

Mark D Handschumacher

List of Publications by Citations

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82
papers

10,403
citations

45
h-index

83
g-index

83
ext. papers

12,034
ext. citations

8.5
avg, IF

5.41
L-index

#	Paper	IF	Citations
82	Guidelines for the echocardiographic assessment of the right heart in adults: a report from the American Society of Echocardiography endorsed by the European Association of Echocardiography, a registered branch of the European Society of Cardiology, and the Canadian Society of Echocardiography. <i>Journal of the American Society of Echocardiography</i> , 2010 , 23, 685-713; quiz 786-8	5.8	4444
81	Three-dimensional echocardiographic reconstruction of the mitral valve, with implications for the diagnosis of mitral valve prolapse. <i>Circulation</i> , 1989 , 80, 589-98	16.7	443
80	Insights from three-dimensional echocardiography into the mechanism of functional mitral regurgitation: direct in vivo demonstration of altered leaflet tethering geometry. <i>Circulation</i> , 1997 , 96, 1999-2008	16.7	387
79	Geometric determinants of functional tricuspid regurgitation: insights from 3-dimensional echocardiography. <i>Circulation</i> , 2006 , 114, 143-9	16.7	267
78	Mechanism of ischemic mitral regurgitation with segmental left ventricular dysfunction: three-dimensional echocardiographic studies in models of acute and chronic progressive regurgitation. <i>Journal of the American College of Cardiology</i> , 2001 , 37, 641-8	15.1	252
77	Antigenic determinants in proteins coincide with surface regions accessible to large probes (antibody domains). <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 1986 , 83, 226-30	11.5	251
76	Chordal cutting: a new therapeutic approach for ischemic mitral regurgitation. <i>Circulation</i> , 2001 , 104, 1958-63	16.7	231
75	Refined structure of alkaline phosphatase from <i>Escherichia coli</i> at 2.8 Å resolution. <i>Journal of Molecular Biology</i> , 1985 , 186, 417-33	6.5	211
74	Active adaptation of the tethered mitral valve: insights into a compensatory mechanism for functional mitral regurgitation. <i>Circulation</i> , 2009 , 120, 334-42	16.7	198
73	Mitral leaflet adaptation to ventricular remodeling: occurrence and adequacy in patients with functional mitral regurgitation. <i>Circulation</i> , 2008 , 118, 845-52	16.7	190
72	Design of a new surgical approach for ventricular remodeling to relieve ischemic mitral regurgitation: insights from 3-dimensional echocardiography. <i>Circulation</i> , 2000 , 101, 2756-63	16.7	185
71	Mitral valve disease—morphology and mechanisms. <i>Nature Reviews Cardiology</i> , 2015 , 12, 689-710	14.8	172
70	A new integrated system for three-dimensional echocardiographic reconstruction: development and validation for ventricular volume with application in human subjects. <i>Journal of the American College of Cardiology</i> , 1993 , 21, 743-53	15.1	136
69	Three-dimensional echocardiography. In vivo validation for left ventricular volume and function. <i>Circulation</i> , 1993 , 88, 1715-23	16.7	134
68	Three-dimensional echocardiography. In vivo validation for right ventricular volume and function. <i>Circulation</i> , 1994 , 89, 2342-50	16.7	129
67	Reverse ventricular remodeling reduces ischemic mitral regurgitation: echo-guided device application in the beating heart. <i>Circulation</i> , 2002 , 106, 2594-600	16.7	128
66	Mechanism of dynamic regurgitant orifice area variation in functional mitral regurgitation: physiologic insights from the proximal flow convergence technique. <i>Journal of the American College of Cardiology</i> , 1999 , 33, 538-45	15.1	120

