Ralph S Marcucio

List of Publications by Year
in descending order

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142 papers	8,267 citations	50276 46 h-index	51608 86 g-index
156 all docs	156 docs citations	156 times ranked	8616 citing authors

#	Article	IF	Citations
1	The Collaborative Cross, a community resource for the genetic analysis of complex traits. Nature Genetics, 2004, 36, 1133-1137.	21.4	1,034
2	Deciphering the Palimpsest: Studying the Relationship Between Morphological Integration and Phenotypic Covariation. Evolutionary Biology, 2009, 36, 355-376.	1.1	373
3	Cellular biology of fracture healing. Journal of Orthopaedic Research, 2019, 37, 35-50.	2.3	304
4	Patterns of Infantile Hemangiomas: New Clues to Hemangioma Pathogenesis and Embryonic Facial Development. Pediatrics, 2006, 117, 698-703.	2.1	278
5	A zone of frontonasal ectoderm regulates patterning and growth in the face. Development (Cambridge), 2003, 130, 1749-1758.	2.5	236
6	Molecular interactions coordinating the development of the forebrain and face. Developmental Biology, 2005, 284, 48-61.	2.0	215
7	Cellular basis for age-related changes in fracture repair. Journal of Orthopaedic Research, 2005, 23, 1300-1307.	2.3	191
8	Cartilage to bone transformation during fracture healing is coordinated by the invading vasculature and induction of the core pluripotency genes. Development (Cambridge), 2017, 144, 221-234.	2.5	171
9	Ischemia leads to delayed union during fracture healing: A mouse model. Journal of Orthopaedic Research, 2007, 25, 51-61.	2.3	162
10	A SHH-responsive signaling center in the forebrain regulates craniofacial morphogenesis via the facial ectoderm. Development (Cambridge), 2009, 136, 107-116.	2.5	162
11	Stem Cellâ€“Derived Endochondral Cartilage Stimulates Bone Healing by Tissue Transformation. Journal of Bone and Mineral Research, 2014, 29, 1269-1282.	2.8	159
12	Effects of Aging on Fracture Healing. Current Osteoporosis Reports, 2017, 15, 601-608.	3.6	157
13	Differentiation of avian craniofacial muscles: I. Patterns of early regulatory gene expression and myosin heavy chain synthesis. Developmental Dynamics, 1999, 216, 96-112.	1.8	152
14	Multiple roles for CCR2 during fracture healing. DMM Disease Models and Mechanisms, 2010, 3, 451-458.	2.4	152
15	Temporal perturbations in sonic hedgehog signaling elicit the spectrum of holoprosencephaly phenotypes. Journal of Clinical Investigation, 2004, 114, 485-494.	8.2	150
16	Tissue engineering strategies for promoting vascularized bone regeneration. Bone, 2016, 83, 197-209.	2.9	145
17	Mechanisms that underlie coâ€variation of the brain and face. Genesis, 2011, 49, 177-189.	1.6	141
18	Role of Matrix Metalloproteinase 13 in Both Endochondral and Intramembranous Ossification during Skeletal Regeneration. PLoS ONE, 2007, 2, e1150.	2.5	141

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19	Effect of age on vascularization during fracture repair. Journal of Orthopaedic Research, 2008, 26, 1384-1389.	2.3	123
20	Quantitative analyses link modulation of sonic hedgehog signaling to continuous variation in facial growth and shape. Development (Cambridge), 2010, 137, 3405-3409.	2.5	122
21	Structured three-dimensional co-culture of mesenchymal stem cells with chondrocytes promotes chondrogenic differentiation without hypertrophy. Osteoarthritis and Cartilage, 2011, 19, 1210-1218.	1.3	121
22	Action of ILâ€1Î² during fracture healing. Journal of Orthopaedic Research, 2010, 28, 778-784.	2.3	112
