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### **Education**

BS in physics from Wright State University, June 1983. Graduated Magna Cum Laude with Honors in Physics. Inducted into Sigma Pi Sigma. Honors thesis title: *Interaction of Dislocation Lines with Point Defects in Pure Copper*.

MS & PhD in physics from the University of Cincinnati, December 1984 & December 1987. PhD thesis title: *The Dynamics of Mixmaster Type Vacuum Universes with Spacetime Geometries  $R \times S^3 \times S^3$  and  $R \times S^3 \times S^3 \times S^3$* .

### **Experience**

September 1981 - August 1983: Taught introductory physics labs for all majors at Wright State University. Rank: Undergraduate teaching assistant.

September 1983 - June 1987: Taught introductory physics labs and recitations for all majors at the University of Cincinnati. Rank: Graduate teaching assistant.

June 1987 - July 1987: Taught an introductory physics lecture for life-science majors (trigonometry-based) at Wright State University. Rank: Instructor.

September 1987 - July 1988: Taught introductory physics lecture for scientists and engineers (calculus-based) at the University of Dayton. Rank: Assistant professor.

August 1988 - present: Teach physics and philosophy at all levels for science and non-science majors at Elizabethtown College. Rank: Professor.

## Courses Taught

*Introductory Physics Lab* for engineers, scientists, liberal arts majors, and life-science majors. One year, trigonometry-based and calculus-based courses. These courses teach students how to take data, do error analysis, maintain a laboratory notebook, and report experimental findings. The texts were written by instructors at the colleges where the labs were taught. I wrote my own handouts describing the laboratory procedures at Elizabethtown College.

*Introductory Physics* for life-science majors, scientists, and engineers. Three semester, trigonometry-based and calculus-based courses. Each sequence of courses introduces (at the appropriate mathematical level) kinematics, dynamics, thermodynamics, statics, fluids, electricity and magnetism, optics, relativity, quantum mechanics, nuclear and atomic physics, and particle physics. Texts: *Physics for Scientists and Engineers* by Serway & Jewett; *General Physics* by D.C. Giancoli. I turned the first two semesters of the algebra-based version into an online course in Canvas using *Physics in Biology and Medicine* by P. Davidovits. I turned the first semester of the calculus-based version into an online course in Canvas using Hands-On Labs, WebAssign, and MATLAB Grader.

*Introductory Mathematics for Physics* for engineers and scientists. One semester course covering algebra, straight lines, quadratic equations, trigonometry, vectors, complex numbers, sinusoids, systems of equations, derivatives, integrals, and differential equations. MATLAB is introduced and used throughout the course. Text: *Introductory Mathematics for Engineering Applications* by Rattan & Klingbeil.

*Freshman Seminars* titled, “Mysteries of the Cosmos,” “The Universe: Cosmos or Chaos,” “God and the New Physics,” “The Mind of God,” “Romancing the Universe,” “How Do You Know? Spiritual & Rational Realms of Knowledge,” and “Mind & Brain.” One semester, non-mathematical courses. The Freshman Seminar is designed to introduce first-semester students to college-level academics, familiarize them with the library, polish their communications skills, and inspire them to greater academic achievement. Texts: *Cycles of Fire* by W.K. Hartmann and R. Miller; *The Capricious Cosmos* by Joe Rosen; *God and the New Physics* by P. Davies; *The Mind of God*, by P. Davies; *Romancing the Universe* by J.G. Sobosan; *Mapping the Mind* by Rita Carter; *Consciousness: An Introduction* by Susan Blackmore; *Conscious* by Annaka Harris.

*Cosmology*. One semester, non-mathematical course. A study of the origin, evolution, and large scale structure of the universe according to various scientific theories; the history of cosmology and its interactions with society; world views associated with nihilism, existentialism, holism, reductionism, the anthropic principles, and the theistic principle. Text: *Cosmology: Historical, Literary, Philosophical, Religious, and Scientific Perspectives* edited by N.S. Hetherington.

*Astronomy* with lab. One semester, algebra-based course. A study of the structure and evolution of stars, planetary systems, galaxies, and the universe. Less familiar astronomical objects such as black holes, quasars, cosmic strings, texture, and wormholes are also studied. Laboratories provide an opportunity to observe planets, stars, clusters, nebulae, and galaxies; they also provide practical experience in determining astronomical quantities. Text: *The Cosmic Perspective* by Jeffrey Bennett *et al.*

*Earth in Space*. One semester, non-mathematical introduction to Big Bang cosmology, galaxies, stellar evolution, planetary formation, the solar system, physical geology, Earth's interior & physical properties, the sea floor, plate tectonics, mountain belts, the continental crust, structural geology, earthquakes & seismology, igneous rocks & the rock cycle. Text: *Earth in Space: The Evolution of a Planet*, Custom Text.

*How Things Work*. One semester, non-mathematical introduction to concepts in physics related to commonly used technology and processes experienced in daily life. Topics covered: Motion (skating, projectiles, wheels, bumper cars), Mechanics (scales, baseball, amusement parks, bicycle), Resonance (musical instruments), Optics (camera, telescope), Modern Physics (relativity of simultaneity, quantum non-locality), and Astronomy (celestial motions). Text: *How Things Work: The Physics of Everyday Life* by Louis A. Bloomfield. Also taught online in Canvas with lab.

*Introductory Acoustics*. One semester, algebra-based creative expression course. A study of the fundamentals of musical sound produced by wind and string instruments. The course covers vibrational and oscillatory motion, waves, types of sound, science and aesthetics, scales, pitch, beats, power and loudness, consonance, dissonance, chords, and harmony. Text: *Musical Acoustics* by D.A. Hall.

*History & Philosophy of Science*. One semester, non-mathematical course offered through the Department of Philosophy. An examination of the scientific method and scientific models, as well as an analysis of the impact of science upon the modern world. The limitations of science are also addressed. Texts: *Philosophy of Science, The Central Issues* edited by Martin Curd & J.A. Cover; *Worldviews: An Introduction to the History and Philosophy of Science* by Richard Dewitt; *An Introduction to the Philosophy of Physics* by Marc Lange.

*Foundations of Modern Physics*. One semester, non-mathematical course offered as an Interdisciplinary Colloquium at Elizabethtown College. Co-taught with Michael Silberstein, Professor of Philosophy. The course introduces issues in modern physics such as quantum nonlocality, closed timelike curves, dark matter, dark energy, quantum gravity, and unification. Texts: *Seven Brief Lessons on Physics* by Carlo Rovelli; *Beyond the Dynamical Universe* by Michael Silberstein, W.M. Stuckey, and Timothy McDevitt.

