Spring 2022

THE INSTITUTE FOR ADVANCED PHYSICS

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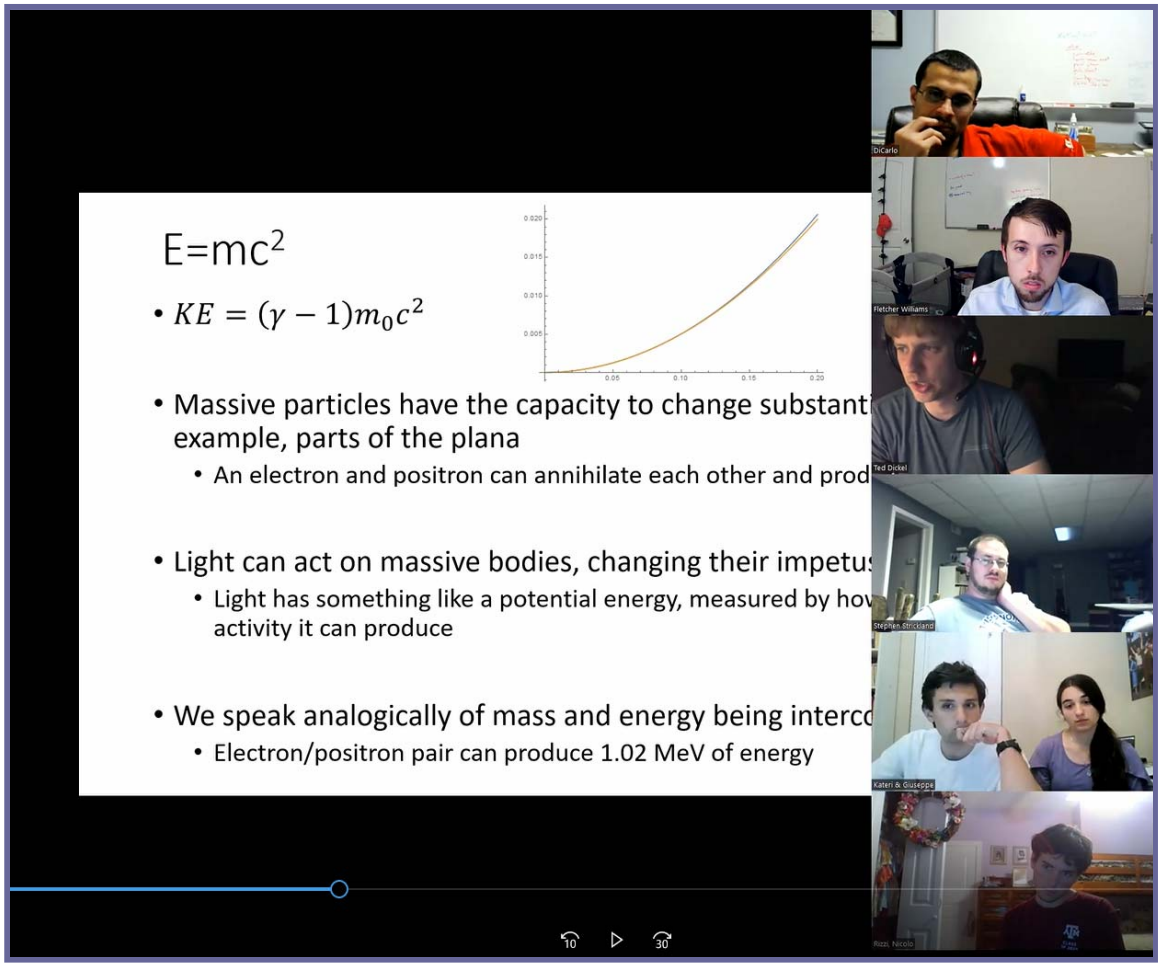
Dr. Dickel teaches special relativity seminar

Institute for Advanced Physics (IAP) Assistant Professor **Dr. Doyl Dickel** led an online seminar, teaching the proper understanding, discovered by Dr. Anthony Rizzi IAP founder and Director, of the special theory of relativity. Organized by Associate Professor of Practice **Fletcher Williams**, the group of more than 20 Certified, Associate, and

The Institute for Advanced Physics
P.O. Box 15030, Baton Rouge, LA 70895

Volunteer Members, as well as a couple invited students, met online weekly for four weeks to study the 10th chapter of the Institute for Advanced Physics textbook, *Physics for Realists: Mechanics* (PFR-M*)*. This chapter contains, for the first time in history, the meaning of the deep equations of special relativity. In that chapter, Dr. Rizzi explains the meaning of space and time and all the complex empiriometric theory in a way that leaves aside the many contradictions implicit in the equation alone development of the theory, which up till the publication of PFR-M, was the only way to approach the theory.

