

# THE INSTITUTE FOR ADVANCED PHYSICS

# The Institute News



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## *Sixteenth Annual IAP Members Conference*

by Ken Klenk, Ph.D., IAP Certified Member

photos courtesy of Ken Klenk, James Louviere, Murray Daw, Mrs. Rizzi, and Don Caffery



*This year's conference was very special in multiple ways. It is not an exaggeration to say that everyone grew greatly in their understanding and came out with the joy of that new understanding. The conference was unique as it was planned to commemorate IAP's tremendous success over the last 15 years. In particular, the conference consisted of two parallel tracks: A "Quantum Field Theory" (QFT) track and a Science Before Science (SBS) Track. The latter was for Certified and Associate members' wives and older children as well as volunteer members. It was the Sixteenth Annual Institute for Advanced Physics (IAP) Conference and was held at Louisiana State University (LSU) in Baton Rouge on July 24 to July 28, 2018. (photo: some of the conference participants gather for a photo during the banquet) Story continues on page 2*

The Institute for Advanced Physics

*Annual conference story continued from page 1...*



IAP faculty and members (left to right) **Dr. Ken Klenk, David Giroir, Dr. Murray Daw, Fr. Neal Nichols, Randy Nichols, Maikel Garcia, Dr. Anthony Rizzi, Dr. Ted Dickel, Frank Camacho, Dr. Dan Welch, Giuseppe Rizzi** (volunteer), **Dr. Jian He**, and **Anthony Coniglio** (student), *participating by Skype* **Dr. David Welch** and **Dr. Stephen Strickland**

We discuss here the QFT track. The SBS track is discussed in a later article. The purpose of the QFT meeting was to begin quantum field theory (QFT) research discussions and to discuss the deep new content of the recently published (March) *Physics for Realists: Quantum Mechanics - Physics with a Common Sense Grounding*. This textbook gives for the first time a fully physical understanding of quantum physics, grounding it in the first principles given through the senses.

Discussion began on Tuesday night and continued through lunch on Wednesday as the conference started in earnest.

After lunch, a primer session of the QFT parallel conference was held on Wednesday afternoon led by **Dr. Murray Daw**, IAP faculty, and focused on reviewing the revolutionary and deep concepts given in the previously published texts for Mechanics and Electricity & Magnetism (E&M). A roundtable discussion went late into the evening focusing on many topics, including explicating the problem with the base of our thinking through analyzing the errors in current science texts and in the writing of a very (empirilogically) good present-day physicist who implicitly rejects the foundational principles given through the senses.

The conference helped members access the new material of the quantum text for deepening their own knowledge and for teaching others. On Thursday, **Dr. Anthony Rizzi**, Director of IAP, led off the conference with an overview of the results of the empiriological thinking that pervades our society and how it impacts the morality, music, and every aspect of our culture. Every truth has an empiriological substitute. We deny the reality that is in front of us. The physical environment makes no difference. All that matters is our “good will”. We are over spiritualized. Ironically, the result is that our lowest instincts get the highest value. Our conscience is salved by pious and/or social actions. The ultimate consequence of our scientized culture is authoritarianism which scientism breeds. Since we do not know the fundamentals, learning starting with them can be hard, but to reject this essential task (which comes with our nature and the state of the culture) because it is inconvenient is a primal sin.

Dr. Rizzi introduced the quantum field theory path that the IAP has now embarked on. This

*Story continues on page 3*

Annual conference story continued from page 2...



*Frank Camacho (left) with other members on Wednesday at Chipotle Mexican Grill*

was continued later that evening with discussions on the Standard Model of particle physics which centered on a poster board made by Dr. Daw and **Andrew Garmon**. Dr. Rizzi also reviewed the new quantum mechanics textbook, pointing out many ground breaking insights that were gained in the years of research leading up to its release.

On Thursday evening, IAP Certified Members **Dr. Ted Dickel** and **Dr. Stephen Strickland** gave a review of their work on Hydrodynamic Analogy involving bouncing droplets. Dr. Strickland is developing a special lab at Samford University, Birmingham, AL, to study the various phenomena that by analogy can help us understand aspects of quantum mechanics.

On Friday, the conference returned to the quantum textbook and understanding the key aspects of the analysis that went into it. The discussion on Identical Particles was most enlightening, leading ultimately to a new understanding of the EPR Paradox and Bell's Theorem and to the "loophole" free Bell experiment by Hanson et al. which indicates that superluminal activity exists.

The conference concluded with brief presentations by IAP

Associate Members **Mr. Maikel Garcia** and **Mr. Frank Camacho** on the status of the Algebra Guide and by IAP Certified Member **Dr. Ken Klenk** on the quantum mechanics that is assumed to be at the basis of the ability of birds to migrate long distances.

At the 15<sup>th</sup> anniversary celebration banquet, the following men received their membership certificates: Certified Member **Dr. Jian He**, Associate Member **Ronald Heisser**, Associate Member **Gerardo Vazquez**, and Associate Member **Fletcher Williams** (see SBS Conference article for details on the ball and banquet).





*Dr. Rizzi awards Dr. Jian He IAP Certified Member certificate*



*Dr. Rizzi awards Ronald Heisser IAP Associate Member certificate*



*Dr. Rizzi awards Gerardo Vazquez IAP Associate Member certificate*



*Dr. Rizzi awards Fletcher Williams IAP Associate Member certificate*



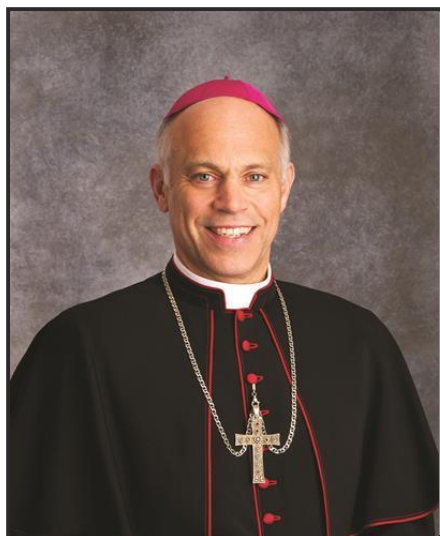
## **Dr. Doyl Dickel appointed IAP Assistant Professor**

In May, Dr. Ted Dickel was appointed an Assistant Professor at the Institute for Advanced Physics (IAP). He is a researcher and teacher at Mississippi State University and has been an IAP Certified Member since 2012.