65	Proximal flow convergence region as assessed by real-time 3-dimensional echocardiography: challenging the hemispheric assumption. <i>Journal of the American Society of Echocardiography</i> , 2007 , 20, 389-96	5.8	117
64	Effect of three-dimensional valve shape on the hemodynamics of aortic stenosis: three-dimensional echocardiographic stereolithography and patient studies. <i>Journal of the American College of Cardiology</i> , 2002 , 40, 1479-86	15.1	95
63	Paradoxical decrease in ischemic mitral regurgitation with papillary muscle dysfunction: insights from three-dimensional and contrast echocardiography with strain rate measurement. <i>Circulation</i> , 2001 , 104, 1952-7	16.7	93
62	Direct measurement of vena contracta area by real-time 3-dimensional echocardiography for assessing severity of mitral regurgitation. <i>American Journal of Cardiology</i> , 2009 , 104, 978-83	3	91
61	Mitral leaflet adaptation to ventricular remodeling: prospective changes in a model of ischemic mitral regurgitation. <i>Circulation</i> , 2009 , 120, S99-103	16.7	88
60	Quantitative assessment of regional myocardial function in mice by tissue Doppler imaging: comparison with hemodynamics and sonomicrometry. <i>Circulation</i> , 2005 , 111, 2611-6	16.7	84
59	Protein antigenicity: a static surface property. <i>Trends in Immunology</i> , 1987 , 8, 26-31		74
58	Mechanistic insights into functional mitral regurgitation. <i>Current Cardiology Reports</i> , 2002 , 4, 125-9	4.2	72
57	Three-dimensional echocardiography: techniques and applications. <i>American Journal of Cardiology</i> , 1992 , 69, 121H-130H; discussion 131H-134H	3	71
56	In vivo measurement of mitral leaflet surface area and subvalvular geometry in patients with asymmetrical septal hypertrophy: insights into the mechanism of outflow tract obstruction. <i>Circulation</i> , 2010 , 122, 1298-307	16.7	63
55	Mitral regurgitation augments post-myocardial infarction remodeling failure of hypertrophic compensation. <i>Journal of the American College of Cardiology</i> , 2008 , 51, 476-86	15.1	60
54	Quantitative three-dimensional reconstruction of aneurysmal left ventricles. In vitro and in vivo validation. <i>Circulation</i> , 1995 , 91, 222-30	16.7	59
53	The echo score revisited: Impact of incorporating commissural morphology and leaflet displacement to the prediction of outcome for patients undergoing percutaneous mitral valvuloplasty. <i>Circulation</i> , 2014 , 129, 886-95	16.7	56
52	Location of antigenic epitopes on antibody molecules. <i>Journal of Molecular Biology</i> , 1986 , 189, 715-21	6.5	56
51	Myocardial Infarction Alters Adaptation of the Tethered Mitral Valve. <i>Journal of the American College of Cardiology</i> , 2016 , 67, 275-87	15.1	55
50	Mitral valve enlargement in chronic aortic regurgitation as a compensatory mechanism to prevent functional mitral regurgitation in the dilated left ventricle. <i>Journal of the American College of Cardiology</i> , 2013 , 61, 1809-16	15.1	55
49	Effect of Losartan on Mitral Valve Changes After Myocardial Infarction. <i>Journal of the American College of Cardiology</i> , 2017 , 70, 1232-1244	15.1	55
48	Three-dimensional echocardiographic reconstruction of right ventricular volume: in vitro comparison with two-dimensional methods. <i>Journal of the American Society of Echocardiography</i> , 1994 , 7, 150-8	5.8	55