Special Relativity, formulated by Einstein in 1905, gives the equational structure necessary to capture the measured behavior of objects moving at speeds close to that of light. The theory is a significant breakthrough in our empiriometric understanding and is required for all modern theories. However, its physical meaning has been and is, without PFR-M, misunderstood. Indeed, it is the basis for much confusion about the world. Students in the seminar were encouraged to work through textbook problems, including common examples involving these confusions. After a lecture each week by Dr. Dickel which covered a portion of the text, students were divided into breakout groups of four or five along with an IAP Certified Member to discuss the reading and lecture, and were encouraged to ask questions to help clear up any confusions. After the conclusion of the seminar, students



were eager to share their appreciation for the seminar and many who had studied Special Relativity without PFR reported that they finally understood that which they had not understood at all before, indeed saw how they had accepted contradictions, including equating "something" with "nothing!" It is this equation-alone approach that not only robs us of our understanding of special relativity, but also the very things we see with our own eyes! It is these high things that power the central theorem of IAP (see IAP Central Theorem at https://www.iapweb.org/mission.htm).

There is so much hunger for IAP material

Physics professor leads study groups for laymen

Dear Anthony,

I wanted to write to tell you about the exciting Institute for Advanced Physics (IAP) activities at my parish (St. Joseph's Church in Anderson, SC). I have been talking to our pastor Fr. Philip Gillespie about the IAP and publications like *A Kid's Introduction to Physics (and Beyond)* (KIP) (which he's read and enjoyed). I offered to lead a Faith & Reason study group based on KIP and he was keen to see it happen; so, this last spring a group met weekly for an hour on Tuesday evenings for 14 weeks to read the KIP book and then follow up with several articles from the IAP *Physics & Culture* magazine (*How a Neglect of Physics Has Turned Christianity into a Myth for Modern Man*, *What is America?*, *Death of Justice?*, and several others available on the IAP website). I emphasized homework and consistent attendance, and was gratified when 40 people attended every week and did the reading. The feedback to Father Gillespie was so positive that he asked what I could do for an encore. So, now this fall a group of 20+ are meeting weekly between Labor Day and Christmas to study *The Science Before Science: A Guide to Thinking in the 21st Century*.

It has been very exciting to be a part of a well-grounded Faith & Reason group at my parish based on the well-grounded IAP materials. There is so much hunger for this red meat!

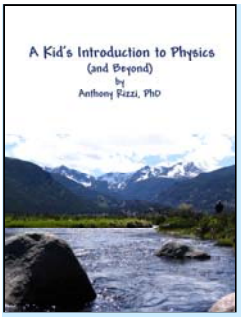
God bless,

Murray Daw

Murray Daw is the R. A. Bowen Professor of Physics at Clemson University. He is an IAP Certified Member and in 2006 he was appointed IAP Adjunct Faculty.

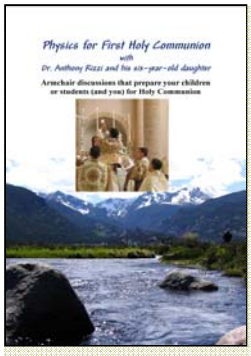
IAP Physics on Ave Maria Radio

On January 22, 2022 an interview of Institute for Advanced Physics (IAP) Associate Member **Anthony DiCarlo** aired on Ave Maria Radio's show *Epiphany* with **Mrs. Vanessa Garmo**. Mrs. Garmo asked Mr. DiCarlo about the work of IAP and the many important resources that it has made available. Mr. DiCarlo discussed the equation-only mindset of our culture which results from the ungrounded physics that we have and the need to ground our thinking in the simple truths about physical nature that the IAP alone is proclaiming. Mr. DiCarlo highlighted four important resources (featured below) that listeners should get to begin learning these truths and sharing them with others. You can listen to Mr. DiCarlo's interview on Ave Maria radio here: https://avemariaradio.net/epiphany-1-22-2022/



This book introduces readers (7th grade & up) to physics starting with their natural wonder about the things around them. It shows them the need for the Unchangeable Changer and how this world proves that He exists.

