

Dennis R. Trumble, PhD

Journal Articles / Book Chapters / Books

1. R Gaumond, D Geselowitz, P Gibbons, **D Trumble**, and W Weiss. Modification of a series-tuned transcutaneous energy transmission system. *Proceedings of the Twelfth Annual Northeast Bioengineering Conference*, March, 1986.
2. **DR Trumble**, RL Kao, and GJ Magovern. Quantification of skeletal muscle work capacity for circulatory assistance. *Cardiovasc Sci Tech: Basic and Applied: II* (Oxymoron Press, Louisville, KY), 388-390, 1990.
3. RL Kao, **DR Trumble**, JA Magovern, IY Christlieb and GJ Magovern. Fatigue resistant muscle with preserved force and mass for cardiac assist. *J Card Surg* 6:210-217, 1991.
4. AP Furnary, **DR Trumble**, TQ Vu, GJ Magovern, and RL Kao. Perineural lead and burst stimulation optimize contraction of skeletal muscle. *ASAIO Transactions* 37:M164-M166, 1991.
5. AP Furnary, JA Magovern, IY Christlieb, and **DR Trumble**. Improved ventricular augmentation with right latissimus cardiomyoplasty. *ACS 1991 Surgical Forum XLII*: 307-309, 1991.
6. AH Goldstein, **DR Trumble**, RL Kao, and RE Clark. Development of an implantable centrifugal blood pump. *ASAIO Transactions*, 38(3):M362-365, Jul-Sep 1992.
7. BL Cmolik, SE Park, **DR Trumble**, BE Pennock, and JA Magovern. Heterotopic lung transplant: temporary support for gas exchange in ARDS. *Surgical Forum XLIII*:300-304, 1992.
8. RR Lazzara, BE Pennock, **DR Trumble**, and JA Magovern. Heterotopic lung as an auxiliary oxygenator. *Allegheny-Singer Res Inst Scientific Report 1992-1993*, Allegheny General Hospital, Pittsburgh, PA.
9. RR Lazzara, CM McCarty, **DR Trumble**, TL Demmy, and GJ Magovern. Segmental heart transplantation. *Allegheny-Singer Res Inst Scientific Report 1992-1993*, Allegheny General Hospital, Pittsburgh, PA.
10. BL Cmolik, SE Park, **DR Trumble**, BE Pennock, and RR Lazzara. Auxiliary support for gas exchange in ARDS: heterotopic lung transplantation. *Allegheny-Singer Res Inst Scientific Report 1992-1993*, Allegheny General Hospital, Pittsburgh, PA.
11. AP Furnary, JA Magovern, IY Christlieb, **DR Trumble**, and GJ Magovern. Component analysis of bilateral anterior cardiomyoplasty. *Ann Thor Surg*, 55:72-77, 1993.
12. SE Park, BL Cmolik, RR Lazzara, **DR Trumble**, and JA Magovern. Right latissimus dorsi cardiomyoplasty augments left ventricular systolic performance. *Ann Thor Surg*, 56: 1290-1295, 1993.
13. JA Magovern, SE Park, BL Cmolik, **DR Trumble**, IY Christlieb, and GJ Magovern. Early effects of right latissimus dorsi cardiomyoplasty on left ventricular function. *Circulation*, 88(5):298-303, Nov. 1993.
14. RR Lazzara, JA Magovern, **DR Trumble**, and RE Clark. Effects of synchronization ratio on pH in latissimus dorsi muscle used for cardiac assist. *J Penn Assoc Thorac Surg*, 1:48-51, 1993.
15. RR Lazzara, SE Park, BL Cmolik, **DR Trumble**, JA Magovern. Static left latissimus dorsi cardiomyoplasty: effect on left ventricular function. *J Heart Lung Transplantation*, 12(6):1024-1028, Nov/Dec 1993.