*Physics for Bio-Nanotechnology.* One semester, calculus-based course offered at Harrisburg University. Topics include surface-to-volume ratios, quantum mechanics, covalent bonding, ionic bonding, Fermi energy, Boltzmann distribution function, Fermi-Dirac distribution function, metallic solids, covalent solids, laser, population inversion, scanning tunneling microscope, Coulomb blockade, quantum dots, energy bands and energy gaps in solids, semiconductors, *n*-type and *p*-type semiconductors, light-emitting and light-absorbing diodes, resonant tunneling transistors, photovoltaic solar cell, junction transistor, metal-oxide-semiconductor field-effect transistor, unimolecular rectifier, carbon nanotube field emission device. Texts: *Physics for Scientists & Engineers* by R.A. Serway & J.W. Jewett; *Learning Bio-Micro-Nanotechnology* by M.I. Mendelson; *Introduction to Nanoscience & Nanotechnology* by G. Hornyak *et al.*

*Statics.* One semester, sophomore-level course. Equilibria of particles and rigid bodies subject to concentrated and distributed forces with practical applications to the design of mechanical structures. Topics include: vector analysis, moments, equations of equilibrium, structural analysis, internal forces, and inertial properties. Text: *Engineering Mechanics: Statics* by R.C. Hibbler.

*Modern Physics.* One semester, sophomore-level course. An introduction to special relativity, general relativity and quantum mechanics. Topics include Lorentz transforms, boost matrix mechanics, Faraday tensor, Einstein's equations, relativistic cosmology and the Schwarzschild metric, dark energy and dark matter, Schrödinger's equation, reflection and transmission coefficients, the EPR paradox, and the Standard Model of particle physics. Text: *Physics for Scientists & Engineers with Modern Physics* by R.A. Serway & J.W. Jewett.

*College Physics III with Numerical Analysis Lab.* One semester, sophomore-level course. An introduction to electrostatics, magnetostatics, and partial differential equations. The laboratory covers topics such as repeated bisection and Newton's method for finding the roots of polynomials, Taylor series and the Runge-Kutta method for solving differential equations, cubic splines and least-squares fitting, and finite difference methods. Text: *Boundary Value Problems* by D.L. Powers.

*Advanced Physics Laboratory* for physicists and engineers. One semester, junior-level course. Advanced laboratory course with experiments in modern physics, electricity and magnetism, optics, and thermodynamics. References: *Experimental Methods for Engineers* by J.P. Holman; *Electronics and Instrumentation for Scientists* by H.V. Malmstadt, C.G. Enke, and S.R. Crouch.

*Mechanics* for physicists and engineers. One semester, junior-level course. An intermediate course in mechanics covering Newtonian mechanics of systems of particles, central forces, oscillations, collisions, rigid-body dynamics, and the Lagrangian formalism for generalized coordinates. Text: *Dynamics* by R.C. Hibbeler.

*Electromagnetism* for physicists and engineers. One semester, junior-level course. An intermediate course in vector analysis, Coulomb's Law, Electric Field Intensity, Electric Flux Density, Gauss's Law, Divergence, Energy and Potential, Current and Capacitance, Current and Conductors, Dielectrics and Capacitance, and Poisson's and Laplace's Equations. Text: *Engineering Electromagnetics* by W.H. Hayt and J.A. Buck.

*General Relativity* (listed by Math Department as *Applied Differential Geometry*) for physicists and mathematicians. One semester, junior-level course. An introduction to manifolds, differential topology, exterior calculus, affine geometry, Riemannian geometry, special relativity, and general relativity with applications to relativistic cosmology and black holes. References: *Gravitation* by C.W. Misner, K.S. Thorne, and J.A. Wheeler; *General Relativity* by R.M. Wald.

*Junior-Senior Colloquium* titled, "Exploring Worldviews: Cosmology in Philosophical, Scientific, and Theological Perspective." One semester, junior-level course. An introduction to the central and essential cosmological questions that face all human beings, providing students with the resources and the opportunity to explore their own worldviews. Text: *God, Humanity and the Cosmos* by Christopher Southgate *et al.*

*Quantum Physics I and II* for physicists. One year, senior-level course. The course introduces and uses the Dirac notation to explain introductory quantum mechanics from simple one-dimensional problems through the hydrogen atom. Also studied are spin, the path integral formalism, and the addition of angular momenta. Texts: *Principles of Quantum Mechanics* by R. Shankar; *Quantum Mechanics and Experience* by David Z. Albert.

*Applied Quantum Mechanics* for physicists. One semester, junior-level course. In addition to texts, the course uses published papers to introduce the measurement problem, entanglement, quantum nonlocality, Bell's inequalities, principles of quantum mechanics, Hilbert spaces, Heisenberg's uncertainty principle, interaction-free measurement, quantum liar paradox, quantum eraser, weak values, Popescu-Rohrlich corrections, Tsirelson bound, no-signaling condition, and interpretations of quantum mechanics. Texts: *Quantum Mechanics and Experience* by David Z. Albert; *Totally Random: Why Nobody Understands Quantum Mechanics* by T. Bub & J. Bub.

#### **Courses Audited at Elizabethtown College**

*Fundamentals of Language and Culture* (GER 111)

*Introduction to Music Literature* (MU 105)

*The Religious Literature of Early Christianity* (REL 102)

*Eastern Religions* (REL 222)

*Abstract Algebra* (MA 301)

*Philosophy of Natural Science* (PH 370)

*Christology* (REL 374)

*The Religious Literature of Ancient Israel* (REL 101)

*Philosophy of Science* (PH 213)  
*Real Analysis I* (MA 421)  
*Dynamic Earth* (ES 111)  
*Topology* (MA 371)  
*Philosophy of Mind* (PH 378)  
*History and Philosophy of Science* (PH 200)  
*Intermediate Mathematica* (MA 170)  
*Foundations of Physics* (PH 484)  
*Philosophy of Physics: Time Travel and the Nature of Space and Time* (PH 374)  
*Numerical Methods in MATLAB* (MA 460)  
*Philosophy and History of Physics* (PH 239)

### ArXiv Papers and Publications

“Dynamics of the Mixmaster Type Universe with Topology  $\mathbb{R} \times S^3 \times S^3$ ,” W.M. Stuckey, L. Witten and Bob Stewart, *General Relativity and Relativistic Astrophysics, Proceedings of the 2<sup>nd</sup> Canadian Conference*, edited by C.C. Dyer, B.O.J. Tupper and A.A. Coley, 64 – 67 (World Scientific, Singapore, 1988).