A Kid's Introduction to Physics (and Beyond)
https://www.iapweb.org/store/kids.html#kids
(70 pages soft cover 6"x8" with 14 font) $12



Nine episode series featuring Dr. Anthony Rizzi's armchair discussions using the principles in his children's book to prepare his six year old daughter for Holy Communion. Though it surprises most, St. Thomas Aquinas teaches that the first physics is needed to understand Communion.

Physics for First Communion **DVD**
https://www.iapweb.org/store/kids.html#video
(2 DVDs, approx. 4 ½ hours total) $35 donation

Decision for Truth **DVD**
https://www.iapweb.org/dft.html
Watch the Trailer
(2 DVDs, 5 episodes) $35 donation

As featured in the *Decision for Truth* series.

Kit contains 7 essential tools.

IAP Survival Kit $128
https://www.iapweb.org/store/kids.html#survive

Joy of the Faith host interviews Williams

On March 8th, **Ray Grijalba** (*photo left*) from *The Joy of the Faith* interviewed IAP Assistant Professor of Practice **Fletcher Williams** (*photo right*). The interview addresses the often misunderstood issue of science and faith. Williams, contrary to the usual religious commentators, drives home the point that *science (as currently understood) and faith do conflict*. He brings out how our bad physics leads necessarily to problems not only with religion, but, first with the reality we see, then with all reality!

Having commenced with the important topic of science and faith, the interview explored how the equation-first physics cuts us off from reality and how the IAP is the place that understands the nature of this problem and of its solution. The interview will be available on YouTube in July of this year. Check it out and share it with your friends!

Fletcher Williams to begin PhD in Physics

Starting in August 2022, Associate Member Fletcher Williams will begin pursuing his PhD in Physics at the University of Tennessee in Knoxville. When he graduated with his B.S. Physics from Clemson University several years ago, he was primarily interested in teaching at the high school level and had no plans of pursuing physics research.

Shortly after he began teaching, he became an Associate Member of IAP and was introduced to the Institute for Advanced Physics textbook series *Physics for Realists* (PFR). In studying PFR, an interest in physics was ignited in him that far surpassed anything he had known while pursuing his bachelor's degree. Now, instead of physics being a kind of symbol-pushing game, he saw its true meaning and was filled with the joy of actually understanding the meaning of the physical world for the first time. He initially thought he would drop his teaching direction and return to physics, but through discussion with Associate Member Anthony DiCarlo under the guidance of IAP Director Dr. Rizzi, he realized he did have a vocation of teaching as well.

Since that time, under encouragement from Dr. Rizzi to integrate teaching and physics research, he has avidly searched for opportunities to pursue graduate studies in physics while still teaching high school. Still, by study and teaching of IAP material and in light of IAP principles, he advanced in his knowledge of physics and his ability to

communicate it so well that he was appointed as IAP Assistant Professor of Practice in 2020.

For a long time, he found no viable options to pursue a formal degree until COVID19 provided an open door in the form of graduate courses offered remotely at the University of Memphis. Having success there then led to opportunities at the University of Tennessee in Knoxville, that have now culminated in the exciting path now available to pursue a full PhD and maintain his high school teaching position which is also in Knoxville. He is grateful for the hand of Providence, acting through the IAP, which has made this a possibility and is excited for the day when he can be an integral part of the advanced physics research being done at IAP.

$15,000 goal met for Matching Donations

Your donations between March 5th and March 12th exceeded our $15,000 goal!

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THANK YOU!

Our anonymous donor donated $15,000 to double your generosity!

You can donate online at https://www.iapweb.org/store/#donate

or by check:

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How does the scientism proceed from the culture to me?

by Anthony Rizzi

The scientism is the equation-alone based thinking that dominates our culture.

Let's illustrate with an example from a real person, a student. The example is an exchange between him and his mother.