47	Gene delivery of sarcoplasmic reticulum calcium ATPase inhibits ventricular remodeling in ischemic mitral regurgitation. <i>Circulation: Heart Failure</i> , 2010 , 3, 627-34	7.6	54
46	Usefulness of three-dimensionally guided assessment of mitral stenosis using matrix-array ultrasound. <i>American Journal of Cardiology</i> , 2005 , 96, 1151-6	3	53
45	Three-dimensional echocardiography improves noninvasive assessment of left ventricular volume and performance. <i>American Heart Journal</i> , 1995 , 130, 812-22	4.9	53
44	Mechanism of decrease in mitral regurgitation after cardiac resynchronization therapy: optimization of the force-balance relationship. <i>Circulation: Cardiovascular Imaging</i> , 2009 , 2, 444-50	3.9	52
43	Mitral Valve Adaptation to Isolated Annular Dilatation: Insights Into the Mechanism of Atrial Functional Mitral Regurgitation. <i>JACC: Cardiovascular Imaging</i> , 2019 , 12, 665-677	8.4	52
42	Assessment of mitral valve adaptation with gated cardiac computed tomography: validation with three-dimensional echocardiography and mechanistic insight to functional mitral regurgitation. <i>Circulation: Cardiovascular Imaging</i> , 2013 , 6, 784-9	3.9	48
41	Leaflet concavity: a rapid visual clue to the presence and mechanism of functional mitral regurgitation. <i>Journal of the American Society of Echocardiography</i> , 2003 , 16, 1301-8	5.8	47
40	Three-dimensional reconstruction of ventricular septal defects: validation studies and in vivo feasibility. <i>Journal of the American College of Cardiology</i> , 1994 , 23, 201-8	15.1	47
39	Quantitative analysis of intraventricular dyssynchrony using wall thickness by multidetector computed tomography. <i>JACC: Cardiovascular Imaging</i> , 2008 , 1, 772-81	8.4	46
38	Early repair of moderate ischemic mitral regurgitation reverses left ventricular remodeling: a functional and molecular study. <i>Circulation</i> , 2007 , 116, 1288-93	16.7	45
37	Basic mechanisms of mitral regurgitation. <i>Canadian Journal of Cardiology</i> , 2014 , 30, 971-81	3.8	40
36	Three-dimensional echocardiography: in vivo validation for right ventricular free wall mass as an index of hypertrophy. <i>Journal of the American College of Cardiology</i> , 1994 , 23, 1715-22	15.1	35
35	Persistent reduction of ischemic mitral regurgitation by papillary muscle repositioning: structural stabilization of the papillary muscle-ventricular wall complex. <i>Circulation</i> , 2007 , 116, 1259-63	16.7	34
34	Three-dimensional echocardiography: the influence of number of component images on accuracy of left ventricular volume quantitation. <i>Journal of the American Society of Echocardiography</i> , 1996 , 9, 147-55	5.8	32
33	Aortic valve adaptation to aortic root dilatation: insights into the mechanism of functional aortic regurgitation from 3-dimensional cardiac computed tomography. <i>Circulation: Cardiovascular Imaging</i> , 2014 , 7, 828-35	3.9	31
32	Late repair of ischemic mitral regurgitation does not prevent left ventricular remodeling: importance of timing for beneficial repair. <i>Circulation</i> , 2013 , 128, S248-52	16.7	31
31	The power-velocity integral at the vena contracta: A new method for direct quantification of regurgitant volume flow. <i>Circulation</i> , 2000 , 102, 1053-61	16.7	31
30	Leaflet area as a determinant of tricuspid regurgitation severity in patients with pulmonary hypertension. <i>Circulation: Cardiovascular Imaging</i> , 2015 , 8,	3.9	30