16. RA Walters, F Moeller, and **DR Trumble**. A low-cost, programmable, tissue stimulator for biomedical research applications. *Proc 15th Ann Int Conf IEEE Engr in Med and Biol Soc*, 2:871-872, 1993.
17. RR Lazzara, **DR Trumble**, JA Magovern, and GJ Magovern. Clinical and experimental effects of the unstimulated (static) right latissimus dorsi cardiomyoplasty on left ventricular function. *Basic and Applied Myology*, 3(4):281-288 1993.
18. RR Lazzara, **DR Trumble**, and JA Magovern. Cardiac assist with descending thoracic aortomyoplasty using latissimus dorsi in dogs: acute hemodynamic effects. *J Penn Assoc for Thor Surg*, 2:52-59, July 1994.
19. RR Lazzara, **DR Trumble**, and JA Magovern. Autogenous cardiac assist with chronic descending thoracic aortomyoplasty. *Ann Thor Surg*, 57:1540-44, 1994.
20. RR Lazzara, BE Pennock, **DR Trumble** and JA Magovern. Experimental studies on heterotopic lung transplantation during temporary pulmonary insufficiency. *Chest*, 106:257-61, 1994.
21. RR Lazzara, **DR Trumble**, and JA Magovern. Chronic counterpulsation with descending thoracic aortomyoplasty improved cardiac function in animals with heart failure. *J Heart and Lung Transplantation*, 13(4):652-660, 1994.
22. RR Lazarra, **DR Trumble**, and JA Magovern. Dynamic descending thoracic aortomyoplasty: comparison with intra-aortic balloon pump in a model of heart failure. *Ann Thorac Surg*, 58:366-71, 1994.
23. **DR Trumble** and JA Magovern. Ergometric studies of untrained skeletal muscle demonstrate the potential for muscle-powered cardiac assistance. *J Appl Physiol*, 77(4):2036-2041, 1994.
24. RC Reddy, **DR Trumble**, BE Pennock, PD Kaplan, and JA Magovern. Effective negative pressure ventilation with a light-weight chest wall cuirass. *J Penn Assoc Thor Surg*, 3: 62-65, 1995.
25. JC Cardone, PD Yoon, **DR Trumble**, and JA Magovern. Regional effects of aortomyoplasty in acute ischemia. *Ann Thor Surg*, 61(1):426-429, 1996.
26. **DR Trumble**, and JA Magovern. A permanent prosthesis for converting in situ muscle contractions into hydraulic power for cardiac assist. *J Appl Physiol*, 82(5):1704-1711, 1997.
27. RR Lazzara, **DR Trumble**, C Duan, and JA Magovern. *Effect of mobilization on pH and temperature in pedicled latissimus dorsi flaps used for cardiac assist*. In: *World Symposium on Cardiomyoplasty and Biomechanical Assist* (Carpentier, Chachques, Grandjean editors), Futura Publishing, Armonk, NY, p. 345-358, 1997.
28. C Duan, JA Magovern, IY Christlieb, **DR Trumble**, M. Hebert, and GJ Magovern. Anti-collagen type III antibodies detect increase of blood vessels in stimulated rabbit latissimus dorsi muscle. *Proc 2nd Ann IFESS Conf*, 58-60, 1997.
29. **DR Trumble**, WA LaFramboise, C Duan, and JA Magovern. Functional properties of conditioned skeletal muscle: implications for muscle-powered cardiac assist. *Am J Physiol* 273 (*Cell Physiol* 42): C588-C597, 1997.
30. C Duan, **DR Trumble**, IY Christlieb, JA Magovern, and GJ Magovern Sr. Improved function in muscles trained via interval stimulation. *Basic and Applied Myology*, 8(1): 35-40, 1998.