> Student: "Mom, what do you think about that? Don't you think something should be done to show Steve (name changed), how very wrong what he did was?" (it's important to know that what Steve did was indeed *actually* wrong)
>
> Mom: "I think you're over thinking the situation. Sometimes people will do things that we don't like, but as long as Steven isn't hurting anyone else he can do what he wants and we need to respect that. There is nothing wrong with doing what you want." [1]

Here you see the mom passing the scientism to her son. This could as well be any other person in his life that has influence; the strongest are family, teachers and friends. Friends include people who are not properly friends, for example some people on social media. Teachers include those who influence through music, TV, internet videos, other internet content and other sources of information. As family and friend structures weaken, these types of systemic, more institutionalized, modes become more prominent.

Continued on page 7

What was wrong with the mom's explanation?

Her explanation distorted his understanding of the first physics. By saying: "he can do what he wants and we need to respect that" with respect to something that is opposed to reality in a severe way (which, as we noted above, is the case), she is implicitly teaching him that the meaning of reality is assigned by us, by our wills, instead of being what it is: reality is a meaning existing outside of ourselves that is to be discovered and conformed to. Things have meanings before we even exist!

What is the source and power of statements like hers?

The source (and hence its power) is in our root understanding of the world, the equation-alone physics at the base of all our modern thinking.

How does that work?

Her statement implicitly employs the false understanding of substance (see *A Kid's Introduction to Physics (and Beyond)*[2] (KIP)) that arises from the equation-alone physics at the core of all our modern thinking. Substances are the real things around us (e.g., you, me and the tree) that have their own existence (in contrast to properties which proceed *from* and thus exist *in* a substance). This means she distorted her son's understanding of substances from its true meaning to a false one. A substance is something that exists by itself, but she was effectively treating it as a mental construct that *we* make, so as to use it as *we* want. Mental constructs, such as involved in thinking, "here's how I want to live and I'm free to do whatever I want," use substances as symbols of something else. The substance is preempted by our use of it. If we do this substance disappears for us. That is, for us, there is nothing that exists outside of ourselves; there are only things that exist because we made them up.

As you can see, through the distortion of his understanding of substance, his understanding of everything is distorted. Many errors result from this, but the deepest is the loss of contact with reality and the "will trumps truth" mindset that arises from it. The "will trumps truth" mindset arises as we end in thinking that what we want, we create, and therefore is what is, and thus is what is good, so, in this way, we can basically decide what is good for us; empty and contradictory as it is, we end by acting as if executing our own will is what is good for us. Basically, it boils down to "if I want something, it is and thus I should be able to do it."

What is the general summary of this?

The equations in modern physics are by habit treated as substitutes for the essences of things; this changes the meaning of the first physics (see KIP[2]) in multiple ways and at multiple levels. This is transmitted to all subjects from this base. At the most profound level, the equation-alone physics at the core of our culture teaches (in innumerable ways, through almost everyone we know) to treat reality as if it were there for us to assign meaning to, not for us to conform to. We thus treat reality as if it were simply *artificial* symbols created by us for a place in our mental constructions and, in this way, act as if we create reality by our own will. This leaves us to effectively make of our thinking a bouquet of properties with no essential unity conforming to reality but one that changes at the whim of the scientized culture, especially through our family, friends, teachers, and, to some lesser extent, our own whim.[3]

Continued on page 8

Again, substance is only one example, each element of the basic understanding of the physical world given in KIP[2] is distorted in various ways and degrees by the equation-alone physics at the core of our thinking.

This happens to all of us in everyday living and conversation in subliminal ways that we do not recognize. At some real level, every explanation we have received from our parents, teachers, and friends passes on the scientism to us in a fashion like that outlined above, and it is of utmost importance for us to study the first physics and begin the process of fixing all the twists and turns and errors in our understanding of it and all that follows from it. There are all kinds of truth in what is said around us, but it rests on a confused base.

Until we get the right physics and the metaphysics that follows from it, (see KIP and *The Science Before Science*[4] and "Reintegration of the Modern Mind"[5]), each one of us is governed by this equation-alone physics.

Footnotes:

1. There is a deep point here that the scientism has obscured that we will not directly discuss here. In contrast to what the mother said, everything we do wrong hurts ourselves and others; that's what makes it wrong! Note, the hurt done to ourselves and that done to others is intertwined because *our* common good is our higher good. See A. Rizzi, "The Death of Justice?" *Physics and Culture* (October 2018).

