References to Support the GUIDELINES FOR SELF-STUDY AND EXTERNAL EVALUATION OF UNDERGRADUATE PHYSICS PROGRAMS

References to reviews and resource letters:

- 1. "Resource Letter PER-1: Physics Education Research", Lillian C. McDermott and Edward F. Redish, The American Journal of Physics, **67**, 755-767 (September, 1999)
- 2. "Resource Letter RPS-1: Research in problem solving," Leonardo Hsu, Eric Brewe, Thomas M. Foster, and Kathleen A. Harper, Am. J. Phys. **72**, 1147 (2004)
- 3. "Recent advances in classroom physics," Rep. Prog. Phys. 66, 1833-1864 (2003).
- 4. Online bibliography: R. Duit, Students' and Teachers' Conceptions in Science Education, http://www.ipn.uni-kiel.de/aktuell/stcse/stcse.html].

References to cited conceptual surveys

- 1. FCI: "Force Concept Inventory," David Hestenes, Malcom Wells and Gregg Swackhamer, Physics Teacher **30**, 141-158 (1992)
- 2. FMCE: "Assessing student learning of Newton's laws: The Force and Motion Conceptual Evaluation," R.K. Thornton and D.R. Sokoloff, Am. J. Phys. **66**(4), 228-351 (1998)
- 3. CSEM: "Surveying students' conceptual knowledge of electricity and magnetism," David P. Maloney, Thomas L. O'Kuma, Curtis J. Hieggelke, and Alan Van Heuvelen, Am. J. Phys. **69**, S12 (2001)

Some reference books on teaching physics

- 1. A Guide to Introductory Physics Teaching, Arnold Arons (John Wiley & Sons, Inc., 1990).
- 2. *Just-in-Time Teaching*, G. M. Novak, E. T. Patterson, A. D. Gavrin, and W. Christian, (Prentice Hall, 1999).
- 3. *Peer Instruction, A User's Manual*, Eric Mazur, (Prentice Hall, Upper Saddle River NJ, 1997).
- 4. Reasoning in Physics: The Part of Common Sense, L. Viennot (Kluwer, 2001).
- 5. Five Easy Lessons: Strategies for Successful Physics Teaching, R. D. Knight (Addison Wesley, 2002).
- 6. Teaching Physics with the Physics Suite, E. F. Redish (John Wiley & Sons, Inc.)

Some Important Articles on Undergraduate Physics

Rosanne Di Stefano, "Where an Instructor's Dreams Meet Reality: Total Available Student Time," in *Proceedings of the International Conference on Undergraduate Physics Education*, CP399, edited by E.F. Redish and J.S. Rigden, (AIP Press, Woodbury, NY, 1997), pp.225-239

Fred Goldberg, "How Can Computer Technology be Used to Promote Learning and Communication Among Physics Teachers?" in *Proceedings of the International Conference on Undergraduate Physics Education*, CP399, edited by E.F. Redish and J.S. Rigden, (AIP Press, Woodbury, NY, 1997), pp.2375-2392.

Richard R. Hake, "Evaluating Conceptual Gains in Mechanics: A Six Thousand Student Survey of Test Data," in *Proceedings of the International Conference on Undergraduate Physics Education*, CP399, edited by E.F. Redish and J.S. Rigden, (AIP Press, Woodbury, NY, 1997), pp.595-603.

Richard Hake, "Interactive-engagement versus traditional methods: A six-thousand-student survey of mechanics test data for introductory physics courses," Am. J. Phys. **66**, 64-74 (1998).

Patricia Heller, Ronald Keith, and Scott Anderson, "Teaching problem solving through cooperative grouping. Part 1: Group vs. Individual Problem Solving," Am. J. Phys. **60**, 627 (1992).

Patricia Heller, Ronald Keith, and Scott Anderson, "Teaching problem solving through cooperative grouping. Part 2: Designing Problems and Structuring Groups," Am. J. Phys. **60**, 637 (1992).

Robert C. Hilborn, "Guest Comment: Revitalizing undergraduate physics—who needs it?" Am. J. Phys. **65**, 175 (1997).

Robert C. Hilborn, Ruth H. Howes, and Kenneth S. Krane, editors, *Strategic Programs* for Innovations in Undergraduate Physics: Project Report, http://www.aapt.org/Projects/ntfup.cfm

Robert C. Hilborn and Ruth H. Howes, "Why Many Undergradaute Physics Programs Are Good but Few are Great," Physics Today **56** 38 (2003).

Ruth H. Howes and Robert C. Hilborn, "Guest Comment: Winds of Change," Am. J. Phys. **68**, 40 (2000).

William J. Leonard, Robert J. Dufresne, and Jose P. Mestre, "Using qualitative problem-solving strategies to highlight the role of conceptual knowledge in solving problems," Am J. Phys. **64**, 1495 (1996).

Corinne A. Manogue, Philip J. Siemens, Janet Tate, Kerry Browne, Margaret Niess, and Adam J. Wolfer, "Paradigms in Physics: a New Upper-division Curriculum," Am. J. Phys **69**, 978 (2001).

Corinne A. Manogue and Kenneth S. Krane, "Paradigms in Physics: Restructuring the Upper Level," Physics Today **56** 53 (2003).

Lillian McDermott, "Bridging the Gap Between Teaching and Learning: the Role of Research," in *Proceedings of the International Conference on Undergraduate Physics Education*, CP399, edited by E.F. Redish and J.S. Rigden, (AIP Press, Woodbury, NY, 1997), pp.139-165.

Edward F. Redish, "Millikan Lecture 1998: Building a Science of Teaching Physics," Am. J. Phys. **67**, 562 (1997).

Frederick Reif, "How Can We Help Students Acquire Effectively Usable Physics Knowledge?" in *Proceedings of the International Conference on Undergraduate Physics Education*, CP399, edited by E.F. Redish and J.S. Rigden, (AIP Press, Woodbury, NY, 1997), pp.179-195.

Ronald K. Thornton, "Conceptual Dynamics: Following Changing Student Views of Force and Motion," in *Proceedings of the International Conference on Undergraduate Physics Education*, CP399, edited by E.F. Redish and J.S. Rigden, (AIP Press, Woodbury, NY, 1997), pp.241-265.

Barbara L. Whitten, Suzanne R. Foster, and Margaret L. Duncombe, "What Works for Women in Undergraduate Physics?" Physics Today **56** 46 (2003).