David Sedmera

List of Publications by Citations

144 papers	4,098 citations	35 h-index	61 g-index
156 ext. papers	4,710 ext. citations	4.1 avg, IF	5.19 L-index

#	Paper	IF	Citations
144	Developmental patterning of the myocardium. *The Anatomical Record*, **2000**, 258, 319-37		412
143	Structure and function of the developing zebrafish heart. *The Anatomical Record*, **2000**, 260, 148-57		245
142	Remodeling of chick embryonic ventricular myoarchitecture under experimentally changed loading conditions. *The Anatomical Record*, **1999**, 254, 238-52		198
141	Developmental anatomy of the heart: a tale of mice and man. *Physiological Genomics*, **2003**, 15, 165-76	3.6	169
140	Hemodynamics is a key epigenetic factor in development of the cardiac conduction system. *Circulation Research*, **2003**, 93, 77-85	15.7	161
139	Functional and morphological evidence for a ventricular conduction system in zebrafish and Xenopus hearts. *American Journal of Physiology - Heart and Circulatory Physiology*, **2003**, 284, H1152-60	5.2	146
138	Transitions in early embryonic atrioventricular valvular function correspond with changes in cushion biomechanics that are predictable by tissue composition. *Circulation Research*, **2007**, 100, 1503-11	15.7	122
137	Increased ventricular preload is compensated by myocyte proliferation in normal and hypoplastic fetal chick left ventricle. *Circulation Research*, **2007**, 100, 1363-70	15.7	107
136	Cellular changes in experimental left heart hypoplasia. *The Anatomical Record*, **2002**, 267, 137-45		98
135	Developmental changes in the myocardial architecture of the chick. *The Anatomical Record*, **1997**, 248, 421-32		91
134	Spatiotemporal pattern of commitment to slowed proliferation in the embryonic mouse heart indicates progressive differentiation of the cardiac conduction system. *The Anatomical Record*, **2003**, 274, 773-7		88
133	Congenital coronary artery anomalies: a bridge from embryology to anatomy and pathophysiology--a position statement of the development, anatomy, and pathology ESC Working Group. *Cardiovascular Research*, **2016**, 109, 204-16	9.9	85
132	Hemodynamic-dependent patterning of endothelin converting enzyme 1 expression and differentiation of impulse-conducting Purkinje fibers in the embryonic heart. *Development (Cambridge)*, **2004**, 131, 581-92	6.6	83
131	Development of the cardiac pacemaking and conduction system. *Birth Defects Research Part C: Embryo Today Reviews*, **2003**, 69, 46-57		82
130	High-frequency ultrasonographic imaging of avian cardiovascular development. *Developmental Dynamics*, **2007**, 236, 3503-13	2.9	77
129	OPTIMISATION OF THE FORMATION AND DISTRIBUTION OF PROTOPORPHYRIN IX IN THE UROTHELIUM: AN IN VITRO APPROACH. *Journal of Urology*, **1999**, 162, 546-552	2.5	76
128	Myocyte proliferation in the developing heart. *Developmental Dynamics*, **2011**, 240, 1322-34	2.9	64