2. A. Rizzi, *A Kid's Introduction to Physics (and Beyond)*, IAP Press, Baton Rouge, 2012.

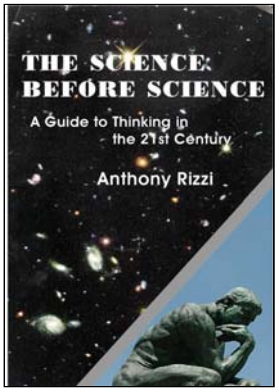
3. The bounds of what we are allowed to do actually become increasingly constrained. The equations of modern physics do work and do describe the world as manifested through the property of quantity (the first property of physical things, see KIP) directly or by analogy in things close to quantity; however, this inadvertently neglects higher things, including the very essence of the simple inanimate things from which the quantity examined in modern physics robustly proceeds. Neglecting them as well as treating them as if the equations were the essence results in a radically limited view of human nature, which in turn generates mechanical constraints on human activity and expectations.

4. *The Science Before Science: A Guide to Thinking in the 21st Century*, A. Rizzi, IAP Press, Baton Rouge, 2004.

5. "The Science Before Science: Reintegration of the Modern Mind and its Science", A. Rizzi, October 2006 plenary talk at the American Maritain Conference, Published: *Reading the Cosmos: Nature, Science and Wisdom*, American Maritain Association Publication (2011) also in Vol. 1 *Physics and Culture*.

BOOK REVIEW by Ann Martin, Ph.D.

The Science Before Science: A Guide to Thinking in the 21st Century
by Anthony Rizzi



The Science Before Science is, first of all, a beautifully written book. Dr. Rizzi has the rare talent of making readers feel that they are taking part in an intimate, friendly conversation. This conversation ranges widely in *The Science Before Science*, from the smallest, most obvious observations (that we all have been trained to miss) to the most astonishing, brilliant insights. Not a page is boring; not a page is predictable; not for a moment will readers lose their trust in the guide who leads them gently from step to step to the book's satisfyingly logical conclusions.

What are those conclusions? Well, suffice it to say that they can't be summarized in a sentence or a tweet. You'll have to take the journey for yourself. Like any good narrative, *The Science Before Science* depends on a gradual unfolding of meaning. Like any good narrative, *The Science Before Science* shows you the universe, allowing you to see how vividly filled with truth it is.

And I mean that literally. You'll get to know the simple little items that surround you in a new way. Apples, rocks, glasses of water, the clock on the wall: every single atom in them matters …. You don't have to grasp physics *or* metaphysics to start the book, but you'll grasp them when you finish.

… Dr. Rizzi will convince you of many essential things, including proving our own immortality....

This book is delightful as well as well-written and well-reasoned. It's teeming with people, contemporary, medieval, and ancient, who have expressed ideas on the subjects under consideration. Satisfyingly, Dr. Rizzi doesn't just include people who agree with him. He invites all sorts of thinkers, scientists, philosophers, theologians, atheists, believers, even mathematicians into his story. But, he doesn't leave us hanging; he proves the correct answers, showing who's right, who's wrong and who missed the boat.

And, what's more, this book is necessary. We modern readers have spent all our lives understanding our place in the world through the current philosophical-psychological paradigm; and we've been confident that our understanding is enlightened. Dr. Rizzi gently pulls up the blind, letting the bright light of the real world in…. Once you see it, you can't un-see it. And what a good thing that is.

Mrs. Ann Martin, Ph.D., is a Distinguished Instructor of English at Louisiana State University (LSU). She was introduced to The Science Before Science (SBS) *through her previous student, Kateri Rizzi, who is an IAP Volunteer Member. She attended the LSU campus fall 2021-Spring 2022 SBS book study led by Ethan Robson and mentored by Giuseppe Rizzi, which joined multiple other university groups via Zoom.*

