

Martin G. Frasch

List of Publications by Year in descending order

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110
papers

2,025
citations

257101

24
h-index

315357

38
g-index

129
all docs

129
docs citations

129
times ranked

2002
citing authors

#	ARTICLE	IF	CITATIONS
1	Psychosocial stress in pregnancy and preterm birth: associations and mechanisms. <i>Journal of Perinatal Medicine</i> , 2013, 41, 631-645.	0.6	217
2	Improving pregnancy outcomes in humans through studies in sheep. <i>American Journal of Physiology - Regulatory Integrative and Comparative Physiology</i> , 2018, 315, R1123-R1153.	0.9	111
3	Heart beat classification from single-lead ECG using the synchrosqueezing transform. <i>Physiological Measurement</i> , 2017, 38, 171-187.	1.2	61
4	Fetal body weight and the development of the control of the cardiovascular system in fetal sheep. <i>Journal of Physiology</i> , 2007, 579, 893-907.	1.3	53
5	Does heart rate variability reflect the systemic inflammatory response in a fetal sheep model of lipopolysaccharide-induced sepsis?. <i>Physiological Measurement</i> , 2015, 36, 2089-2102.	1.2	50
6	Vagus Nerve Stimulation for Treatment of Inflammation: Systematic Review of Animal Models and Clinical Studies. <i>Bioelectronic Medicine</i> , 2016, 3, 1-6.	1.0	49
7	Decreased neuroinflammation correlates to higher vagus nerve activity fluctuations in near-term ovine fetuses: a case for the afferent cholinergic anti-inflammatory pathway?. <i>Journal of Neuroinflammation</i> , 2016, 13, 103.	3.1	49
8	Fetal cholinergic anti-inflammatory pathway and necrotizing enterocolitis: the brain-gut connection begins in utero. <i>Frontiers in Integrative Neuroscience</i> , 2013, 7, 57.	1.0	45
9	Sampling rate of heart rate variability impacts the ability to detect acidemia in ovine fetuses near-term. <i>Frontiers in Pediatrics</i> , 2014, 2, 38.	0.9	45
10	Measures of acidosis with repetitive umbilical cord occlusions leading to fetal asphyxia in the near-term ovine fetus. <i>American Journal of Obstetrics and Gynecology</i> , 2009, 200, 200.e1-200.e7.	0.7	44
11	Systemic and cerebral inflammatory response to umbilical cord occlusions with worsening acidosis in the ovine fetus. <i>American Journal of Obstetrics and Gynecology</i> , 2010, 202, 82.e1-82.e9.	0.7	43
12	Fetal microglial phenotype in vitro carries memory of prior in vivo exposure to inflammation. <i>Frontiers in Cellular Neuroscience</i> , 2015, 9, 294.	1.8	43
13	Correlation of arterial fetal base deficit and lactate changes with severity of variable heart rate decelerations in the near-term ovine fetus. <i>American Journal of Obstetrics and Gynecology</i> , 2013, 208, 285.e1-285.e6.	0.7	37
14	A Review on the Vagus Nerve and Autonomic Nervous System During Fetal Development: Searching for Critical Windows. <i>Frontiers in Neuroscience</i> , 2021, 15, 721605.	1.4	37
15	Heart Rate Variability Analysis Allows Early Asphyxia Detection in Ovine Fetus. <i>Reproductive Sciences</i> , 2009, 16, 509-517.	1.1	35
16	Microglial memory of early life stress and inflammation: Susceptibility to neurodegeneration in adulthood. <i>Neuroscience and Biobehavioral Reviews</i> , 2020, 117, 232-242.	2.9	34
17	Acceleration and Deceleration Capacity of Fetal Heart Rate in an In-Vivo Sheep Model. <i>PLoS ONE</i> , 2014, 9, e104193.	1.1	34
18	Nonlinear properties of vagal and sympathetic modulations of heart rate variability in ovine fetus near term. <i>American Journal of Physiology - Regulatory Integrative and Comparative Physiology</i> , 2009, 296, R702-R707.	0.9	32