127	Cardiac neural crest ablation inhibits compaction and electrical function of conduction system bundles. *American Journal of Physiology - Heart and Circulatory Physiology*, **2007**, 292, H1291-300	5.2	56
126	Quantitative volumetric analysis of cardiac morphogenesis assessed through micro-computed tomography. *Developmental Dynamics*, **2007**, 236, 802-9	2.9	56
125	Embryogenesis of the heart muscle. *Heart Failure Clinics*, **2008**, 4, 235-45	3.3	55
124	Comparison of different tissue clearing methods and 3D imaging techniques for visualization of GFP-expressing mouse embryos and embryonic hearts. *Histochemistry and Cell Biology*, **2016**, 146, 141-52	2.4	54
123	Function and form in the developing cardiovascular system. *Cardiovascular Research*, **2011**, 91, 252-9	9.9	51
122	Developmental transitions in electrical activation patterns in chick embryonic heart. *The Anatomical Record*, **2004**, 280, 1001-9		49
121	Benzo[A]pyrene-induced oral carcinogenesis and chemoprevention: studies in bioengineered human tissue. *Drug Metabolism and Disposition*, **2006**, 34, 346-50	4	48
120	Confocal imaging of the embryonic heart: how deep?. *Microscopy and Microanalysis*, **2005**, 11, 216-23	0.5	45
119	Metabolic characterization of volume overload heart failure due to aorto-caval fistula in rats. *Molecular and Cellular Biochemistry*, **2011**, 354, 83-96	4.2	44
118	Current issues and perspectives in hypoplasia of the left heart. *Cardiology in the Young*, **2005**, 15, 56-72	1	44
117	Effect of metformin therapy on cardiac function and survival in a volume-overload model of heart failure in rats. *Clinical Science*, **2011**, 121, 29-41	6.5	43
116	Pitx2 confers left morphological, molecular, and functional identity to the sinus venosus myocardium. *Cardiovascular Research*, **2012**, 93, 291-301	9.9	40
115	Pressure overload alters stress-strain properties of the developing chick heart. *American Journal of Physiology - Heart and Circulatory Physiology*, **2003**, 285, H1849-56	5.2	39
114	Developmental changes in cardiac recovery from anoxia-reoxygenation. *American Journal of Physiology - Regulatory Integrative and Comparative Physiology*, **2002**, 283, R379-88	3.2	39
113	Native T1 Relaxation Time and Extracellular Volume Fraction as Accurate Markers of Diffuse Myocardial Fibrosis in Heart Valve Disease - Comparison With Targeted Left Ventricular Myocardial Biopsy. *Circulation Journal*, **2016**, 80, 1202-9	2.9	38
112	Identification of a hybrid myocardial zone in the mammalian heart after birth. *Nature Communications*, **2017**, 8, 87	17.4	38
111	A quantitative study of the ventricular myoarchitecture in the stage 21-29 chick embryo following decreased loading. *European Journal of Morphology*, **1998**, 36, 105-19		37
110	Increased susceptibility of HIF-1β heterozygous-null mice to cardiovascular malformations associated with maternal diabetes. *Journal of Molecular and Cellular Cardiology*, **2013**, 60, 129-41	5.8	36

109	The effect of connexin40 deficiency on ventricular conduction system function during development. *Cardiovascular Research*, **2012**, 95, 469-79	9.9	33
108	Abnormal myocardial and coronary vasculature development in experimental hypoxia. *Anatomical Record*, **2008**, 291, 1187-99	2.1	33
107	Blood-borne stem cells differentiate into vascular and cardiac lineages during normal development. *Stem Cells and Development*, **2006**, 15, 17-28	4.4	33
106	Trabeculation in the embryonic heart. *BioEssays*, **1996**, 18, 607	4.1	33
105	Form follows function: developmental and physiological view on ventricular myocardial architecture. *European Journal of Cardio-thoracic Surgery*, **2005**, 28, 526-8	3	32
104	Effect of increased pressure loading on heart growth in neonatal rats. *Journal of Molecular and Cellular Cardiology*, **2003**, 35, 301-9	5.8	31
103	Wnt11 and Wnt7a are up-regulated in association with differentiation of cardiac conduction cells in vitro and in vivo. *Developmental Dynamics*, **2003**, 227, 536-43	2.9	30
102	Changes in activation sequence of embryonic chick atria correlate with developing myocardial architecture. *American Journal of Physiology - Heart and Circulatory Physiology*, **2006**, 291, H1646-52	5.2	29
101	Optical mapping of electrical activation in the developing heart. *Microscopy and Microanalysis*, **2005** , 11, 209-15	0.5	29
100	Specialized impulse conduction pathway in the alligator heart. *ELife*, **2018**, 7,	8.9	28
99	On the development of Cetacean extremities: I. Hind limb rudimentation in the Spotted dolphin (Stenella attenuata). *European Journal of Morphology*, **1997**, 35, 25-30		28
98	HIF-1 is required for development of the sympathetic nervous system. *Proceedings of the National Academy of Sciences of the United States of America*, **2019**, 116, 13414-13423	11.5	27
97	Proteomic and transcriptomic analysis of heart failure due to volume overload in a rat aorto-caval fistula model provides support for new potential therapeutic targets - monoamine oxidase A and transglutaminase 2. *Proteome Science*, **2011**, 9, 69	2.6	26
96	Effects of mechanical loading on early conduction system differentiation in the chick. *American Journal of Physiology - Heart and Circulatory Physiology*, **2010**, 298, H1571-6	5.2	24
95	Patterns of muscular strain in the embryonic heart wall. *Developmental Dynamics*, **2009**, 238, 1535-46	2.9	23
94	Cardiac expression patterns of endothelin-converting enzyme (ECE): implications for conduction system development. *Developmental Dynamics*, **2008**, 237, 1746-53	2.9	22
93	Heart rate changes mediate the embryotoxic effect of antiarrhythmic drugs in the chick embryo. *American Journal of Physiology - Heart and Circulatory Physiology*, **2013**, 304, H895-902	5.2	20
92	Myocardial morphological characteristics and proarrhythmic substrate in the rat model of heart failure due to chronic volume overload. *Anatomical Record*, **2011**, 294, 102-11	2.1	20