31. C Duan, **DR Trumble**, IY Christlieb, and JA Magovern. Letter to the Editor. *Basic and Applied Myology*, 8(3): 182-183, 1998.
32. **DR Trumble**, and JA Magovern. Muscle-powered blood pump: design and initial test results. *ASAIO J*, 45(3):178-182, 1999.
33. C Duan, **DR Trumble**, D Scalise, and JA Magovern. Intermittent stimulation enhances function of conditioned muscle. *Am J Physiol* 276 (*Regulatory Integrative Comp Physiol* 45): R1534-R1540, 1999.
34. **DR Trumble**, C Park, and JA Magovern. Copulsation balloon for right ventricular assistance: preliminary trials. *Circulation* 99: 2815-2818, 1999.
35. WE McGregor, **DR Trumble**, and JA Magovern. Mechanical analysis of midline sternotomy wound closure. *J Thorac Cardiovasc Surg* 117:1144-1150, 1999.
36. **DR Trumble** and JA Magovern. A muscle-powered energy delivery system and means for chronic in vivo testing. *J Appl Physiol* 86(6): 2106-2114, 1999.
37. **DR Trumble** and JA Magovern. Linear muscle power for cardiac support: a progress report. *Basic Appl Myology* 9(4): 175-186, 1999.
38. **DR Trumble**, C Kelley, RP Gaumond, JF Gardner, AJ Snyder, and WJ Weiss. Artificial Hearts and Other Organs. In: *Encyclopedia of Electrical and Electronics Engineering* (John Webster, editor), John Wiley & Sons Inc., p. 656-666, 1999.
39. **DR Trumble**. From the shoulders of giants: a look ahead. Biotechnology in the 21st century (editorial). *ASAIO J* 46(3): 251-252, 2000.
40. **DR Trumble** and JA Magovern. Method for measuring long-term function of muscle-powered implants via radio telemetry. *J Appl Physiol* 90: 1977-1985, 2001.
41. **DR Trumble**. Racing Hearts. *Scientific American* 284(1):12, Jan. 2001.
42. **DR Trumble**, Changping Duan, and JA Magovern. Effects of long-term stimulation on skeletal muscle phenotype expression and collagen/fibrillin distribution. *Basic Appl Myology* 11(2):91-98, 2001.
43. GJ Magovern Jr. and **DR Trumble**. Physiologic characteristics of canine skeletal muscle: implications for timing skeletal muscle cardiac assist devices (invited commentary). *Ann Thor Surg*, 72(4): 1343, 2001.
44. **DR Trumble**, DB Melvin and JA Magovern. Method for anchoring biomechanical implants to muscle tendon and chest wall. *ASAIO J* 48:62-70, 2002.
45. **DR Trumble** and JA Magovern. Muscle-Powered Mechanical Blood Pumps. *Science* 296(5575):1967, 2002.
46. **DR Trumble**, WE McGregor, and JA Magovern. Validation of a bone analog model for studies of sternal closure. *Ann Thor Surg* 74:739-45, 2002.
47. UK Dasika, **DR Trumble**, JA Magovern. Lower sternal reinforcement improves the stability of common sternal closures. *Ann Thor Surg* 75:1618-1621, 2003.
48. **DR Trumble** and JA Magovern. Capturing in situ skeletal muscle power for circulatory support: A new approach to device design. *ASAIO J* 49:480-485, 2003.