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19	Efficient Fetal-Maternal ECG Signal Separation from Two Channel Maternal Abdominal ECG via Diffusion-Based Channel Selection. <i>Frontiers in Physiology</i> , 2017, 8, 277.	1.3	32
20	Non-invasive biomarkers of fetal brain development reflecting prenatal stress: An integrative multi-scale multi-species perspective on data collection and analysis. <i>Neuroscience and Biobehavioral Reviews</i> , 2020, 117, 165-183.	2.9	31
21	Monitoring Fetal Electrocardiogram Activity during Labour for Predicting Worsening Acidemia: A Prospective Study in the Ovine Fetus Near Term. <i>PLoS ONE</i> , 2011, 6, e22100.	1.1	28
22	A Cross-Species Analysis of Animal Models for the Investigation of Preterm Birth Mechanisms. <i>Reproductive Sciences</i> , 2016, 23, 482-491.	1.1	28
23	Fetal heart rate variability responsiveness to maternal stress, non-invasively detected from maternal transabdominal ECG. <i>Archives of Gynecology and Obstetrics</i> , 2020, 301, 405-414.	0.8	26
24	First evidence that intrinsic fetal heart rate variability exists and is affected by hypoxic pregnancy. <i>Journal of Physiology</i> , 2020, 598, 249-263.	1.3	26
25	Can Monitoring Fetal Intestinal Inflammation Using Heart Rate Variability Analysis Signal Incipient Necrotizing Enterocolitis of the Neonate?. <i>Pediatric Critical Care Medicine</i> , 2016, 17, e165-e176.	0.2	24
26	$\hat{\alpha}7$ nicotinic acetylcholine receptor signaling modulates the inflammatory phenotype of fetal brain microglia: first evidence of interference by iron homeostasis. <i>Scientific Reports</i> , 2017, 7, 10645.	1.6	24
27	Temporal Patterns in Sheep Fetal Heart Rate Variability Correlate to Systemic Cytokine Inflammatory Response: A Methodological Exploration of Monitoring Potential Using Complex Signals Bioinformatics. <i>PLoS ONE</i> , 2016, 11, e0153515.	1.1	23
28	Theoretical Value of Deceleration Capacity Points to Deceleration Reserve of Fetal Heart Rate. <i>IEEE Transactions on Biomedical Engineering</i> , 2020, 67, 1176-1185.	2.5	22
29	Autonomic organization of respirocardial function in healthy human neonates in quiet and active sleep. <i>Early Human Development</i> , 2007, 83, 269-277.	0.8	21
30	Adaptive Brain Shut-Down Counteracts Neuroinflammation in the Near-Term Ovine Fetus. <i>Frontiers in Neurology</i> , 2014, 5, 110.	1.1	21
31	Validating phase relations between cardiac and breathing cycles during sleep. <i>IEEE Engineering in Medicine and Biology Magazine</i> , 2001, 20, 101-106.	1.1	20
32	Placental Vascular Calcification and Cardiovascular Health: It Is Time to Determine How Much of Maternal and Offspring Health Is Written in Stone. <i>Frontiers in Physiology</i> , 2018, 9, 1044.	1.3	20
33	Maturation changes and effects of chronic hypoxemia on electrocortical activity in the ovine fetus. <i>Brain Research</i> , 2011, 1402, 38-45.	1.1	19
34	Correlating multidimensional fetal heart rate variability analysis with acid-base balance at birth. <i>Physiological Measurement</i> , 2014, 35, L1-L12.	1.2	19
35	Adaptive shut-down of EEG activity predicts critical acidemia in the near-term ovine fetus. <i>Physiological Reports</i> , 2015, 3, e12435.	0.7	19
36	Saving the brain one heartbeat at a time. <i>Journal of Physiology</i> , 2018, 596, 5503-5504.	1.3	19

