



THE INSTITUTE FOR ADVANCED PHYSICS

The Institute News

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Ninth Annual IAP Conference at Notre Dame on New Groundbreaking Text

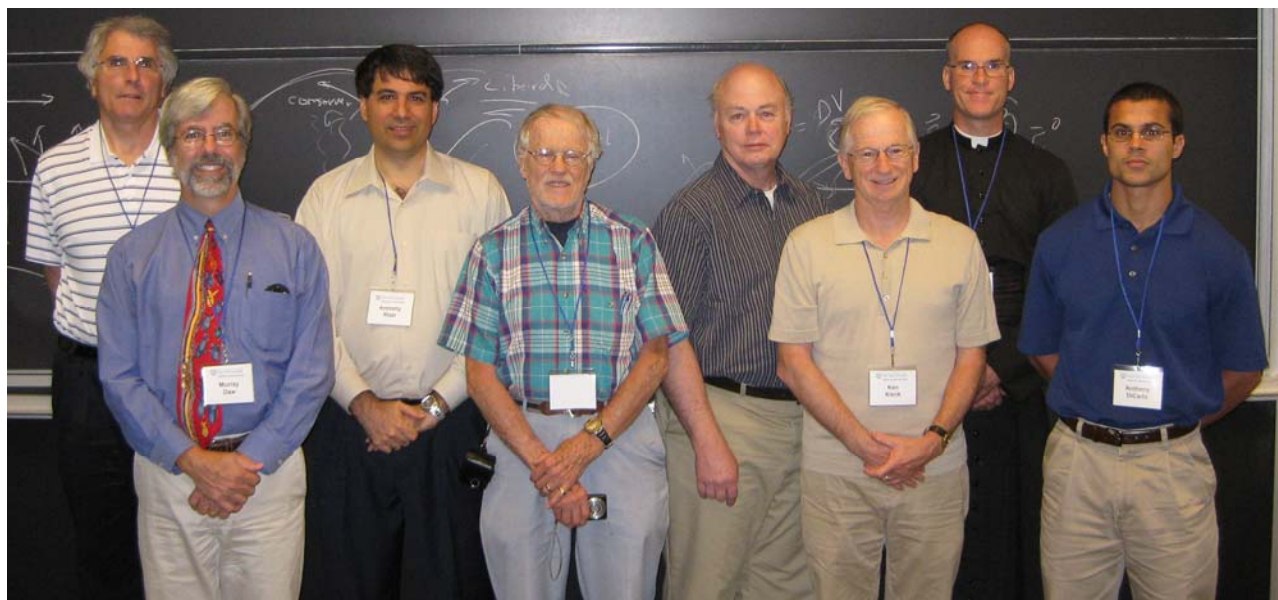
by Ken Klenk. Ph.D.

The Ninth Annual IAP Conference was held at the University of Notre Dame on July 27-30, 2011. It focused on IAP's groundbreaking text *Physics For Realists: Electricity and Magnetism*:

"With the release of Physics for Realists: Electricity and Magnetism, for the first time in human history, the two pillars of modern physics (mechanics and E&M) are grounded in the simple common sense principles that at some level, every child knows."

Dan Welch, Professor of Physics, Wofford College, SC

Story continues on page 2...



Pictured IAP members and faculty, from left to right: Rado Krevs, teacher member, Dr. Murray Daw, Adjunct Professor, Dr. Anthony Rizzi, Director and Professor, Dr. Joe Martin, Certified Member, Dr. Dan Welch, Certified Member, Dr. Ken Klenk, Certified Member, Fr. Neal Nichols, IAP Spiritual Director and Associate Member, and Anthony DiCarlo, Associate Member

Annual conference story continued from page 1...

On the afternoon prior to the conference, **Dr. Murray Daw** gave a seminar on how to approach teaching *Physics for Realists*, providing many good suggestions for helping students to make maximal use of the mechanics text's integration of the first physics we know with modern physics. At the official opening of the conference, **Dr. Anthony Rizzi** distributed the new textbook – *Physics for Realists – Electricity and Magnetism*, the second book in the series aimed at the college physics level.

The first day of the conference consisted of talks summarizing the various chapters of the book by Dr. Daw, **Dr. Ken Klenk**, **Dr. Joe Martin**, Dr. Rizzi and **Dr. Dan Welch**. Emphasis was placed on the many new and valuable insights into electric potential ϕ and the magnetic vector potential \vec{A} , that are developed in the book. Electricity and magnetism are caused by charges and impetus-activated charges, respectively. Active charge and passive charge are powers (category of quality) that can cause and, respectively, receive the action of an electric field. Impetus activated charge causes a magnetic field. Generally, radiation is caused by a change in the impetus of a charged body. The

displacement current in Maxwell's equations receives a correct understanding over the incorrect one – that a changing E -field causes a magnetic field. The new book fills in the essential understanding that relates the symbolic and analogically mathematical representations of E&M to the real world and the fundamentals of the underlying *physica*.