“Dynamics of the Mixmaster-type, Vacuum Universe with Geometry  $\mathbb{R} \times S^3 \times S^3 \times S^3$ ,” W.M. Stuckey, L. Witten and Bob Stewart, *General Relativity and Gravitation* **22**(11), 1321 – 1339 (1990).

“Some Recent Developments in Mixmaster Cosmology,” W.M. Stuckey, *Comments on Astrophysics* **15**(2), 63 – 70 (1990).

“Can Galaxies Exist within Our Particle Horizon with Hubble Recessional Velocities Greater Than  $c$ ?” W.M. Stuckey, *American Journal of Physics* **60**(2), 142 – 146 (1992).

“Derivation of the Spectral Energy Density in  $\mathbb{R} \times S^3$ ,” W.M. Stuckey and G. Bambakidis, *General Relativity and Relativistic Astrophysics, Proceedings of the 4<sup>th</sup> Canadian Conference*, edited by G. Kunstatter, D.E. Vincent and J.G. Williams, 347 – 349 (World Scientific Press, Singapore, 1992).

“Hamiltonian for the Vacuum Mixmaster Universe with Geometry  $\mathbb{R} \times S^7$ ,” R.M. Cassidy and W.M. Stuckey, *General Relativity and Relativistic Astrophysics, Proceedings of the 4<sup>th</sup> Canadian Conference*, edited by G. Kunstatter, D.E. Vincent and J.G. Williams, 35 – 39 (World Scientific Press, Singapore, 1992).

“Kinematics between Comoving, Photon Exchangers in the Closed Matter-dominated Universe,” W.M. Stuckey, *American Journal of Physics* **60**(6), 554 – 560 (1992).

“The Schwarzschild Black Hole as a Gravitational Mirror,” W.M. Stuckey, *American Journal of Physics* **61**(5), 448 – 456 (1993).

“Recession Velocities Greater Than  $c$  within the Particle Horizon,” W.M. Stuckey, *General Relativity and Relativistic Astrophysics, Proceedings of the 5<sup>th</sup> Canadian Conference*, R.B. Mann and R.G. McLenaghan, 454 – 458 (World Scientific Press, Singapore, 1994).

“The Observable Universe Inside a Black Hole,” W.M. Stuckey, *American Journal of Physics* **62**(9), 788 – 795 (1994).

“Defining Spacetime,” W.M. Stuckey, *Modern Mathematical Models of Time and their Applications to Physics and Cosmology, Astrophysics and Space Science* **244**, edited by W.G. Tifft and W.J. Cocke, 371 – 374 (Kluwer, Boston, 1996).

“Uniform Spaces via Topological Groups and Non-locality,” W.M. Stuckey, *Causality and Locality in Modern Physics*, edited by Geoffrey Hunter, Stanley Jeffers and Jean-Pierre Vigi er, 235 – 242 (Kluwer, Boston, 1998).

“Leibniz’s Principle, Dynamism and Non-locality,” W.M. Stuckey, *Physics Essays* **12**(3), 414 – 419 (1999).

“Pregeometry and the Trans-Temporal Object,” W.M. Stuckey, *Studies on the Structure of Time: from Physics to Psycho(patho)logy*, edited by R. Buccheri, V. Di Gesu, and M. Saniga, 121 – 128 (Kluwer Academic, New York, 2000).

“Uniform Spaces in the Pregeometric Modeling of Quantum Non-Separability,” W.M. Stuckey and Michael Silberstein, <http://arxiv.org/abs/gr-qc/0003104>.

“Science, Religion, & Templeton Prize,” W. Mark Stuckey, *Letters: Physics Today* **54**(8), 72 – 74 (2001).

“Metric Structure and Dimensionality over a Borel Set via Uniform Spaces,” W.M. Stuckey, <http://arxiv.org/abs/gr-qc/0109030>.

“Pregeometry via Uniform Spaces,” W.M. Stuckey and Wyeth Raws, *Gravitation & Cosmology: From the Hubble Radius to the Planck Scale*, edited by R.L. Amoroso, G. Hunter, M. Kafatos, and J.P. Vigi er, 477 – 482 (Kluwer Academic, Dordrecht, 2002).

“On a Pregeometric Origin for Spacetime Dimensionality and Metric Structure,” W.M. Stuckey, <http://arxiv.org/abs/gr-qc/0208057>.

“Causality as a Casualty of Pregeometry,” W.M. Stuckey, *The Nature of Time: Geometry, Physics and Perception*, edited by R. Buccheri, M. Saniga and W.M. Stuckey, 353 – 362 (Kluwer Academic, Dordrecht, 2003).

“Of Quantum Non-Locality & Anti-Bullets,” Mark Stuckey, *Metanexus: Views 2003.03.19*.

“Deflating Quantum Mysteries via the Relational Blockworld,” W.M. Stuckey, Michael Silberstein and Michael Cifone, *Physics Essays* **19**(2), 269 – 283 (2006), <http://arxiv.org/abs/quant-ph/0503065>.

“Reversing the Arrow of Explanation in the Relational Blockworld: Why Temporal Becoming, the Dynamical Brain and the External World are in the Mind,” W.M. Stuckey, Michael Silberstein and Michael Cifone, *Endophysics, Time, Quantum and the Subjective*, edited by R. Buccheri, A. Elitzur, and M. Saniga, 293 – 316 (World Scientific, Singapore, 2005).

“Quantum to Classical Transition per the Relational Blockworld,” W.M. Stuckey, Michael Silberstein and Michael Cifone, <http://arxiv.org/abs/quant-ph/0605105>.

“An Argument for 4D Blockworld from a Geometric Interpretation of Non-relativistic Quantum Mechanics,” Michael Silberstein, W.M. Stuckey and Michael Cifone, *Relativity and the Dimensionality of the World*, edited by Vesselin Petkov, 197 – 216 (Springer-Verlag, Germany, 2007), <http://arxiv.org/abs/quant-ph/0605039>.

“The Relational Blockworld Interpretation of Non-relativistic Quantum Mechanics,” W.M. Stuckey, Michael Silberstein and Michael Cifone, *Foundations of Probability and Physics 4*, edited by Guillaume Adenier, Christopher A. Fuchs and Andrei Yu. Khrennikov, 412 – 421 (American Institute of Physics, Melville, NY, 2007).

“Implications for a spatially discrete transition amplitude in the twin-slit experiment,” W.M. Stuckey, <http://arxiv.org/abs/quant-ph/0703039>.

“Reconciling Spacetime and the Quantum: Relational Blockworld and the Quantum Liar Paradox,” W.M. Stuckey, Michael Silberstein and Michael Cifone, *Foundations of Physics* **38**(4), 348 – 383 (2008), <http://arxiv.org/abs/quant-ph/0510090>.