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37	Vagal contributions to fetal heart rate variability: an omics approach. <i>Physiological Measurement</i> , 2019, 40, 065004.	1.2	19
38	Sampling frequency of fetal heart rate impacts the ability to predict pH and BE at birth: a retrospective multi-cohort study. <i>Physiological Measurement</i> , 2015, 36, L1-L12.	1.2	18
39	±7 Nicotinic Acetylcholine Receptor Signaling Modulates Ovine Fetal Brain Astrocytes Transcriptome in Response to Endotoxin. <i>Frontiers in Immunology</i> , 2019, 10, 1063.	2.2	18
40	Detecting the signature of reticulothalamocortical communication in cerebrocortical electrical activity. <i>Clinical Neurophysiology</i> , 2007, 118, 1969-1979.	0.7	17
41	Impact of Ventilatory Modes on the Breathing Variability in Mechanically Ventilated Infants. <i>Frontiers in Pediatrics</i> , 2014, 2, 132.	0.9	17
42	Detection of maternal and fetal stress from the electrocardiogram with self-supervised representation learning. <i>Scientific Reports</i> , 2021, 11, 24146.	1.6	17
43	Ex Vivo Biomechanical Comparison of 4 Suture Materials for Laparoscopic Bladder Closure in the Horse. <i>Veterinary Surgery</i> , 2016, 45, 374-379.	0.5	16
44	Accelerated acidosis in response to variable fetal heart rate decelerations in chronically hypoxic ovine fetuses. <i>American Journal of Obstetrics and Gynecology</i> , 2016, 214, 270.e1-270.e8.	0.7	16
45	Online Detection of Fetal Acidemia during Labour by Testing Synchronization of EEG and Heart Rate: A Prospective Study in Fetal Sheep. <i>PLoS ONE</i> , 2014, 9, e108119.	1.1	16
46	A Doubly Stochastic Change Point Detection Algorithm for Noisy Biological Signals. <i>Frontiers in Physiology</i> , 2017, 8, 1112.	1.3	15
47	Fetal Cardiovascular Decompensation During Labor Predicted From the Individual Heart Rate Tracing: A Machine Learning Approach in Near-Term Fetal Sheep Model. <i>Frontiers in Pediatrics</i> , 2021, 9, 593889.	0.9	14
48	The Impact of Intermittent Umbilical Cord Occlusions on the Inflammatory Response in Pre-Term Fetal Sheep. <i>PLoS ONE</i> , 2012, 7, e39043.	1.1	13
49	Vagus Nerve Stimulation for Treatment of Inflammation: Systematic Review of Animal Models and Clinical Studies. <i>Bioelectronic Medicine</i> , 2016, 3, 1-6.	1.0	13
50	Maternal fetal stress and DNA methylation signatures in neonatal saliva: an epigenome-wide association study. <i>Clinical Epigenetics</i> , 2022, 14, .	1.8	13
51	Impact of Chronic Fetal Hypoxia and Inflammation on Cardiac Pacemaker Cell Development. <i>Cells</i> , 2020, 9, 733.	1.8	12
52	RNAseq profiling of primary microglia and astrocyte cultures in near-term ovine fetus: A glial in vivo-in vitro multi-hit paradigm in large mammalian brain. <i>Journal of Neuroscience Methods</i> , 2017, 276, 23-32.	1.3	11
53	Brief Report: Can a Composite Heart Rate Variability Biomarker Shed New Insights About Autism Spectrum Disorder in School-Aged Children?. <i>Journal of Autism and Developmental Disorders</i> , 2021, 51, 346-356.	1.7	11
54	Early Biomarkers and Intervention Programs for the Infant Exposed to Prenatal Stress. <i>Current Neuropharmacology</i> , 2022, 20, 94-106.	1.4	11

