



New Interpretation of Quantum Mechanics Turning Heads



Professor Mark Stuckey's exciting new Relational Block World theory is turning heads in the Quantum Physics world.

Recently Physics Professor Mark Stuckey, along with Michael Silberstein (Assoc Prof of Philosophy, EC) and Michael Cifone (EC graduate, PhD candidate at Univ. MD), introduced an exciting new interpretation of quantum mechanics (QM) called *Relational Blockworld* (RBW).

Professor Stuckey originally presented RBW at a ZiF (Center for Interdisciplinary Research) workshop, *Endo-physics, Time, Quantum and the Subjective*, held at the University of Bielefeld, Germany, in January. Silberstein and Stuckey wrote a paper for the proceedings of that workshop titled, "Reversing the Arrow of Explanation in the Relational Blockworld: Why Temporal Becoming, the Dynamical Brain and the External World are in the Mind." Those proceedings will be published by World Scientific in late 2005 or early 2006.

The new interpretation is described in their paper titled, "Deflating Quantum Mysteries via the Relational Blockworld" which is under review for publication by the journal *Physics Essays*. In a nutshell, RBW explains paradoxes in Quantum Mechanics by throwing out all

of our current Newtonian constructs and focusing on events and their relations.

Stuckey's RBW theory is turning heads in the Quantum Physics world - Mark Stuckey and Michael Silberstein received a prestigious invitation to introduce RBW at an exclusive conference (50 participants were invited to hear a mere 10 presentations) held in May at the American Institute of Physics in Maryland.

(Stuckey, continued on page 2)

EE, ME Concentrations Coming to E-town

The Department is pleased to announce the creation of a new program. We have replaced the Engineering-Physics degree with a new major in Engineering with concentrations available in Mechanical Engineering (ME), Electrical Engineering (EE), or Applied Physics. We are excited to now offer a 4-year "at Etown" degree in the two largest engineering disciplines, EE and ME. The major has a strong multidisciplinary foundation, at least 13 credits of technical electives in each concentration area (including several new upper-level course offerings), and design courses in all 4 years.

The combination of this new Engineering degree, along with our strong program in Computer Engineering, growing Industrial Engineering Management program, and the strength of the liberal arts core, puts the Department into a position to be one of the nation's leading small college engineering programs. More details are available by contacting Department Chair Kurt DeGoede (degoedek@etown.edu).

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Solar Boat Team Competes at Solar Splash '05 in Buffalo, NY



(From left to right) Garry Brock '08, José Cruz '05, Chris Heisey '05, and Professor McBride pose with the Etown College 2005 Solar Boat after completing the international Solar Splash Competition in Buffalo, NY from June 20 – 26.

After two years of dedicated work, a team of engineering students from Elizabethtown College traveled to Buffalo, NY, to compete in the International Solar Electric Boat Competition -- Solar Splash '05. The 2004-2005 team was comprised of Christopher Heisey '05, José Cruz '05, Joshua Bittle '07, Keanan Barbour-March '08, and Garry Brock '08; and received additional help from Lauren Swiecicki '07, Kaitlin Hartzell '07, and Pat Gianelli '08. The team used the knowledge, experience, and some equipment from the first year of the Solar Boat team (2003-2004) by Doug Wisner '04, Arturo Garcia '04, Dax Kepshire '04, Heisey, and Bittle to propel themselves to the competition this year. This was evident by their solid showing in their rookie performance; the team competed successfully in all six events (Qualifying, Slalom, Sprint, Endurance, Visual Display, and Technical Report), finished 15th out of 22 registered teams, and received the "Notable Performance by a Rookie Team" award. (More details and pictures available

at www.solarsplash.com.)

The team has only lost two team members, due to graduation, so the majority of the team is still intact. The remaining members are eager to apply the knowledge that they gained from their first competition and compete again. This year's competition will be held in Arkansas. The Solar Boat Team, led by Bittle and Brock, has merged into a new club, Future Energies and Sustainable Technologies (FEAST). Several goals of this new club are to include other related department projects, to help fund the project, and attract students from non-engineering majors. If you are interested in learning more about the Solar Boat competition or FEAST, please contact Josh [BittleJ@etown.edu] or team and club advisor Professor Troy McBride [McBrideT@etown.edu].