“Unification per the Relational Blockworld,” W.M. Stuckey and Michael Silberstein, <http://arxiv.org/abs/0712.2778>.

“Why Quantum Mechanics Favors Adynamical and Acausal Interpretations such as Relational Blockworld over Backwardly Causal and Time-Symmetric Rivals,” Michael Silberstein, Michael Cifone and W.M. Stuckey, *Studies in History & Philosophy of Modern Physics* **39**(4), 736 – 751 (2008). <http://dx.doi.org/10.1016/j.shpsb.2008.07.005>.

“Relational Blockworld: Towards a Discrete Graph Theoretic Foundation of Quantum Mechanics,” W.M. Stuckey, Timothy McDevitt and Michael Silberstein, <http://arxiv.org/abs/0903.2642>.

“Gauge Invariance from a Graphical Self-Consistency Criterion,” W.M. Stuckey, T.J. McDevitt and Michael Silberstein. <http://arxiv.org/abs/1106.3339>.

“Modified Regge Calculus as an Explanation of Dark Energy,” W.M. Stuckey, Timothy McDevitt and Michael Silberstein, *Classical & Quantum Gravity* **29**(5), 055015 (2012). <http://arxiv.org/abs/1110.3973>.

“Explaining the Supernova Data without Accelerating Expansion,” W.M. Stuckey, Timothy McDevitt and Michael Silberstein. Honorable Mention in the Gravity Research Foundation 2012 Awards for Essays on Gravitation, May 2012. *International Journal of Modern Physics D* **21**(11), 1242021 (2012) DOI: 10.1142/S0218271812420217 <http://users.etown.edu/s/STUCKEYM/GRFessay2012.pdf>.

“Being, Becoming and the Undivided Universe: A Dialogue between Relational Blockworld and the Implicate Order Concerning the Unification of Relativity and Quantum Theory,” Michael Silberstein, W.M. Stuckey and Timothy McDevitt. *Foundations of Physics* **43**(4), 502-532 (2013). <http://arxiv.org/abs/1108.2261>.

“An Adynamical, Graphical Approach to Quantum Gravity and Unification,” W.M. Stuckey, Michael Silberstein and Timothy McDevitt, *Beyond Peaceful Coexistence: The Emergence of Space, Time and Quantum*, edited by I. Licata, 499 – 544 (Imperial College Press, London, 2016) <http://arxiv.org/abs/0908.4348>.

“Concerning Quadratic Interaction in the Quantum Cheshire Cat Experiment,” W.M. Stuckey, Michael Silberstein and Timothy McDevitt. *International Journal of Quantum Foundations* **2**(1), 17-31 (2016) <http://arxiv.org/abs/1410.1522> <http://www.ijqf.org/wps/wp-content/uploads/2015/12/IJQF2016v2n1p2.pdf>

“Relational Blockworld: Providing a Realist Psi-Epistemic Account of Quantum Mechanics,” W.M. Stuckey, Michael Silberstein and Timothy McDevitt. *International Journal of Quantum Foundations* **1**(3), 123-170 (2015) <http://www.ijqf.org/wps/wp-content/uploads/2015/06/IJQF2015v1n3p2.pdf>.

“Space, Time and the Limits of Human Understanding,” W.M. Stuckey, Michael Silberstein and Timothy McDevitt, *Space, Time and the Limits of Human Understanding*, edited by Shyam Wuppuluri & Giancarlo Ghirardi, 203 – 215 (The Frontiers Collection. Springer, 2016)

“The Missing Mass Problem as a Manifestation of GR Contextuality,” W.M. Stuckey, Timothy McDevitt and Michael Silberstein. <http://arxiv.org/abs/1509.09288>.

“End of a Dark Age?” W.M. Stuckey, Timothy McDevitt, A.K. Sten, and Michael Silberstein. Honorable Mention in the Gravity Research Foundation 2016 Awards for Essays on Gravitation, May 2016. *International Journal of Modern Physics D* **25**(12), 1644004 (2016) DOI: 10.1142/S0218271816440041 <http://arxiv.org/abs/1605.09229>.

“Underwriting Information-Theoretic Accounts of Quantum Mechanics with a Realist, Psi-Epistemic Model,” W.M. Stuckey, Michael Silberstein and Timothy McDevitt. *International Journal of Quantum Information* **14**(1), 1640007 (2016) DOI: 10.1142/S0219749916400074 <https://www.overleaf.com/read/pywttwvgnzjp>.

“Could GR Contextuality Resolve the Missing Mass Problem?” W.M. Stuckey, Timothy McDevitt, A.K. Sten, and Michael Silberstein. Honorable Mention in the Gravity Research Foundation 2018 Awards for Essays on Gravitation, May 2018. *International Journal of Modern Physics D* **27**(14), 1847018 (2018) DOI: 10.1142/S0218271818470181.

“Why the Tsirelson Bound? Bub’s Question and Fuchs’ Desideratum,” W.M. Stuckey, Michael Silberstein, Timothy McDevitt, and Ian Kohler. *Entropy* **21**(7), 692 (2019) DOI:10.3390/e21070692 <https://arxiv.org/abs/1807.09115>. <https://www.mdpi.com/1099-4300/21/7/692>

“Re-Thinking the World with Neutral Monism: Removing the Boundaries Between Mind, Matter, and Spacetime,” Michael Silberstein and W.M. Stuckey. *Entropy* **22**(5), 551 (2020) <https://www.mdpi.com/1099-4300/22/5/551/pdf>.

“Answering Mermin’s Challenge with Conservation per No Preferred Reference Frame,” W.M. Stuckey, Michael Silberstein, Timothy McDevitt, and T.D. Le. *Scientific Reports* **10**, 15771 (2020) <http://arxiv.org/abs/1809.08231>. [www.nature.com/articles/s41598-020-72817-7](https://www.nature.com/articles/s41598-020-72817-7)

“The Completeness of Quantum Mechanics and the Determinateness and Consistency of Intersubjective Experience: Wigner’s Friend and Delayed Choice,” Michael Silberstein and W.M. Stuckey. In *Consciousness and Quantum Mechanics*, edited by Shan Gao (Oxford University Press, 2022) 198–259 <http://arxiv.org/abs/1901.10825>. <https://academic.oup.com/book/44484/chapter/376468182>

“Beyond Causal Explanation: Einstein’s Principle Not Reichenbach’s,” Michael Silberstein, W.M. Stuckey, and Timothy McDevitt. *Entropy* **23**(1), 114 (2021). <https://www.mdpi.com/1099-4300/23/1/114/htm>

