Carl E Wieman

List of Publications by Year
in descending order

70 papers	6,911 citations	109321 35 h-index	110387 64 g-index
72 all docs	72 docs citations	72 times ranked	4783 citing authors

#	Article	IF	Citations
1	Perspectives on Active Learning: Challenges for Equitable Active Learning Implementation. Journal of Chemical Education, 2022, 99, 1691-1699.	2.3	16
2	FINDING THE MISSING NONPOLYPOID (FLAT AND DEPRESSED) COLORECTAL NEOPLASM (NP-CRN): A NEW EDUCATIONAL STRATEGY FOR VISUAL DISCRIMINATION BASED ON EXPERT PERFORMANCE. Gastrointestinal Endoscopy, 2022, 95, AB177.	1.0	1
3	Evaluating the problem-solving skills of graduating chemical engineering students. Education for Chemical Engineers, 2021, 34, 68-77.	4.8	10
4	Mixed results from a multiple regression analysis of supplemental instruction courses in introductory physics. PLoS ONE, 2021, 16, e0249086.	2.5	2
5	Validated diagnostic test for introductory physics course placement. Physical Review Physics Education Research, 2021, 17, .	2.9	3
6	Response to â€œInterpret with Caution: COPUS Instructional Styles May Not Differ in Terms of Practices That Support Student Learning,â€•by Melody McConnell, Jeffrey Boyer, Lisa M. Montplaisir, Jessie B. Arneson, Rachel L. S. Harding, Brian Farlow, and Erika G. Offerdahl. CBE Life Sciences Education, 2021, 20, le1.	2.3	4
7	A Detailed Characterization of the Expert Problem-Solving Process in Science and Engineering: Guidance for Teaching and Assessment. CBE Life Sciences Education, 2021, 20, ar43.	2.3	24
8	Evidence-Based Principles for Worksheet Design. Physics Teacher, 2021, 59, 402-403.	0.3	0
9	Developing scientific decision making by structuring and supporting student agency. Physical Review Physics Education Research, 2020, 16, .	2.9	30
10	Template for teaching and assessment of problem solving in introductory physics. Physical Review Physics Education Research, 2020, 16, .	2.9	14
11	What factors impact student performance in introductory physics?. PLoS ONE, 2020, 15, e0244146.	2.5	4
12	Characterizing the mathematical problem-solving strategies of transitioning novice physics students. Physical Review Physics Education Research, 2020, 16, .	2.9	3
13	What factors impact student performance in introductory physics?. , 2020, 15, e0244146.		0
14	What factors impact student performance in introductory physics?. , 2020, 15, e0244146.		0
15	What factors impact student performance in introductory physics?. , 2020, 15, e0244146.		0
16	What factors impact student performance in introductory physics?. , 2020, 15, e0244146.		0
17	Expertise in University Teaching & the Implications for Teaching Effectiveness, Evaluation & Training. Daedalus, 2019, 148, 47-78.	1.8	22
18	Exploring bias in mechanical engineering students' perceptions of classmates. PLoS ONE, 2019, 14, e0212477.	2.5	4

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19	Demographic gaps or preparation gaps?: The large impact of incoming preparation on performance of students in introductory physics. Physical Review Physics Education Research, 2019, 15, .	2.9	70
20	Tools for Science Inquiry Learning: Tool Affordances, Experimentation Strategies, and Conceptual Understanding. Journal of Science Education and Technology, 2018, 27, 215-235.	3.9	30
21	Preparing physics students for being marooned on a desert island (and not much else). Physics Teacher, 2017, 55, 68-68.	0.3	1
22	Enhancing Diversity in Undergraduate Science: Self-Efficacy Drives Performance Gains with Active Learning. CBE Life Sciences Education, 2017, 16, ar56.	2.3	194
23	Value added or misattributed? A multi-institution study on the educational benefit of labs for reinforcing physics content. Physical Review Physics Education Research, 2017, 13, .	2.9	63
24	The Connection Between Teaching Methods and Attribution Errors. Educational Psychology Review, 2016, 28, 645-648.	8.4	4
25	Concepts first, jargon second improves student articulation of understanding. Biochemistry and Molecular Biology Education, 2016, 44, 12-19.	1.2	24
26	The half empty question for socio-cognitive interventions.. Journal of Educational Psychology, 2016, 108, 397-404.	2.9	26
27	Examining and contrasting the cognitive activities engaged in undergraduate research experiences and lab courses. Physical Review Physics Education Research, 2016, 12, .	2.9	38
28	Comment on â€œBenefits of completing homework for students with different aptitudes in an introductory electricity and magnetism courseâ€• Physical Review Physics Education Research, 2016, 12, .	2.9	2
29	Analyzing the many skills involved in solving complex physics problems. American Journal of Physics, 2015, 83, 459-467.	0.7	47
30	Comparative Cognitive Task Analyses of Experimental Science and Instructional Laboratory Courses. Physics Teacher, 2015, 53, 349-351.	0.3	73
31	Teaching critical thinking. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 11199-11204.	7.1	135
32	Educational transformation in upper-division physics: The Science Education Initiative model, outcomes, and lessons learned. Physical Review Physics Education Research, 2015, 11, .	1.7	29
33	Editorial for special issue on concept inventories in computing. Computer Science Education, 2014, 24, 250-252.	3.7	3
34	Physics Exams that Promote Collaborative Learning. Physics Teacher, 2014, 52, 51-53.	0.3	37
35	The Teaching Practices Inventory: A New Tool for Characterizing College and University Teaching in Mathematics and Science. CBE Life Sciences Education, 2014, 13, 552-569.	2.3	102
36	The Similarities Between Research in Education and Research in the Hard Sciences. Educational Researcher, 2014, 43, 12-14.	5.4	18

