

Physics Tracks

Newsletter of the Department of Physics
University of Notre Dame
Volume 3, No. 1



WYOP05...
the year in
review.



Letter from the Chair

Greetings to our Department of Physics graduates and friends:



As I write this on a cold December morning, the "World Year of Physics" celebrating the 100th anniversary of Einstein's miraculous year ("annus mirabilis"), we look forward to another century of great discoveries in physics. Following a year celebrated with lectures, music, open houses, and plays, our celebration will end with Prof. Grant Mathews' lecture entitled "What and When was the Christmas Star?" on Dec. 9th.

Einstein's papers in 1905 provided theoretical explanations of Brownian motion (thus giving reality to then-controversial presence of atoms and molecules), of the photoelectric effect (a major step toward quantum mechanics), and of the absence of the ether (by proposing the special theory of relativity). As miraculous as that was, we look forward in the 21st century to equally mind-boggling discoveries. Research at Notre Dame is addressing questions such as: "What is the nature of mass?"; "Why is the expansion of the universe accelerating?"; "Can we make electronics using spin?"; "How are cells organized?"; "How are heavy elements formed in supernovae?"; and "What is the origin of the matter/anti-matter asymmetry in the universe?". This is indeed a most exciting time for research in physics!

The 2005-2006 academic year at Notre Dame has been one of significant change and progress in both the University and in the Physics Department. We have a new president, a new executive vice president, and a new provost at Notre Dame. We will soon have a new vice president for graduate studies and research. In the physics department, the administration is also changing: Prof. Ani Aprahamian has left the chair position and I have been asked to serve as the interim chair until a permanent chair is selected. All-in-all, we are in a period of significant development and there is anticipation of great things to come.

Looking back, we have many things to thank Ani for in her tenure as chair. Research thrived in the department under her leadership. In addition to the many research projects being carried on by individual faculty members, a significant number of centers and institutes are flourishing. These include:

- CANDU (Center for Astrophysics at Notre Dame University)
- Bio-complexity Center for Interdisciplinary Research
- Center for Complex Network Research
- ITS (Institute of Theoretical Sciences: Notre Dame/Argonne)
- JINA (Joint Institute of Nuclear Astrophysics)
- Joint Nuclear Theory Institute (Notre Dame/Argonne)

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Faculty

Michael Wiescher



Michael Wiescher, Freimann Professor of Physics, is the Director for the Joint Institute for Nuclear Astrophysics (JINA).



The National Research Council of Canada has appointed Michael Wiescher to serve on the Advisory Committee on TRIUMF (ACOT). TRIUMF is Canada's National Laboratory for Particle and Nuclear Physics located in Vancouver, B.C. He was also recently invited to become a Faculty Fellow at the Center of Social Concerns at the University of Notre Dame.

Ikaros Bigi



Ikaros Bigi, a particle physics theorist from RWTH Aachen (Germany). Winner of the 2004 J.J. Sakurai Prize.



Ikaros Bigi was recently appointed to the Grace-Rupley II Chair in Physics. Professor Bigi was the co-recipient of the American Physical Society's 2004 J.J. Sakurai Prize. He was cited for pioneering theoretical insights that pointed the way to the very fruitful experimental study of CP violation in B decays and for continuing contributions to the field of CP and heavy flavor physics.

Ani Aprahamian



Ani Aprahamian is a Fellow of the American Physical Society, recipient of the Notre Dame Presidential Award (2003), and a member of the DOE/NSF Nuclear Science Advisory Committee.



Ani Aprahamian announced in August that the Physics Division at Argonne National Laboratory and the Physics Department at the University of Notre Dame began a collaborative research initiative "Advancing Nuclear Theory for a Rare Isotope Accelerator: Nuclear Structure and Reactions for Astrophysics." This new initiative will explore and explain the physics of rare nuclear isotopes and their role in astrophysical phenomena.

Albert-Laszlo Barabasi

Albert-Laszlo Barabasi has been awarded the 2005 Federation of European Biochemical Societies Anniversary Prize for Systems Biology. Barabasi was honored for his important contributions to understanding cellular networks such as the scale-free nature of the metabolic and the protein interaction networks.