“Introducing Quantum Entanglement to First-Year Students: Resolving the Trilemma,” W.M. Stuckey, Timothy McDevitt, and Michael Silberstein. <https://arxiv.org/abs/2106.12043>

“‘Mysteries’ of Modern Physics and the Fundamental Constants  $c$ ,  $h$ , and  $G$ ,” W.M. Stuckey, Timothy McDevitt and Michael Silberstein. Honorable Mention in the Gravity Research Foundation 2021 Awards for Essays on Gravitation, May 2021. *Quanta* **11**(1), 5-14 (2022). <http://quanta.ws/ojs/index.php/quanta/article/view/189/146>

“No Preferred Reference Frame at the Foundation of Quantum Mechanics,” W.M. Stuckey, Timothy McDevitt, and Michael Silberstein. *Entropy* **24**(1), 12 (2022). <https://www.mdpi.com/1099-4300/24/1/12>

“Completing the Quantum Reconstruction Program via the Relativity Principle,” W.M. Stuckey, Michael Silberstein, and Timothy McDevitt. <http://arxiv.org/abs/2404.13064>

“Price-Wharton Constrained Colliders: Co-Causation or No Causation?” W.M. Stuckey and Michael Silberstein. <http://arxiv.org/abs/2406.19419>

“Schrödinger’s Cat: Qbit or Cbit?” W.M. Stuckey. <https://philsci-archive.pitt.edu/23536/>

### **Books**

“Beyond the Dynamical Universe: Unifying Block Universe Physics and Time as Experienced,” Michael Silberstein, W.M. Stuckey, and Timothy McDevitt. Oxford University Press, Oxford, ISBN 978-0-19-880708-7 (2018).

“Einstein’s Entanglement: Bell Inequalities, Relativity, and the Qubit,” W.M. Stuckey, Michael Silberstein, and Timothy McDevitt. Oxford University Press, Oxford (2024).

### **Blog Posts**

“The Quantum Liar Experiment: An Instantiation of the Mermin Device,” W.M. Stuckey. Physics Forums Insight (9 May 2015) <https://www.physicsforums.com/insights/quantum-liar-experiment-instantiation-mermin-device/>

“Learn About the Greenberger-Horne-Zeilinger Experiment,” W.M. Stuckey. Physics Forums Insight (9 May 2015) <https://www.physicsforums.com/insights/greenberger-horne-zeilinger-experiment/>

“Weak Values Part 1: Asking Photons Where They Have Been,” W.M. Stuckey. Physics Forums Insight (30 May 2015) <https://www.physicsforums.com/insights/weak-values-part-1-asking-photons/>

“Weak Values Part 2: The Quantum Cheshire Cat Experiment,” W.M. Stuckey. Physics Forums Insight (30 May 2015) <https://www.physicsforums.com/insights/weak-values-part-2-quantum-cheshire-cat-experiment/>

“Blockworld and Its Foundational Implications: Time Dilation and Length Contraction,” W.M. Stuckey. Physics Forums Insight (5 November 2015)  
<https://www.physicsforums.com/insights/blockworld-foundational-implications-part-1-time-dilation-length-contraction/>

“Blockworld and Its Foundational Implications: The Relativity of Simultaneity and Blockworld,” W.M. Stuckey. Physics Forums Insight (6 November 2015)  
<https://www.physicsforums.com/insights/blockworld-foundational-implications-part-2-relativity-simultaneity-blockworld/>

“Blockworld and its Foundational Implications: General Relativity and the Big Bang,” W.M. Stuckey. Physics Forums Insight (9 November 2015)  
<https://www.physicsforums.com/insights/blockworld-foundational-implications-part-3-general-relativity-big-bang/>

“Blockworld and its Foundational Implications: General Relativity and Closed Timelike Curves,” W.M. Stuckey. Physics Forums Insight (9 November 2015)  
<https://www.physicsforums.com/insights/blockworld-foundational-implications-part-4-general-relativity-closed-timelike-curves/>

“Blockworld and its Foundational Implications: Delayed Choice and No Counterfactual Definiteness,” W.M. Stuckey. Physics Forums Insight (10 November 2015)  
<https://www.physicsforums.com/insights/blockworld-foundational-implications-part-5-delayed-choice-no-counterfactual-definiteness/>

“Understanding Retrocausality and Blockworld,” W.M. Stuckey. Physics Forums Insight (11 November 2015)  
<https://www.physicsforums.com/insights/retrocausality/>

“The Schwarzschild Metric: GPS Satellites,” W.M. Stuckey. Physics Forums Insight (27 December 2017)  
<https://www.physicsforums.com/insights/schwarzschild-metric-part-1-gps-satellites/>

“The Schwarzschild Metric: The Photon Sphere,” W.M. Stuckey. Physics Forums Insight (29 December 2017)  
<https://www.physicsforums.com/insights/schwarzschild-metric-part-2-photon-sphere/>

“The Schwarzschild Metric: A Newtonian Comparison,” W.M. Stuckey. Physics Forums Insight (1 January 2018)  
<https://www.physicsforums.com/insights/schwarzschild-metric-part-3-newtonian-comparison/>

“Why the Quantum | A Response to Wheeler’s 1986 Paper,” W.M. Stuckey. Physics Forums Insight (4 August 2018)  
<https://www.physicsforums.com/insights/why-the-quantum-a-response-to-wheelers-1986-paper/>

“The Unreasonable Effectiveness of the Popescu-Rohrlich Correlations,” W.M. Stuckey. Physics Forums Insight (23 October 2018)

<https://www.physicsforums.com/insights/the-unreasonable-effectiveness-of-the-popescu-rohrlich-correlations/>

“The Quantum Mystery of Wigner’s Friend,” W.M. Stuckey. Physics Forums Insight (14 November 2018)

<https://www.physicsforums.com/insights/wigners-friend/>

“Modern Physics Understood as an Unrecognized Kuhnian Revolution,” W.M. Stuckey. Physics Forums Insight (15 October 2019)

<https://www.physicsforums.com/insights/modern-physics-understood-as-an-unrecognized-kuhnian-revolution/>

“Exploring Bell States and Conservation of Spin Angular Momentum,” W.M. Stuckey. Physics Forums Insight (16 October 2019)

<https://www.physicsforums.com/insights/bell-states-and-conservation-of-spin-angular-momentum/>

“Answering Mermin’s Challenge with the Relativity Principle,” W.M. Stuckey. Physics Forums Insight (25 October 2019)

<https://www.physicsforums.com/insights/answering-mermins-challenge-with-wilczeks-challenge/>