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37	Large-scale comparison of science teaching methods sends clear message. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 8319-8320.	7.1	185
38	Psychological insights for improved physics teaching. Physics Today, 2014, 67, 43-49.	0.3	55
39	Making On-line Science Course Materials Easily Translatable and Accessible Worldwide: Challenges and Solutions. Journal of Science Education and Technology, 2012, 21, 1-10.	3.9	12
40	Development and Validation of Instruments to Measure Learning of Expertâ€Like Thinking. International Journal of Science Education, 2011, 33, 1289-1312.	1.9	282
41	Improved Learning in a Large-Enrollment Physics Class. Science, 2011, 332, 862-864.	12.6	857
42	Student Interpretations of Equations Related to the First Law of Thermodynamics. Journal of Chemical Education, 2010, 87, 750-755.	2.3	63
43	Galvanizing Science Departments. Science, 2009, 325, 1181-1181.	12.6	5
44	Modifying and Validating the Colorado Learning Attitudes about Science Survey for Use in Chemistry. Journal of Chemical Education, 2008, 85, 1435.	2.3	120
45	Oersted Medal Lecture 2007: Interactive simulations for teaching physics: What works, what doesnâ€™t, and why. American Journal of Physics, 2008, 76, 393-399.	0.7	64
46	PhET: Simulations That Enhance Learning. Science, 2008, 322, 682-683.	12.6	252
47	Why Not Try a Scientific Approach to Science Education?. Change, 2007, 39, 9-15.	0.5	132
48	A powerful tool for teaching science. Nature Physics, 2006, 2, 290-292.	16.7	43
49	Formation of Bright Matter-Wave Solitons during the Collapse of Attractive Bose-Einstein Condensates. Physical Review Letters, 2006, 96, 170401.	7.8	416
50	PhET: Interactive Simulations for Teaching and Learning Physics. Physics Teacher, 2006, 44, 18-23.	0.3	199
51	Minimize Your Mistakes by Learning from Those of Others. Physics Teacher, 2005, 43, 252-253.	0.3	0
52	The Surprising Impact of Seat Location on Student Performance. Physics Teacher, 2005, 43, 30-33.	0.3	56
53	Boseâ€“Einstein Condensation in a Dilute Gas: The First 70 Years and some Recent Experiments (Nobel) Tj ETQq1 1 0.784314 rgBT /Ove	2.1	23
54	Atomâ€“molecule coherence in a Boseâ€“Einstein condensate. Nature, 2002, 417, 529-533.	27.8	600

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55	Dynamics of collapsing and exploding Boseâ€"Einstein condensates. Nature, 2001, 412, 295-299.	27.8	670
56	Atom cooling, trapping, and quantum manipulation. Reviews of Modern Physics, 1999, 71, S253-S262.	45.6	194
57	Boseâ€"Einstein Condensation in an Ultracold Gas. International Journal of Modern Physics B, 1997, 11, 3281-3296.	2.0	0
58	The Richtmyer Memorial Lecture: Boseâ€"Einstein Condensation in an Ultracold Gas. American Journal of Physics, 1996, 64, 847-855.	0.7	12
59	Resource Letter TNAâ€1: Trapping of neutral atoms. American Journal of Physics, 1996, 64, 18-20.	0.7	10
60	The creation of Bose-Einstein condensation in a cold vapor. European Physical Journal D, 1996, 46, 2923-2927.	0.4	0
61	Evanescent-wave guiding of atoms in hollow optical fibers. Physical Review A, 1996, 53, R648-R651.	2.5	133
62	Inexpensive laser cooling and trapping experiment for undergraduate laboratories. American Journal of Physics, 1995, 63, 317-330.	0.7	72
63	Parity nonconservation in atoms; past work and trapped atom future. Hyperfine Interactions, 1993, 81, 27-34.	0.5	2
64	Using diode lasers for atomic physics. Review of Scientific Instruments, 1991, 62, 1-20.	1.3	664
65	Multiply loaded, ac magnetic trap for neutral atoms. Physical Review Letters, 1991, 67, 2439-2442.	7.8	105
66	Collective behavior of optically trapped neutral atoms. Physical Review Letters, 1990, 64, 408-411.	7.8	292
67	432-nm source based on efficient second-harmonic generation of GaAlAs diode-laser radiation in a self-locking external resonant cavity. Optics Letters, 1989, 14, 731.	3.3	87
68	Atomic beam collimation using a laser diode with a self-locking power-buildup cavity. Optics Letters, 1988, 13, 357.	3.3	44
69	Precision measurement of the Stark shift in the 6S1/2â†'6P3/2cesium transition using a frequency-stabilized laser diode. Physical Review A, 1988, 38, 162-165.	2.5	46
70	Precision measurement of the hyperfine structure of theCs1336P3/2state. Physical Review A, 1988, 38, 1616-1617.	2.5	48