

## ABSTRACT:

We explore, in depth, Dr. Einstein's Special Relativity and cite noted physicists Daniel Gezari, Reginald Cahill, Danielle Sasso, Rodney Bartlett, and Johannes Valks as well as mathematician Josh Grams.

EDITORIAL by Glenn A. Baxter, P.E.\*\* - See [www.k1man.com/i1](http://www.k1man.com/i1)

The so called "Standard Model" is in trouble. See [www.k1man.com/f79](http://www.k1man.com/f79) In this issue of the Scientific Journal, we introduce Dr. Johannes C. Valks from the Netherlands. He and I, so far, seem to disagree whether or not my anti-neutron theory/model of the atom (see [www.k1man.com/c2](http://www.k1man.com/c2)) is really something new or whether my anti-neutron is nothing more than a pion and already contained within the current "Standard Model." I vigorously oppose his views, or course, but he is currently in the process of "coming to grips" with my theories regarding Dr. Einstein's relativity theories as discussed in my newly published book, Physics in the 21<sup>st</sup> Century. That book is free for downloading at [www.k1man.com/t](http://www.k1man.com/t) The book is intended as a text for a college or university advanced seminar type course at the undergraduate or graduate levels. The text will also be useful for post doctoral and independent physics researchers. I am confident that Dr. Valks will come around to my scientific points of view eventually. It might take years! I have already learned a great deal from recent collaborations with him. See [www.k1man.com/z](http://www.k1man.com/z), [www.k1man.com/z2](http://www.k1man.com/z2), and [www.k1man.com/z3](http://www.k1man.com/z3)

Recently, Nature Physics invited me to attend a 1 ½ hour meeting of a small group of scientists in New York City on 8 February 2012. I have asked Nature Physics if they could possibly reschedule this important scientific meeting since I have another equally important meeting the same day in Bangor, Maine. Nature Physics is the granddaddy of all the peer reviewed physics journals, and they have offices all over the world. I figure that a subscription to Nature Physics plus Scientific American, and free access to [www.viXra.org](http://www.viXra.org) & [www.arXiv.org](http://www.arXiv.org) is really all one needs in order to do first class physics research. Really advanced scientific researchers subscribe to THIS free Scientific Journal, of course!

Any scientific paper published in any of the many peer reviewed journals, such as Physical Review, etc., etc., etc., can be found by Googling the author or title of the paper, and up it

comes, free, covered by the Creative Commons License. If you don't find it, go directly to [www.viXra.org](http://www.viXra.org) or [www.arXiv.org](http://www.arXiv.org) and search under the writer's name. For example, Google [Not So Fast, Dr. Einstein](#), and you will see what I mean. Or go to [www.viXra.org](http://www.viXra.org) and search under Glenn Baxter. Be careful, however. For D. Sasso, you need to use ONLY the last name, Sasso, since all her papers are published under the name of D. Sasso. You will get full access to all of her significant papers on [www.viXra.org](http://www.viXra.org) by searching under Daniele Sasso. See [www.k1man.com/a13](http://www.k1man.com/a13)

Dr. Rodney Bartlett has cited has cited your Scientific Journal Editor, Glenn A. Baxter, P.E. on [www.viXra.org](http://www.viXra.org). See his interesting paper : [www.k1man.com/f300](http://www.k1man.com/f300) and [www.k1man.com/f301](http://www.k1man.com/f301) His 427 page book, Tomorrow's Science Today – Proposed Future Discoveries in Science, and How everyone Will See Everything Differently is at [www.k1man.com/f302](http://www.k1man.com/f302) His bio is at [www.k1man.com/f303](http://www.k1man.com/f303). He is an accomplished author. See [www.k1man.com/f304](http://www.k1man.com/f304) See also [www.viXra.org](http://www.viXra.org) and search Glenn Baxter

Your Scientific Journal Editor, Glenn A. Baxter, P.E. is now adding Part 12 to his paper "NOT SO FAST, DR. EINSTEIN." This deals with Dr. Einstein's Gravity – Acceleration Equivalency Principle. Here is the updated ABSTRACT: See [www.k1man.com/c1](http://www.k1man.com/c1)

UPDATED ABSTRACT (29 January 2012 8:02 A.M.)