23	Embryonic bauplans and the developmental origins of facial diversity and constraint. Development (Cambridge), 2014, 141, 1059-1063.	2.5	112
24	The Multifaceted Role of the Vasculature in Endochondral Fracture Repair. Frontiers in Endocrinology, 2015, 6, 4.	3.5	104
25	Immunolocalization of BMPs, BMP antagonists, receptors, and effectors during fracture repair. Bone, 2010, 46, 841-851.	2.9	100
26	Unique organization of the frontonasal ectodermal zone in birds and mammals. Developmental Biology, 2009, 325, 200-210.	2.0	95
27	The Generation of Variation and the Developmental Basis for Evolutionary Novelty. Journal of Experimental Zoology Part B: Molecular and Developmental Evolution, 2012, 318, 501-517.	1.3	93
28	Temporal perturbations in sonic hedgehog signaling elicit the spectrum of holoprosencephaly phenotypes. Journal of Clinical Investigation, 2004, 114, 485-494.	8.2	92
29	Trauma-Induced Inflammation and Fracture Healing. Journal of Orthopaedic Trauma, 2010, 24, 522-525.	1.4	91
30	The role of oxygen during fracture healing. Bone, 2013, 52, 220-229.	2.9	90
31	Rejuvenation of the inflammatory system stimulates fracture repair in aged mice. Journal of Orthopaedic Research, 2010, 28, 1000-1006.	2.3	84
32	MMP9 regulates the cellular response to inflammation after skeletal injury. Bone, 2013, 52, 111-119.	2.9	84
33	Signaling by bone morphogenetic proteins directs formation of an ectodermal signaling center that regulates craniofacial development. Developmental Biology, 2007, 312, 103-114.	2.0	83
34	Facial Morphogenesis. Current Topics in Developmental Biology, 2015, 115, 299-320.	2.2	83
35	Developmental nonlinearity drives phenotypic robustness. Nature Communications, 2017, 8, 1970.	12.8	81
36	Holoprosencephaly: signaling interactions between the brain and the face, the environment and the genes, and the phenotypic variability in animal models and humans. Wiley Interdisciplinary Reviews: Developmental Biology, 2015, 4, 17-32.	5.9	79

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37	Ageâ€related changes to macrophages are detrimental to fracture healing in mice. Aging Cell, 2020, 19, e13112.	6.7	73
38	Let's Face Itâ€”Complex Traits Are Just Not That Simple. PLoS Genetics, 2014, 10, e1004724.	3.5	68
39	Role of Muscle Stem Cells During Skeletal Regeneration. Stem Cells, 2015, 33, 1501-1511.	3.2	65
40	Epigenetic integration of the developing brain and face. Developmental Dynamics, 2011, 240, 2233-2244.	1.8	63
41	The developmental-genetics of canalization. Seminars in Cell and Developmental Biology, 2019, 88, 67-79.	5.0	63
42	Morphometrics, 3D Imaging, and Craniofacial Development. Current Topics in Developmental Biology, 2015, 115, 561-597.	2.2	61
43	Impaired remodeling phase of fracture repair in the absence of matrix metalloproteinase-2. DMM Disease Models and Mechanisms, 2011, 4, 203-211.	2.4	59
44	A dynamic Shh expression pattern, regulated by SHH and BMP signaling, coordinates fusion of primordia in the amniote face. Development (Cambridge), 2015, 142, 567-574.	2.5	59
45	Effects of delayed stabilization on fracture healing. Journal of Orthopaedic Research, 2007, 25, 1552-1558.	2.3	52
46	Signals from the brain induce variation in avian facial shape. Developmental Dynamics, 2015, 244, 1133-1143.	1.8	52
47	Fgf8 dosage determines midfacial integration and polarity within the nasal and optic capsules. Developmental Biology, 2013, 374, 185-197.	2.0	50
48	Delayed Bone Regeneration Is Linked to Chronic Inflammation in Murine Muscular Dystrophy. Journal of Bone and Mineral Research, 2014, 29, 304-315.	2.8	50