91	Knockout of the neural and heart expressed gene HF-1b results in apical deficits of ventricular structure and activation. *Cardiovascular Research*, **2005**, 67, 548-60	9.9	20
90	On the development of Cetacean extremities: II. Morphogenesis and histogenesis of the flippers in the spotted dolphin (Stenella attenuata). *European Journal of Morphology*, **1997**, 35, 117-23		20
89	Deletion of a conserved noncoding sequence in Plzf intron leads to Plzf down-regulation in limb bud and polydactyly in the rat. *Developmental Dynamics*, **2009**, 238, 673-84	2.9	19
88	Multiple Roles of Pitx2 in Cardiac Development and Disease. *Journal of Cardiovascular Development and Disease*, **2017**, 4,	4.2	18
87	Knockout of Tmem70 alters biogenesis of ATP synthase and leads to embryonal lethality in mice. *Human Molecular Genetics*, **2016**, 25, 4674-4685	5.6	15
86	Changes in Myocardial Composition and Conduction Properties in Rat Heart Failure Model Induced by Chronic Volume Overload. *Frontiers in Physiology*, **2016**, 7, 367	4.6	15
85	Fibroblast Growth Factor-2 regulates proliferation of cardiac myocytes in normal and hypoplastic left ventricles in the developing chick. *Cardiology in the Young*, **2009**, 19, 159-69	1	14
84	Pacing-induced ventricular remodeling in the chick embryonic heart. *Pediatric Research*, **1999**, 45, 845-52	3.2	14
83	Heart development in the spotted dolphin (Stenella attenuata). *The Anatomical Record*, **2003**, 273, 687-99		13
82	Epoxyeicosatrienoic acid analog EET-B attenuates post-myocardial infarction remodeling in spontaneously hypertensive rats. *Clinical Science*, **2019**, 133, 939-951	6.5	12
81	Infarct size-limiting effect of epoxyeicosatrienoic acid analog EET-B is mediated by hypoxia-inducible factor-1β via downregulation of prolyl hydroxylase 3. *American Journal of Physiology - Heart and Circulatory Physiology*, **2018**, 315, H1148-H1158	5.2	12
80	Adverse effects of Hif1a mutation and maternal diabetes on the offspring heart. *Cardiovascular Diabetology*, **2018**, 17, 68	8.7	12
79	The role of connexin40 in developing atrial conduction. *FEBS Letters*, **2014**, 588, 1465-9	3.8	12
78	His-Purkinje Lineages and Development. *Novartis Foundation Symposium*, **2008**, 110-124		12
77	Endocardial Fibroelastosis is Secondary to Hemodynamic Alterations in the Chick Embryonic Model of Hypoplastic Left Heart Syndrome. *Developmental Dynamics*, **2018**, 247, 509-520	2.9	11
76	Partial deficiency of HIF-1β stimulates pathological cardiac changes in streptozotocin-induced diabetic mice. *BMC Endocrine Disorders*, **2014**, 14, 11	3.3	11
75	Stress and strain adaptation in load-dependent remodeling of the embryonic left ventricle. *Biomechanics and Modeling in Mechanobiology*, **2013**, 12, 1037-51	3.8	11
74	Developmental determinants of cardiac sensitivity to hypoxia. *Canadian Journal of Physiology and Pharmacology*, **2014**, 92, 566-74	2.4	11