Albert-Laszlo Barabasi, Emil T. Hoffman Professor of Physics, is the author of "Linked: The New Science of Networks."



J. Christopher Howk

Chris Howk's research is focused on understanding the evolution of galaxies and the build up of the elements since the Big Bang. He uses the Hubble and Spitzer Space Telescopes along with other ground and space based observatories, to study evolution of the interstellar gas in our Milky Way and other nearby galaxies.



J. Christopher Howk, Assistant Professor, joined the Department of Physics in August 2005.



Anna Goussiou

Aнна Goussiou received a NSF CAREER Award in Physics for a research program aimed at discovering the mechanism responsible for electroweak symmetry breaking and the origin of mass. Prof. Goussiou is currently pursuing her research at the Tevatron proton-antiproton collider at Fermilab and will continue at the proton-proton LHC at CERN.



Anna Goussiou is an Assistant Professor in the Department of Physics. She came to Notre Dame in 2003.



Anthony Hyder



Anthony Hyder, in addition to being a research professor in physics, has served on several panels and advisory boards, including the National Academy of Sciences and the National Research Council.



Prof. Anthony Hyder, associate vice president for graduate studies and research professor of physics, has received the Air Force Institute of Technology (AFIT) Distinguished Alumnus title. The title is the highest honor the AFIT awards to its alumni, only 23 of whom have received it since it was first conferred in 1979.

Kevin Krisciunas



Kevin Krisciunas was recently appointed a Research Assistant Professor in the Department of Physics.



Kevin Krisciunas joined the Department of Physics as a Postdoctoral Research Associate in 2004. His main field of study, astrophysics and cosmology, keep him busy several times a year at his favorite observatory, Cerro Tololo, in Chile.

Alexei Vazquez



Alexei Vazquez was recently appointed a Research Assistant Professor in the Department of Physics.



Alexei Vazquez joined the Department of Physics as a Postdoctoral Research Associate in 2002. He is currently working with Professor Barabasi as a Research Assistant Professor at the Dana Farber Cancer Institute in Boston, Massachusetts.

Graduate Spotlight

May 2005

Ph.D. Graduates

Timothy Ashenfelter, Ph.D.

Plamen Boutachkov, Ph.D.

Keith Calkins, Ph.D.

Jason Daly, Ph.D.

Aaron Stuckey, Ph.D.

Seng-Kai Wong, Ph.D.

Xuan Nguyen, Ph.D.

August 2005

Ph.D. Graduates

Julie Torborg, Ph.D.

Claudio Ugalde, Ph.D.

May 2005

Masters Students

Carlos Chaparro, M.S.

Joe R. Haywood, M.S.

Joseph Gallagher, M.S.

Dylan Menzies-Gow, M.S.

Jyotsna Osta, M.S.

Matthew Quinn, M.S.

Boris Skorodumov, M.S.

Barbara Truett, M.S.

Zhiguo Ge, M.S.

Xuelian Zhu, M.S.

August 2005

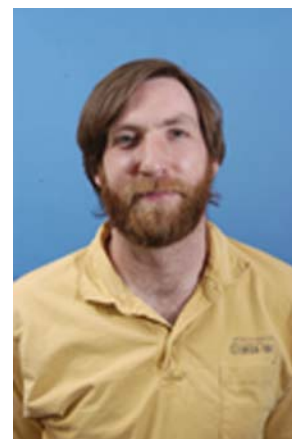
Masters Students

Juan Rolon, M.S.

Student Life by Ed Stech

I was asked to submit my thoughts about working at the same institution where I was a student. Before discussing these issues, I will first summarize some of my earlier experiences to provide some context for my current comments. I first arrived as a student at Notre Dame in the fall of 1991 as a bright eyed, bushy tailed freshman. The world was a very different place back then. President Bush (#43) had recently lead the U.S. into a war with Iraq, Notre Dame's football team was enjoying a 10-3 season with a prolific offense averaging more than 35 points per game while a new building (DeBartolo Hall) was under construction which promised to dramatically enhance the teaching resources on campus. Sometime during the first semester, I decided to become a physics major and ended up gaining some research experience in the Nuclear Structure Laboratory (NSL) beginning during my junior year and continuing throughout the next two summers thanks to the REU program. I continued to work in the lab as one of Dr. Michael Wiescher's graduate students and after graduation took my current research faculty position.