49	Chronic psychosocial stress compromises the immune response and endochondral ossification during bone fracture healing via Î²-AR signaling. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 8615-8622.	7.1	50
50	Modulation of Macrophage Activity During Fracture Repair Has Differential Effects in Young Adult and Elderly Mice. Journal of Orthopaedic Trauma, 2014, 28, S10-S14.	1.4	48
51	Assessing angiogenesis during fracture healing. Iowa orthopaedic journal, The, 2006, 26, 17-26.	0.5	48
52	Comparison of the Melatonin and Calmodulin in Paravertebral Muscle and Platelets of Patients With or Without Adolescent Idiopathic Scoliosis. Spine, 2009, 34, E659-E663.	2.0	43
53	Signaling by SHH rescues facial defects following blockade in the brain. Developmental Dynamics, 2012, 241, 247-256.	1.8	43
54	Stem Cell Therapies in Orthopaedic Trauma. Journal of Orthopaedic Trauma, 2015, 29, S24-S27.	1.4	43

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55	Integration and the Developmental Genetics of Allometry. Integrative and Comparative Biology, 2019, 59, 1369-1381.	2.0	42
56	Tfap2a-dependent changes in facial morphology result in clefting that can be ameliorated by a reduction in Fgf8 gene dosage. DMM Disease Models and Mechanisms, 2015, 8, 31-43.	2.4	40
57	Mechanical Stability Affects Angiogenesis During Early Fracture Healing. Journal of Orthopaedic Trauma, 2011, 25, 494-499.	1.4	38
58	Myotube heterogeneity in developing chick craniofacial skeletal muscles. Developmental Dynamics, 1999, 214, 178-194.	1.8	36
59	The synergistic effect of micro-topography and biochemical culture environment to promote angiogenesis and osteogenic differentiation of human mesenchymal stem cells. Acta Biomaterialia, 2015, 18, 100-111.	8.3	35
60	Divergence of craniofacial developmental trajectories among avian embryos. Developmental Dynamics, 2015, 244, 1158-1167.	1.8	33
61	Neural crest cells pattern the surface cephalic ectoderm during FEZ formation. Developmental Dynamics, 2012, 241, 732-740.	1.8	32
62	A Registration and Deep Learning Approach to Automated Landmark Detection for Geometric Morphometrics. Evolutionary Biology, 2020, 47, 246-259.	1.1	31
63	The effect of calmodulin antagonists on scoliosis: bipedal C57BL/6 mice model. European Spine Journal, 2009, 18, 499-505.	2.2	30
64	Quantification of shape and cell polarity reveals a novel mechanism underlying malformations resulting from related FGF mutations during facial morphogenesis. Human Molecular Genetics, 2013, 22, 5160-5172.	2.9	30
65	Microenvironmental Regulation of Chondrocyte Plasticity in Endochondral Repairâ€"A New Frontier for Developmental Engineering. Frontiers in Bioengineering and Biotechnology, 2018, 6, 58.	4.1	30
66	Genetics of murine craniofacial morphology: diallel analysis of the eight founders of the Collaborative Cross. Journal of Anatomy, 2016, 228, 96-112.	1.5	29
67	Craniofacial diversification in the domestic pigeon and the evolution of the avian skull. Nature Ecology and Evolution, 2017, 1, 95.	7.8	29
68	Facial surface morphology predicts variation inÂinternal skeletal shape. American Journal of Orthodontics and Dentofacial Orthopedics, 2016, 149, 501-508.	1.7	28
69	Differential fracture response to traumatic brain injury suggests dominance of neuroinflammatory response in polytrauma. Scientific Reports, 2019, 9, 12199.	3.3	28
70	The Effect of Calmodulin Antagonists on Experimental Scoliosis. Spine, 2009, 34, 533-538.	2.0	26