The Science Before Science

Available online, including on Amazon

IAP Member Notes

Benjamin Luna,
Associate Member,
Physics Ph.D. candidate

My interest in science started when I was very young and continued to increase as I went through grade school and my first undergraduate years. However, the difference between theory and experiment in physics was extremely difficult for me to understand and to deal with. I originally had the attitude that I wanted to be involved in both theory and experiment, but in certain experiments, I was expected to figure out how to work within the current system built for investigation of physics principles without being able to understand the equational principles which were being investigated at the requisite level. Because of this, I thought "If this is what it means to be a physicist, I'm not so sure I want to be a physicist." I completed my bachelor's degrees at Tennessee Tech, but my drive to become a physicist was greatly diminished. I learned about the Institute for Advanced Physics (IAP) during my first year of graduate school, and IAP Assistant Professor of Practice **Fletcher Williams** helped me become an Associate Member of the IAP. IAP gave me for the first time the ability to truly understand my work as a physics major, and that was the only thing that kept me in physics. My path forward became clear - I would pursue physics at a university with a strong IAP presence, like Clemson University. I have now graduated with my master's in physics from the University of Tennessee, and I will enter Clemson as a PhD student under IAP Certified Member **Dr. Murray Daw** this fall. Dr. Daw is the R. A. Bowen Professor of Physics at Clemson University Department of Physics and Astronomy and an IAP Adjunct Faculty.

It is the ungrounded, empiriological-alone thinking of our culture which turns physics majors against their own vocations. It is the IAP which is the remedy for our ungrounded thinking. I owe enormous gratitude to the IAP for showing to me the goodness of my own vocation as a physicist by pointing out that physics comes first for all of us, even those who do not have a vocation to modern physics. To the particular IAP members mentioned above and also IAP Volunteer Member **Mr. Ethan Robson**, I owe special gratitude for their immense kindness in helping me to reground my own thinking so I can hear once again and pursue my vocation as a physicist.

On June 2, **Fletcher Williams** (Associate Professor of Practice), **Giuseppe Rizzi** (Associate Member), **Benjamin Luna**

(Associate Member), **Ethan Robson** (Volunteer Member), **Michael Rutland** (Volunteer member), and **Ben Williams** (IAP student) set out for a multi-day backpacking trip through the mountains of North Carolina. They were celebrating Ben Williams's recent graduation from Clemson (B.S. in Computer Science with minors in Physics and Math) and preparing for his send off to his new computer programming job at **Siemens Digital**.

The plan was to hike 12 miles of the Art Loeb trail and camp out along the way. Unfortunately, a couple miles into the trail Benjamin Luna suffered a severe sprained ankle. What followed were several hours of improvised attempts to get Luna off the mountain. Though it was a difficult experience, it ended up providing an exciting opportunity to work through a challenging problem as a team and to learn and practice wilderness survival skills. About 10 hours later (around 2 am) the mission of getting Luna back to safety came to a successful close!

Though the camping and longer backpacking trip prematurely ended, the group made the most of their remaining time in the mountains. Some of the guys were able to go on several interesting smaller hikes, and the entire group was able to enjoy warm fellowship and stimulating conversation before sending Ben Williams off to begin his career.

"Behold how good and how pleasant it is for brethren to dwell in unity." (Psalm 133:1).

IAP members please send your newsletter announcements to info@iapweb.org

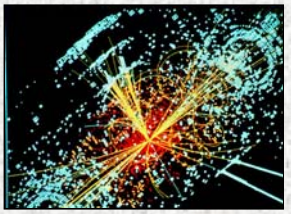
In June, IAP Certified Member **Dr. Dan Lejeune** donated seven bankers boxes full of physics books for IAP's use. The books range from introductory-level physics textbooks to records of the hearings of the U.S. Congress joint committee on atomic energy from 1954. From 1986 until his recent retirement, Dan was Professor of Physics at Wofford College, South Carolina and has been an IAP member since 2011. IAP is sincerely grateful for Dr. Lejeune's generosity and thoughtfulness!

IAP high school physics offered to students in Baton Rouge area: students very successfully completed a two semester algebra-based physics course using *Physics for Realists: Mechanics* (PFR-M) taught by an IAP Associate Member. The soon to be released Algebra Guide companion to PFR-M was vetted and enjoyed by the students and the teacher.

Contact IAP at 225-667-0233 to inquire about a physics course for your students anywhere in the country.

New membership classes are starting soon. Click here to learn more about how you can become an IAP Certified, Associate, Associate Humanities, or Volunteer Member of the Institute for Advanced Physics. We are a supportive community of active individuals seeking to solve our cultural downfall by grounding our thinking in the proper physics, thereby leading people to grounded rational thinking.