49. WE McGregor, M Payne, **DR Trumble**, KM Farkas, and JA Magovern. Improvement of sternal closure stability with reinforced steel wires. *Ann Thor Surg* 76(5):1631-1634, 2003.
50. DB Melvin, W Santamore, **D Trumble**, JA Magovern, and A Litsky. A durable, load-bearing muscle-prosthetic coupling. In: *Cardiac Bioassist 2002*. Eds: NW Guldner, P Klapproth, JC Jarvis. Shaker Verlag Aachen (Lübeck, Germany) 2003.
51. **DR Trumble**. Comparison of dog and pig models for testing sub-sternal cardiac compression devices. *ASAIO J* 50(3):188-192, 2004.
52. LA Nikolaidis, **DR Trumble**, T Hentosz , A Doverspike, R Huerbin, YT Shen, RP Shannon. Catecholamines restore myocardial contractility in dilated cardiomyopathy at the expense of increased coronary blood flow and myocardial oxygen consumption (MvO₂ cost of catecholamines in heart failure). *Eur J Heart Fail* 6(4):409-19, 2004.
53. **DR Trumble**. One Longsome Argument. *Skeptical Inquirer* 29(2):18-22, 2005.
54. **DR Trumble**, DB Melvin, MT Byrne, and JA Magovern. Improved mechanism for capturing muscle power for circulatory support. *Artificial Organs* 29(9):691-700, 2005.
55. JA Magovern, JD Fonger, DHJ Wang, D Kopilec, **DR Trumble**, DE Smith. A femoral artery cannula that allows distal blood flow. *J Thor Cardiovasc Surg* 130(3):684-6, 2005.
56. JA Magovern, L Teekell -Taylor, S Mankad , U Dasika , W McGregor, R Biederman, J Yamrozik and **DR Trumble**. Effect of flexible ventricular restraint device on cardiac remodeling after acute myocardial infarction. *ASAIO J* 52:196-200, 2006.
57. **DR Trumble**, DB Melvin, DA Dean, and JA Magovern. In vivo performance of a muscle-powered drive system for implantable blood pumps. *ASAIO J* 54(3):227-32, 2008.
58. **DR Trumble**. Linear muscle power for cardiac support: Current progress and future directions. *Basic Appl Myol* 19(1):35-40, 2009.
59. **DR Trumble**, M Norris and A Melvin. An implantable muscle energy converter for powering pulsatile cardiac assist devices: Design improvements and in vitro testing. *ASME J Med Dev* Sep 2010 4(3):035002 (4 pages). doi:10.1115/1.4002235
60. **DR Trumble**. Potential mechanisms for muscle-powered cardiac support. *Artificial Organs* 35(7): 715-720, 2011.
61. **DR Trumble**, W McGregor, RCP Kerckhoffs and LK Waldman. Cardiac assist with a twist: Apical torsion as a means to improve heart function. *J Biomech Engr* Oct;133(10):101003, 2011.
62. **DR Trumble**. What God Hath Wrought. *Free Inquiry* 33(2):27-32, 2013.
63. **DR Trumble**, *The Way of Science: Finding Truth and Meaning in a Scientific Worldview*. Prometheus Books, 2013. ISBN 978-1-61614-755-6.
64. **DR Trumble**, E Soohoo and LK Waldman. Applied apical torsion for cardiac assist: Design considerations and prototype development. *J Medical Devices* 9(2):020923, doi:10.1115/1.4030135, June 2015.

65. **DR Trumble.** A Muscle-powered counterpulsation device for tether-free cardiac support: Form and function. *J Medical Devices* 10(2):020903, doi: 10.1115/1.4033115 May 2016.
66. E Soohoo, H Ma, A Alcasid and **DR Trumble.** Torsional Ventricular Assist Device (tVAD): Design Considerations and Prototype Development. *J Medical Devices* 10(2):020906, doi: 10.1115/1.4033117 May 2016.
67. **DR Trumble.** Artificial Hearts and Cardiac Assist Devices: Performance, Control, and Power Delivery. In: *Encyclopedia of Electrical and Electronics Engineering* (John Webster, editor), John Wiley & Sons Inc. Published Online : 15 NOV 2016, DOI: 10.1002/047134608X.W6602.pub2
68. **DR Trumble.** Tipping the balance toward a critical mass of critical thinkers. *Free Inquiry*, 37(2):59-61, 2017.
69. E Soohoo, **DR Trumble** and LK Waldman. Computational parametric studies investigating the effects of applied apical torsion for cardiac assist. *Ann Biomed Eng* 45 (6), 1434–1448, June 2017. Published online: 2017 Mar 2. doi: 10.1007/s10439-017-1812-x.
70. E Aranda-Michel, J Han and **DR Trumble.** Design of a muscle-powered extra-aortic counterpulsation device for long-term circulatory support. *Design of Medical Devices Conference Proceedings*, Paper No. DMD2017-3325, pp. V001T01A002; 2 pages. doi:10.1115/DMD2017-3325, 2017.
71. J Han, M Kubala and **DR Trumble.** Design of a Muscle-powered Soft Robotic Bi-VAD for Long-term Circulatory Support. *Design of Medical Devices Conference Proceedings*, 2018 (accepted).
72. E Soohoo, E Aranda-Michel, M Kaissar and **DR Trumble.** Development of Epicardial Circulatory Assist Devices: Material Considerations. *Design of Medical Devices Conference Proceedings*, 2018 (accepted)