73	The Oldest, Toughest Cells in the Heart. *Novartis Foundation Symposium*, **2008**, 157-176		11
72	Preclinical alternative model for analysis of porous scaffold biocompatibility in bone tissue engineering. *ALTEX: Alternatives To Animal Experimentation*, **2019**, 36, 121-130	4.3	11
71	Developmental mechanisms driving complex tooth shape in reptiles. *Developmental Dynamics*, **2020**, 249, 441-464	2.9	11
70	Novel approaches to study coronary vasculature development in mice. *Developmental Dynamics*, **2018**, 247, 1018-1027	2.9	11
69	His-Purkinje lineages and development. *Novartis Foundation Symposium*, **2003**, 250, 110-22; discussion 122-4, 276-9		10
68	Identification of the building blocks of ventricular septation in monitor lizards (Varanidae). *Development (Cambridge)*, **2019**, 146,	6.6	9
67	Bendiocarb effect on liver and central nervous system in the chick embryo. *Journal of Environmental Science and Health - Part B Pesticides, Food Contaminants, and Agricultural Wastes*, **2009**, 44, 383-8	2.2	9
66	Trabecular Architecture Determines Impulse Propagation Through the Early Embryonic Mouse Heart. *Frontiers in Physiology*, **2018**, 9, 1876	4.6	8
65	Relative position of the atrioventricular canal determines the electrical activation of developing reptile ventricles. *Journal of Experimental Biology*, **2018**, 221,	3	8
64	Studying dynamic events in the developing myocardium. *Progress in Biophysics and Molecular Biology*, **2014**, 115, 261-9	4.7	8
63	The chick embryo heart as an experimental setup for the assessment of myocardial remodeling induced by pacing. *PACE - Pacing and Clinical Electrophysiology*, **1999**, 22, 776-82	1.6	8
62	Acute temperature effects on function of the chick embryonic heart. *Acta Physiologica*, **2016**, 217, 276-86	5.6	8
61	Arrhythmias in the developing heart. *Acta Physiologica*, **2015**, 213, 303-20	5.6	7
60	HNK-1 in Morphological Study of Development of the Cardiac Conduction System in Selected Groups of Sauropsida. *Anatomical Record*, **2019**, 302, 69-82	2.1	7
59	Erbb2 is required for cardiac atrial electrical activity during development. *PLoS ONE*, **2014**, 9, e107041	3.7	6
58	Pacing redistributes glycogen within the developing myocardium. *Journal of Molecular and Cellular Cardiology*, **2001**, 33, 513-20	5.8	6
57	Morphometric alterations, steatosis, fibrosis and active caspase-3 detection in carbamate bendiocarb treated rabbit liver. *Environmental Toxicology*, **2015**, 30, 212-22	4.2	5
56	Physiological role of FGF signaling in growth and remodeling of developing cardiovascular system. *Physiological Research*, **2016**, 65, 425-35	2.1	5