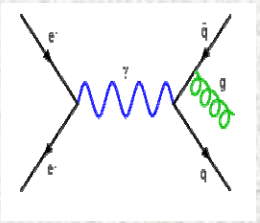
The Institute for Advanced Physics presents its 20th annual conference



Quantum Field Theory IV

Louisiana State University
by invitation only

July 20 – July 23, 2022



Check out resources at IAP's online magazine

Love and Friendship: What is Love? What is Friendship? **NEW**
Why do We Think so Poorly?
What is America?
What is the One Ring that Rules them all? **(print or audio)**
Is Temperature Real?
What is Science?
The World Just Got More Empiriological Today
Death of Justice?
What is the Difference Between a Lab and a Border Collie?
Physics and "Judge not that you might not be Judged"
Is there in Truth, Beauty?
Is Your Computer Real?
How to Learn in Four Steps **(print or audio)**
A Brief History of Nothing
How Do I Know My Hand Causes Movement?
The Problem of Our Failing Culture and its Solution
Answering Dawkins on Simplicity of God
How to Have Productive Enjoyable Conversations **(print or audio)**
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Please consider a larger donation
to facilitate our many activities. Thank you

Dr. Deal Hudson
interviews Dr. Anthony Rizzi
on Ave Maria Radio
March 12th & 13th

Dr. Rizzi explains:

- *the nature of the modern scientific method*
- *the development of modern science*
- *the progression of scientism in our culture*
- *and shares a plethora of historical insights you won't want to miss.*

https://www.iapweb.org/resources.htm
see General Educational Resources

The Glory of God is a Man Fully Alive
by Dr. Anthony Rizzi

is an article that discusses, following Chesterton's book *Manalive,* how we should live life searching for and growing in the good, not blind rule following of the scientism.
Go to IAP website for print or audio
https://www.iapweb.org/iapmagazine.htm
Go to "Departments", "Theologica"

Why do We Think So Poorly?

How Should We Think?

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), IAP magazine and now IAP Journal of Physics and Math have been initiated.

In Physics and Culture articles (complete articles located on the IAP web site at the below link), Dr. Rizzi shows us how the basic physics teaches us the meaning of something that we probably think we already know, but actually don't!

Unfortunately, in our ordinary life, we seldom act from principle. Indeed, we usually act simply according to how we spontaneously think and feel about what is put in front of us.[1] And, few know that our spontaneous thought *and feelings* arise from our established habits of thought about the things around us.[1] And, because of the state of our culture, those habits of thought, in turn, arise from what we have been told to think about things, *not* from our own *deliberate* thinking *nor* even from the *deliberate* correct thinking of our parents and teachers. When questioned about why we do what we do, we often rationalize our choices and can even get irritated if pressed on the reasoning behind those choices. This is not surprising because we have not been taught to reason from first principles about ordinary situations but, instead, to live in a kind of fog of activity, not thinking too much about why we do what we do. Indeed, we have a kind of dislike of reasoning about ordinary life situations.

How and Why We Reject Thinking

The other day, I was sent an article[2] which points to male "abstraction" as the cause of a serious problem in medicine. The author quotes Edith Stein as saying "*abstraction in every sense* is alien to the feminine nature" to argue that woman physicians are the cure to certain core ailments of the practice of modern medicine. By this, the author does not deny that abstraction is good or that women cannot abstract (nor does Edith Stein), but the author speaks as if abstraction were of necessity leaving out the whole and, most importantly, gives the impression that focus on abstraction is the central reason for the mechanical, even inhumane, treatment of patients sometimes seen in systemic modern medical practice today.

Now, this example only serves to bring forward a natural line of thinking that *anyone* who thinks seriously will find it hard not to fall into. In fact, it is widespread among those that care about our culture. Namely, if you see that modern science is the base of our culture and you believe modern science is characterized by abstraction, it is natural to conclude that abstraction is, or at least over emphasis on it is, in some way the source of the mechanistic anti-human culture we are increasingly falling into. However, if we adopt this anti-abstraction conclusion and react against abstraction, it follows that we will not properly value reasoning because abstraction is a prerequisite to reasoning (indeed a prerequisite to all understanding).

Read more in Physics & Culture magazine. See below.

CONTIUE ON NEXT PAGE

[1] See (Four Steps) A. Rizzi, "How to Learn in Four Steps", *Physics and Culture* (April 2014) to understand that spontaneous responses have a proper place in everyday life, but that for such responses to be good and proper, they presuppose proper reasoning has been done in the past.

[2] Sr. E. Gardner, "The woman physician as antidote to the ills of modern medicine", *The Linacre Quarterly* 84 (4), 2017.

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