Dr. Dickel assists Dr. Murray Daw, IAP Professor, in teaching the IAP membership courses and he also is active in IAP research and textbook development.

# Archbishop Cordileone Congratulates IAP members

*Talk given at the 16<sup>th</sup> annual conference*



I am delighted to be able to speak with you on this very special occasion: the 15<sup>th</sup> Anniversary of the Institute for Advanced Physics (IAP). You have good reason to celebrate as the Institute has

accomplished so much since its inception in 2003. Most important is the re-discovery of profound truths that have been left dormant for centuries. As is seen in the numerous articles, books, talks, and other resources that make possible the proper understanding of modern science for the first time! This includes three groundbreaking textbooks. All are the fruit of much study, research, discovery and plain hard work. *In just 15 years, the IAP has made incredible strides in the monumental journey of understanding the last 400 years of science in terms of the first principles that we get through the senses. God's blessing is clearly on the work that you are doing.* I am excited to see all that the IAP will accomplish in the years ahead.

I would also like to use this opportunity to reflect on the urgency of the work that IAP alone is doing. Recall the responsibility and noble task that you have been given and accepted. The lack of understanding of basic natural truths is rampant in our times, even among the most devout Christians. The primacy of truth is quickly eroding in our society. This, of course, includes our increasingly erroneous view of morality and law. American laws are properly understood to derive their authority from God through the natural law which can be known by reason alone. Now, however, laws are thought to be simply

socially-engineered rules that can be modified according to the mandates of scientism.

Popes have been warning us of our plunge into confusion and error. Leo XIII called us back to the teaching of St. Thomas Aquinas, Pius X warned of "modernism," John Paul II warned against the culture of death. Benedict XVI warned of the dictatorship of relativism. Such errors with their consequent evils are now manifesting themselves upon us more than ever. As the Institute teaches, the growth and spread of these evils have a root cause: an improper digestion of modern science. Scientism is the assertion that modern science is the first and only way of knowing. In reality, we learn starting from what we see and then proceed to modern science, which, when properly understood, is good and essential to man's growth.

As St. Thomas Aquinas says, no matter how high the truths that we are considering may be, we never know them in any way other than through what we know through the senses.<sup>1</sup> Since through our senses we are in contact with physical things, our understanding of physical things, our physics, is the starting point for all of our thinking and doing. Indeed, even our ability to understand and share the Catholic Faith depends on having a proper understanding of the physical world. *Physics needs to be given the respect and proper place as the first science. That's why I had IAP come to my seminary to help form the understanding of the future priests here in San Francisco.* As priests, it will be essential for them to know the basic physics properly understood, its proper place and the root problem resulting from the current misunderstanding of physics in the proper sense. I am proud to have one of my seminarians now among your number as an IAP Associate Member. *Talk continues on page 6*

<sup>1</sup> *Commentary on Boethius on the Trinity* (6,3)

**The Institute for Advanced Physics**

P.O. Box 15030, Baton Rouge, LA 70895

For those that are listening on EWTN, I encourage you to support the work of the Institute for Advanced Physics. We must be attentive to the forces that are shaping our thinking in the modern world in which we live, keeping all that is good. Do so by getting IAP's resources, by learning the fundamentals that they contain, and by sharing all this with others. Support the Institute for Advanced Physics by your prayers and financial help.

Sincere thanks to all those who have already been funding the IAP's work.

IAP members, remember that all that you are doing to learn and teach the proper physics is an essential part of your spiritual walk. Again, our ability to live the Faith with the fullness of integrity depends on our having the proper physics. We must make it a priority! For those of you who are Catholic, access the Sacraments as essential aids in your IAP endeavors. Pray that

God will guide you to understand rightly and clearly, to fully live the truth you learn, and to teach it with charm and grace.

Lastly, I want to encourage you members to keep up your good efforts in the important work of advancing the mission of the Institute for Advanced Physics. I also encourage families of members, and all people of good will, to support the members in their essential work. Make sure it is not a thankless work but a work populated by your support and appreciation.

Our Lord will surely be with you every step of the way, as He has been during these last 15 years. Keep your zeal. Truth Himself beckons you onward. Now, I leave you with my Apostolic blessing... *I pray that the blessing of Almighty God may come upon you and remain with you forever. The Father † and the Son † and the Holy Spirit †. Amen*

Mr. & Mrs. Friends of IAP	Date: <u>January 16, 2019</u>
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**Thank you for your financial support.**

## Science Before Science Conference for family members of IAP members and volunteer members

by Anthony DiCarlo, IAP Associate Member  
photos courtesy of Ken Klenk, James Louviere, Murray Daw, Mrs. Rizzi, and Don Caffery



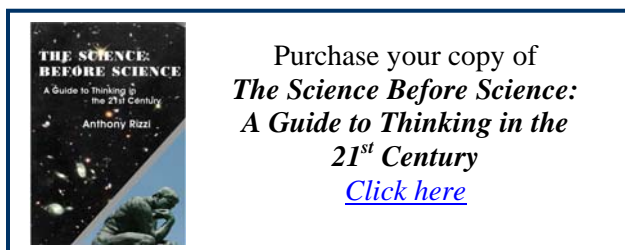
IAP conference presenters and mentors (left to right) **Anthony DiCarlo** (lead presenter), **Fletcher Williams** (presenter), **Ronald Heisser** (mentor), **Dr. Kevin Hix** (presenter), **Gerardo Vazquez** (mentor), **James Louviere** (mentor/audio-visual), and **Don Caffery** (mentor)