71	Stimulating Fracture Healing in Ischemic Environments: Does Oxygen Direct Stem Cell Fate during Fracture Healing?. Frontiers in Cell and Developmental Biology, 2017, 5, 45.	3.7	26
72	Tibial fracture decreases oxygen levels at the site of injury. Iowa orthopaedic journal, The, 2008, 28, 14-21.	0.5	25

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73	Blocking Kv1.3 potassium channels prevents postoperative neuroinflammation and cognitive decline without impairing wound healing in mice. British Journal of Anaesthesia, 2020, 125, 298-307.	3.4	24
74	Effect of bone morphogenetic protein signaling on development of the jaw skeleton. Developmental Dynamics, 2008, 237, 3727-3737.	1.8	23
75	Correlations Between the Morphology of Sonic Hedgehog Expression Domains and Embryonic Craniofacial Shape. Evolutionary Biology, 2015, 42, 379-386.	1.1	22
76	Cellular basis for age-related changes in fracture repair. Journal of Orthopaedic Research, 2005, 23, 1300-1307.	2.3	21
77	Disruption of thrombospondinâ€2 accelerates ischemic fracture healing. Journal of Orthopaedic Research, 2013, 31, 935-943.	2.3	21
78	The effect of hypoxia on facial shape variation and disease phenotypes in chicken embryos. DMM Disease Models and Mechanisms, 2013, 6, 915-24.	2.4	21
79	A comparative examination of odontogenic gene expression in both toothed and toothless amniotes. Journal of Experimental Zoology Part B: Molecular and Developmental Evolution, 2015, 324, 255-269.	1.3	20
80	Reverse engineering development: Crosstalk opportunities between developmental biology and tissue engineering. Journal of Orthopaedic Research, 2017, 35, 2356-2368.	2.3	20
81	SATB1 establishes ameloblast cell polarity and regulates directional amelogenin secretion for enamel formation. BMC Biology, 2019, 17, 104.	3.8	20
82	Morphogenesis of blood vessels in the head muscles of avian embryo: Spatial, temporal, and VEGF expression analyses. Developmental Dynamics, 2003, 227, 470-483.	1.8	19
83	Impact of retinoic acid exposure on midfacial shape variation and manifestation of holoprosencephaly inTwisted gastrulationmutant mice. DMM Disease Models and Mechanisms, 2015, 8, 139-46.	2.4	19
84	Surface landmark quantification of embryonic mouse craniofacial morphogenesis. BMC Developmental Biology, 2014, 14, 31.	2.1	19
85	Genetic structure of phenotypic robustness in the collaborative cross mouse diallel panel. Journal of Evolutionary Biology, 2016, 29, 1737-1751.	1.7	19
86	Facial shape and allometry quantitative trait locus intervals in the Diversity Outbred mouse are enriched for known skeletal and facial development genes. PLoS ONE, 2020, 15, e0233377.	2.5	19
87	Vascular endothelial growth factor improves bone repair in a murine nonunion model. Iowa orthopaedic journal, The, 2012, 32, 90-4.	0.5	19
88	Nonlinear gene expressionâ€phenotype relationships contribute to variation and clefting in the A/WySn mouse. Developmental Dynamics, 2019, 248, 1232-1242.	1.8	18
89	Chondrocyteâ€toâ€osteoblast transformation in mandibular fracture repair. Journal of Orthopaedic Research, 2021, 39, 1622-1632.	2.3	18
90	Local injections of Î²-NGF accelerates endochondral fracture repair by promoting cartilage to bone conversion. Scientific Reports, 2020, 10, 22241.	3.3	18

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91	Recombinant human bone morphogenetic proteinâ€7 enhances fracture healing in an ischemic environment. Journal of Orthopaedic Research, 2010, 28, 687-696.	2.3	17