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55	Complexity of heart rate fluctuations in near-term sheep and human fetuses during sleep. <i>Biomedizinische Technik</i> , 2006, 51, 233-236.	0.9	10
56	Putative Role of AMPK in Fetal Adaptive Brain Shut-Down: Linking Metabolism and Inflammation in the Brain. <i>Frontiers in Neurology</i> , 2014, 5, 150.	1.1	10
57	Commentary: Computerised interpretation of fetal heart rate during labour (INFANT): a randomised controlled trial. <i>Frontiers in Physiology</i> , 2017, 8, 721.	1.3	10
58	Letter to the Editor: Mind the gap: epistemology of heart rate variability. <i>American Journal of Physiology - Regulatory Integrative and Comparative Physiology</i> , 2020, 319, R343-R344.	0.9	10
59	Machine learning model on heart rate variability metrics identifies asymptomatic toddlers exposed to zika virus during pregnancy. <i>Physiological Measurement</i> , 2021, 42, 055008.	1.2	10
60	Instrumentation of Near-term Fetal Sheep for Multivariate Chronic Non-anesthetized Recordings. <i>Journal of Visualized Experiments</i> , 2015, , e52581.	0.2	9
61	Sculpting the Sculptors: Methods for Studying the Fetal Cholinergic Signaling on Systems and Cellular Scales. <i>Methods in Molecular Biology</i> , 2018, 1781, 341-352.	0.4	9
62	Impact of ambient temperature on inflammation-induced encephalopathy in endotoxemic mice—role of phosphoinositide 3-kinase gamma. <i>Journal of Neuroinflammation</i> , 2020, 17, 292.	3.1	9
63	Distance to Healthy Metabolic and Cardiovascular Dynamics From Fetal Heart Rate Scale-Dependent Features in Pregnant Sheep Model of Human Labor Predicts the Evolution of Acidemia and Cardiovascular Decompensation. <i>Frontiers in Pediatrics</i> , 2021, 9, 660476.	0.9	9
64	The Ovine Fetal and Placental Inflammatory Response to Umbilical Cord Occlusions With Worsening Acidosis. <i>Reproductive Sciences</i> , 2015, 22, 1409-1420.	1.1	8
65	Mathematical Model of Cardiovascular and Metabolic Responses to Umbilical Cord Occlusions in Fetal Sheep. <i>Bulletin of Mathematical Biology</i> , 2015, 77, 2264-2293.	0.9	8
66	A Comparison of Five Algorithms for Fetal Magnetocardiography Signal Extraction. <i>Cardiovascular Engineering and Technology</i> , 2018, 9, 483-487.	0.7	8
67	Electrocortical activity in the near-term ovine fetus: Automated analysis using amplitude frequency components. <i>Brain Research</i> , 2011, 1402, 30-37.	1.1	7
68	Time scales of autonomic information flow in near-term fetal sheep. <i>Frontiers in Physiology</i> , 2012, 3, 378.	1.3	7
69	Analysis of fetal heart rate variability in frequency domain: methodical considerations. <i>Experimental Physiology</i> , 2014, 99, 466-467.	0.9	7
70	Perinatal Psychoneuroimmunology: Protocols for the Study of Prenatal Stress and Its Effects on Fetal and Postnatal Brain Development. <i>Methods in Molecular Biology</i> , 2018, 1781, 353-376.	0.4	7
71	Letter to Editor: An Argument for a Universal Health Record. <i>Journal of Biomedical Informatics</i> , 2022, 129, 104061.	2.5	7
72	Behavioural state linkage in the ovine fetus near term. <i>Brain Research</i> , 2009, 1250, 149-156.	1.1	6

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73	Unexpected sawtooth artifact in beat-to-beat pulse transit time measured from patient monitor data. PLoS ONE, 2019, 14, e0221319.	1.1	6
74	Recording and manipulation of vagus nerve electrical activity in chronically instrumented unanesthetized near term fetal sheep. Journal of Neuroscience Methods, 2021, 360, 109257.	1.3	6
75	Detection of Preventable Fetal Distress During Labor From Scanned Cardiotocogram Tracings Using Deep Learning. Frontiers in Pediatrics, 2021, 9, 736834.	0.9	6
76	Brain Injury and Inflammatory Response to Umbilical Cord Occlusions Is Limited With Worsening Acidosis in the Near-Term Ovine Fetus. Reproductive Sciences, 2016, 23, 858-870.	1.1	5
77	Location, Location, Location: Appraising the Pleiotropic Function of HMGB1 in Fetal Brain. Journal of Neuropathology and Experimental Neurology, 2017, 76, 332-334.	0.9	5
78	Relationship Between Deceleration Morphology and Phase Rectified Signal Averaging-Based Parameters During Labor. Frontiers in Medicine, 2021, 8, 626450.	1.2	5
79	Heart Rate as a Non-Invasive Biomarker of Inflammation: Implications for Digital Health. Frontiers in Immunology, 2022, 13, .	2.2	5
80	Comprehensive HRV estimation pipeline in Python using Neurokit2: Application to sleep physiology. MethodsX, 2022, 9, 101782.	0.7	5
81	Validation of spontaneous assessment of baroreceptor reflex sensitivity and its relation to heart rate variability in the ovine fetus pre- and near-term. Canadian Journal of Physiology and Pharmacology, 2009, 87, 736-742.	0.7	4
82	Fetal cerebral perfusion is better than fetal acidemia for the prediction of brain injury and might be assessable by sophisticated fetal heart rate metrics. BJOG: an International Journal of Obstetrics and Gynaecology, 2021, 128, 1443-1443.	1.1	4
83	Stereotactic approach and electrophysiological characterization of thalamic reticular and dorsolateral nuclei of the juvenile pig. Acta Neurobiologiae Experimentalis, 2006, 66, 43-54.	0.4	4
84	Wearable technology for health monitoring during pregnancy: an observational cross-sectional survey study. Archives of Gynecology and Obstetrics, 0, , .	0.8	4
85	Letter to the Editor. Reproductive Sciences, 2008, 15, 863-864.	1.1	3
86	Development of somatosensory-evoked potentials in foetal sheep: effects of betamethasone. Acta Physiologica, 2017, 220, 137-149.	1.8	3
87	Multimodal pathophysiological dataset of gradual cerebral ischemia in a cohort of juvenile pigs. Scientific Data, 2021, 8, 4.	2.4	3
88	Bezold-Jarisch reflex in the near-term fetus during labor: a matter of time. American Journal of Physiology - Regulatory Integrative and Comparative Physiology, 2021, 320, R715-R715.	0.9	3
89	Effect of maternal ketoacidosis on the ovine fetus. Canadian Veterinary Journal, 2015, 56, 863-6.	0.0	3
90	Association of Atypical Decelerations With Acidemia. Obstetrics and Gynecology, 2013, 121, 1107-1108.	1.2	2