The annual Institute for Advanced Physics (IAP) Conference was held on **Louisiana State University's** (LSU) campus in Baton Rouge from July 24 through July 28. As previously mentioned, this year's conference was a special one, and it included two tracks: The Quantum Field Theory (QFT) track for certified and associate members and The Science Before Science (SBS) track for volunteer members and family members of IAP members. The SBS track was based on Dr. Rizzi's book the *Science Before Science: A Guide to Thinking in the 21<sup>st</sup> Century*. The two

tracks came together on the evening of July 27 for a Ball and Banquet to celebrate IAP's 15th anniversary! The Conference was a huge success and left everyone excited about all that is going on with the IAP.

The SBS track was led by IAP associate members **Anthony DiCarlo**, **Fletcher Williams**, and **Dr. Kevin Hix**. These members had weekly, in depth, meetings with Dr. Rizzi in June and July in order to prepare for the SBS Conference. Also involved in these meetings were associate members **Ronald Heisser**, **Gerardo Vazquez**, and **Don Caffery** (who served as mentors at the SBS Conference), as well as associate members **John Sudnick** and **Dr. David Liberto** (PhD Theology, BS mathematics).

The SBS Conference, which was held at the **LSU Cook Hotel and Conference Center**, began on Wednesday afternoon with a primer on Dr. Rizzi's book *A Kid's Introduction to Physics* (and *Story continues on next page*)



Purchase your copy of  
*The Science Before Science:  
A Guide to Thinking in the  
21<sup>st</sup> Century*  
[Click here](#)

Beyond). **Mrs. Katie DiCarlo** and **Miss Hannah Dille** organized the logistics and material for the primer.



*Mrs. Deya Garcia (and baby), Miss Hannah Dille, and Mrs. Katie DiCarlo (and baby)*

Following the primer, SBS Conference participants watched "Return to Wisdom", an IAP production in which Dr. Rizzi analyzes the ways in which the scientism is eroding our common sense. Then they enjoyed pizza, discussed the important concepts and their implications and socialized before turning in for the evening to get ready for the full days that lay ahead.



*Fr. Paul Clark and Nicolo Rizzi*

On Thursday morning, **Fr. Paul Clark**, a priest of the Archdiocese of New Orleans, offered Mass in the Cook Conference Center for SBS Conference leaders, members, and participants. Thursday's conference sessions began in the Cook Conference Center with the

praying of the St. Thomas Aquinas Study Prayer, the opening song (**John Denver's Singing Skies and Dancing Waters**), and introductions. Mr. DiCarlo gave a brief presentation on Dr. Rizzi's article *How to Learn in Four Steps* (see [Hyperlink](#)) which included mention the of IAP Central Theorem.

*IAP Central Theorem*

Physics is the Problem and Solution

- ❖ Physics is the first science because everything we know comes through the senses
- ❖ Therefore, all other branches of learning depend on this first science
- ❖ Therefore, if our physics is wrong, to that degree, so is everything else!
- ❖ Our physics is an equational physics that cannot answer simple questions like what something is, so all of our thinking is unstable.

The core material began with an hour long *overview* presentation of the entire SBS book: Mr. Williams covered chapters 1-4, Dr. Hix covered 5 and 6, and Mr. DiCarlo did chapters 7-9. After this, *full lectures* on Chapters 1-5 began, with Mr. Williams presenting lectures on Chapters 1-4 and Dr. Kevin Hix presenting a lecture on Chapter 5. As part of his lectures, Mr. Williams gave a presentation on the IAP Central Theorem, which proves the need for the work of the IAP and the essential importance of the education that the conference participants were there to receive.

The lectures were broken up by small and large group discussions, which gave SBS Conference participants an opportunity to better digest the content of SBS and the presentations and to ask questions. Following each lecture, small groups were formed and group leaders asked questions to each member of his group to probe for understanding and to prompt conversations. After this, the small groups came back together to form a large group, and helpful insights were shared and questions were addressed. Meal times provided additional [Story continues on next page](#)



opportunities to extend conversations and deepen understanding. Many thought-provoking and enlightening conversations were had during these times. At the end of Thursday's lectures, there was a brief review and Mr. DiCarlo gave a brief presentation that addressed how IAP alone is doing the work of grounding modern empirical science in the basic physics, the simple truths that we get directly through our senses, and that highlighted the urgency of this work.



*Robert Lane (center) participates in small group discussion*

After the SBS lectures on Thursday, SBS Conference participants, mentors, and leaders enjoyed dinner together at the Cook Conference Center. This was followed by a cloud chamber experiment led by Mr. Williams. The experiment was a big hit! Staff members of the Cook Conference Center also joined in watching the experiment. One of the Cook staff members was so interested in what he overheard from the lectures and experiment that he started investigating the IAP website and reading some of the articles from the IAP online magazine! Indeed, toward the end of the conference, a staff member said she had been watching our sessions and activities and wished that she could join in!

After the experiment, SBS Conference participants and mentors socialized and walked to Insomnia Cookie and Highland Coffee to get some fresh air and some exercise, as well as a treat. Conversations and fellowship continued late into the evening.

Like Thursday, Friday began with Mass offered by Fr. Clark at the Cook Conference Center. Sessions began once again after

breakfast with the praying of the St. Thomas Aquinas Study prayer. Friday's lectures covered Chapters 6-10 of SBS, with Dr. Hix covering Chapter 6 and Mr. DiCarlo covering Chapters 7-9. As on Thursday, the lectures were broken up by small and large group discussions. On Friday afternoon, Mr. Williams and Mr. DiCarlo led a review of the IAP Central Theorem and the four steps of learning to conclude the presentations.



