cancer progression. EMBO Journal, 2022, 41, e110466.	3.5	24
3	Inhibiting GLUTtony in cancer. Cell Chemical Biology, 2022, 29, 353-355.	2.5	1
4	Regulation of chromatin accessibility by the histone chaperone CAF-1 sustains lineage fidelity. Nature Communications, 2022, 13, 2350.	5.8	8
5	Pyruvate Kinase M1 Suppresses Development and Progression of Prostate Adenocarcinoma. Cancer Research, 2022, 82, 2403-2416.	0.4	10
6	Cancer cells depend on environmental lipids for proliferation when electron acceptors are limited. Nature Metabolism, 2022, 4, 711-723.	5.1	29
7	The Impact of PIK3R1 Mutations and Insulinâ€“PI3Kâ€“Glycolytic Pathway Regulation in Prostate Cancer. Clinical Cancer Research, 2022, 28, 3603-3617.	3.2	7
8	Netrin G1 Promotes Pancreatic Tumorigenesis through Cancer-Associated Fibroblastâ€“Driven Nutritional Support and Immunosuppression. Cancer Discovery, 2021, 11, 446-479.	7.7	97
9	Arginase Therapy Combines Effectively with Immune Checkpoint Blockade or Agonist Anti-OX40 Immunotherapy to Control Tumor Growth. Cancer Immunology Research, 2021, 9, 415-429.	1.6	11
10	Increased demand for NAD+ relative to ATP drives aerobic glycolysis. Molecular Cell, 2021, 81, 691-707.e6.	4.5	232
11	Association of Prediagnostic Blood Metabolomics with Prostate Cancer Defined by ERG or PTEN Molecular Subtypes. Cancer Epidemiology Biomarkers and Prevention, 2021, 30, 1000-1008.	1.1	2
12	The metabolic landscape of RAS-driven cancers from biology to therapy. Nature Cancer, 2021, 2, 271-283.	5.7	139
13	Fatty acid synthesis is required for breast cancer brain metastasis. Nature Cancer, 2021, 2, 414-428.	5.7	147
14	Cell-programmed nutrient partitioning in the tumour microenvironment. Nature, 2021, 593, 282-288.	13.7	491
15	Pancreatic Î² cells put the glutamine engine in reverse. Cell Metabolism, 2021, 33, 702-704.	7.2	3
16	Differential Substrate Use in EGFâ€•and Oncogenic KRASâ€Stimulated Human Mammary Epithelial Cells. FEBS Journal, 2021, 288, 5629-5649.	2.2	4
17	Suppression of pancreatic ductal adenocarcinoma growth and metastasis by fibrillar collagens produced selectively by tumor cells. Nature Communications, 2021, 12, 2328.	5.8	45
18	Mitochondrial NADPH is a pro at Pro synthesis. Nature Metabolism, 2021, 3, 453-455.	5.1	2

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19	Metabolomics in cancer research and emerging applications in clinical oncology. Ca-A Cancer Journal for Clinicians, 2021, 71, 333-358.	157.7	267
20	The CAT-SIR is out of the bag: tumors prefer host rather than dietary nutrients. BMC Biology, 2021, 19, 92.	1.7	1
21	Hepcidin sequesters iron to sustain nucleotide metabolism and mitochondrial function in colorectal cancer epithelial cells. Nature Metabolism, 2021, 3, 969-982.	5.1	58
22	PKM1 Exerts Critical Roles in Cardiac Remodeling Under Pressure Overload in the Heart. Circulation, 2021, 144, 712-727.	1.6	23
23	Patient-Derived Xenografts to Study Cancer Metabolism: When Does X Mark the Spot?. Cancer Research, 2021, 81, 4399-4401.	0.4	0
24	Gene Expression Pathways in Prostate Tissue Associated with Vigorous Physical Activity in Prostate Cancer. Cancer Epidemiology Biomarkers and Prevention, 2021, 30, 751-756.	1.1	1
25	Low glycaemic diets alter lipid metabolism to influence tumour growth. Nature, 2021, 599, 302-307.	13.7	142
26	Methionine synthase is essential for cancer cell proliferation in physiological folate environments. Nature Metabolism, 2021, 3, 1500-1511.	5.1	26
27	Cancerâ€associatedÂmutations in human pyruvate kinase M2 impair enzyme activity. FEBS Letters, 2020, 594, 646-664.	1.3	15
28	Metabolism in the Tumor Microenvironment. Annual Review of Cancer Biology, 2020, 4, 17-40.	2.3	61