92	The metabolic basis of adolescent idiopathic scoliosis: 2011 report of the â€œmetabolicâ€•workgroup of the Fondation Yves Cotrel. European Spine Journal, 2012, 21, 1033-1042.	2.2	17
93	Creating Rigidly Stabilized Fractures for Assessing Intramembranous Ossification, Distraction Osteogenesis, or Healing of Critical Sized Defects. Journal of Visualized Experiments, 2012, , .	0.3	15
94	Anti-inflammatory treatment increases angiogenesis during early fracture healing. Archives of Orthopaedic and Trauma Surgery, 2012, 132, 1205-1213.	2.4	15
95	Prenatal morphogenesis of the human mental foramen. European Journal of Oral Sciences, 2002, 110, 452-459.	1.5	14
96	FGFRâ€associated craniosynostosis syndromes and gastrointestinal defects. American Journal of Medical Genetics, Part A, 2016, 170, 3215-3221.	1.2	13
97	Promoting Endochondral Bone Repair Using Human Osteoarthritic Articular Chondrocytes. Tissue Engineering - Part A, 2016, 22, 427-435.	3.1	13
98	Living tissues are more than cell clusters: The extracellular matrix as a driving force in morphogenesis. Progress in Biophysics and Molecular Biology, 2018, 137, 46-51.	2.9	13
99	Is decreased bone mineral density associated with development of scoliosis? A bipedal osteopenic rat model. Scoliosis, 2011, 6, 24.	0.4	12
100	Selective estrogen receptor modulation prevents scoliotic curve progression: radiologic and histomorphometric study on a bipedal C57Bl6 mice model. European Spine Journal, 2014, 23, 455-462.	2.2	12
101	Absence of beta3 integrin accelerates early skeletal repair. Journal of Orthopaedic Research, 2010, 28, 32-37.	2.3	11
102	Development Shapes a Consistent Inbreeding Effect in Mouse Crania of Different Line Crosses. Journal of Experimental Zoology Part B: Molecular and Developmental Evolution, 2016, 326, 474-488.	1.3	11
103	miR â€199 family contributes to regulation of sonic hedgehog expression during craniofacial development. Developmental Dynamics, 2020, 249, 1062-1076.	1.8	9
104	Wnt Signaling Drives Correlated Changes in Facial Morphology and Brain Shape. Frontiers in Cell and Developmental Biology, 2021, 9, 644099.	3.7	9
105	Basic research in orthopedic surgery: Current trends and future directions. Indian Journal of Orthopaedics, 2009, 43, 318.	1.1	8
106	A novel mouse model to study fracture healing of the proximal femur. Journal of Orthopaedic Research, 2020, 38, 2131-2138.	2.3	8
107	Future Treatment Strategies for Delayed Bone Healing. Journal of the American Academy of Orthopaedic Surgeons, The, 2016, 24, e134-e135.	2.5	7
108	Quantifying threeâ€dimensional morphology and RNA from individual embryos. Developmental Dynamics, 2017, 246, 431-436.	1.8	7

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109	Systemic and local cardiac inflammation after experimental long bone fracture, traumatic brain injury and combined trauma in mice. Journal of Orthopaedic Translation, 2021, 28, 39-46.	3.9	7
110	Relating multivariate shapes to genescapes using phenotype-biological process associations for craniofacial shape. ELife, 2021, 10, .	6.0	7
111	Developmental constraint through negative pleiotropy in the zygomatic arch. EvoDevo, 2018, 9, 3.	3.2	6
112	Fgf8 dosage regulates jaw shape and symmetry through pharyngealâ€cardiac tissue relationships. Developmental Dynamics, 2022, 251, 1711-1727.	1.8	6
113	Pak1ip1 Loss-of-Function Leads to Cell Cycle Arrest, Loss of Neural Crest Cells, and Craniofacial Abnormalities. Frontiers in Cell and Developmental Biology, 2020, 8, 510063.	3.7	5