That paper, [Not So Fast, Dr. Einstein](#) ([www.k1man.com/c1](http://www.k1man.com/c1)), disproves Dr. Einstein's theory of Special Relativity with both exact mathematical as well as experimental arguments. According to D. Sasso of Italy, Special Relativity is obsolete. See [www.k1man.com/a11](http://www.k1man.com/a11) and [www.k1man.com/a58](http://www.k1man.com/a58) Dr. Einstein's General Theory of Relativity is discussed and referenced throughout the first eleven Parts of this paper and is discussed in depth in Part 12. Part 12 examines the Dr. Einstein Gravity – Acceleration Equivalency Principle as the phenomenon of Newton's Universal Law of Gravitation when one of the masses APPROACHES zero as when the mass of a photon APPROACHES zero as its speed APPROACHES the speed of light, de facto, when a Dr. Einstein photon energy packet travels at the speed of light.

We have decided to publish this Scientific Journal each month on [www.viXra.org](http://www.viXra.org). Also, our August 18, 2012 Portland, Maine physics colloquium is featured daily on our short wave radio program heard world wide 24/7 over the International Amateur Radio Network (IARN) on 14.275 MHz. upper side band (single sideband) and 3.890 MHz. lower side band. If you would like to be a guest on our Physics/Mathematics Section of my weekly short wave radio program, produced each Saturday, telephone 207 242 2143, and leave a message as to when is the best time for us to call you back. You can purchase a little portable short wave SSB receiver to listen to this short wave program every day (in the entire United States or in

the entire world) at Radio Shack for about \$100. I have the little Grundig G, about the size of a paper back book.

Finally, thanks to mathematician Josh Grams for joining the Special Relativity debate. Your Editor has been trying, without previous success, to get Josh to weigh in on this matter for over three years!

## Dr. Rodney Bartlett's Interesting Paper:

[www.k1man.com/f300](http://www.k1man.com/f300) - The non-Higgs, revised electroweak unification, revised gravitation, and explained dark energy/dark mater – By Dr. Rodney Bartlett

## LETTERS

See [www.k1man.com/Josh14](http://www.k1man.com/Josh14) - This is a very important dialectic between Glenn A. Baxter, P.E. and “pure” mathematician Josh Grams. The dialectic is ongoing and digs deeply into the detailed analysis and mathematics of Not So Fast, Dr. Einstein by Glenn A. Baxter, P.E. ([www.k1man.com/c1](http://www.k1man.com/c1)) To get the up to the minute latest version of this interesting dialectic click on [www.k1man.com/Josh14](http://www.k1man.com/Josh14)

See also the forums regarding this at [www.k1man.com/z](http://www.k1man.com/z), [www.k1man.com/z2](http://www.k1man.com/z2), and [www.k1man.com/z3](http://www.k1man.com/z3)

## PAPERS

**$E = kMC^2$  As A Special Case For Electron – Positron Annihilation** by Glenn A. Baxter, P.E.\*\* Also at [www.k1man.com/c7](http://www.k1man.com/c7)

(Preliminary paper)

## ABSTRACT

We have shown that Dr. Einstein's famous formula  $E = MC^2$  is incorrectly derived. See [www.k1man.com/c1](http://www.k1man.com/c1) We have further suggested that  $E = MC^2$  is not an identity, with implications for Dr. DeBroglie's famous equation,  $\lambda = h/p$ , and Planck's famous equation,  $E = hf$ , where  $f$  is the frequency in hertz and  $\lambda = c/f$ . See [www.k1man.com/c4](http://www.k1man.com/c4) We now propose that there exists a  $k$ , such that  $E = kMC^2$ , as a special case for electron – positron annihilation.

## ARGUMENT

J.C. Valks has recently shown calculations to suggest that, assuming Dr. Einstein's famous mass changing due to uniform relative motion relativistic equation,  $m = M_0/\sqrt{(1 - v^2/c^2)}$ , is valid, then  $k \approx 40$ . See [www.k1man.com/z](http://www.k1man.com/z) We have demonstrated that  $m = M_0/\sqrt{(1 - v^2/c^2)}$  is not valid. See [www.k1man.com/c1](http://www.k1man.com/c1).