“Dark Energy Part 1: Einstein-deSitter Cosmology,” W.M. Stuckey. Physics Forums Insight (7 April 2020)

<https://www.physicsforums.com/insights/dark-energy-part-1-einstein-desitter-cosmology/>

“Dark Energy Part 2: LCDM Cosmology,” W.M. Stuckey. Physics Forums Insight (21 April 2020)

<https://www.physicsforums.com/insights/dark-energy-part-2-lcdm-cosmology/>

“Dark Energy Part 3: Fitting the SCP Union 2.1 Supernova Data,” W.M. Stuckey. Physics Forums Insight (25 April 2020)

<https://www.physicsforums.com/insights/dark-energy-part-3-fitting-the-scp-union-2-1-supernova-data/>

“A Principle Explanation of the ‘Mysteries’ of Modern Physics,” W.M. Stuckey. Physics Forums Insight (28 August 2020)

<https://www.physicsforums.com/insights/a-principle-explanation-of-the-mysteries-of-modern-physics/>

“Does the Block Universe of Physics Mean Time is an Illusion?” W.M. Stuckey. Physics Forums Insight (28 September 2020)

<https://www.physicsforums.com/insights/does-the-block-universe-of-physics-mean-time-is-an-illusion/>

“Einstein’s Missed Opportunity to Rid Us of ‘Spooky Actions at a Distance’,” W.M. Stuckey. *Science X Dialogs* (12 October 2020)

<https://sciencex.com/news/2020-10-einstein-opportunity-spooky-actions-distance.html>.

“How Quantum Information Theorists Revealed the Relativity Principle at the Foundation of Quantum Mechanics,” W.M. Stuckey. Physics Forums Insight (25 July 2021)

<https://www.physicsforums.com/insights/how-quantum-information-theorists-revealed-the-relativity-principle-at-the-foundation-of-quantum-mechanics/>

“Quantum Information Theorists Produce New ‘Understanding’ of Quantum Mechanics,” W.M. Stuckey. *Science X Dialogs* (6 January 2022).

<https://sciencex.com/news/2022-01-quantum-theorists-mechanics.html>

“Superdeterminism and the Mermin Device,” W.M. Stuckey. Physics Forums Insight (20 March 2022)

<https://www.physicsforums.com/insights/superdeterminism-and-the-mermin-device/>

“How Quantum Information Theory Solves ‘the only mystery’ of Quantum Mechanics,” W.M. Stuckey. Physics Forums Insight (3 June 2023)

<https://www.physicsforums.com/insights/how-quantum-information-theory-solves-the-only-mystery-of-quantum-mechanics/>

“Schrödinger’s Cat and the Qbit,” W.M. Stuckey. Physics Forums Insight (3 April 2024)

<https://www.physicsforums.com/insights/schrodingers-cat-and-the-qbit/>

“Comment on PBS Video: ‘What If Physics IS NOT Describing Reality’,” W.M. Stuckey. Physics Forums Insight (22 July 2024)

<https://www.physicsforums.com/insights/pbs-video-comment-what-if-physics-is-not-describing-reality/>

“Quantum information theorists are shedding light on entanglement, one of the spooky mysteries of quantum mechanics,” William Mark Stuckey (30 July 2024)

<https://theconversation.com/quantum-information-theorists-are-shedding-light-on-entanglement-one-of-the-spooky-mysteries-of-quantum-mechanics-222861>

### **Conferences and Workshops Attended**

1985 Joint Spring Meeting of the Ohio Section of the American Physical Society and the Southern Ohio Section of the American Association of Physics Teachers. (April 1985)

2<sup>nd</sup> Canadian Conference on General Relativity and Relativistic Astrophysics. (May 1987)

1987 Fall Meeting of the Ohio Section of the American Physical Society. (October 1987)

Chautauqua Short Course: Mathematics for Dynamic Modeling. (April 1989)

37<sup>th</sup> Annual Meeting of the Central Pennsylvania Section of the American Association of Physics Teachers. (April 1989) One of my students delivered a paper.

38<sup>th</sup> Annual Meeting of the Central Pennsylvania Section of the American Association of Physics Teachers. (April 1990)

1990 Spring Meeting of the American Physical Society, Division of Astrophysics. (April 1990)

1990 Central Pennsylvania Consortium Astronomers' Meeting. (April 1990)

39<sup>th</sup> Annual Meeting of the Central Pennsylvania Section of the American Association of Physics Teachers. (April 1991) One of my students delivered a paper.

1991 Central Pennsylvania Consortium Astronomers' Meeting. (April 1991)

4<sup>th</sup> Canadian Conference on General Relativity and Relativistic Astrophysics. (May 1991)

Frontiers of Theoretical Physics and Mathematics: Topics on Quantum Gravity. (April 1992)

1992 Central Pennsylvania Consortium Astronomers' Meeting. (April 1992)

Chautauqua Short Course: A Radio View of the Universe. (May 1992)

1993 Central Pennsylvania Consortium Astronomers' Meeting. (April 1993)

5<sup>th</sup> Canadian Conference on General Relativity and Relativistic Astrophysics. (May 1993)

1994 Central Pennsylvania Consortium Astronomers' Meeting. (April 1994)

Chautauqua Short Course: Unification, Grand and Not So Grand. (May 1994)

43<sup>rd</sup> Annual Meeting of the Central Pennsylvania Section of the American Association of Physics Teachers. (April 1995) One of my students delivered a paper.

1995 Central Pennsylvania Consortium Astronomers' Meeting. (April 1995)

Fundamental Forces and Quantum Technology. (May 1995)

Mathematical Modeling of Time in Physics and Cosmology. (April 1996)

Causality and Locality in Modern Physics and Astronomy. (August 1997)

The Study of Time X. (July 1998)

Fundamental Problems in Quantum Theory. (August 1999)

Studies on the Structure of Time: from Physics to Psycho(patho)logy. (November 1999)

Gravitation and Cosmology: From the Hubble Radius to the Planck Scale. (August 2000)

Wheeler Symposium: Science & Ultimate Reality. (Mar 2002)

NATO ARW: The Nature of Time: Geometry, Physics and Perception. (May 2002)

New Directions in the Foundations of Physics. (May 2002)

The Ontology of Spacetime. (May 2004)

Endophysics, Time, Quantum and the Subjective. (January 2005)

New Directions in the Foundations of Physics. (April 2005)

Time-Symmetry in Quantum Mechanics. (July 2005)

New Directions in the Foundations of Physics. (April 2006)

Foundations of Probability and Physics 4. (June 2006)

Cosmology, Physics & the Possibility of Life. (January 2007)