29	Monitoring and modeling of lymphocytic leukemia cell bioenergetics reveals decreased ATP synthesis during cell division. Nature Communications, 2020, 11, 4983.	5.8	19
30	MFSD7C switches mitochondrial ATP synthesis to thermogenesis in response to heme. Nature Communications, 2020, 11, 4837.	5.8	21
31	Deficiency of malate-aspartate shuttle component SLC25A12 induces pulmonary metastasis. Cancer & Metabolism, 2020, 8, 26.	2.4	11
32	Induction of a Timed Metabolic Collapse to Overcome Cancer Chemoresistance. Cell Metabolism, 2020, 32, 391-403.e6.	7.2	79
33	A metastasis map of human cancer cell lines. Nature, 2020, 588, 331-336.	13.7	214
34	REV1 inhibitor JH-RE-06 enhances tumor cell response to chemotherapy by triggering senescence hallmarks. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 28918-28921.	3.3	27
35	Limited Environmental Serine and Glycine Confer Brain Metastasis Sensitivity to PHGDH Inhibition. Cancer Discovery, 2020, 10, 1352-1373.	7.7	145
36	Keap1 mutation renders lung adenocarcinomas dependent on Slc33a1. Nature Cancer, 2020, 1, 589-602.	5.7	44

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37	A Metabolomics Analysis of Adiposity and Advanced Prostate Cancer Risk in the Health Professionals Follow-Up Study. Metabolites, 2020, 10, 99.	1.3	12
38	Emerging Roles for Branched-Chain Amino Acid Metabolism in Cancer. Cancer Cell, 2020, 37, 147-156.	7.7	233
39	Transcriptional activation of macropinocytosis by the Hippo pathway following nutrient limitation. Genes and Development, 2020, 34, 1253-1255.	2.7	2
40	Dissecting cell-type-specific metabolism in pancreatic ductal adenocarcinoma. ELife, 2020, 9, .	2.8	61
41	Increased PHGDH expression promotes aberrant melanin accumulation. BMC Cancer, 2019, 19, 723.	1.1	6
42	Identification of DHODH as a therapeutic target in small cell lung cancer. Science Translational Medicine, 2019, 11, .	5.8	89
43	Cellular redox state constrains serine synthesis and nucleotide production to impact cell proliferation. Nature Metabolism, 2019, 1, 861-867.	5.1	107
44	A framework for examining how diet impacts tumour metabolism. Nature Reviews Cancer, 2019, 19, 651-661.	12.8	87
45	Postdiagnosis Loss of Skeletal Muscle, but Not Adipose Tissue, Is Associated with Shorter Survival of Patients with Advanced Pancreatic Cancer. Cancer Epidemiology Biomarkers and Prevention, 2019, 28, 2062-2069.	1.1	26
46	Determinants of nutrient limitation in cancer. Critical Reviews in Biochemistry and Molecular Biology, 2019, 54, 193-207.	2.3	36
47	Phenotypic selection with an intrabody library reveals an anti-apoptotic function of PKM2 requiring Mitofusin-1. PLoS Biology, 2019, 17, e2004413.	2.6	14
48	Putting the K+ in K+aloric Restriction. Immunity, 2019, 50, 1129-1131.	6.6	4
49	Increased Serine Synthesis Provides an Advantage for Tumors Arising in Tissues Where Serine Levels Are Limiting. Cell Metabolism, 2019, 29, 1410-1421.e4.	7.2	168
50	Deoxycytidine Release from Pancreatic Stellate Cells Promotes Gemcitabine Resistance. Cancer Research, 2019, 79, 5723-5733.	0.4	90
51	Reactive metabolite production is a targetable liability of glycolytic metabolism in lung cancer. Nature Communications, 2019, 10, 5604.	5.8	45
52	Quantification of microenvironmental metabolites in murine cancers reveals determinants of tumor nutrient availability. ELife, 2019, 8, .	2.8	350
53	The redox requirements of proliferating mammalian cells. Journal of Biological Chemistry, 2018, 293, 7490-7498.	1.6	100
54	Molecular mechanisms of cell death: recommendations of the Nomenclature Committee on Cell Death 2018. Cell Death and Differentiation, 2018, 25, 486-541.	5.0	4,036

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55	Height, Obesity, and the Risk of TMPRSS2:ERG-Defined Prostate Cancer. Cancer Epidemiology Biomarkers and Prevention, 2018, 27, 193-200.	1.1	18