Now, assuming that  $m = M_0/\sqrt{(1 - v^2/c^2)}$  is not valid, we propose to calculate a new value for  $k$ . Actually,  $k \approx 40$  is not too bad as it is, because the important thing here is that we have suggested that  $E = MC^2$  is far too simplistic and not generally true for all mass but only true, or nearly true, within the writer's anti-neutron theory/model of the atom. See [www.k1man.com/c2](http://www.k1man.com/c2)

We show in the paper, Not So Fast, Dr. Einstein (see [www.k1man.com/c1](http://www.k1man.com/c1)), that the speed of light is not constant, and that therefore special relativity is not correct as well as a host of conclusions flowing from special relativity by Dr. Einstein, including the derivation of  $E = MC^2$ .  $E = MC^2$  CAN be derived from theoretical analysis of the annihilation of an electron and a positron, as done in Not So Fast, Dr. Einstein, by temporarily neglecting spin. Then, by including spin, energy is actually greater than shown by  $E = MC^2$ . Thus, photon energy is "created," or rather transferred, from electron and positron mutual electrostatic energy, while their charges and masses both cancel out to zero. The fact is that photon energy can also be "created" and radiated from a radio antenna by accelerating electrons in the radio antenna wire without electrostatic charges cancelling and without masses cancelling. In the case of electron and positron annihilation, electromagnetic energy comes DIRECTLY from the electrostatic energy stored in the electric field between the electron and positron before they accelerate as they are mutually attracted, while electromagnetic energy from a radio antenna comes from the fuel driving the electric generator which powers the radio transmitter which is attached to the radio antenna thus accelerating electrons and generating electromagnetic energy

which is radiated from the radio antenna. The energy in the fuel, of course, came from fusion on the sun which was the original electron and positron annihilation.

In 1924, Dr. Louis de Broglie assumed the identity  $E = MC^2$  to be correct for all matter, and then he directly derived his equation and idea that  $\lambda = h/p$  for any particle with mass or even theoretical photon particles without mass. The collection of radical ideas was now that all mass was identical to energy and that all particles, with or without mass, had a characteristic wave length. This neatly linked together the concepts of both waves (photons) and particles, as well as mass and energy. If only physics and nature were that simple!

In Not So Fast, Dr. Einstein, we assumed that Dr. de Broglie's equation was correct and then derived  $E = MC^2$ . Dr. de Broglie did the reverse; he assumed  $E = MC^2$  to be correct and then derived his famous equation,  $\lambda = h/p$ . Starting with  $E = MC^2$  and Planck's relationship  $E = hf$ , where  $f = c/\lambda$  and momentum is  $p = mc$ , then  $hf = pc$  and  $hc/\lambda = pc$ , thus  $h/\lambda = p$  or  $\lambda = h/p$ , which is Dr. de Broglie's equation.

Suppose  $E > MC^2$ , as described in the first paragraph above, and  $E = hf$ , where  $f = c/\lambda$  and momentum is  $p = mc$ . Therefore  $E > pc$  and  $hf > pc$  or  $hc/\lambda > pc$  and therefore  $h/\lambda > p$  as described by Z.Y. Wang in his paper  $\lambda = h/p$  is universal? [1] There, Dr. Wang analyses photons in a wave guide and concludes that  $h/\lambda > p$  as well.