Although many people advise against remaining at one's



*Ed Stech
Assistant Professional
Specialist*

degree granting institution after graduation, I have been very satisfied with my decision. In my opinion, the opportunities granted me in the NSL are unparalleled. While there may be many opportunities around the world for students to participate in experiments similar to those carried out here, the level of involvement available to students in the NSL is significantly above average. Add to this the quality of the people working in the lab, I consider going anywhere else a step down. The opportunity to work on a new project which will greatly enhance the capabilities of the laboratory to which I had already devoted so much of myself was too much to turn down.

While I have been very happy overall with my decision, staying at the same institution does have the tendency to exacerbate certain problems as well. The transition from the carefree life of an undergrad to the focused life of a graduate student is always a difficult one, but I

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think it is even more difficult when one does not change locations and has younger friends in the area. While the transition from graduate student to research faculty is made easier because of the familiarity with the equipment, people, and procedures, the change in responsibilities affects one's relationships with both the students and the staff. It can take some time to become accustomed to one's new position in the hierarchy.

Staying in one place for all of

one's early academic life is definitely not the typical path and has both positive and negative consequences. For me, the decision to stay in the NSL at Notre Dame has been a very good one. While there has been the normal series of highs and lows, I have enjoyed the overall experience. In fact, if I had not had the opportunity to continue working here, I would have very likely chosen a career path which would have taken me away from physics research entirely.

Ed Stech is a "tri-domer" having received his B.S. (1995), M.S. (2000) and Ph.D. (2004) at the University of Notre Dame. Ed is married to Suzanne Coshow (Notre Dame M.A. '97, Ph.D. '03), Outreach Coordinator and Assistant Professional Specialist for the Joint Institute for Nuclear Astrophysics (JINA).

An Insider's Journey to an MBA at Notre Dame by Jennifer Maddox

When you work at the University of Notre Dame you are surrounded by students and the academic environment. For some of us it is an irresistible tug at our intellect. We are drawn to learning like iron to a magnet. Further education is available and affordable.

I committed to the opportunity and began my journey to an MBA a year after I joined the department. As a part-time student I took one class a semester, including summers, for six years. This was often a challenging juggling act with balls labeled attend class, do homework, get the job done, take care of home, spend time with family, and have a social life. Okay, maybe the last ball wasn't juggled very much.

As often as possible I tried to marry my coursework with the needs of the Physics Department. For ex-



Jennifer Maddox, physics department administrator, receiving her MBA.

ample, the alumni survey many of you participated in was the result of my independent study course on Internet Research. Yes, I did that in my "spare" time. Other projects included a Graduate Student Marketing Plan for the department which helped our physicists look at graduate recruitment with a new perspective, and a research paper for a course called [Catholic Social Thought in Business](#). The paper, entitled "Catholic Social Teaching as Applied to the Medical Needs of Notre Dame Graduate Students," analyzed the high cost of medi-

cal insurance for graduate students and the perspective a Catholic university should have toward the issue. The report was distributed on campus to those individuals involved in considering University financial support to underwrite a portion of the cost of health insurance. Perhaps it helped support the cause, as a year later the University did announce a health care subsidy for graduate students.

One of the benefits of seeking a graduate degree while working at the university was the ability to understand more poignantly the needs of students in higher education. I was experiencing what they were experiencing. I could not only sympathize, I could empathize. It made me a better advocate for student needs.

It was always interesting, often

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New Science Building Nearing Completion



Ground breaking for the Jordan Hall of Science took place on November 1, 2003. At the end of the second year of construction, we are pleased to report that the entire exterior of the new building has been completed. Current construction includes interior steel

framing, drywall, mechanical/electrical/plumbing rough-in and lab case-work installation. The project is scheduled for completion in the Summer of 2006. The Jordan Hall of Science will contain a four-story concourse with new undergraduate lab space for the departments of Chemistry and Biochemistry, Biology and Physics. The 201,782 sq. ft. facility will also house two 250-seat lecture halls, a 150-seat multi-visualization room, an observatory, teaching labs, herbarium, greenhouse, and departmental offices for Preprofessional Studies.