*Dr. Dan Welch, Noah Lett, and Dr. Anthony Rizzi*

Following this, the participants of the SBS Conference and the QFT Conference came together on Friday at the Cook Conference Center for a Q&A session with Dr. Rizzi. This session included many good questions from SBS Conference participants and helpful insights from Dr. Rizzi. SBS Conference participants also got to show off some of what



*Maikel and Deya Garcia*

*Story continues on next page*

they had learned during the conference. **Mrs. Deya Garcia**, in particular, answered correctly many questions that Dr. Rizzi asked the group in order to test their learning.



*Giuseppe Rizzi, Anthony Coniglio, Peter Maggio, and Ronald Heisser*

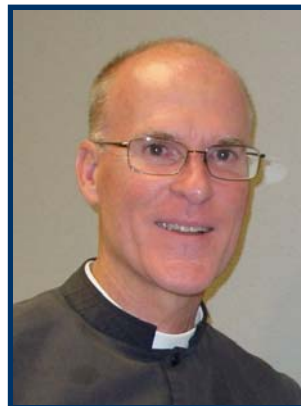
Following the Q&A session, the participants from each conference got an opportunity to socialize with each other while the young adult participants enjoyed punch, fellowship, and good music from the "IAP Jukebox", a computer program created by IAP volunteer member **Giuseppe Rizzi**, which allows listeners to pick from a variety of great music and to learn a little bit about the background of each song.



*Randy and Luise Nichols*

The ball and banquet on Friday night was a grand event indeed! It began with the *Holy Gassers* video, a funny skit which emphasized the importance of using the grace that we receive through the Sacraments to grow in

truth rather than allowing it to be wasted. This IAP production was made by Mr. Heisser and Mr. Giuseppe Rizzi and with the generic script by Dr. Anthony Rizzi. It was followed by an address from **Archbishop Salvatore Cordileone of San Francisco**, who spoke about the urgency of the work of the IAP and encouraged IAP members in their mission. [Read Archbishop Cordileone's full address on page 5] Following this address, Dr. Rizzi gave



*Fr. Neal Nichols, F.S.S.P.  
IAP Spiritual Director*

an address and presented awards to new IAP members. Next came the singing of the *Salve Regina*, grace and blessing given by IAP member **Fr. Neal Nichols**, and a delicious banquet. Following the meal, everyone enjoyed dancing to music from the "IAP Jukebox", a piano concert given by world-class pianist **Anthony Coniglio**, as well as lots of good conversations and laughter.



*IAP wrestlers Nicolo Rizzi and Anthony DiCarlo*

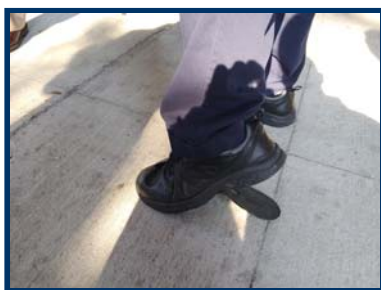
The Ball and Banquet festivities lasted late into Friday night. As things were winding down, participants were pleasantly surprised by some unexpected entertainment: a wrestling match between Anthony DiCarlo and *Story continues on next page*

**Nicolo Rizzi**, as well as a spontaneous piano concert put on by Fletcher Williams, Anthony Coniglio, and **Peter Maggio**. Mrs. Katie DiCarlo commented afterwards that the Ball and Banquet was a great example of how to celebrate and get recharged, and it also revealed the many talents of the IAP members and their family members. Conference participants lingered in fun and deep conversation until the banquet hall closed and they were forced to move outside where they continued some more and then moved again only to pick up again. It was truly a night to remember!

On Saturday morning IAP members attended Mass offered by Fr. Nichols at Christ the King Catholic Church on LSU's campus. After Mass ended, it was observed that Dr. Rizzi had literally danced his shoes off the night before (see picture below)! Never one to miss an opportunity to make a joke, IAP associate member **David Giroir**



*David Giroir*



asked all to “pray for Dr. Rizzi because he saw that Dr. Rizzi was in danger of losing his sole!”

Mr. Giroir’s jokes peppered the conference. He also noted at one point during the ball when people were no longer congregating around the punch, that “all jokes were in trouble because there was no punch line!” At another point, after many people had sat down at the grand piano and revealed the talented people we had in our midst, he said: “maybe we should change our name to Institute for Advanced Pianists.” Earlier at an evening session, when **Dr. Murray Daw** had to

leave momentarily during a discussion he was leading to take an important phone call, Giroir said:

“That is a Daw-gone shame!”

As always, the IAP Conference was an encouragement and an inspiration for all who participated, helping them renew their commitment to learning ever more deeply about the



*Dr. Murray Daw (above), Thomasina and Kateri Rizzi*

fundamental truths on which all other truths depend and to integrating those truths into their lives (see Dr. Rizzi's article *How to Learn in Four Steps*).