## REFERENCES

- [1A] Experimental Basis For Special Relativity in the Photon Sector [www.arXiv.org/abs/0912.3818](http://www.arXiv.org/abs/0912.3818) and also [www.k1man.com/f81](http://www.k1man.com/f81)
- [1B] LUNAR LASER RANGING TEST OF THE INVARIANCE OF c, by Dr. Daniel Y. Gezari, NASA, Goddard Space Flight Center, Laboratory for ExoPlanets and Stellar Astrophysics [www.k1man.com/f61](http://www.k1man.com/f61)
- [2] WAS EINSTEIN WRONG? A QUANTUM THREAT TO RELATIVITY - Scientific American, March, 2009
- [3] Special Relativity is an Obsolete Theory and Time is Not an illusion, by D. Sasso, [www.k1man.com/f58](http://www.k1man.com/f58)
- [4] THE CLOCK PARADOX by J. Bronowski, February 1963 Scientific American
- [5] IF THE SPEED OF LIGHT IS NOT CONSTANT ACCORDING TO THE THEORY OF REFERENCE FRAMES by D.Sasso, [www.k1man.com/a11](http://www.k1man.com/a11)
- [6] THE EFFECT OF NON CONSTANT SPEED OF LIGHT ON 21<sup>st</sup> CENTURY PHYSICS, by Glenn A. Baxter, P.E.\*, [www.k1man.com/c3](http://www.k1man.com/c3) also [www.vixra.org/abs/1107.0027](http://www.vixra.org/abs/1107.0027)
- [7]  $\lambda = h/p$  is universal? By Dr. Z.Y. Wang [www.vixra.org](http://www.vixra.org) 0912.0029v1.pdf Also [www.k1man.com/f24](http://www.k1man.com/f24)
- [8]  $E = MC^2$  and  $\lambda = h/p$  Are Not Identities, and Time Is An Illusion, by Glenn A. Baxter, P.E.\*, [www.k1man.com/c4](http://www.k1man.com/c4) also [www.vixra.org/abs/1112.0051](http://www.vixra.org/abs/1112.0051)

[9] ON THE ELECTRODYNAMICS OF MOVING BODIES

by A. Einstein, "Zur Elektrodynamik Bewegter Körper," Annalen der Physik, 17, 1905.

[10] Not So Fast, Dr. Einstein, by Glenn A. Baxter, P.E.\* (complete paper),

[www.vixra.org/abs/1107.0027](http://www.vixra.org/abs/1107.0027) also [www.k1man.com/c1](http://www.k1man.com/c1)

[11] Using The Law of Conservation of Momentum For Test The Validity of The Special Theory of Relativity by

Cochetklov Victor Nikolayevick, [www.k1man.com/f36](http://www.k1man.com/f36)

[12] Explaining Michelson-Morley Without Special Relativity- S. Wagh and W. Wagh, Central India

Research Institute, [www.k1man.com/f37](http://www.k1man.com/f37) [waghsm.ngp@gmail.com](mailto:waghsm.ngp@gmail.com) [jetwagh@gmail.com](mailto:jetwagh@gmail.com)

[13] The Special Theory of Relativity: Linear Example of Infringement of Laws of Preservation of Impulse by

Cochetklov Victor Nikolayevick, [www.k1man.com/f42](http://www.k1man.com/f42)

[14] Special Relativity: depending on the definition of the momentum of a closed system of bodies from time by

Cochetklov Victor Nikolayevick, [www.k1man.com/f33](http://www.k1man.com/f33)

[15] Wisp Unification Theory – Reasons Why (Dr.) Einstein Was Wrong by Kevin Harkess

[http://www.kevin.harkess.btinternet.co.uk/reasons\\_einstein\\_wrong/reasons\\_einstein\\_wrong.html](http://www.kevin.harkess.btinternet.co.uk/reasons_einstein_wrong/reasons_einstein_wrong.html)

[16] Anti-Neuton Theory/Model of The Atom by Glenn A. Baxter, P.E.\*,

[www.vixra.org/abs/1107.0026](http://www.vixra.org/abs/1107.0026) also [www.k1man.com/c2](http://www.k1man.com/c2)

[17] Lorentz Transformations Without The Second Postulate of Relativity – by J.C. Valks [www.k1man.com/f85](http://www.k1man.com/f85)

[18] Other references: [www.k1man.com/q](http://www.k1man.com/q)

Exactly Where Dr. Einstein Went Wrong - by Glenn A. Baxter, P.E. – Copyright © 24 Jan. 2012

(Updated 27 January 2012 -3:28 P.M.)

## ABSTRACT

We show exactly where Dr. Einstein went wrong with Special Relativity by improperly crossing over from relativity physics to classic physics.