56	Lack of evidence for substrate channeling or flux between wildtype and mutant isocitrate dehydrogenase to produce the oncometabolite 2-hydroxyglutarate. Journal of Biological Chemistry, 2018, 293, 20051-20061.	1.6	11
57	PKM2 is not required for pancreatic ductal adenocarcinoma. Cancer & Metabolism, 2018, 6, 17.	2.4	26
58	Yap regulates glucose utilization and sustains nucleotide synthesis to enable organ growth. EMBO Journal, 2018, 37, .	3.5	73
59	Transaminase Inhibition by 2-Hydroxyglutarate Impairs Glutamate Biosynthesis and Redox Homeostasis in Glioma. Cell, 2018, 175, 101-116.e25.	13.5	234
60	Protocols for Studies on TMPRSS2/ERG in Prostate Cancer. Methods in Molecular Biology, 2018, 1786, 131-151.	0.4	3
61	The nutrient environment affects therapy. Science, 2018, 360, 962-963.	6.0	104
62	Aspartate is an endogenous metabolic limitation for tumour growth. Nature Cell Biology, 2018, 20, 782-788.	4.6	240
63	Serine Synthesis via PHGDH Is Essential for Heme Production in Endothelial Cells. Cell Metabolism, 2018, 28, 573-587.e13.	7.2	127
64	Isoform-specific deletion of PKM2 constrains tumor initiation in a mouse model of soft tissue sarcoma. Cancer & Metabolism, 2018, 6, 6.	2.4	24
65	Cytosolic Aspartate Availability Determines Cell Survival When Glutamine Is Limiting. Cell Metabolism, 2018, 28, 706-720.e6.	7.2	132
66	Microenvironmental regulation of cancer cell metabolism: implications for experimental design and translational studies. DMM Disease Models and Mechanisms, 2018, 11, .	1.2	96
67	Altered exocrine function can drive adipose wasting in early pancreatic cancer. Nature, 2018, 558, 600-604.	13.7	114
68	JAK2/IDH-mutantâ€“driven myeloproliferative neoplasm is sensitive to combined targeted inhibition. Journal of Clinical Investigation, 2018, 128, 789-804.	3.9	66
69	Endothelial Cells Get Î²-ox-ed In to Support Lymphangiogenesis. Developmental Cell, 2017, 40, 118-119.	3.1	4
70	Understanding the Intersections between Metabolism and Cancer Biology. Cell, 2017, 168, 657-669.	13.5	1,561
71	When cancer needs what's non-essential. Nature Cell Biology, 2017, 19, 418-420.	4.6	13
72	Biochemical Underpinnings of Immune Cell Metabolic Phenotypes. Immunity, 2017, 46, 703-713.	6.6	107

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73	Pyruvate Kinase Inhibits Proliferation during Postnatal Cerebellar Neurogenesis and Suppresses Medulloblastoma Formation. Cancer Research, 2017, 77, 3217-3230.	0.4	45
74	Direct evidence for cancer-cell-autonomous extracellular protein catabolism in pancreatic tumors. Nature Medicine, 2017, 23, 235-241.	15.2	263
75	Keap1 loss promotes Kras-driven lung cancer and results in dependence on glutaminolysis. Nature Medicine, 2017, 23, 1362-1368.	15.2	462
76	Targeting Metabolism for Cancer Therapy. Cell Chemical Biology, 2017, 24, 1161-1180.	2.5	677
77	Metabolism and Congenital Malformations â€" NADâ€™s Effects on Development. New England Journal of Medicine, 2017, 377, 509-511.	13.9	4
78	Collagen-derived proline promotes pancreatic ductal adenocarcinoma cell survival under nutrient limited conditions. Nature Communications, 2017, 8, 16031.	5.8	299
79	Nature and Nurture: What Determines Tumor Metabolic Phenotypes?. Cancer Research, 2017, 77, 3131-3134.	0.4	60
80	Environmental cystine drives glutamine anaplerosis and sensitizes cancer cells to glutaminase inhibition. ELife, 2017, 6, .	2.8	237
81	Activation of the NRF2 antioxidant program generates an imbalance in central carbon metabolism in cancer. ELife, 2017, 6, .	2.8	167
82	PKM2 is not required for colon cancer initiated by APC loss. Cancer & Metabolism, 2017, 5, 10.	2.4	28