*Brian Lane, Dr. Kevin Hix, M.D., and Dr. Ken Klenk*

SBS Conference participant **Brian Lane** said that he noticed that there were so many examples during the Conference and the Ball and Banquet of what conversations should be like. Many seconded this and added similar thoughts. Indeed, how rare truth-centered conversations are outside the IAP community! **And it is only truth that can unite us in the bonds of true friendship that we all long for. May the joy that comes from learning and living the truth be yours in the years ahead!**

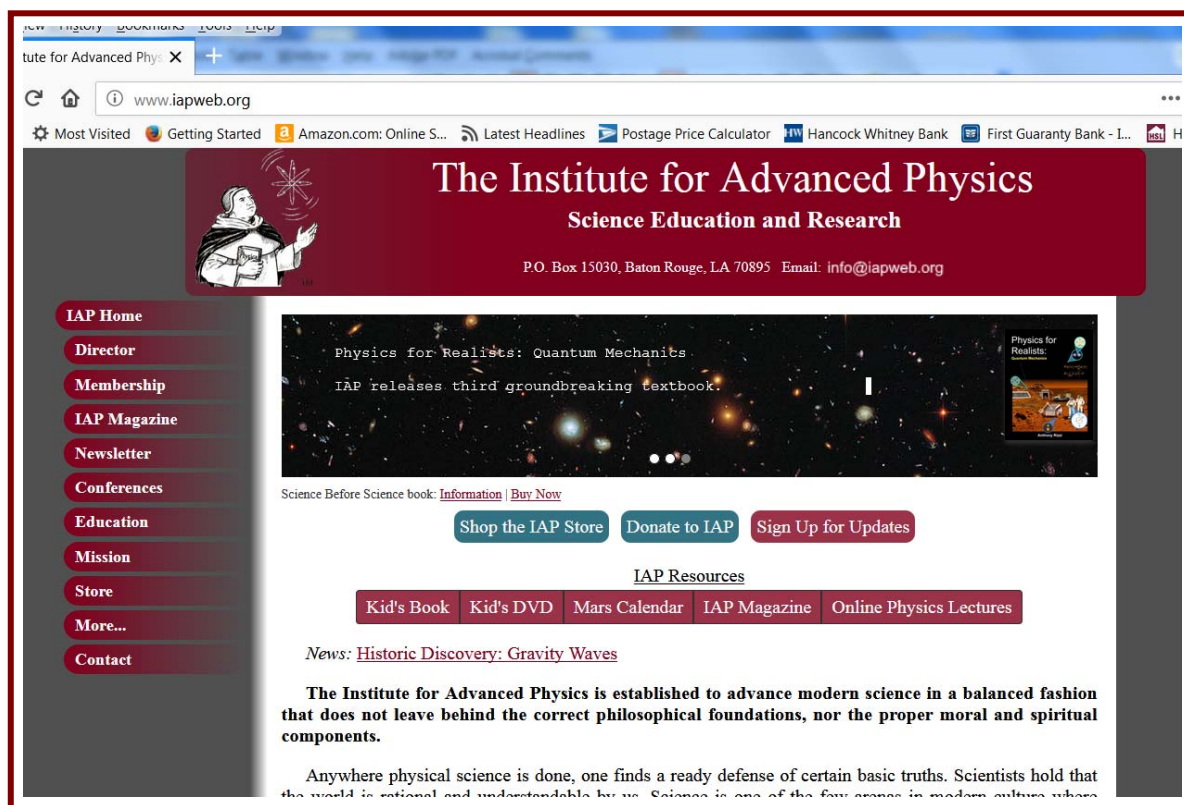
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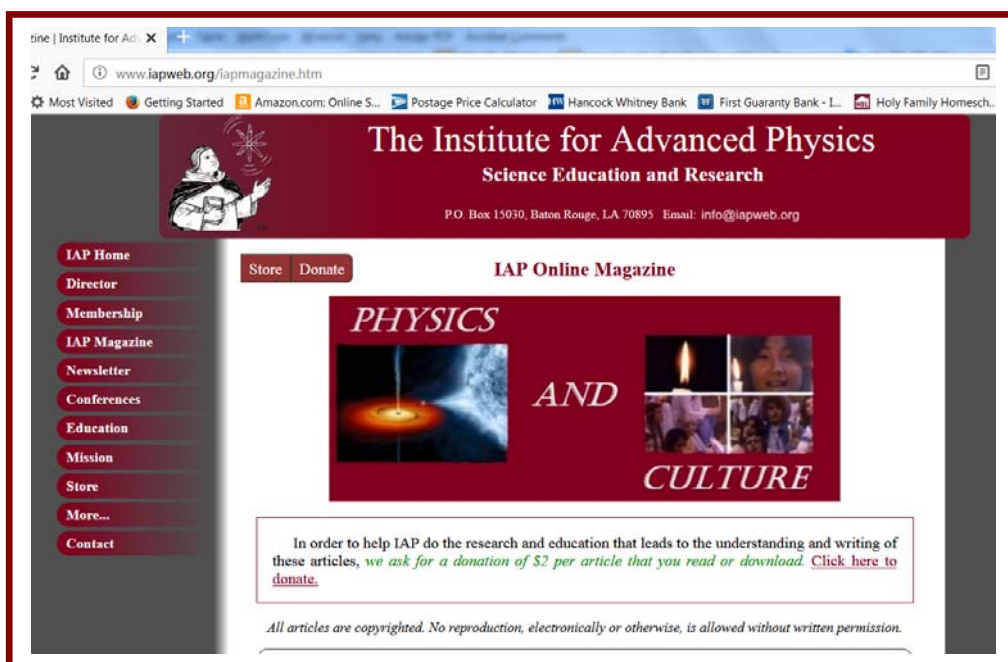
# 15<sup>th</sup> Anniversary Banquet