Outreach by Office of Research

In an effort to provide our physics researchers with the administrative tools they need to continue their successful pursuit of funding, the Office of Research has placed Dr. Richard (Rick) Hilliard in his new role as the Associate Director of Sponsored Programs (Science) and Institutional Animal Care and Use Committee (IACUC), Human Subjects Institutional Review Board (HSIRB), and the Institutional Biosafety Committee (IBC) Administrator within the College of Science in room 338 Nieuwland Science Hall.

The purpose of this move is to provide College of Science researchers with more direct and convenient access to Rick and the Office of Research staff to assist and answer questions regarding proposal preparation and managing awards.

Rick brings with him over 15 years experience with the Office of Research. He has a B.S. in Biology, and an M.S. and Ph.D. in Entomology. While serving in his new role, he will continue to administer the IACUC, HSIRB and IBC committees.

We would like to take this opportunity to welcome him to our facility and look forward to many productive years of teamwork.



Donor's Corner

Alumni and friends played an important role in the Department of Physics' celebration of the World Year of Physics. Through the generosity of our supporters, many of the events were financed with previous contributions. The Walter C. Miller Memorial Lecture Fund underwrote many of the outstanding talks throughout the year, including those given during our alumni reunion weekend. If you would like to ensure your donation to the University of Notre Dame is designated specifically for the needs of the Physics Department, such as toward our lecture funds or student needs, you may send your contribution directly to the department at the following address:

**Ms. Jennifer S. Maddox
Department Administrator
Department of Physics
University of Notre Dame
225 Nieuwland Science Hall
Notre Dame, IN 46556**

Please make your check payable to the University of Notre Dame, and include a note indicating how you would your contribution applied. We will forward your specifically designated contribution to the Department of Development. You will receive an acknowledgement from the Physics Department as well as from the Development office. If you have any questions you may contact Jennifer directly by phone (574)631-4001 or by email at jmaddox@nd.edu. We are always grateful for your continuing support.

Reflections

Sitting here in the physics department on my third sabbatical leave at Notre Dame I reflect on that decision in 1961 that brought me to Notre Dame and how Notre Dame has remained a part of my life. Yes, I know we all receive requests for donations to our alma mater, but Notre Dame has remained much more a part of my life than that. Three times I have been welcomed back for a sabbatical leave, and our son Christopher graduated from the program in 1993.

I vividly recall the start of my graduate career. On Monday (Labor day), September 3, 1961, I was married in Southern California and one week later, on Monday, September 11, I was at Notre Dame taking placement exams! The newly constructed married student housing was not ready for occupancy, and we had to wait a month before we could move in. We were a class of 17 first year graduate students, with four of us married, - Pat Kenealy, Rusty O'Donnell, Phil Loscoe and myself - a situation of four overworked students and four somewhat neglected wives that produced instant camaraderie and commiseration.

When my research adviser left at the end of the second year, at the time of the qualifying exams, Charlie Mullin told me that all would work out, that a new faculty

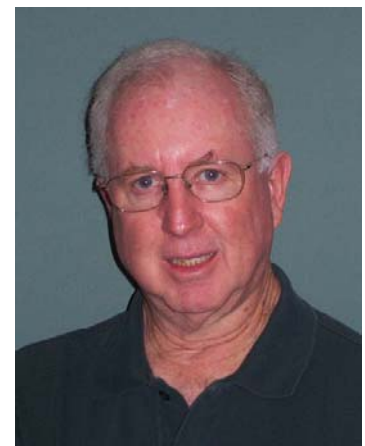
member by the name of Jerry Jones would be coming, and that Jerry would be a good fit for me. Charlie proved to be prophetic. I finished my graduate program in five years, the nominal standard at that time, and graduated in summer 1966. Upon graduation I accepted a faculty position in the physics department at Creighton University in Omaha, Nebraska, planning to stay for one year. I am still there. Early on at Creighton I was asked to develop a new science course for the non-science majors that would be attractive and not threatening to them. The result was a course based on the science and the life of Albert Einstein, a focus that has defined much of my later work.