83	Metabolomic Biomarkers of Prostate Cancer: Prediction, Diagnosis, Progression, Prognosis, and Recurrence. Cancer Epidemiology Biomarkers and Prevention, 2016, 25, 887-906.	1.1	98
84	A PHGDH inhibitor reveals coordination of serine synthesis and one-carbon unit fate. Nature Chemical Biology, 2016, 12, 452-458.	3.9	389
85	Germline loss of PKM2 promotes metabolic distress and hepatocellular carcinoma. Genes and Development, 2016, 30, 1020-1033.	2.7	122
86	Tissue of origin dictates branched-chain amino acid metabolism in mutant Kras -driven cancers. Science, 2016, 353, 1161-1165.	6.0	447
87	Altered metabolite levels in cancer: implications for tumour biology and cancer therapy. Nature Reviews Cancer, 2016, 16, 680-693.	12.8	306
88	Circadian Rhythm Disruption Promotes Lung Tumorigenesis. Cell Metabolism, 2016, 24, 324-331.	7.2	366
89	The importance of serine metabolism in cancer. Journal of Cell Biology, 2016, 214, 249-257.	2.3	299
90	Metabolic requirements for cancer cell proliferation. Cancer & Metabolism, 2016, 4, 16.	2.4	99

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91	Environment Dictates Dependence on Mitochondrial Complex I for NAD+ and Aspartate Production and Determines Cancer Cell Sensitivity to Metformin. Cell Metabolism, 2016, 24, 716-727.	7.2	269
92	<scp>PKM</scp> 2, cancer metabolism, and the road ahead. EMBO Reports, 2016, 17, 1721-1730.	2.0	384
93	Targeting MTHFD2 in acute myeloid leukemia. Journal of Experimental Medicine, 2016, 213, 1285-1306.	4.2	118
94	Circulating Metabolites and Survival Among Patients With Pancreatic Cancer. Journal of the National Cancer Institute, 2016, 108, djv409.	3.0	31
95	Biophysical changes reduce energetic demand in growth factorâ€“deprived lymphocytes. Journal of Cell Biology, 2016, 212, 439-447.	2.3	21
96	Environment Impacts the Metabolic Dependencies of Ras-Driven Non-Small Cell Lung Cancer. Cell Metabolism, 2016, 23, 517-528.	7.2	616
97	EGLN1 Inhibition and Rerouting of Î±-Ketoglutarate Suffice for Remote Ischemic Protection. Cell, 2016, 164, 884-895.	13.5	108
98	Amino Acids Rather than Glucose Account for the Majority of Cell Mass in Proliferating Mammalian Cells. Developmental Cell, 2016, 36, 540-549.	3.1	479
99	Lack of Evidence for PKM2 Protein Kinase Activity. Molecular Cell, 2015, 59, 850-857.	4.5	85
100	Human Pancreatic Cancer Tumors Are Nutrient Poor and Tumor Cells Actively Scavenge Extracellular Protein. Cancer Research, 2015, 75, 544-553.	0.4	673
101	Famine versus feast: understanding the metabolism of tumors in vivo. Trends in Biochemical Sciences, 2015, 40, 130-140.	3.7	150
102	A roadmap for interpreting 13 C metabolite labeling patterns from cells. Current Opinion in Biotechnology, 2015, 34, 189-201.	3.3	513
103	Supporting Aspartate Biosynthesis Is an Essential Function of Respiration in Proliferating Cells. Cell, 2015, 162, 552-563.	13.5	878
104	An epitope tag alters phosphoglycerate dehydrogenase structure and impairs ability to support cell proliferation. Cancer & Metabolism, 2015, 3, 5.	2.4	34
105	Antibody-Mediated Neutralization of Perfringolysin O for Intracellular Protein Delivery. Molecular Pharmaceutics, 2015, 12, 1992-2000.	2.3	13
106	SHMT2 drives glioma cell survival in ischaemia but imposes a dependence on glycine clearance. Nature, 2015, 520, 363-367.	13.7	303
107	Dysregulated metabolism contributes to oncogenesis. Seminars in Cancer Biology, 2015, 35, S129-S150.	4.3	225
108	Pyruvate kinase: Function, regulation and role in cancer. Seminars in Cell and Developmental Biology, 2015, 43, 43-51.	2.3	388

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109	Pyruvate Kinase Isoform Expression Alters Nucleotide Synthesis to Impact Cell Proliferation. Molecular Cell, 2015, 57, 95-107.	4.5	209
110	A DERL3-associated defect in the degradation of SLC2A1 mediates the Warburg effect. Nature Communications, 2014, 5, 3608.	5.8	94