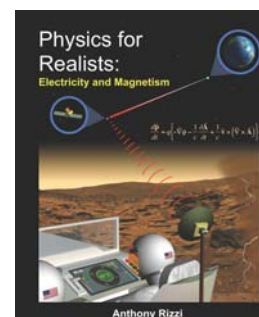
During the meeting, Dr. Rizzi welcomed new Associate Member **Anthony DiCarlo**. Mr. DiCarlo was presented with a certificate recognizing his completion of a course of study based on Dr. Rizzi's book *The Science Before Science: A Guide to Thinking in the 21st Century*.

The first teacher's conference on the new *Physics for Realists: Electricity & Magnetism* book was held on Friday where IAP faculty and members helped teachers with the concepts presented in this Volume 2 of the PFR textbook series. There were breakout sessions where the teachers were given the opportunity to teach various topics and role play with the attendees.

The Institute is thankful for **Fr. Neal Nichols** and his dedication to IAP's mission, especially recognizing his ninth year of service to IAP faculty and members at our annual conferences.



ORDER *Physics for Realists*
for your students or for your personal use:
Mechanics (Vol. I) \$95
Solutions Manual (Vol. I) for professors \$45
Electricity & Magnetism (Vol. II) \$90
Solutions Manual (Vol. II) available Spring 2012
<http://www.iapweb.org/store/>



Want to start a book study group on
The Science Before Science
with friends, at school, or at church?

IAP CAN HELP! Contact us at
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Read in next issue about John Baker's group



Order your copy of *The Science Before Science: A Guide to Thinking in the 21st Century* online at our site or on Amazon or by calling our distributor: 888-519-5121, select option 1

In the news.....

NASA: IAP's Mars Calendar was incorporated into a **NASA educational web site:**

<http://marsvlm.herokuapp.com/4/1/2/2>

Download our interactive IAP calendar at:

<http://www.iapweb.org/MartianCalendar/>

Softpedia Award: IAP won an award from **Softpedia Editorial Team**

"Congratulations, Mars Calendar, one of your products, has been added to Softpedia's database of software programs for the Windows operating system."

Catholic Encyclopedia requests Dr. Rizzi write articles on morality and on science

Al Kresta radio: Are neutrino's really going faster than the speed of light? Does this completely undermine all previous science? How do we answer those who suggest our knowledge is not stable, open to complete change overnight?

Ave Maria radio host Al Kresta

interviews Dr. Anthony Rizzi:

<http://archive.avemariaradio.net/guest.php>

Duke University: University Reader requested permission to reprint part of *The Science Before Science* in a **Duke University course** material packet

EWTN Live interview, see article below.

<http://www.youtube.com/watch?v=m6DYJt-NI1A>

EWTN LIVE: Stephen Hawking and the break in history at the Scientific Revolution

On September 14, 2011 on EWTN LIVE, Dr. Anthony Rizzi spoke with **Fr. Mitch Pacwa** about the pressing need to recognize the fundamental importance of science. In this context, Dr. Rizzi addressed **Stephen Hawking's** statement that the universe does not need God because Hawking has shown it can come from nothing. Such thinking is the result of scientism, which splits science from the simple common sense things that everyone knows. Dr. Rizzi pointed out this split began around 1600 with the advent of modern science. He points out that modern science, which has given us so much new understanding, has not been digested all the way: "it got stuck on the way down." During the program, Dr. Rizzi gave the following analogy. "Picture a loaf of bread. It has a beginning and an end like time, which has a beginning and will have an end. ... take a big knife ... chop it in half... that is what the scientific revolution did. It chopped history in half."

Dr. Rizzi discussed the need to digest science properly to heal this split in history, which is reflected in each one of us. He points out because of this split our souls are cut in half--

reason on one side, faith on the other. The split is healed only by going back to fundamentals, by starting with the simple physical things we get from our senses that every child should learn rigorously. Dr. Rizzi points out that these fundamentals must be brought up to the most mature parts of our thinking, for while a man needs the thinking he learned as a child, he also needs that thinking to be matured to the level of a man. For our culture, this means modern physics must be grounded in those fundamentals all the way up to the latest discoveries in order for those fundamentals to be able to have an impact on the everyday world in which we think and act.

In this regard, Dr. Rizzi announced the release of IAP's *Physics for Realists: Electricity & Magnetism*, which for the first time in history grounds that subject in those fundamentals. Dr. Rizzi discussed how this connects with all of our lives and is in fact the root of our cultural problems. The studio audience was very excited about all they learned and the calling phone banks were filled to capacity with eager questioners during the show.