Getting started in the academic life and raising five children took so much of my available time and energy that I slid out of touch with Notre Dame for several years. When I resumed contact, asking to spend my sabbatical leave with them, I was encouraged to do so. In 1990, on the first of my three sabbatical leaves at Notre Dame, I returned to work with Jerry Jones. Because of my interest in Einstein's work in a historical context, Jerry introduced me to Jim Cushing, with whom I had several long discussions on the history and philosophy of physics. I returned for a second sabbatical leave in 1996 to work primarily with Jim Cushing on the

*Physics at Notre Dame
(1961-1966)
by Professor Robert
Kennedy*

history and philosophy of physics. On my current sabbatical leave at Notre Dame, I am working with Don Howard, Director of the Program in the History and Philosophy of Science, and with Jerry Jones and Bill McGlenn, Department of Physics, preparing a book on the science and life of Albert Einstein for beginning physics majors.

Each visit has been like a homecoming, seeing friends from the past, and making new ones. On my current stay I have talked with Wally Johnson, identifying some people in pictures from my student days. Emerson Funk and I have talked a couple of times about faculty and students from my era. Former fellow student Joe Bellina and I had a brief hallway visit. Mike Brienza was on campus for a two day visit, and the department put us in contact. Mike and I had



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Undergrads

Physics Majors

2nd year

Nicholas Battafarano
John Biddle
John Connick
Thomas Deering
Alissa Donovan
Benjamin Fehrman
Michael Florack
Adam Gadzinski
Erin Gutbrod
Joseph Hagmann
Andrew Hartnett
Alec Hirschauer
Zachary Liptak
James Miller-Marquez
Matthew Phipps
Emily Rhatican
Leanna Steier
Sean Sullivan
Brian Walsh
Edward White
Jason Wittenbach
Adam Work

3rd year

Anthony Bendinelli
Corey Betker
Christian Burdziak
Matthew Gordon
Steven Kurtz
Bridget Osetinsky
Gary Pritts
Douglas Raney
Thomas Schad
Bradley Tucker

4th year

Matthew Begley
Thomas Burger
Tristan Butterfield
Evan Donoghue
Patricia Engel
Matthew Hogancamp
George Hsu
Catherine Kennedy
Kevin McCusker
Angelo Signoracci
Todd Strobel

Society of Physics Students

The Physics Club organized a pizza party on the roof of Nieuwland Science Hall on Friday, September 9. Thirty-three physics interns in the freshman year were invited to enjoy a social evening with members of the Physics Club and faculty members from the physics department.

The picnic on the roof was instituted in 2004. It was a great success and has become an annual event for the start of each new school year.



Physics on the Roof 2005

Congratulations to new Sigma Pi Sigma inductees:

Students: Laurel Miannecki, Becky Marks, Eric Chitambar, Tony Strathman, Ken Henisey, Pat Engel, Catherine Kennedy, and Angelo Signoracci

Faculty: Professors Mitchell Wayne, Michael Hildreth, Peter Garnavich, Philippe Collon, Kathie Newman, Albert-Laszlo Barabasi and Dr. Eivind Almaas

Congratulations to new Physics Club officers: Catherine Kennedy, President; Brad Tucker and Nicholas Battafarano, Vice Presidents; and John Biddle, Treasurer.

Also, congratulations to Patricia Engel for receiving a Society of Physics Students Leadership Scholarship.

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Letter from the Chair

- EMSI (Environmental Molecular Sciences Institute)
- MBE Laboratory for Molecular Beam Epitaxy of semiconductor nanostructures
- NSL (Nuclear Structure Laboratory, now known as the Institute for Structure and Nuclear Astrophysics: ISNAP).

Our base and productivity have grown significantly – we now have 36 teaching and research faculty, an additional 12 research faculty, 21 postdoctoral research associates, 99 graduate students, and 79 undergraduate physics majors! Research in the department is now funded externally by grants totaling almost eight million dollars, publications totaled almost 300, and the faculty taught over 10,000 credit hours this past year. Recent honors and prizes awarded to faculty include:

- Michael Wiescher: Hans Bethe prize in nuclear physics and astrophysics (2003 – American Physical Society)
- Ikaros Bigi: J.J. Sakurai prize in theoretical elementary particle physics (2004 – American Physical Society); Mercator Professor at the Technical University of Karlsruhe (2002)
- Jacek Furdyna: Honorary degree (2002 – Warsaw University); Fellow of the Institute of Physics, United Kingdom
- Anna Goussiou: NSF Career Award (2005)
- Mike Hildreth: Cottrell Scholar (2003 – Research Corp.) and Outstanding Junior Investigator (2002 – U. S. Department of Energy)
- Laszlo Barabasi: FEBS Anniversary Award of the European Biochemical Society (2005); Member of the Hungarian National Academy of Sciences (2004)
- Morten Eskildsen: Alfred P. Sloan Fellow (2005)
- Boldizsar Janko: Alfred P. Sloan Fellow (2003)
- and finally, 46% of the faculty are now Fellows of the American Physical Society.

We look forward to continued growth in both teaching and research. The new Jordan Hall of Science will open for business in the fall of '06 and, thanks to the success of the Notre Dame football team(!), it will be supplied with the finest laboratory equipment for our undergraduate physics labs. (Funds from the proceeds of the Fiesta Bowl will be used for academic priorities including the JHS.)

We hope that you will visit us in the near future so that we may show you around the department and the new JHS – you may be surprised at all the changes! Check out our website if you can't make it in person at <http://www.physics.nd.edu/>. We hope you all had a very merry Christmas and are well on your way to a happy New Year.

Neal Cason, Interim Chair

Lectures Available on DVD

DVDs of talks from Alumni Reunion Weekend 2005 are available for a nominal cost. Titles available are:

"The Universe and Everything In It" by Dr. Philip Sakimoto

The Keynote Address titled "The architecture of complexity: the structure of dynamics of complex networks" by Emil T. Hofman Prof. Laszlo Barabasi

"Relativity and Einstein" by Prof. Chris Kolda

Also available will be individual lectures from the Series "Thoughts on the Unthinkable: Perspectives on Nuclear Weapons and Warfare." Titles and speakers can be viewed at <http://www.nd.edu/%7Ensl/Lectures/nuclear/index.htm>

And finally, "What and When was the Christmas Star" by Prof. Grant Mathews, and "Public Outreach with the Amateur Astronomy Community" by Ms. Terry Mann.

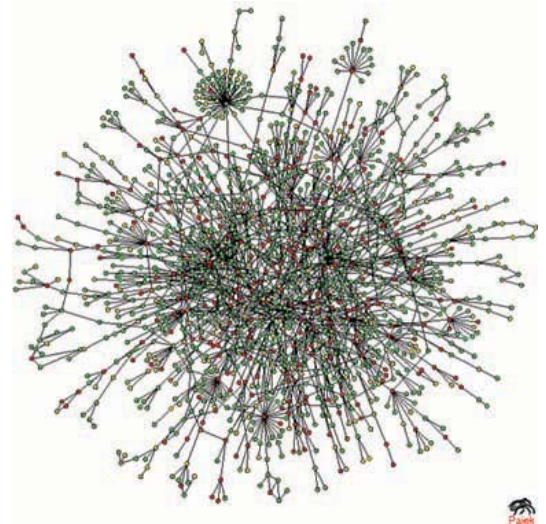
The Center for Complex Network Research (CCNR)

The primary goal of the Center for Complex Network Research (CCNR) is to become the intellectual hub of network science, a new interdisciplinary field in which researchers at Notre Dame play a prominent, leadership role. This is achieved through a few key activities such as offering sabbatical support for prominent visitors, organizing international meetings and school on the subject, acting as a think-tank for network applications for

academia, government and industry, and stimulating dialog between the arts and sciences on the impact of networks.



Albert-Laszlo Barabasi



Map of protein-protein interactions (above). The colour of a node signifies the phenotypic effect of removing the corresponding protein (red, lethal; green, non-lethal; orange, slow growth; yellow, unknown). By Hawoong Jeong. Email: hjeong@nd.edu.

Celebrating Einstein's "Miracle Year"

In celebration of what historians called Einstein's *annus mirabilis* (miraculous year) universities and governmental bodies staged an array of celebrations, conferences, concerts and lectures.