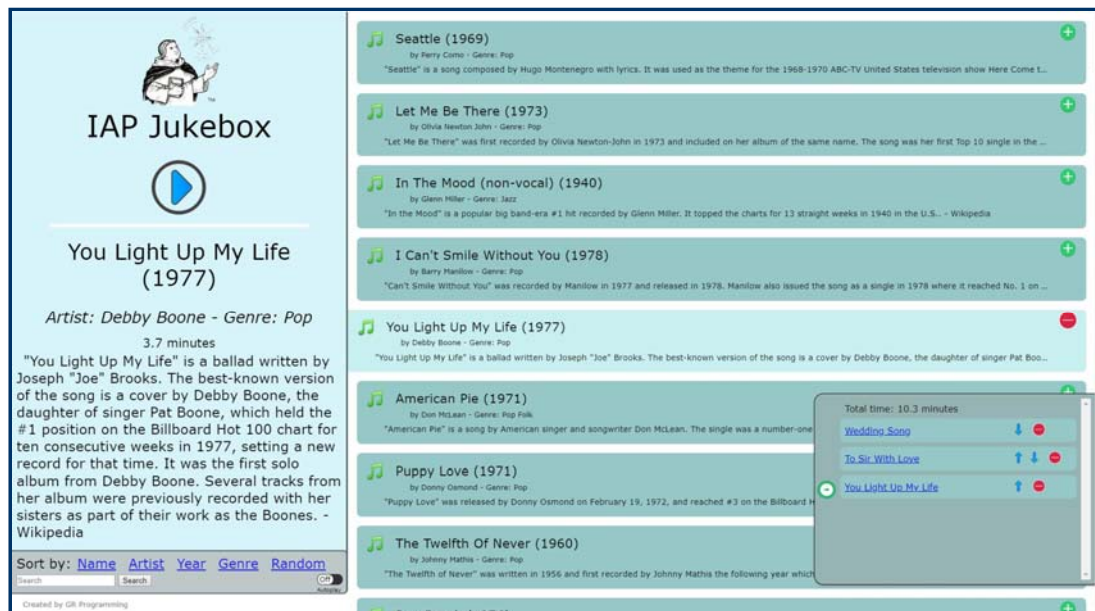
# IAP has a New Website!



In May, IAP Volunteer Member **Mr. Giuseppe Rizzi**, founder of GR Programming, created a new website for the Institute for Advanced Physics. Giuseppe, pictured in an article below with one of the robots he designed, is a junior electrical engineering student at Texas A&M University.



# IAP Jukebox and *Holy Gassers* Video



IAP created the **IAP Jukebox** which played the music for the 15<sup>th</sup> Anniversary Ball in July. Using a computer, members selected a playlist from the 100 song database which played during the ball and banquet. The software was made by **Mr. Giuseppe Rizzi**.

IAP also produced an educational video, *Holy Gassers*, which premiered at the 15<sup>th</sup> Anniversary Conference. The skit, outlined by **Dr. Anthony Rizzi**, is done in the spirit of the parables of Jesus. It helps us examine the way we approach the Sacraments and use the grace we receive through them. Associate Member **Ronald Heisser** directed, acted, and filmed the video with **Giuseppe Rizzi** providing the video editing. **Fletcher Williams** narrates the introduction and conclusion of the video.



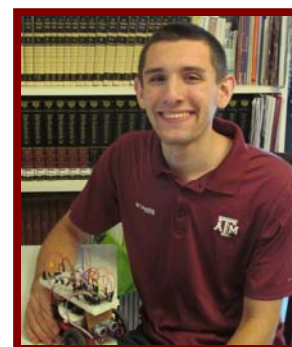
Ronald Heisser directs and acts in *Holy Gassers*

## Grab that Word Game App



**Giuseppe Rizzi** wrote the software for IAP's "**Grab that Word**" which is an online game app based off the game show "Pyramid." Players try to get teammates to say as many words on-screen as they can before time runs out. It's a great game to play with the whole family. This Institute for Advanced

Physics version of the game contains many special features, including a mode to practice the IAP vocabulary. It also includes a custom mode which can be used to practice your child's vocabulary for grade school as well as SAT or ACT words. This version of the app was donated to IAP by GR Programming. The game app is available for a \$5 donation. <http://www.iapweb.org/store#grab-word>



Giuseppe Rizzi

## Duke University and Clemson University Young Scholars using IAP Materials

North Carolina's Duke University Talent Identification Program is a nonprofit organization that supports academically talented students in grades four through twelve. Through above-grade-level testing,

# Duke TIP

enrichment resources, year-round learning options, residential summer programs, online courses, need-based financial aid, and original research into the needs of gifted students, they help support and nurture students' talents. Duke TIP has been using Dr. Rizzi's *Science Before Science* since 2011 as part of this program.

At Clemson, rising 7th-12th grade students up to age 17 are introduced to college subjects taught by Clemson instructors while being immersed in the culture of Clemson University,

South Carolina. Clemson uses Dr. Rizzi's *A Kid's Introduction to Physics (and Beyond)* as part of this program. The book has been so well received by

their students that they plan to add Volume II of this book to their curriculum when it is released by the Institute for Advanced Physics in 2019. These are but two examples of the many ways IAP's material is being used.



## Dr. Rizzi on *EWTN Live*



On September 26<sup>th</sup>, **Dr. Anthony Rizzi** appeared on **EWTN Live** to discuss his new book with **Fr. Mitch Pacwa** which for the first time unites the teachings of St. Thomas Aquinas and quantum physics! Dr. Rizzi explained the core source of (in Pope Benedict's words) "the dictatorship of relativism" in which we find ourselves and how we can be a part of changing it.

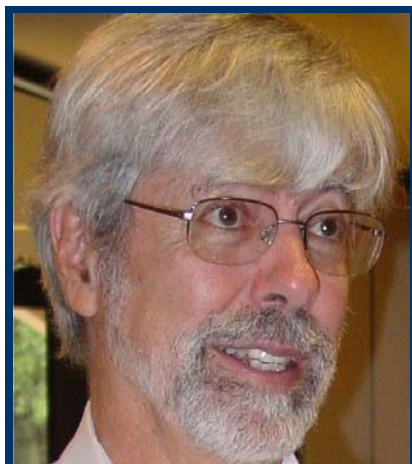
As Americans we've lost the basic common

sense principles upon which our nation and culture was built and preserved and grown by its Christian religion. In this interview, Dr. Rizzi explained the need to reinsert these principles at the core of our thinking. It takes some time to see that what the Institute for Advanced Physics is doing is essentially important to everything we want to accomplish. Dr. Rizzi is uniquely qualified to help people understand what is happening to our culture and why we are losing our common sense understanding of the world. The work of the Institute for Advanced Physics is about putting the common sense principles back into our cultural thinking through the head of our culture which is modern science. In this deep way, we are working to stop the moral decline in our culture at its source!