Watch the show at

<http://www.youtube.com/watch?v=m6DYJt-NI1A>

IAP welcomes Dan Lejeune, new Certified Member



Dan Lejeune received his B.S. degree in Physics from the University of Louisiana, Lafayette and his Ph.D. in Physics from Texas A&M University. Early in his career, he was named Robert A Welch Post-Doctoral Fellow and Research Associate with the Texas A&M Cyclotron Institute where he performed cryogenic R&D on the Cyclotron Electron Beam Ion Source. He was employed by Texas Instruments in Dallas, TX where he became

Engineering Section Mgr. responsible for Military High Reliability Transistors and Temperature Sensor/Transducer products. In 1978, Dr. Lejeune became Research, Development and Engineering Mgr. for a division of EXXOM, Inc. During this time, he invented a novel data acquisition and analysis process and later was named Sr. Research Scientist.

Dr. Lejeune has been involved with the startup of several companies in various capacities. In 1984, he designed, developed and implemented the software and hardware for a revolutionary “measurement while drilling” system utilized in the drilling of oil wells. (Patent and copyright resulted.)

Dr Lejeune joined the faculty as Professor of Physics in the Physics Department of Wofford College, SC in 1986. He teaches and his present research is in high vacuum equipment design, High Temperature Superconductivity and sensor design and development. Welcome on board Prof. Lejeune!

Rick Gildersleeve, new Associate Member



Dr. Gildersleeve earned a B.S. in Zoology and a Ph.D. in Animal Science from Louisiana State University. He was a researcher for NIH and has also taught at LSU and NCSU. In the biotechnology industry, he served as Vice President of Embrex, Inc., a global agricultural company. He also earned an M.T.S at the International Theological Institute for Studies of Marriage and Family. Currently, he is Chairman of the Science Department at Pope John Paul the Great High School, VA.

Dr. Gildersleeve completed the IAP Associate Membership and will continue his studies toward

membership Level II. During his studies, he is discovering, as we all do, how many new things there are to learn and *how many things there are to unlearn*. It is a very interesting fact that as one further specializes his understanding of the first principles, he has to deepen his understanding of those principles which, because it involves incarnating those principles into places that already have twisted versions of those principles, one has to do battle with what he thinks he already knows. In the end, the principles are seen then more deeply. And, how deeply we *all* need these principles is seen at a new level. That, in turn, reveals further the primary importance for all of us of the mission of the Institute for Advanced Physics.

The Institute for Advanced Physics

Complexity versus Simplicity: Richard Dawkins, IAP Members, and Ourselves

by Anthony Rizzi

As you know, IAP is tackling the core of our deep cultural problems, which is our science not being clearly grounded in the principles that every child knows. IAP is repairing the core of our culture by grounding its core thinking, modern science, in our knowledge of the physical things that we know directly through our senses. To give people insight into this deep need (which is currently only addressed by IAP), Dr. Rizzi here addresses the core of a question that has been in the news.

Most people's understanding of complexity and simplicity is fundamentally confused. Richard Dawkins reveals this confusion when he claims that "...a God capable of designing the universe, or anything else, would have to be complex..."¹ Leaving aside the core of Dawkins' argument, which follows (along with many of his opponents) the mistaken route of William Paley (1743-1805AD), this line of argument would block a central principle in the proofs of God's existence. This thinking is not, as many might believe, a function of Dawkins' atheism, but of a cause that affects us all, namely the ungroundedness of our *scientia*, our knowledge. Because we all grow up in and live and breathe the modern scientific

worldview, we, at some level, are all confused in ways that people who lived before the scientific revolution did not have to worry about.

The misunderstanding implicit in Dawkins' statement is sometimes made evident to IAP's faculty as they teach our new members (all IAP members have to complete some course work to learn the fundamentals that everyone's education leaves out and to begin the requisite integration of these fundamentals into their thinking). What is incorrect about Dawkins' usage and some of our members' spontaneous usage?

[Click here to read more or go to this address:
IAPweb.org/articles/ComplexityvsSimplicity.pdf](http://IAPweb.org/articles/ComplexityvsSimplicity.pdf)

Anthony Rizzi, Ph.D., founder and Director of The Institute for Advanced Physics (an eight year old non-profit organization with Vatican backing), gained worldwide recognition in theoretical physics by solving an 80-year old problem in Einstein's theory. He has physics degrees from MIT and Princeton University. Prior to IAP, he was senior scientist at Cal-Tech's Louisiana LIGO and taught at LSU.

¹ There is more to say given that this quote comes in a larger context that would further make the point that those on *all sides* of current debates need to return to first principles, but addressing this larger context is outside the intent of this article.