## ARGUMENT

Thanks to Josh Grams and Dr. Johannes C. Valks for focusing our attention recently to exactly where we need to concentrate in order to understand exactly where Special Relativity went astray, in this writer's scientific and professional opinion. See [www.k1man.com/z](http://www.k1man.com/z) Special thanks also to Dr. Daniele Sasso in Italy. See [www.k1man.com/k](http://www.k1man.com/k)

Dr. Valks correctly points out that you cannot mix classic physics with relativistic physics. He is right on target, you cannot. But that is exactly what Dr. Einstein did, which led directly and

incorrectly to  $E = MC^2$  as an inherent mass quality and being valid for ALL mass. It isn't. See [www.k1man.com/c1](http://www.k1man.com/c1) and [www.k1man.com/c2](http://www.k1man.com/c2) Oh, if physics were only so simple and so elegant! 1929 Nobel Laureate, Dr. Louis De Broglie, then took Nobel Laureate, Dr. Max Planck's formula,  $E = hf$ , and Nobel Laureate Dr. Einstein's  $E = MC^2$  and directly derived  $\lambda = \frac{h}{p}$ , which suggested an exact connection between ALL mass momentum and  $\lambda$  and therefore all momentum and frequency  $f$ , where  $\lambda = c/f$ , such as supposedly observed by 1927 Nobel Laureate, Dr. A. H. Compton's, experiments. Dr. Compton's experiments speak volumes, but Dr. DeBroglie, went way too far when he suggested that ALL mass, including a basketball, or even a Volkswagen, have their own wave lengths,  $\lambda$ . Again, "Oh, if physics were only so simple and so elegant!" This writer is not even so sure whether X and gamma radiation is identical to radio waves or even if radio waves are identical to light waves. That they all apparently travel at the speed of light is not convincing proof that those phenomena are all identical.

All of this flows from Dr. Einstein's incorrect postulate that the speed of light is constant, relative to any observer. This is disproven by this writer two different ways in [Not So Fast, Dr. Einstein](#). See [www.k1man.com/c1](http://www.k1man.com/c1) The first way is by contradiction, and the second way is by Fizeau's actual experiments.

Josh Grams and Dr. Valks keep emphasizing an important distinction between classic physics and relativity physics. In relativity physics, Dr. Einstein argues that relative motion appears to cause time to slow down and mass to increase. When relative motion reverts back to uniform motion, Dr. Einstein said that mass reverts back to "rest mass." But, Dr. Einstein's time slowing down is quite another matter. The slowing of time by uniform motion, as predicted by Dr. Einstein, then reverts to time appearing to flow "normally," but time on an ACTUAL and real clock accumulates, and this accumulation cannot revert back to "normal." It is analogous to the second law of thermodynamics. When Dr. Einstein said in his famous 1905 paper that:

".....Thence we conclude that a balance clock at the equator must go more slowly, by a very small amount, than a precisely similar clock at one of the poles under otherwise identical conditions,"

he demonstrated clearly that he had improperly crossed from relativity physics to classic physics, with actual ticking clocks which accumulate time irreversibly. You can not "turn back" a "Dr. Einstein's clock."

Then when an atomic bomb explodes, allegedly following  $E = MC^2$ , that also cannot be reversed to go from classic physics back to relativity physics. According to this writer, and also, independently, to Nobel Laureate Dr. Richard Feynman, all the energy from a fission bomb comes from the electrostatic energy released when positive chunks of the uranium nucleus

violently fly apart. Granted, there are a probably host of other things “going on” during that particular charade! See [www.k1man.com/c2](http://www.k1man.com/c2) Dr. Feynman helped to develop the atomic bomb at Los Alamos.

The Dr. Einstein error came when he incorrectly postulated that the speed of light relative to any observer is constant, and then he set the moving reference frame Pythagorean/Lorentz triangles to be equal. See [www.k1man.com/c1](http://www.k1man.com/c1) As Dr. Valks suggests, indirectly, and perhaps without realizing it, in his writings (See [www.k1man.com/z](http://www.k1man.com/z), [www.k1man.com/z2](http://www.k1man.com/z2) and [www.k1man.com/z3](http://www.k1man.com/z3) ), that this is exactly where Dr. Einstein first went wrong. See [www.k1man.com/z](http://www.k1man.com/z) , [www.k1man.com/z2](http://www.k1man.com/z2) , and [www.k1man.com/z3](http://www.k1man.com/z3) )

All this seems to be challenged by the Hafele – Keating experiments. See [www.k1man.com/f47](http://www.k1man.com/f47) Those experiments and conclusions are challenged both directly and indirectly by Dr. Gezari, Harkess, and also this writer(1). See [www.k1man.com/f61](http://www.k1man.com/f61) [www.k1man.com/81](http://www.k1man.com/81) , [www.k1man.com/f72](http://www.k1man.com/f72), and [www.k1man.com/v](http://www.k1man.com/v) The Hafele – Keating experiments also seem to be inconsistent with the practical operation and adjustments needed in GPS.