Watch at:

<https://www.youtube.com/watch?v=mW00M2fZUfQ>

# University Development Committee



**Dr. Murray Daw**



**Anthony DiCarlo**



**Dr. Ted Dickel**



**Doug Eckert**

Since September, IAP's university development committee has been meeting weekly focused on developing curriculum and resources for an Institute for Advanced Physics university. The university's guiding principle is that everything we know comes through what we know through the senses, so physics, the study of the physical world, is the first science. Therefore, all other branches of learning depend on this first science. The end goal is to provide undergraduate and graduate education in all disciplines in an educational atmosphere that is fully human, incorporating true and proper moral and spiritual components.



**Dr. David Liberto**



**Dr. Anthony Rizzi**



**Fletcher Williams**



## Anthony Rizzi, Director and Founder



*How should we do science? If this question is not answered adequately, science will stay disconnected from, or worse answer via scientism, man's deepest questions, and the widespread loss of meaning and the resulting feelings of displacement and malaise can only be expected to deepen. With no integrated balance, technocratic thought and devices will reign, and man will feel increasingly alienated as less and less room is allotted for his humanity. It is only by clearly grounding our thinking in the basic physics that we know directly through the senses that we can get the truth we seek and need. With that base physics, we can place our modern scientific knowledge in context and regain meaning in our increasingly chaotic and busy lives. More than this, grounding and integrating modern science with this simple physics will give access to all (scientist and non-scientist) to the full sweep of the deep meaning and beauty embedded in modern science. We are made for Truth; only by putting it again in the center of our thinking and action can we regain ourselves.*

**Anthony Rizzi, Founder and Director of the Institute for Advanced Physics**  
(Founded March 14, 2003)

## Please Pray for our Deceased Members

### Fr. Benedict M. Ashley, O.P., Associate Faculty

May 3, 1915 – February 23, 2013, *requiescat in pace*



Fr. Ashley was an Associate Faculty of the Institute for Advanced physics from March 2003, near its founding, till his death in February 2013. He was world renowned in theology and philosophy and considered his work with the Institute for Advanced Physics as his most important work.

He was a priest of the Dominican Order, Chicago Province. He graduated from the University of Chicago and The University of Notre Dame and had doctorates in philosophy and political science, and the post-doctoral decree of Master of Sacred Theology conferred by an international committee of the Order of Preachers at the University of St. Thomas Aquinas, Rome. Interestingly, he was a former student of the late Mortimer Adler. He was formerly President of Aquinas Institute of Theology, St. Louis, Missouri, Professor of Theology at the Institute of Religion and Human Development, Houston, Texas, the Aquinas Lecturer at the Center for Thomistic Studies in Houston, as well as the Director of the Albertus Magnus Lyceum for Philosophy of Science. He has also been Professor of Theology at the Pontifical John Paul II Institute for Studies on Marriage and Family in Washington, D.C. and Visiting Lecturer in Humanities at the University of Chicago; he is also a Professor of Moral Theology at Aquinas Institute of Theology, St. Louis and an Associate Professor at the Center for Health Care Ethics at the Medical School of St. Louis University. He was a member of the board of the Institute for the Psychological Sciences, Washington, D.C. and a Senior Fellow of the National Catholics for Bioethics, Boston, MA.

He was honored with the medal *Pro Ecclesia et Pontifice* conferred by Pope John Paul II, a Lifetime Achievement Award from the Catholic Health Association (2004) and was a consultant to various National Catholic Bishops Conferences from 1981-1998. Fr. Ashley authored over 20 books

and his curriculum vitae references thirteen pages of published articles. He co-authored the internationally used textbook on Health Care Ethics.

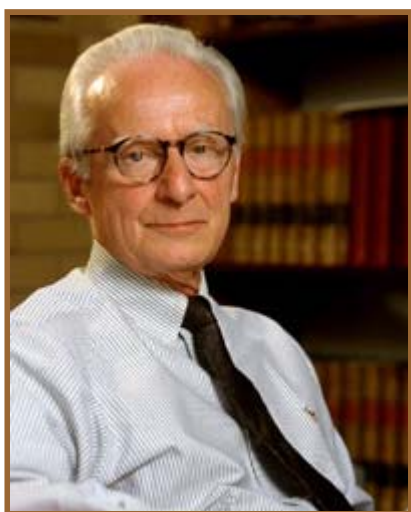
In 2005, Fr. Ashley was offered a distinguished senior visiting fellowship at Oxford University in the philosophy and theology department. In order to not impede his work at IAP, Fr. Ashley declined the appointment. Fr. Ashley was given awards up to the end of his life, recognizing his many contributions.

*IAP's mission directly addresses the most important intellectual problem of the last 400 years, without which the Church cannot truly evangelize modern man. **IAP is the first and only institution addressing this problem** at its core by integrating the proper philosophical depth into the heart of modern science.*

**Fr. Benedict Ashley**

## Ralph McInerny, Board Member

*January 29, 2010, requiescat in pace*



*I am writing to express my complete and enthusiastic support for the work of the Institute for Advanced Physics. The people involved are knowledgeable and even exceptional in their fields. ... As a board member, I can testify that the Institute's work is crucial to reforming our culture. Misunderstanding of science is the key source of the confusion in the humanities and the larger culture. Physics in the broad sense is the foundation for all of our knowing.*

**Ralph McInerny** (February 24, 1929 – January 29, 2010), Professor of Philosophy, University of Notre Dame, Member of the President's committee for the Arts and Humanities, Gifford Lecturer, Institute for Advanced Physics Board Member (March 2003 – January 2010)

## Archbishop Philip Hannan, Advisory Board Member

*September 29, 2011, requiescat in pace*



**Philip Matthew Hannan** (May 20, 1913 – September 29, 2011) served as auxiliary bishop of the Catholic Archdiocese of Washington and later as the eleventh archbishop of the Catholic Archdiocese of New Orleans from September 29, 1965, to December 6, 1988.