Garry Brock pilots the Solar Boat in the 2-hour Endurance Event

Stuckey (continued from page 1)

After their presentation, the organizer congratulated them on successfully introducing a new interpretation of QM. In fact, Michael Fisher, member of the Nobel nominating committee, told the organizer that Stuckey and Silberstein's presentation was the most interesting talk of the conference, despite the fact that new interpretations of QM are rarely recognized internationally by researchers in the foundations of physics. This prompted an additional invitation to present at another exclusive workshop, *Time-Symmetry in Quantum Mechanics*, which was held at the University of Sydney in July.

Currently, the talented Etown College group is finishing another paper on the subject, "Quantum Liar Paradox and the Relational Blockworld," which will be submitted to the *International Journal of Theoretical Physics* this month [October]. To learn more about Stuckey's new theory, check out some of his articles on his website:

<http://users.etown.edu/s/stuckeym/>



The Department Welcomes Class of 2009 *By: David Ferruzza*

In a single word, this year's incoming students can be described as "talented." Other words also come to mind: capable, diversified, communicative, and enthusiastic. This year there are 24 First Year students, more representative of a "normal" year than last year's record breaking 36 students. And whereas last year, there were no females, it is pleasant to welcome five women this year.

The average SAT score is 1245, higher than last year's 1175. Since the college's "middle 50%" ranged from 1010 to 1220, the "average" (1245) Physics and Engineering student is well within the top quarter of entire First Year class.

A majority of the First Year students come from Pennsylvania; four are from Maryland, and one each are from New Jersey, New York, and Utah. Our four international students are from India, Colombia, Bolivia, and The Netherlands. (You will likely hear more on this unique "chips" story from other sources, but Bolivian student Patricio Terrazas is the fourth of four siblings to attend Elizabethtown College!)

As in years past, students intending to major in engineering (22) far out number the two intended physics majors. However, these two students plan on completing two majors.

First Year students are: Brandon Bear (physics and math), Steven Bicker, Jeremy Cain, Jeffrey Cowan, Neal Dawes, Nicholas Diaduk, Douglas Eroh, John Eveland, Maria Garcia (Colombia),

Kevin Green, Jeremy Harwick, Jennifer Hawkins, Justin Hypnarowski, Shaen Johnson, Frank Messina, Evan Metz, Christine Miller (physics and religion), John Mink, Hugo Niemans (Netherlands), Bhavin Patel (India), Alexandria Rankowski, Stephany Schultz, Vincent Sparacino, and Patricio Terrazas (Bolivia).

We welcome each new student and acknowledge that the "torch has been passed" to them. Faculty and upper-class students will do their best at mentoring, but these students are entrusted with the future "reputation" of the Department. They join us as partners in maintaining and even improving on the moral fiber, spirit, and successes of the Department.



First year engineering students Maria Garcia and Patricio Terrazas (Patricio is the 4th of 4 siblings to attend E-town!)

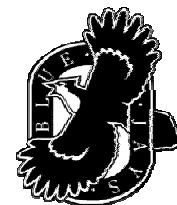
Announcements

Wear your department with pride!

Show your pride in The Physics & Engineering Department by wearing a short-sleeved polo shirt. The shirts are navy blue with white writing, embroidered; the flying blue jay logo will be in the upper right corner with the words "Elizabethtown College Physics and Engineering" written below the logo [see right]. The cost is \$26.00 (\$5.00 of the price goes to the Physics & Engineering Club.) — Shipping available. If you would to purchase one or want more information email Kaitlin Hartzell [Hartzellk@etown.edu].

Something to Share?

Have you been recently married? New Job? Or if you would just like to say "hi" to the department, send Kaitlin Hartzell an email [Hartzellk@etown.edu] and she will post it in the next newsletter. We would love to hear from you!



Elizabethtown College
Physics and Engineering

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Faculty and Friends for their input,
articles and photos.
If you wish to receive this newsletter
electronically or wish to be
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Sights From the Department



(Above Left) At Solar Splash 2005 in Buffalo, NY, the Elizabethtown College Team is seen next to Cal State Poly and University of Northern Iowa in the 2 hour Endurance Race. (Above Right) The Etown Team, (José Cruz '05 standing; Garry Brock '08 driving; Josh Bittle '07 and Chris Heisey '05 making repairs) repair a broken drive pin in 5 minutes and go on to finish the 2



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