55	Analysis of Siamese Crocodile (Crocodylus siamensis) Eggshell Proteome. *Protein Journal*, **2018**, 37, 21-37	3.9	5
54	The formation of the atrioventricular conduction axis is linked in development to ventricular septation. *Journal of Experimental Biology*, **2020**, 223,	3	5
53	Apoptosis and epicardial contributions act as complementary factors in remodeling of the atrioventricular canal myocardium and atrioventricular conduction patterns in the embryonic chick heart. *Developmental Dynamics*, **2018**, 247, 1033-1042	2.9	5
52	Adenylyl cyclase signaling in the developing chick heart: the deranging effect of antiarrhythmic drugs. *BioMed Research International*, **2014**, 2014, 463123	3	4
51	Functional suppression of Kcnq1 leads to early sodium channel remodelling and cardiac conduction system dysmorphogenesis. *Cardiovascular Research*, **2013**, 98, 504-14	9.9	4
50	Poster session 3. *Cardiovascular Research*, **2012**, 93, S92-S127	9.9	4
49	Tissue clearing and imaging methods for cardiovascular development. *IScience*, **2021**, 24, 102387	6.1	4
48	Ontogenesis of Myocardial Function **2012**, 147-175		4
47	Proteomic analysis of cardiac ventricles: baso-apical differences. *Molecular and Cellular Biochemistry* , **2018**, 445, 211-219	4.2	3
46	New Imaging Markers of Clinical Outcome in Asymptomatic Patients with Severe Aortic Regurgitation. *Journal of Clinical Medicine*, **2019**, 8,	5.1	3
45	Development of cardiac conduction system in mammals with a focus on the anatomical, functional and medical/genetical aspects. *Journal of Applied Biomedicine*, **2007**, 5, 115-123	0.6	3
44	PHB/CHIT Scaffold as a Promising Biopolymer in the Treatment of Osteochondral Defects-An Experimental Animal Study. *Polymers*, **2021**, 13,	4.5	3
43	The oldest, toughest cells in the heart. *Novartis Foundation Symposium*, **2003**, 250, 157-74; discussion 174-6, 276-9		3
42	Factors in ventricular and atrioventricular valve growth: An embryologist@ perspective. *Progress in Pediatric Cardiology*, **2010**, 29, 11-14	0.4	2
41	SEM and image analysis in quantitative evaluation of embryonic myocardial architecture. *Biology of the Cell*, **1995**, 84, 227-227	3.5	2
40	What Is the Optimal Light Source for Optical Mapping Using Voltage- and Calcium-Sensitive Dyes?. *Physiological Research*, **2020**, 69, 599-607	2.1	2
39	The role of cell death in limb development of rats manifesting Lx allele on different genetic backgrounds. *European Journal of Morphology*, **1998**, 36, 173-81		2
38	Gap Junctional Communication via Connexin43 between Purkinje Fibers and Working Myocytes Explains the Epicardial Activation Pattern in the Postnatal Mouse Left Ventricle. *International Journal of Molecular Sciences*, **2021**, 22,	6.3	2

37	Prenatal Adaptations to Overload **2013**, 41-57		2
36	Coating Ti6Al4V implants with nanocrystalline diamond functionalized with BMP-7 promotes extracellular matrix mineralization in vitro and faster osseointegration in vivo.. *Scientific Reports*, **2022**, 12, 5264	4.9	2
35	Ossification Pattern in Forelimbs of the Siamese Crocodile (Crocodylus siamensis): Similarity in Ontogeny of Carpus Among Crocodylian Species. *Anatomical Record*, **2018**, 301, 1159-1168	2.1	1
34	Hemodynamics During Development and Postnatal Life **2016**, 97-107		1
33	Pathways to embryonic heart failure. *American Journal of Physiology - Heart and Circulatory Physiology*, **2009**, 297, H1578-9	5.2	1
32	Chick development and high dose of bendiocarb. *Journal of Environmental Science and Health - Part A Toxic/Hazardous Substances and Environmental Engineering*, **2012**, 47, 1312-8	2.3	1
31	Letter by Gourdie and Sedmera regarding article, "abnormal conduction and morphology in the atrioventricular node of mice with atrioventricular canal-targeted deletion of Alk3/Bmpr1a receptor". *Circulation*, **2008**, 118, e106; author reply e107	16.7	1
30	Proliferative Responses to Myocardial Remodeling in the Developing Heart **2007**, 47-51		1
29	Regulation of Embryonic Cardiac Wall Growth and Vascularization by FGF-2. *FASEB Journal*, **2009**, 23, 642.3	0.9	1
28	Low incidence of atrial septal defects in nonmammalian vertebrates. *Evolution & Development*, **2020**, 22, 241-256	2.6	1
27	Visualization of GFP mouse embryos and embryonic hearts using various tissue clearing methods and 3D imaging modalities **2016**, 256-257		1
26	The Tale-Tell Heart: Evolutionary tetrapod shift from aquatic to terrestrial life-style reflected in heart changes in axolotl (Ambystoma mexicanum). *Developmental Dynamics*, **2021**,	2.9	1
25	Developmental patterning of the myocardium		1
24	Abnormal Myocardial and Coronary Vasculature Development in Experimental Hypoxia. *Anatomical Record*, **2008**, 291, spc1-spc1	2.1	0
23	Chick embryonic model of hypoplastic left heart syndrome: endocardial fibroelastosis. *European Heart Journal*, **2013**, 34, P1443-P1443	9.5	
22	Induction and Patterning of the Impulse Conducting Purkinje Fiber Network **2007**, 91-94		
21	Quantitative volumetric analysis of cardiac morphogenesis assessed through micro-computed tomography. *Developmental Dynamics*, **2007**, 236, spc1-spc1	2.9	
20	Cardiac Development 2007 Update. *Developmental Dynamics*, **2007**, 236, 3571-3572	2.9	

