

Collaborative Research: Creating a Common Thermodynamics References Cited

- AAMC-HHMI committee, 2009, *Scientific Foundations for Future Physicians*.
- Alberts, B. 1998, "The cell as a collection of protein machines: Preparing the next generation of molecular biologists", *Cell*, **92**, 291-294.
- Barke, H.-D., Hazari, A. & Yitbarek, S., 2009, *Misconceptions in Chemistry: Addressing perceptions in chemical education* (Springer Verlag).
- Chabay, R. & Sherwood, B.A., 2011, *Matter and Interactions, 3rd Ed.* (Wiley).
- Chi, M., 2005, "Commonsense Conceptions of Emergent Processes: Why Some Misconceptions Are Robust", *Journal of the Learning Sciences*, **14**(2), 161-199.
- Christensen, W.M., Meltzer, D.E. & Ogilvie, C.A., 2009, "Student ideas regarding entropy and the second law of thermodynamics in an introductory physics course", *American Journal of Physics*, **77**(10), 907-917.
- Crouch, C.H. et al., 2010, "Physics for Future Physicians and Life Scientists : a moment of opportunity", *APS News*, **19**(3), 6.
- Garvin-doxas, K. & Klymkowsky, M.W., 2008, "Understanding Randomness and its Impact on Student Learning : Lessons Learned from Building the Biology Concept Inventory (BCI)", *CBE-Life Sciences Education*, **7**, 227-233.
- Hammer, D. et al., 2004. "Resources, framing, and transfer", in J. Mestre, ed. *Transfer of Learning from a Modern Multidisciplinary Perspective*. 89–120.
- Hammer, D., 2000. Student resources for learning introductory physics. *American Journal of Physics*, **68**(S1), S52.
- Hsu, L. et al., 2004, "Resource Letter RPS-1: Research in problem solving", *American Journal of Physics*, **72**(9), 1147.
- Johnstone, A. H., MacDonald J. J., & Webb, G., 1977, "Misconceptions in school thermodynamics," *Phys. Educ.* **12**:4, 248-251.
- Kesidou, S. & Duit, R., 1993, "Students' conceptions of the second law of thermodynamics — an interpretive study," *J. Res. Sci. Teach.* **30**, 85-106.
- Knight, R., 2007, *Physics for Scientists and Engineers: A strategic approach, 2nd Ed.* (Addison Wesley)
- Knight, R., Jones, B., & Field, S., 2009, *College Physics: A strategic approach* (Addison Wesley)
- L. Tisza, 1966, *Generalized Thermodynamics* (MIT Press).
- McDermott, L.C. & Redish, Edward F., 1999. Resource Letter: PER-1: Physics Education Research. *American Journal of Physics*, **67**(9), 755-767.
- Meltzer, D.E., 2004, "Investigation of students' reasoning regarding heat, work, and the first law of thermodynamics in an introductory calculus-based general physics course," *American Journal of Physics*, **72**(11), p.1432.

- NRC, 2003. *Bio 2010* (National Academy Press).
- NSF #0087519, Learning How to Learn Science: Metacognition in post-secondary physics education for bioscience majors.
- NSF #0440113, Toward a new Conceptualization of What Constitutes Progress in Learning Physics, K-16 : Resources , Frames , and Networks.
- NSF #0524987, Learning the language of science: Advanced math for concrete thinkers.
- NSF #0715567, Collaborative Research: Open-source physics tutorial worksheets with faculty / TA development and implementation resources.
- NSF #0737458, Collaborative Research: Modeling Physics in an Integrated Physics Course for Biologists.
- NSF #0919816, The Physics of Life: Interdisciplinary Education at the Introductory Level.
- NSF #0965156, The Conference on Scientific Foundations of Future Physicians: How do physics departments respond?
- NSF #9355849, Student Expectations in University Physics.
- NSF #9653007, General Chemistry Investigations: An Interdisciplinary, Research Team Laboratory.
- Redish, E. F & Smith, K.A., 2008, “Looking Beyond Content: Skill Development for Engineers”, *Journal of Engineering Education*, **97**, 295–307.
- Redish, E. F, 2004, “A Theoretical Framework for Physics Education Research: Modeling Student Thinking”, in *Proceedings of the International School of Physics, "Enrico Fermi", Course CLVI*. 629-642.
- Redish, E. F. & Hammer, D., 2009, “Reinventing college physics for biologists: Explicating an epistemological curriculum”, *American Journal of Physics*, **77**(7), 629-642.
- Redish, E. F., 1998, “Student expectations in introductory physics”, *American Journal of Physics*, **66**(3), 212-224.
- Redish, E. F., 2010, “Introducing Students to the Culture of Physics: Explicating elements of the hidden curriculum”, in *Proceedings of the Physics Education Research Conference, Portland, OR, July 2010, AIP Conf. Proc.* **1289**, 49-52.
- Redish, E. F., 2010, “Introducing Students to the Culture of Physics: Explicating elements of the hidden curriculum”, in *Proceedings of the Physics Education Research Conference, Portland, OR, July 2010, AIP Conf. Proc.* **1289**, 49-52.
- Sears, F.W. & Zemansky, M., 1956, *College Physics: Mechanics, Heat, and Sound* (Addison Wesley).
- Sherwood, B. A. and Bernard, W., 1984, “Work and heat transfer in the presence of sliding friction,” *Am. J. Phys.*, **52**, 1001-1007.
- Sherwood, B.A., 1983, “Work and pseudowork,” *Am. J. Phys.*, **51**, 597-602.
- Vogel, S. 2003, *Comparative Biomechanics: Life’s physical world* (Princeton U. Press,).
- Warren, J. W., 1972, “The teaching of the concept of heat,” *Phys. Educ.* **7**, 41-44.