The Department of Physics at Notre Dame was no exception. Beginning in September 2004, we were a joint sponsor of a lecture by 2000 Physics Nobel Laureate, Professor Herbert Kroemer. This was followed by a lecture-recital co-sponsored with the Department of Music. In November 2004, Prof. Alan Beyerchen of Ohio State University and author of "Scientists under Hitler," gave a colloquium. In December 2004, Dr. Jay Davis of the Lawrence Livermore National Laboratory gave a colloquium on "Nuclear Weapons, Nuclear Policy, and Nuclear Laboratories: Changes in the Next Decade. For the Opening Colloquium in January 2005, Professor Don Howard of Notre Dame's History & Philosophy of Science gave a talk titled "Einstein as a Philosopher of Science." For the remainder of 2005, talks were in abundance. We heard



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from Prof. John Stachel, Emeritus Professor of Physics and Director of the Center for Einstein Studies at Boston University, Dr. Philip Sakimoto of the University of Notre Dame, Professor Lawrence Krauss, Chair of the Physics Department at Case Western Reserve University, and Professor Grant Mathews of the University of Notre Dame.

Other special events included a conference, the 2004-2005 Joint Atlantic Seminar for the History of the Physical Sciences "Images of Scientific Genius," a workshop hosted by the Joint Institute for Nuclear Astrophysics entitled "Cosmology: Physics and Philosophical Perspectives," the Arcadia Conference sponsored by the Department of Physics, the College of Arts and Letters, the College of Science, the Graduate School, the Boehnen Fund for Excellence in the Arts, the Honors Program, the Kaneb Center for Teaching and Learning, and the School of Institute for Theoretical Sciences Possibility of Room Temperature Topics and The Joint Institute for held a special school on "Tools ics." Later in the summer, JINA Incompressibility and also sponsored (with the Department of Physics), a film series which ran September the International Conference Spectroscopy 12 and Related Top-Professor Ani Aprahamian.

The Department of Physics Social Concerns, the College of Science sponsored a series of public lectures called "Thoughts on the Unthinkable: Perspectives on Nuclear Weapons and Warfare." This series was a commemoration of the 50th anniversary of the Russell-Einstein Manifesto as well as the 60th anniversary of Hiroshima and Nagasaki.

Still in full swing for WYOP05, the Department of Physics hosted our "Alumni Weekend" with talks, tours, and a dinner for Physics Ph.D. and Master's Alumni. In a similar vein, in November the Department of Physics held an open house where we opened our labs and observatory for guided tours as well as a very popular lecture by Professor Chris Kolda titled "God's Dice: Einstein and the Journey from the Wedgwood Kilns to the Uncertainty Principle."

In September, music and poetry to Hubble Telescope pictures was presented at the DeBartolo Center for the Performing Arts. This performance featured the Telarc recording artists, Ensemble Galilei, who performed Irish, Scottish, Early and Original music.

Wrapping up a very busy year, we participated in the live webcast "The Late Show with Leon Lederman" Nobel Laureate in physics. Featured was our very own Anna Goussiou. Our final event was a public lecture presented by Professor Grant Mathews, Director of our Center for Astrophysics, titled "What and When was the Christmas Star?"

So, as you can see, we were very involved in WYOP05. If Albert Einstein was watching us from somewhere in the universe, I hope he was pleased with our efforts.



Architecture. In addition, the (ITS) held its Workshop on The Superconductivity & Related Nuclear Astrophysics (JINA) and Toys in Nuclear Astrophysics held a workshop on Nuclear sponsored (with the Department of through November 2005. Inference "Capture Gamma-ray ics" was chaired by our own along with the Center for Science, and the Reilly Center for

Staff News

Suzanne Aleva, Terry Arter, Susan Baxmeyer, Tina Bergland, Tonya Brown, Kathleen Burgess, Sue Dobbins, Donald Gard, Lesley Krueger, Heidi Lamm, Jerry Lingle, Jennifer Maddox, Beth Marchant, Jeffrey Marchant, Michael McFarland, Brad Mulder, Drew Sandler, Sandra Trobaugh, Mark Vigneault, and Michael Wright.

The Physics Department has twenty staff members, thirteen office and seven technical trade staff members.

Tonya Brown

Sr. Administrative Assistant, received her B.S. degree in January 2005 from Ferris State University, Big Rapids, Michigan.