This writer has proposed another and more precise experiment to confirm or disprove experimentally Dr. Einstein’s Special Theory of Relativity. See [www.k1man.com/c1-7](http://www.k1man.com/c1-7)

Now that we are focused at the right place in the theory of Special Relativity, we now need to look more carefully at experimental results and at more exact experiments such as proposed at [www.k1man.com/c1-7](http://www.k1man.com/c1-7) Perhaps further experiments will suggest re-examining our theory further. We need to have both theory and experimental results agree. Welcome to the scientific method! Stay tuned!

Glenn A. Baxter, P.E.\*

[www.k1man.com/physics](http://www.k1man.com/physics), [Institute@k1man.com](mailto:Institute@k1man.com), Other papers by the writer at [www.k1man.com/v](http://www.k1man.com/v)

- (1) Since the Hafele – Keating, et al, experiments used airliners, etc., heading in opposite directions through the earth’s magnetic, field(s), the atomic clocks that they used would have been influenced by the Stern – Gerlach effect, and the observed so called Special Relativity confirmations would, in fact, have had nothing whatsoever to do with Dr. Einstein’s totally incorrect Special Relativity predictions.

The Universal Laws of Gravitation – by Joseph A. Rybczyk

<http://www.mrelativity.net/TheUniversalLawsOfGravitation/The%20Universal%20Laws%20of%20Gravitation%20.pdf>

See forum regarding the above paper at [www.k1man.com/z2](http://www.k1man.com/z2) and [www.k1man.com/z3](http://www.k1man.com/z3)

Glenn A. Baxter, P.E.\*

[www.k1man.com/physics](http://www.k1man.com/physics)

[Institute@k1man.com](mailto:Institute@k1man.com)

Other papers by the writer at [www.k1man.com/v](http://www.k1man.com/v)

Papers by Glenn A. Baxter, P.E. [www.k1man.com/v](http://www.k1man.com/v)

Papers by Dr. Daniel Gezari [www.k1man.com/k4](http://www.k1man.com/k4)

Papers by D. Sasso [www.k1man.com/k](http://www.k1man.com/k)

Papers by Dr. Johannes C. Valks [www.k1man.com/k1](http://www.k1man.com/k1)

Papers by Prof. Daniel Y. Cahill:

<http://arxiv.org/find/all/1/all:+AND+reginald+cahill/0/1/0/all/0/1>

<http://www.vixra.org/search?domains=vixra.org&q=Reginald+Cahill&client=pub-9708849425281176&forid=1&ie=ISO-8859-1&oe=ISO-8859-1&cof=GALT%3A%23008800%3BGL%3A1%3BDIV%3A%23ffffff%3BVLC%3A663399%3BAH%3Acenter%3BBGC%3Affffff%3BLBGC%3Affffff%3BALC%3A008800%3BLC%3A008800%3BT%3A0000%3BGFNT%3A008800%3BGIMP%3A008800%3BFORID%3A11&hl=en&sitesearch=vixra.org%2Fabs>

Victor's papers, k5 Wagh papers, k6 Wang papers , k7 Joseph's papers,

***To kill an error is as good a service, and sometimes even better than, establishing a new truth or fact."***

***Charles Darwin***

"Great causes are never tried on the merits; but the cause is reduced to particulars to suit the size of the partisans, and the contention is ever hottest on minor matters." - Ralph Waldo Emerson - From his essay "Nature" 1844