114	Assessing Signaling Properties of Ectodermal Epithelia During Craniofacial Development. Journal of Visualized Experiments, 2011, , .	0.3	4
115	Beyond cell proliferation in avian facial morphogenesis. Developmental Dynamics, 2016, 245, 190-196.	1.8	3
116	Simulation enabled search for explanatory mechanisms of the fracture healing process. PLoS Computational Biology, 2018, 14, e1005980.	3.2	3
117	Biomedical research models in the science of fracture healing - Pitfalls & promises. Injury, 2020, 51, 2118-2128.	1.7	3
118	MusMorph, a database of standardized mouse morphology data for morphometric meta-analyses. Scientific Data, 2022, 9, .	5.3	3
119	Differentiation of avian craniofacial muscles: I. Patterns of early regulatory gene expression and myosin heavy chain synthesis. , 0, .		2
120	The Phenogenomics of Craniofacial Shape. FASEB Journal, 2012, 26, 337.4.	0.5	1
121	Beneficial effects of oxygen- and lactate-production in scaffold designs. Bone, 2013, 57, 324.	2.9	0
122	Creating Avian Forebrain Chimeras to assess Facial Development. Journal of Visualized Experiments, 2021, , .	0.3	0
123	Mapping the Multiâ€Modal Distribution of Craniofacial Phenotypes in NOSIP Mutants. FASEB Journal, 2021, 35, .	0.5	0
124	Epithelialâ€Mesenchymal Interactions during Facial Development in Mice. FASEB Journal, 2008, 22, 85.5.	0.5	0
125	Rescuing craniofacial development in an avian model of holoprosencephaly. FASEB Journal, 2009, 23, 472.1.	0.5	0
126	The relationship between variable SHH signaling and the severity of structural defects in the face and brain. FASEB Journal, 2009, 23, 180.5.	0.5	0

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127	The effect of early Bone Morphogenetic Protein (BMP) activation on craniofacial development. FASEB Journal, 2009, 23, 472.2.	0.5	0
128	Hypoxia as an Environmental Cause of Holoprosencephaly. FASEB Journal, 2009, 23, 472.3.	0.5	0
129	A craniosynostosisâ€syndrome related Fgfr2 mutation promotes early craniofacial defects in chick. FASEB Journal, 2010, 24, 452.3.	0.5	0
130	A Novel Gene Crispld2 may Contribute to Facial Dysmophology in a Chicken Model of Crouzon's Syndrome. FASEB Journal, 2012, 26, 907.15.	0.5	0
131	Tissue engineering bone by recapitulating developmental and repair programs offers improved biological outcomes. FASEB Journal, 2012, 26, 917.7.	0.5	0
132	Tissue Interactions that Regulate Facial Morphogenesis. FASEB Journal, 2012, 26, 337.2.	0.5	0
133	Embryonic origins of novelty and constraint in the amniote upper jaw. FASEB Journal, 2013, 27, 319.3.	0.5	0
134	Facial development and alterations in FGF signaling in a mouse model of Crouzon Syndrome. FASEB Journal, 2015, 29, 872.11.	0.5	0
135	Mechanisms of FGFâ€Mediated Morphogenesis. FASEB Journal, 2015, 29, 495.3.	0.5	0
136	Shaping the sound of voice. ELife, 2017, 6, .	6.0	0
137	Quantifying the Genotype to Phenotype Map in Developing Mice. FASEB Journal, 2018, 32, lb529.	0.5	0
138	The Silent Treatment: miR199 Family Silences Shh during Craniofacial Development. FASEB Journal, 2019, 33, 774.10.	0.5	0
139	Emergent Properties of Facial Morphogenesis Regulated by Fgf Signaling. FASEB Journal, 2019, 33, 774.18.	0.5	0
140	Integration and the genetics of variation in facial shape. FASEB Journal, 2019, 33, 330.2.	0.5	0
141	Modeling the Development of Cleft Lip and Palate in Variable Clefting Mouse Strains. FASEB Journal, 2019, 33, .	0.5	0
142	Downstream Branches of the Fibroblast Growth Factor Signaling Pathway Act Interdependently to Shape the Face. FASEB Journal, 2022, 36, .	0.5	0