Projective Geometries in Quantum Theory. (August 2007)

The Clock and the Quantum: Time and Quantum Foundations. (September 2008)

Vigier VII: The Search for Fundamental Theory. (July 2010)

Hiley Symposium. (November 2010)

The Biennial Meeting of the Philosophy of Science Association. (November 2010)

New Directions in the Foundations of Physics. (April 2011)

Retrocausality in Quantum Mechanics. (January 2012)

Foundations of Physics 2013. (July 2013)

Quantum Theory: From Foundations to Technologies. (June 2015)

Cosmological Frontiers in Fundamental Physics (June 2016)

2017 Central Pennsylvania Consortium Astronomers' Meeting. (April 2017)

2018 American Physical Society March Meeting. (March 2018)

2019 American Physical Society March Meeting. (March 2019)

Quantum Information Revolution: Impact to Foundations? (June 2019)

2021 American Physical Society March Meeting. (March 2021)

Philosophy of Science Association Meeting. (November 2021)

2022 American Physical Society March Meeting. (March 2022)

Foundations 2023. (July 2023)

Physics and Reality. (June 2024)

### **Colloquia and Seminar Presentations**

Title: Interaction of Dislocation Lines with Point Defects in Pure Copper  
Delivered: May 1983 at Wright State University

Title: Kasner Solution in N-Dimensions  
Delivered: April 1985 at the University of Cincinnati  
Title: N-Dimensional, Mixmaster-type Vacuum Hamiltonian  
Delivered: December 1985 at the University of Cincinnati

Title: Dynamics of the Mixmaster-type Universe with Topology  $\mathbb{R} \times \mathbb{S}^3 \times \mathbb{S}^3$   
Delivered: May 1987 at the University of Toronto  
Title: Relativity, Generally Speaking  
Delivered: February 1986 at Wright State University  
April 1987 at the University of Dayton  
March 1988 at Elizabethtown College  
October 1989 at Millersville University

Title: Faster-than-Light Galaxies  
Delivered: March 1991 for the Astronomical Society of Harrisburg  
April 1991 at Franklin and Marshall College  
October 1991 for the Lehigh Valley Amateur Astronomical Society  
March 1992 for the Delaware Valley Amateur Astronomers  
September 1992 at Lycoming College

Title: Hamiltonian for the Vacuum Mixmaster Universe with Geometry  $R \times S^7$   
Delivered: May 1991 at the University of Winnipeg

Title: Black Holes as Gravitational Mirrors  
Delivered: April 1992 at Gettysburg College  
October 1992 for the Astronomical Society of Harrisburg  
April 1993 for the Lebanon-Lancaster Science Teachers Association  
April 1993 at Wright State University

Title: The View on and about a Q-star  
Delivered: April 1993 at Dickinson College

Title: The Black Hole Universe  
Delivered: March 1994 at Miami University, Ohio  
April 1994 at Gettysburg College  
May 1994 at Wright State University

Title: Big Bang Cosmology  
Delivered: April 1994 for the Lebanon-Lancaster Science Teachers Association

Title: Defining Spacetime  
Delivered: April 1996 at University of Arizona

Title: Does God Play Dice?  
Delivered: April 1997 for the Lebanon-Lancaster Science Teachers Association  
October 1997 at Wright State University

Title: Uniform Spaces via Topological Groups and Non-locality  
Delivered: August 1997 at York University, Toronto

Title: Static for Dynamism  
Delivered: July 1998 at Evangelische Akademie, Germany

Title: Quantum Non-Locality and Reductive Pregeometry  
Delivered: August 1999 at University of Maryland Baltimore County

Title: Pregeometry and the Trans-Temporal Object  
Delivered: November 1999 at Centro Interdipartimentale di Tecnologie, Italy

Title: Pregeometry via Uniform Spaces  
Delivered: August 2000 at University of California, Berkeley.

Title: Causality as a Casualty of Pregeometry  
Delivered: May 2002 at Slovak Academy of Sciences, Tatranska Lomnica

Title: The Relational Blockworld  
Delivered: January 2005 at Bielefeld University, Germany  
February 2005 at Millersville University  
April 2005 at University of Maryland  
April 2005 at American Institute of Physics  
May 2005 at Wright State University  
July 2005 at University of Sydney  
August 2007 at Slovak Academy of Sciences  
September 2008 at Perimeter Institute, Canada

Title: Quantum Non-Locality and the Structure of Spacetime  
Delivered: May 2004 at Concordia University, Montreal  
September 2004 at Millersville University

Title: Quantum to Classical Transition per the Relational Blockworld  
Delivered: June 2006 at Linnaeus University, Växjö, Sweden

Title: Non-technical Introduction to Quantum Conundrums  
Delivered: March 2007 at Sul Ross University

Title: Relational Blockworld: A Path Integral Based Interpretation of Quantum Field Theory  
Delivered: July 2010 at Imperial College, London  
November 2010 at Hiley Symposium, Helsinki  
November 2010 at Philosophy of Science Association, Montreal  
January 2011 at Institute for Advanced Study at Austin, Texas

Title: Modified Regge Calculus as an Explanation of Dark Energy  
Delivered: December 2011 at Institute for Advanced Study at Austin, Texas  
January 2012 at University of Miami, Florida  
May 2012 at Millersville University, Pennsylvania

Title: An Adynamical, Graphical Approach to Quantum Theory  
Delivered: July 2013 at Munich Center for Mathematical Philosophy

Title: Concerning Quadratic Interaction in the Quantum Cheshire Cat Experiment  
Delivered: June 2015 at Linnaeus University, Växjö, Sweden  
July 2015 at Quantum Foundations Workshop, online  
October 2015 at Wright State University, Ohio

Title: End of a Dark Age?

Delivered: April 2016 at Millersville University, Pennsylvania

April 2017 at Franklin & Marshall College, Pennsylvania

Title: Beyond the Dynamical Universe

Delivered: October 2016 at Dolce Hayes Mansion, California

March 2018 at Los Angeles Convention Center, California

Title: Why the Tsirelson Bound?

