Andrew F Heckler

List of Publications by Year
in descending order

55 papers	1,167 citations	430874 18 h-index	395702 33 g-index
57 all docs	57 docs citations	57 times ranked	758 citing authors

#	Article	IF	Citations
1	The Advantage of Abstract Examples in Learning Math. Science, 2008, 320, 454-455.	12.6	202
2	The advantage of simple symbols for learning and transfer. Psychonomic Bulletin and Review, 2005, 12, 508-513.	2.8	99
3	Precision Detection of the Cosmic Neutrino Background. Physical Review Letters, 1999, 82, 3952-3955.	7.8	67
4	Transfer of Mathematical Knowledge: The Portability of Generic Instantiations. Child Development Perspectives, 2009, 3, 151-155.	3.9	65
5	Astrophysical applications of quantum corrections to the equation of state of a plasma. Physical Review D, 1994, 49, 611-617.	4.7	59
6	Effects of electroweak phase transition dynamics on baryogenesis and primordial nucleosynthesis. Physical Review D, 1995, 51, 405-428.	4.7	58
7	Calculation of the Emergent Spectrum and Observation of Primordial Black Holes. Physical Review Letters, 1997, 78, 3430-3433.	7.8	58
8	Formation of a Hawking-radiation photosphere around microscopic black holes. Physical Review D, 1997, 55, 480-488.	4.7	52
9	The cost of concreteness: The effect of nonessential information on analogical transfer.. Journal of Experimental Psychology: Applied, 2013, 19, 14-29.	1.2	44
10	Some Consequences of Prompting Novice Physics Students to Construct Force Diagrams. International Journal of Science Education, 2010, 32, 1829-1851.	1.9	43
11	Adding and subtracting vectors: The problem with the arrow representation. Physical Review Physics Education Research, 2015, 11, .	1.7	35
12	Framework and implementation for improving physics essential skills via computer-based practice: Vector math. Physical Review Physics Education Research, 2017, 13, .	2.9	28
13	The Role of Automatic, Bottom-Up Processes: In the Ubiquitous Patterns of Incorrect Answers to Science Questions. Psychology of Learning and Motivation - Advances in Research and Theory, 2011, , 227-267.	1.1	25
14	Nonperturbative Effects on Nucleation. Physical Review Letters, 1996, 76, 180-183.	7.8	24
15	Peaks and decays of student knowledge in an introductory E&M course. Physical Review Physics Education Research, 2009, 5, .	1.7	21
16	Systematic study of student understanding of the relationships between the directions of force, velocity, and acceleration in one dimension. Physical Review Physics Education Research, 2011, 7, .	1.7	20
17	Grades, grade component weighting, and demographic disparities in introductory physics. Physical Review Physics Education Research, 2020, 16, .	2.9	18
18	Modeling thermal fluctuations: phase mixing and percolation. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1997, 405, 121-125.	4.1	17

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19	Searching for Stellar Mass Black Holes in the Solar Neighborhood. Astrophysical Journal, 1996, 472, L85-L88.	4.5	16
20	Interference between electric and magnetic concepts in introductory physics. Physical Review Physics Education Research, 2011, 7, .	1.7	16
21	Patterns of Response Times and Response Choices to Science Questions: The Influence of Relative Processing Time. Cognitive Science, 2015, 39, 496-537.	1.7	16
22	Can Self-Efficacy and Task Values Buffer Perceived Costs? Exploring Introductory- and Upper-Level Physics Courses. Journal of Experimental Education, 2022, 90, 839-861.	2.6	13
23	Intuitive or rational? Students and experts need to be both. Physics Today, 2021, 74, 28-34.	0.3	13
24	Studentsâ€™ conceptual performance on synthesis physics problems with varying mathematical complexity. Physical Review Physics Education Research, 2017, 13, .	2.9	12
25	The Effect of Field Representation on Student Responses to Magnetic Force Questions. , 2007, , .		11
26	Factors affecting learning of vector math from computer-based practice: Feedback complexity and prior knowledge. Physical Review Physics Education Research, 2016, 12, .	2.9	11
27	Reasoning with alternative explanations in physics: The cognitive accessibility rule. Physical Review Physics Education Research, 2018, 14, .	2.9	11
28	How students process equations in solving quantitative synthesis problems? Role of mathematical complexity in studentsâ€™ mathematical performance. Physical Review Physics Education Research, 2017, 13, .	2.9	9
29	Graduate student misunderstandings of wave functions in an asymmetric well. Physical Review Physics Education Research, 2019, 15, .	2.9	9
30	Sustained Effects of Solving Conceptually Scaffolded Synthesis Problems. , 2010, , .		8
31	What works with worked examples: Extending self-explanation and analogical comparison to synthesis problems. Physical Review Physics Education Research, 2017, 13, .	2.9	8
32	Student difficulties with basic concepts in introductory materials science engineering. , 2011, , .		7
33	Patterns in assignment submission times: Procrastination, gender, grades, and grade components. Physical Review Physics Education Research, 2021, 17, .	2.9	5
34	Modeling studentsâ€™ conceptual understanding of force, velocity, and acceleration. AIP Conference Proceedings, 2009, , .	0.4	4
35	Observed hierarchy of student proficiency with period, frequency, and angular frequency. Physical Review Physics Education Research, 2018, 14, .	2.9	4
36	Toward a comprehensive picture of student understanding of force, velocity, and acceleration. , 2008, , .		3

#	Article	IF	Citations
37	Student accuracy in reading logarithmic plots: The problem and how to fix it. , 2013, , .		3
38	Student Understanding of Differentials in Introductory Physics. , 0, , .		3
39	Group-work tutorials for an introductory materials engineering course. , 2011, , .		2
40	Mediating relationship of differential products in understanding integration in introductory physics. Physical Review Physics Education Research, 2018, 14, .	2.9	2
41	Evolution of Student Knowledge in a Traditional Introductory Classroom. , 2008, , .		1
42	Student Difficulties with Trigonometric Vector Components Persist in Multiple Student Populations. , 0, , .		1
43	Synthesis problems: role of mathematical complexity in students' problem solving strategies. , 0, , .		1
44	Effects of Belief Bias on Student Reasoning from Data Tables. , 0, , .		1
45	The effectiveness of brief, spaced practice on student difficulties with basic and essential engineering skills. , 2013, , .		0
46	The dependence of instructional outcomes on individual differences: An example from DC circuits. , 2013, , .		0
47	Effects of Training Examples on Student Understanding of Force and Motion. , 0, , .		0
48	Formation of a Photosphere Around Microscopic Black Holes. , 1996, , 273-282.		0
49	Spatial Reasoning Ability and the Construction of Integrals in Physics. , 0, , .		0
50	Design and Evaluation of a Natural Language Tutor for Force and Motion. , 0, , .		0
51	Bottlenecks in Solving Synthesis Problems. , 0, , .		0
52	Applying analogical reasoning to introductory-level synthesis problems. , 0, , .		0
53	Student understanding of potential, wavefunctions and the Jacobian in hydrogen in graduate-level quantum mechanics. , 0, , .		0
54	Prelecture Questions and Conceptual Testing in Undergraduate Condensed Matter Courses. , 0, , .		0

#	Article	IF	Citations
55	Effectiveness of guided group work in graduate level quantum mechanics. Physical Review Physics Education Research, 2020, 16, .	2.9	0