19	3d Reconstruction and Nonlinear Finite Element Analysis of the Embryonic Left Ventricle **2007**, 253	
18	Does Neural Crest Ablation Delay or Inhibit Maturation of the Conduction System of the Chick Embryonic Heart?. *Microscopy and Microanalysis*, **2004**, 10, 178-179	0.5
17	Volumetric Imaging of the Developing Heart. *Microscopy and Microanalysis*, **2004**, 10, 1384-1385	0.5
16	Optical Mapping of Electrical Activation in Developing Heart. *Microscopy and Microanalysis*, **2004**, 10, 198-199	0.5
15	Topological Segmentation and Smoothing of Discrete Curve Skeletons **2005**, 389-409	
14	Abnormal coronary tree development in embryonic hypoxia leads to heart failure and embryonic lethality. *FASEB Journal*, **2007**, 21, A974	0.9
13	Cardiac expression patterns of endothelin-converting enzyme (ECE) suggest a role of endothelin signaling in conduction system development. *FASEB Journal*, **2007**, 21, A201	0.9
12	Reverse endoventricular artificial obturator in tricuspid valve position. Experimental feasibility research study. *Physiological Research*, **2014**, 63, 157-65	2.1
11	Growth Dynamics and Mononucleation of the Ventricular Conduction System. *FASEB Journal*, **2015**, 29, 557.2	0.9
10	Effect of Hypoxia on Gene Expression in the Chick Embryonic Heart. *FASEB Journal*, **2015**, 29, 557.5	0.9
9	Development of the Ventricular Conduction System of the Crocodilian Heart. *FASEB Journal*, **2015**, 29, 557.6	0.9
8	Temperature Effects on the Chick Embryonic Heart Function. *FASEB Journal*, **2015**, 29, 1042.5	0.9
7	MOLECULAR ANALYSIS OF NORMAL AND HYPOPLASTIC CHICK EMBRYONIC VENTRICLES. *FASEB Journal*, **2010**, 24, lb15	0.9
6	Functionality of bundle branches in developing hearts of Cx40 deficient mice. *FASEB Journal*, **2010**, 24, 451.2	0.9
5	Cell death in the atrioventricular canal myocardium determines ventricular activation patterns. *FASEB Journal*, **2011**, 25, lb14	0.9
4	IS EMBRYONIC PRESSURE OVERLOAD RESPONSIBLE FOR CAUSING ENDOCARDIAL FIBROLASTOSIS?. *FASEB Journal*, **2012**, 26, 726.13	0.9
3	FGF signaling is involved in physiological adaptation to pressure overload in developing heart. *FASEB Journal*, **2012**, 26, 15.1	0.9
2	ENDOCARDIAL FIBROLASTOSIS IN CHICK MODEL OF HYPOPLASTIC LEFT HEART SYNDROME. *FASEB Journal*, **2013**, 27, 529.3	0.9

1 Left ventricular function and remodelling in rats exposed stepwise up to extreme chronic intermittent hypoxia. *Respiratory Physiology and Neurobiology*, **2020**, 282, 103526 2.8