Delivered: March 2019 at Boston Convention Center, Massachusetts

June 2019 at Linnaeus University, Växjö, Sweden

Title: Quantum Mysteries for Anybody: Solved

Delivered: April 2020 Online for Foundations of Quantum Mechanics

Title: A Principle Account of Entanglement

Delivered: Online for 2021 American Physical Society March Meeting

Title: The Relativity Principle at the Foundation of Quantum Mechanics

Delivered: November 2021 for Philosophy of Science Association Meeting

Title: Making Sense of Quantum Mechanics Per Its Information-Theoretic Reconstructions

Delivered: Online for 2022 American Physical Society March Meeting

April 2022 at Institute for Quantum Optics and Quantum Information, Vienna

Title: Rendering Quantum Mechanics Complete and Consistent with Special Relativity

Delivered: July 2023 at the University of Bristol, England

Title: Unifying Special Relativity and Quantum Mechanics via Adynamical Global Constraints

Delivered: June 2024 at the University of Helsinki, Finland

### **Journals Refereed**

American Journal of Physics

Journal of General Relativity and Gravitation

Physics Essays

Foundations of Science

Foundations of Physics

Discrete and Continuous Dynamical Systems

Studies in History & Philosophy of Modern Physics

Symmetry

Annals of the New York Academy of Sciences

Physica Scripta

International Journal of Quantum Foundations

Philosophical Transactions of the Royal Society A

International Journal of Quantum Information  
Journal of Modern Physics  
Axioms  
Entropy  
The Physics Teacher  
Quantum Studies: Mathematics and Foundations  
Philosophy of Science  
Synthese  
Ratio  
International Journal of Theoretical Physics

### **Review & Editorial Work**

West Publishing Co. (Reviewed chapter on cosmology for Karl Kuhn, 1992)

John Wiley & Sons (Reviewed problems on cosmological redshifts for Kenneth Krane, 1993)

Wm. C. Brown Publishers (Reviewed chapter on cosmology for Thomas Arny, 1994)

Saunders College Publishing (Reviewed chapter on cosmology for Jay Pasachoff, 1994)

Mosby-Year Book (Reviewed chapter on cosmology for Sune Engelbrektson, 1994)

Reviewed “Between Inner Space and Outer Space,” by John D. Barrow for the International Society for the Study of Time (1999)

Reviewed “Romancing the Universe,” by Jeffrey G. Sobosan for META (Jan 2000).

Reviewed “Cosmology and Creation, The Spiritual Significance of Contemporary Cosmology,” by Paul Brockelman for META (Feb 2000).

Springer-Verlag (Reviewed a manuscript on relativity, 2003)

Co-edited “The Nature of Time: Geometry, Physics and Perception” NATO Science Series II. Mathematics, Physics and Chemistry, v95 (2003)

McGraw Hill (Reviewed chapter on relativity for Alan Giambattista, 2004)

Wadsworth Publishing (Reviewed chapter on cosmology for Michael Seeds, 2004)

W.H. Freeman (Revisions to material on large redshift kinematics for Neil Comins, 2007)

Wiley (Corrections for “An Introduction to Modern Cosmology” by Andrew Liddle, 2007)

Oxford University Press (Reviewed book proposal, 2011)

Oxford University Press (Reviewed Elements of Electromagnetics by Matthew N.O. Sadiku, 2012)

Brooks/Cole (Revisions to material on general relativity for Serway/Jewett, 2012)

Cambridge University Press (Reviewed book proposal, 2015)

Harrisburg University (Reviewed their General Education Self-Study, 2015)

Springer Press (Reviewed book proposal, 2017)

Cambridge University Press (Reviewed “Retrocausality and single-world realist approaches to quantum theory” by Emily Adlam, Pete Evans, and Simon Friederich, 2024)

### **Awards**

(1996) My *Junior-Senior Colloquium* titled, “Exploring Worldviews: Cosmology in Philosophical, Scientific, and Theological Perspective” was awarded a \$10,000 prize in the Templeton Foundation’s Courses in Science and Religion Program. The course was co-taught with Professors Silberstein and Bucher. The institutional portion of the grant was used to host a conference, *Reasons to Believe*, which Dr. Silberstein and I co-directed in 1997.

(2000) I was awarded a NATO research grant as part of an international research consortium of colleagues from Italy, England, and Slovakia. The grant funded collaborative visits between members of the consortium. I visited the Solvay Institutes of Physics & Chemistry in January 2002 and the University of Nottingham in January 2003 under the auspices of this grant.

(2001) NATO funded an advanced research workshop entitled, “The Nature of Time: Geometry, Physics & Perception” for which I was an invited speaker, session coordinator and an editor of the proceedings. The workshop was held in May 2002 at the Slovak Academy of Sciences.

(2004) Professors Silberstein, Teske and I received a \$15,000 Local Societies Initiative grant from the Metanexus Institute as co-chairs of the Elizabethtown College Center for Science and Religion. The grant will be matched by Elizabethtown College to promote multidisciplinary, public and cross-institutional dialogue on key issues in the field of science and religion.

(2005) Elizabethtown College Strategic Grant (\$10,000) to conduct research associated with Relational Blockworld.

(2005) Travel award (\$1,500) from Huw Price to present a paper on Relational Blockworld at his conference, “Time-Symmetry in Quantum Mechanics,” hosted by The Centre for Time, University of Sydney.

(2007) Travel award (\$2,000) from the Center for Theology and the Natural Sciences to pay expenses for attending their conference, “Cosmology, Physics & the Possibility of Life.”

(2007) Travel award (\$1,200) from Metod Saniga of the Slovak Academy of Sciences to pay expenses for presenting at his workshop, “Projective Geometries in Quantum Theory.”

(2010) Collaborative Interdisciplinary Scholarship Projects Grant (\$16,000) from Elizabethtown College for the project “Mathematica Calculations for Relational Blockworld.

(2012) “Explaining the Supernova Data without Accelerating Expansion,” W.M. Stuckey, Timothy McDevitt and Michael Silberstein. Honorable Mention in the Gravity Research Foundation 2012 Awards for Essays on Gravitation.

(2016) “End of a Dark Age?” W.M. Stuckey, Timothy McDevitt and Michael Silberstein. Honorable Mention in the Gravity Research Foundation 2016 Awards for Essays on Gravitation.

(2018) “Could GR Contextuality Resolve the Missing Mass Problem?” W.M. Stuckey, Timothy McDevitt and Michael Silberstein. Honorable Mention in the Gravity Research Foundation 2018 Awards for Essays on Gravitation.

(2019) Summer Scholarship, Creative Arts, and Research Projects award (\$9500) from Elizabethtown College to produce the ten-part video series, “Beyond the Dynamical Universe: Rising to Wilczek’s Challenge.”

(2019) Faculty Grant (\$4,000) from Elizabethtown College, “Disseminating Physics Results for Beyond the Dynamical Universe.”

(2021) “‘Mysteries’ of Modern Physics and the Fundamental Constants  $c$ ,  $h$ , and  $G$ ,” W.M. Stuckey, Timothy McDevitt and Michael Silberstein. Honorable Mention in the Gravity Research Foundation 2021 Awards for Essays on Gravitation.