During WWII, after the attack on Pearl Harbor and the United States' entry into World War II, Father Hannan was commissioned in the United States Army, where he served as a chaplain to the 82nd Airborne Division.

Archbishop Hannan was asked by the Kennedy family to deliver the homily at the Requiem Mass of President John F. Kennedy.

Archbishop Hannan was an Advisory Board Member of the Institute for Advanced Physics from 2003 – 2011. He did important work for IAP.

## What is the Difference Between a Lab and a Border Collie?

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 how we move in our understanding from generic to specific. In our knowledge of ourselves, for example, we first get the general idea of a physical thing, then we have to work our way down to the full concrete reality that is myself or yourself. George Washington was not man in general but this man.*

Have you ever wondered what the difference between a dog and a cat is? I mean really wondered what essentially makes a dog a dog? How about what makes this dog different than that dog. Well, that's what this article is about. We are about to plunge into what makes this dog different from that dog. We are going to do it in a general way so that you can then begin to think about what makes you different from your brother or your friend. We will begin, well, at the beginning, and then proceed to what a dog is and then get to the question of the title in a general way, which is finally pointing at what makes an individual this individual.

To start we have to recall the ground of all of our knowing, which are the things we know through our senses, principles that are laid out in the *A Kid's Introduction to Physics (and Beyond)* (KIP).<sup>2</sup> In particular, a physical thing is something and can become something else. We call what it is actually, its *form*, and what it is potentially its

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<sup>2</sup> *A Kid's Introduction to Physics (and Beyond)*, Anthony Rizzi (2012) for the first time at this level gives the larger set of first principles that we get through our senses. Note that this kid's book is for everyone, including adults. It is called a kid's book because the principles are those that should be learned as a child and because it is presented at a very simple level. Since none of us were taught the principles in the book, we can say it is for the kid in each of us.

*matter*. Every physical substance is a form-matter composite. Furthermore, physical substances have properties (see KIP). Through their properties we learn what they are essentially, i.e., we discover their essence.

Through thinking about the things around us that we learn as children,<sup>3</sup> we can discover that the essence of an animal is a physical substance with inanimate powers,<sup>4</sup> vegetative (i.e., powers to live), and sense powers, i.e. power to know through feeling and/or seeing and/or hearing etc... This is the generic (general) essence of an animal. What is a dog? We will not exhaustively answer this rather hard question, but instead give you the key pieces as well as the general structure of how to approach the question so that you can get more of the pieces yourself.

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**Anthony Rizzi, Ph.D.**, founder and Director of The Institute for Advanced Physics (a fifteen-year-old non-profit organization), 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.

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<sup>3</sup> See *The Science Before Science: A Guide to Thinking in the 21<sup>st</sup> Century* (SBS), Anthony Rizzi (2004) for exposition of how we get from physical things to a knowledge of ourselves.

<sup>4</sup> By this I mean the generic physical qualities such as color, mass (including the ability to have impetus), and the ability to apply a force to other bodies. Also, recall all physical things will have properties in all nine categories of properties; for example, the dog will have the first property of extension.

# The Death of Justice?

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 topic of Justice. Having no clear understanding of physical evil, us moderns have lost our understanding of evil completely. Loosing our understanding of good, including the common good, we have lost our understanding of our need for each other.*

What has happened to our sense of Justice? Many of us are not *properly* outraged by injustice. Jesus says it this way: “Blessed are those that hunger and thirst for righteousness.” Not us. Indeed, unless it happens to us or someone we know, we can be pretty apathetic about evil being done. This is because we do not know what real evil is. If evil is done to us or those we care about, we feel the effect of that evil and respond, sometimes with vengeance, which is an *inordinate* outrage, rather than by seeking justice. What’s the difference? Vengeance is about quenching our anger in any way possible, while justice is about reestablishing right order for the *good* of all involved. We don’t really know what justice is, because we don’t really know what evil is.

Justice has been replaced by “kindness.” And, kindness, in turn, has become letting people be and do what they want. Justice has become toleration. But, this is really a kind apathy. In a vital sense, hatred is not the opposite of love, apathy is. If I love someone, I must hate the evil that harms him. Apathy about it would be opposed to real love. Indeed, when we do get mad, it is often a kind of apathy in that we do so because somebody is violating someone’s supposed right to do what they want, independent of whether or not it is good for them.

Again, our apathetic tendencies come back to not understanding evil, in particular human evil. And, this comes back to not understanding physical

evil. All our knowledge comes through what we know through the senses.<sup>5</sup>

To truly answer our title question, we need to first investigate the nature of physical evil. Then, we can address human evil and our inability to properly feel injustice. We will see that the latter arises from our lack of understanding of the principled origins and nature of justice. This, in turn, is evident in the increasing conviction that all men of the past, in particular the Catholic Church, were wrong when they held that the death penalty was a legitimate penalty when carried out by the proper civil authority for first degree murder, i.e. murder with full intent. The death penalty is the central issue around which our discussion of justice will focus.

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<sup>5</sup> Because of this, to fully understand the arguments made here (and all of true arguments) and make their conclusions stable, we need to understand the principles given to us through our senses, the basic principles of physics upon which all of our thinking is based directly or by analogy. For these principles, see *A Kid’s Introduction to Physics (and Beyond)*, Anthony Rizzi (2012). For the full picture of our thinking see *The Science Before Science: A Guide to Thinking in the 21<sup>st</sup> Century*, Anthony Rizzi (2004).