29	Mitral regurgitation after anteroapical myocardial infarction: new mechanistic insights. <i>Circulation</i> , 2011 , 123, 1529-36	16.7	28
28	A novel approach for reducing ischemic mitral regurgitation by injection of a polymer to reverse remodel and reposition displaced papillary muscles. <i>Circulation</i> , 2008 , 118, S263-9	16.7	28
27	Insights from three-dimensional echocardiographic laser stereolithography. Effect of leaflet funnel geometry on the coefficient of orifice contraction, pressure loss, and the Gorlin formula in mitral stenosis. <i>Circulation</i> , 1996 , 94, 452-9	16.7	28
26	Comprehensive annular and subvalvular repair of chronic ischemic mitral regurgitation improves long-term results with the least ventricular remodeling. <i>Circulation</i> , 2012 , 126, 2720-7	16.7	26
25	Relief of mitral leaflet tethering following chronic myocardial infarction by chordal cutting diminishes left ventricular remodeling. <i>Circulation: Cardiovascular Imaging</i> , 2010 , 3, 679-86	3.9	26
24	Crystallographic observations of the metal ion triple in the active site region of alkaline phosphatase. <i>Journal of Molecular Biology</i> , 1983 , 170, 575-81	6.5	25
23	Mitral Leaflet Changes Following Myocardial Infarction: Clinical Evidence for Maladaptive Valvular Remodeling. <i>Circulation: Cardiovascular Imaging</i> , 2017 , 10,	3.9	24
22	Mechanisms of functional mitral regurgitation in ischemic cardiomyopathy determined by transesophageal echocardiography (from the Surgical Treatment for Ischemic Heart Failure Trial). <i>American Journal of Cardiology</i> , 2013 , 112, 1812-8	3	24
21	Assessment of right ventricular function by real-time three-dimensional echocardiography improves accuracy and decreases interobserver variability compared with conventional two-dimensional views. <i>European Journal of Echocardiography</i> , 2009 , 10, 619-24		23
20	Quantitative three-dimensional reconstruction of left ventricular volume with complete borders detected by acoustic quantification underestimates volume. <i>American Heart Journal</i> , 1996 , 131, 553-9	4.9	22
19	Quantification of pericardial effusions by three-dimensional echocardiography. <i>Journal of the American College of Cardiology</i> , 1994 , 24, 254-9	15.1	20
18	Acute Leukemia is Associated with Cardiac Alterations before Chemotherapy. <i>Journal of the American Society of Echocardiography</i> , 2017 , 30, 1111-1118	5.8	18
17	Role of LA shape in predicting embolic cerebrovascular events in mitral stenosis: mechanistic insights from 3D echocardiography. <i>JACC: Cardiovascular Imaging</i> , 2014 , 7, 453-61	8.4	18
16	Impact of mitral regurgitation on exercise capacity and clinical outcomes in patients with ischemic left ventricular dysfunction. <i>American Journal of Cardiology</i> , 2011 , 108, 1714-20	3	18
15	Attenuated Mitral Leaflet Enlargement Contributes to Functional Mitral Regurgitation After Myocardial Infarction. <i>Journal of the American College of Cardiology</i> , 2020 , 75, 395-405	15.1	16
14	Polymer injection therapy to reverse remodel the papillary muscles: efficacy in reducing mitral regurgitation in a chronic ischemic model. <i>Circulation: Cardiovascular Interventions</i> , 2010 , 3, 499-505	6	14
13	Estimation of radial strain and rotation using a new algorithm based on speckle tracking. <i>Journal of the American Society of Echocardiography</i> , 2008 , 21, 1168-74	5.8	14
12	Mechanical effects of MitraClip on leaflet stress and myocardial strain in functional mitral regurgitation - A finite element modeling study. <i>PLoS ONE</i> , 2019 , 14, e0223472	3.7	13

11	Effect of destructive pulse duration on the detection of myocardial perfusion in myocardial contrast echocardiography: In vitro and in vivo observations. <i>Journal of the American Society of Echocardiography</i> , 2002 , 15, 1440-7	5.8	12
10	Characterization of five epitopes of human renin from a computer model. <i>Biochemistry</i> , 1988 , 27, 156-64	3.2	12
9	The prognostic value of post-exercise blood pressure reduction in patients with hypertensive response during exercise stress test. <i>International Journal of Cardiology</i> , 2006 , 111, 352-7	3.2	10
8	In vivo assessment of aortic root geometry in normal controls using 3D analysis of computed tomography. <i>European Heart Journal Cardiovascular Imaging</i> , 2017 , 18, 780-786	4.1	9
7	Persistence of mitral regurgitation following ring annuloplasty: is the papillary muscle outside or inside the ring?. <i>Journal of Heart Valve Disease</i> , 2012 , 21, 218-24		9
6	Contraction Timing Patterns in Patients Treated for Breast Cancer Before and After Anthracyclines Therapy. <i>Journal of the American Society of Echocardiography</i> , 2017 , 30, 454-460	5.8	8
5	Efficacy of polymer injection for ischemic mitral regurgitation: persistent reduction of mitral regurgitation and attenuation of left ventricular remodeling. <i>JACC: Cardiovascular Interventions</i> , 2015 , 8, 355-363	5	7
4	Pseudodyskinesis of the inferior left ventricular wall: recognizing an echocardiographic mimic of myocardial infarction. <i>Journal of the American Society of Echocardiography</i> , 2007 , 20, 1374-9	5.8	6
3	Illusion of contraction from out-of-plane translation: can Doppler tissue velocities resolve it?. <i>Journal of the American Society of Echocardiography</i> , 2003 , 16, 832-40	5.8	3
2	Left atrial cross-sectional area is a novel measure of atrial shape associated with cardioembolic strokes. <i>Heart</i> , 2020 , 106, 1176-1182	5.1	2
1	Three-dimensional echocardiography: A new method for real-time integration and computer storage of images and positional data in high volume. <i>Journal of the American College of Cardiology</i> , 1991 , 17, A3	15.1	2