Michael Wright

Apprentice Machinist, is currently taking classes at Lake Michigan College to complete an Associate Degree.

Drew Sandler

ITS Administrator, teaches martial arts at Notre Dame and recently received a motorcycle license.

Suzanne Aleva

Sr. Administrative Assistant, is a member of the Michiana Astronomical Society and as a presenter has coordinated public outreach events for MAS.



Beth Marchant
Director, QuarkNet
Two and one-half years of service to the Physics Department. Works directly with 12 of the 54 QuarkNet Centers and administers a \$1 million annual budget. Beth likes to read, golf and learn new things.



Michael Wright
Apprentice Machinist
Two and one-half years of service to the Physics Department. An avid outdoorsman, Michael enjoys hunting and fishing.



Jerry Lingle
Accelerator Technician
2 years of service to the Physics Department. When not at work, Jerry enjoys woodworking and gardening.



Susan Baxmeyer
Administrative Assistant
One year of service to Notre Dame. Susan is a huge Notre Dame fan and an athletic booster at her sons' high school.



Tonya Brown
Sr. Administrative Assistant
One and one-half years of service to the Physics Department. Tonya is an amateur photographer. Her favorite models are her son and daughter.

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Physics at Notre Dame*

dinner together, catching up on each other's families and reminiscing about the old time in the department and in University Village. Ani Aprahamian, whom I met on my first sabbatical leave at Notre Dame was head of the department. Jerry Jones, who came to Notre Dame in 1964 and became my research adviser, has retired to emeritus status. Jim Cushing is missed, not only as a colleague and resource person, but more so as a friend.

I cannot help but note how some things appear never to change. The unending rainy days in the fall. The excitement as the Notre Dame band marches across campus prior to football games. Controversy surrounding the football team. We went from Joe Kuharich to Ara Parseghian. This year it is Ty Willingham (now Charlie Weis). The department under reliable leadership, changing leadership smoothly. In my days it was from Father Bolger to Charlie Mullin. This past year it was from Bruce Bunker to Ani Aprahamian (to Neal Cason). There was concern about Vietnam. Today it is Iraq. The people in the department remain very helpful, very friendly, and very down to earth.

Although my home is now firmly situated in Omaha and Creighton University, the Notre Dame physics department will always remain home to me.

Robert Kennedy was a graduate student in the Department of Physics at the University of Notre Dame from 1961 to 1966. He actively serves on the faculty of Creighton University where he was Chair of the Physics Department for 20 years, President of the University Faculty, First President of the Faculty Senate and has served on numerous committees. He is the recipient of the Creighton University Distinguished Faculty Service Award (2003), the College of Arts & Sciences Award for Professional Excellence (2003) and the St. Ignatius Award for Service to Others (2000).

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An Insider's Journey*

demanding, and sometimes exhausting to go to school and work at the same time. I am grateful to my department chairs, Profs. Bruce Bunker and Ani Aprahamian, who understood the benefit of my further education to the department and provided the opportunity to attend class during the work day. I am also appreciative of the support of the physics staff and faculty who encouraged me throughout the years and helped me celebrate the successful conclusion. I graduated with honors on May 15, 2005.

Special thanks to everyone who contributed articles and pictures for this newsletter, and the following donor for his generous support:

Professor John Federici

Prof. Terry Rettig, Prof. Grant Mathews, Dr. Philip Sakimoto, and Prof. Chris Howk are ready to take their places in the processional from the Main Building to the Joyce Center for the inauguration of new university president, Fr. John Jenkins.



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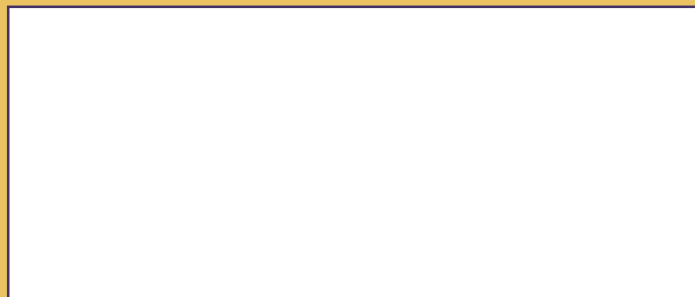
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