2012 PHYSICS COLLOQUIUM IN PORTLAND, MAINE -17 August 2012

We are now calling for papers and inviting speakers for the 18 August 2012 Physics Colloquium, to be held in Portland, Maine. The theme for the 2012 Colloquium will be the effect of Special Relativity on Electromagnetic Theory as described by Maxwell's equations. Reference: Electromagnetic Theory by Dr. Julius Stratton, McGraw-Hill, New York and London, (Maple Press, York, Pa.), 1941. (see [www.k1man.com/physics](http://www.k1man.com/physics)). The 13 August 2011 Physics Colloquium scheduled in Portland, Maine focused on the effect of the non constant nature of the speed of light on 21<sup>st</sup> century physics. Accepted papers for presentation at the 2012 colloquium will be distributed to all registered attendees before the colloquium so they can be studied and even discussed, which will greatly improve the effectiveness and efficiency of the colloquium itself. Attendees are cordially invited to dinner in Portland on Friday evening, August 17, 2012 at 7:00 p.m. to informally meet and to also discuss physics. Please register for the colloquium (free) and/or the dinner (off the menu) by sending an E-mail to [Institute@K1MAN.com](mailto:Institute@K1MAN.com)

BELGRADE LAKES INSTITUTE FOR ADVANCED RESEARCH -

SCIENTIFIC JOURNAL - PREVIOUS ISSUES: [www.k1man.com/p](http://www.k1man.com/p)

\*\*\* THE INSTITUTE'S MISSION STATEMENT:

The Belgrade Lakes Institute For Advanced Research was founded in 1999 to study original scientific work of great thinkers going back as far as possible (even thousands of years) to reexamine ideas in search of hints or inspiration which might apply to current scientific progress in physics. The late Dr. Richard Feynman\*\*\*\* is an Honorary Member of the Institute, and his lectures and publications serve as a corner stone for our work and model for our thinking and efforts. Other examples of great thinkers and scientists would include people such as Michael Faraday, Maxwell, Euler, Cantor, Lavoisier, Lise Meitner, Otto Hahn, Bohr, De Broglie, Planck, Avogadro, Boltzmann, Compton, Schrodinger, Dr.

Albert Einstein, Newton, Leibnitz, Pythagoras, Descartes, and many others. Membership in the Institute is by application and majority of votes timely cast by the general membership. For more information call the USA number 207 242 2143 or E-mail [Institute@K1MAN.com](mailto:Institute@K1MAN.com) Articles for the Scientific Journal are invited. Our mail address is Belgrade Lakes Institute For Advanced Research, 310 Woodland Camp Road, Box 440, Belgrade Lakes, Maine 04918 USA [www.k1man.com/physics](http://www.k1man.com/physics)

PAST ISSUES OF THE SCIENTIFIC JOURNAL: [www.k1man.com/p](http://www.k1man.com/p)

## \*\*\*Richard Feynman

Richard Feynman (1918–1988), American physicist and Nobel laureate. Feynman shared the 1965 Nobel Prize in physics for his role in the development of the theory of quantum electrodynamics, the study of the interaction of light with atoms and their electrons. He also made important contributions to the theory of quarks (particles that make up elementary particles such as protons and electrons) and superfluidity (a state of matter in which a substance flows with no resistance). He created a method of mapping out interactions between elementary particles that became a standard way of representing particle interactions and is now known as Feynman diagrams. Feynman was a noted teacher, a notorious practical joker, and one of the most colorful characters in physics.

Feynman was born in New York City. As a child he was fascinated by mathematics and electronics and became known in his neighborhood as “the boy who fixes radios by thinking.” He graduated with a bachelor’s degree in physics from the Massachusetts Institute of Technology (MIT) in 1939 and obtained a Ph.D. degree in physics from Princeton University in 1942. His advisor was John Wheeler, and his thesis, “A Principle of Least Action in Quantum Mechanics,” was typical of his use of basic principles to solve fundamental problems.

During World War II (1939-1945) Feynman worked at what would become Los Alamos National Laboratory in central New Mexico, where the first nuclear weapons were being designed and tested. Feynman was in charge of a group responsible for problems involving large-scale computations (carried out by hand or with rudimentary calculators) to predict the behavior of neutrons in atomic explosions.

After the war Feynman moved to Cornell University, where German-born American physicist Hans Bethe was building an impressive school of theoretical physicists. Feynman continued developing his own approach to quantum electrodynamics (QED) at Cornell and then at the California Institute of Technology (Caltech), where he moved in 1950.