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91	Respiratory Variability during NAVA Ventilation in Children: Authors' Reply. <i>Frontiers in Pediatrics</i> , 2015, 3, 13.	0.9	2
92	Animal Models for the Study of Neonatal Disease. , 2017, , 805-837.		2
93	Animal Models of Fetal Programming: Focus on Chronic Maternal Stress During Pregnancy and Neurodevelopment. , 2017, , 839-849.		2
94	Perceived maternal stress during pregnancy affects newborn development in a low-income cohort of pregnant women.. <i>Placenta</i> , 2019, 83, e74-e75.	0.7	2
95	Heart rate variability in relation to stress in the Asian elephant (<i>Elephas maximus</i>). <i>Canadian Veterinary Journal</i> , 2016, 57, 289-92.	0.0	2
96	Prenatal stress perturbs fetal iron homeostasis in a sex specific manner. <i>Scientific Reports</i> , 2022, 12, .	1.6	2
97	ISDN2014_0345: Effects of vagotomy on systemic and regional inflammation in ovine fetus near term. <i>International Journal of Developmental Neuroscience</i> , 2015, 47, 104-104.	0.7	1
98	ISDN2014_0340: <i>In vitro</i> pro-inflammatory phenotype of fetal brain microglia is potentiated by an <i>in vivo</i> pre-exposure to inflammation: A prospective study in ovine fetus near term. <i>International Journal of Developmental Neuroscience</i> , 2015, 47, 103-103.	0.7	1
99	Monitoring Fetal Electroencephalogram Intrapartum: A Systematic Literature Review. <i>Frontiers in Pediatrics</i> , 2020, 8, 584.	0.9	1
100	Heart during acidosis: Etiology and early detection of cardiac dysfunction. <i>EClinicalMedicine</i> , 2021, 37, 100994.	3.2	1
101	Regularity of Fetal HRV Changes in an In:vivo Sheep Model of Labor. , 0, , .		1
102	517: Ovine nucleated red blood cell count as a marker for antepartum asphyxia. <i>American Journal of Obstetrics and Gynecology</i> , 2007, 197, S151.	0.7	0
103	Editorial: Perinatology in the Era of Big Data and Nanoparticles. <i>Frontiers in Pediatrics</i> , 2015, 3, 95.	0.9	0
104	Value of base deficit. <i>American Journal of Obstetrics and Gynecology</i> , 2016, 214, 416-417.	0.7	0
105	Non-invasive acquisition of fetal ECG from the maternal xyphoid process: a feasibility study in pregnant sheep and a call for open data sets. <i>Physiological Measurement</i> , 2018, 39, 035005.	1.2	0
106	#29 Heart rate variability monitoring identifies asymptomatic toddlers exposed to Zika virus during pregnancy. <i>Reproductive Toxicology</i> , 2019, 88, 142.	1.3	0
107	Update to the dataset of cerebral ischemia in juvenile pigs with evoked potentials. <i>Scientific Data</i> , 2021, 8, 248.	2.4	0
108	A mathematical model of nutrient delivery during labour: predicting fetal distress due to severe acidemia. <i>FASEB Journal</i> , 2013, 27, 1217.16.	0.2	0

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109	Modeling fetal heart rate decelerations and partial oxygen pressure changes in response to repeated umbilical cord occlusions (1180.3). FASEB Journal, 2014, 28, 1180.3.	0.2	0
110	Manipulation of $\alpha 7$ nicotinic acetylcholine receptor signaling in primary ovine fetal microglia cultures. Protocol Exchange, 0, , .	0.3	0