111	Targetable Signaling Pathway Mutations Are Associated with Malignant Phenotype in IDH-Mutant Gliomas. Clinical Cancer Research, 2014, 20, 2898-2909.	3.2	146
112	Cell-State-Specific Metabolic Dependency in Hematopoiesis and Leukemogenesis. Cell, 2014, 158, 1309-1323.	13.5	289
113	Elevation of circulating branched-chain amino acids is an early event in human pancreatic adenocarcinoma development. Nature Medicine, 2014, 20, 1193-1198.	15.2	510
114	Tracing Compartmentalized NADPH Metabolism in the Cytosol and Mitochondria of Mammalian Cells. Molecular Cell, 2014, 55, 253-263.	4.5	477
115	PKM2 Isoform-Specific Deletion Reveals a Differential Requirement for Pyruvate Kinase in Tumor Cells. Cell, 2013, 155, 397-409.	13.5	429
116	Heterogeneity of tumor-induced gene expression changes in the human metabolic network. Nature Biotechnology, 2013, 31, 522-529.	9.4	381
117	Macropinocytosis of protein is an amino acid supply route in Ras-transformed cells. Nature, 2013, 497, 633-637.	13.7	1,316
118	Allosteric Regulation of PKM2 Allows Cellular Adaptation to Different Physiological States. Science Signaling, 2013, 6, pe7.	1.6	93
119	Exploiting tumor metabolism: challenges for clinical translation. Journal of Clinical Investigation, 2013, 123, 3648-3651.	3.9	64
120	Differential Dependence On Aerobic Glycolysis In Normal and Malignant Hematopoietic Stem and Progenitor Cells To Sustain Daughter Cell Production. Blood, 2013, 122, 793-793.	0.6	3
121	Reductive glutamine metabolism by IDH1 mediates lipogenesis under hypoxia. Nature, 2012, 481, 380-384.	13.7	1,470
122	Small Molecule Activation of PKM2 in Cancer Cells Induces Serine Auxotrophy. Chemistry and Biology, 2012, 19, 1187-1198.	6.2	149
123	Pyruvate kinase M2 activators promote tetramer formation and suppress tumorigenesis. Nature Chemical Biology, 2012, 8, 839-847.	3.9	614
124	Inhibition of Pyruvate Kinase M2 by Reactive Oxygen Species Contributes to Cellular Antioxidant Responses. Science, 2011, 334, 1278-1283.	6.0	984
125	Targeting cancer metabolism: a therapeutic window opens. Nature Reviews Drug Discovery, 2011, 10, 671-684.	21.5	1,227
126	Phosphoglycerate dehydrogenase diverts glycolytic flux and contributes to oncogenesis. Nature Genetics, 2011, 43, 869-874.	9.4	945

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127	Aerobic Glycolysis: Meeting the Metabolic Requirements of Cell Proliferation. Annual Review of Cell and Developmental Biology, 2011, 27, 441-464.	4.0	2,333
128	The alternative splicing repressors hnRNP A1/A2 and PTB influence pyruvate kinase isoform expression and cell metabolism. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 1894-1899.	3.3	351
129	Activation of a Metabolic Gene Regulatory Network Downstream of mTOR Complex 1. Molecular Cell, 2010, 39, 171-183.	4.5	1,598
130	Evidence for an Alternative Glycolytic Pathway in Rapidly Proliferating Cells. Science, 2010, 329, 1492-1499.	6.0	586
131	Cancer-associated IDH1 mutations produce 2-hydroxyglutarate. Nature, 2009, 462, 739-744.	13.7	3,315
132	Understanding the Warburg Effect: The Metabolic Requirements of Cell Proliferation. Science, 2009, 324, 1029-1033.	6.0	12,186
133	Tyrosine Phosphorylation Inhibits PKM2 to Promote the Warburg Effect and Tumor Growth. Science Signaling, 2009, 2, ra73.	1.6	632
134	Pyruvate kinase M2 is a phosphotyrosine-binding protein. Nature, 2008, 452, 181-186.	13.7	881
135	The M2 splice isoform of pyruvate kinase is important for cancer metabolism and tumour growth. Nature, 2008, 452, 230-233.	13.7	2,423
136	Growth Factors Can Influence Cell Growth and Survival through Effects on Glucose Metabolism. Molecular and Cellular Biology, 2001, 21, 5899-5912.	1.1	466