Feynman shared the 1965 Nobel Prize in physics with American physicist Julian Schwinger and Japanese physicist Tomonaga Shin’ichirō for his work on QED. Each of the three had independently developed methods for calculating the interaction between electrons, positrons (particles with the same mass as electrons but opposite in charge) and photons (packets of light energy). The three approaches were fundamentally the same, and QED remains the most accurate physical theory known. In Feynman's *space-time* approach, he represented physical processes with collections of diagrams showing how particles moved from one point in space and time to another. Feynman had

rules for calculating the probability associated with each diagram, and he added the probabilities of all the diagrams to give the probability of the physical process itself.

Feynman wrote only 37 research papers in his career (a remarkably small number for such a prolific researcher), but many consider the two discoveries he made at Caltech, superfluidity and the prediction of quarks, were also worthy of the Nobel Prize. Feynman developed the theory of superfluidity (the flow of a liquid without resistance) in liquid helium in the early 1950s. Feynman worked on the *weak interaction*, the *strong force*, and the composition of neutrons and protons later in the 1950s. The weak interaction is the force that causes slow nuclear reactions such as beta decay (the emission of electrons or positrons by radioactive substances). Feynman studied the weak interaction with American physicist Murray Gell-Mann. The strong force is the short-range force that holds the nucleus of an atom together. Feynman's studies of the weak interaction and the strong force led him to believe that the proton and neutron were composed of even smaller particles. Both particles are now known to be composed of quarks.

The written version of a series of undergraduate lectures given by Feynman at Caltech, *The Feynman Lectures on Physics* (three volumes with Robert Leighton and Matthew Sands, 1963), quickly became a standard reference in physics. At the front of the lectures Feynman is shown indulging in one of his favorite pastimes, playing the bongo drum. Painting was another hobby. In 1986 Feynman was appointed to the Rogers Commission, which investigated the Challenger disaster—the explosion aboard the space shuttle Challenger that killed seven astronauts in 1986. In front of television cameras, he demonstrated how the failure of a rubber O-ring seal, caused by the cold, was responsible for the disaster. Feynman wrote several popular collections of anecdotes about his life, including *"Surely You're Joking Mr. Feynman"* (with Ralph Leighton and Edward Hutchings, 1984) and *What do YOU Care What Other People Think?* (with Ralph Leighton, 1988).

Microsoft ® Encarta ® 2006. © 1993-2005 Microsoft Corporation. All rights reserved.

\*\* Mr. Baxter has a degree in Industrial Engineering from the University of Rhode Island and is a Licensed Professional Engineer in Illinois and Maine. He is a graduate of Vermont Academy, which honored him in 1993 as a Distinguished Alumnus with the Dr. Florence R. Sabin Award. It was at Vermont Academy as a student where Mr. Baxter attended a talk and met the very popular relativity author James A. Coleman(7). Mr. Baxter has been doing research in relativity and physics ever since and is currently Executive Director of the Belgrade Lakes Institute for Advanced Research. His current interests include physics, philosophy, and theology.

FORUM [www.k1man.com/z](http://www.k1man.com/z) , [www.k1man.com/z2](http://www.k1man.com/z2) and [www.k1man.com/z3](http://www.k1man.com/z3)

Glenn A. Baxter, P.E., Executive Director,  
Belgrade Lakes Institute For Advanced Research  
And

Editor, Scientific Journal  
310 Woodland Camp Road  
Belgrade, Maine 04917

[Institute@K1MAN.com](mailto:Institute@K1MAN.com) tel. 207 242 2143 [www.k1man.com/physics](http://www.k1man.com/physics)

Autobiography [www.k1man.com/g](http://www.k1man.com/g)



Glenn A. Baxter, P.E., at his home in Belgrade Lakes, Maine



Glenn A. Baxter, P.E., age 4, with his dad, Frank H. Baxter (Bachelor of Science Degree, 1914, Rhode Island State College), and President of Frank H. Baxter Associates, 370 Lexington Avenue, New York City. See [www.k1man.com/fhb](http://www.k1man.com/fhb) and also [www.k1man.com/w10](http://www.k1man.com/w10) and [www.k1man.com/Loons](http://www.k1man.com/Loons)