

Physics News



WESTERN MICHIGAN
UNIVERSITY

Winter 2016

Book Donation Noted

The Department of Physics was pleased to receive a large number of books from the library of the late physicist **Vaughn Zidell**.

Over two decades, he worked as a teacher and practitioner of physics for a variety of aerospace organizations and several universities, including—briefly—WMU. We thank his brother, Bill Zidell, for this generous donation.



A Ph.D. in physics is not what Enrique Gamez envisioned for himself as a homeschooled K-12 student enrolled in community college classes.



PHYSICS ALUM WINS NSF FELLOWSHIP

Originally drawn to music composition, Enrique Gamez (B.S. Physics, 2014) recently won a prestigious graduate

research fellowship with the National Science Foundation.

Gamez transferred to WMU as an electrical engineering major but was quickly drawn back to the core sciences—classes that he says explain “how the world works at its most basic level.” He credits his professors for supporting his success and curiosity about particle physics and for including him in their research.

Gamez has begun a doctoral program in particle physics at the University of Michigan. As someone who felt well prepared by his professors at WMU, he says he’d eventually like to follow in their footsteps: “I like the idea of staying in academia. I think I have the potential to be a pretty decent teacher.”

Excerpted from summer 2015 edition of WMU Magazine.

STEMULATING CAREERS DAY

Each January, Physics Department students help host this campus event, which introduces Kalamazoo Public School students to careers in science, technology, engineering and math.



NEW BOOKS...FAMILIAR AUTHORS

Professor Paul Pancella and WMU physics alumnus Marc Humphrey (B.S. 1997) recently teamed up to publish two paperbacks in the popular “**Idiot’s Guides**” series from Alpha books.

Humphrey began Idiot’s Guides: Quantum Physics several years ago in response to an agent’s request for authors. The publisher liked his writing sample but then underwent considerable re-organization, so the project languished.

In the meantime, Humphrey got a job with the International Atomic Energy Agency and moved his growing family to Vienna, Austria. When the publisher was finally ready to go ahead, Humphrey

figured he would need some help. So he contacted a couple of his old WMU professors, Nora Berrah and Paul Pancella.

The Idiot’s Guides series aims to present a wide variety of topics in a way that is accessible and easy to digest for the general public. It was quite a challenge for this team, who had not worked together in more than 15 years, to figure out how to explain the esoteric subject matter of quantum physics accurately but without much math.

To complicate matters, Berrah left WMU for another university during the writing phase. With Humphrey working in Vienna, the threesome had to rely entirely on long-distance, electronic collaboration.

They persevered, and the manuscript was delivered on schedule in the spring of 2014. The publishers were so pleased with the result, that even before the release of the quantum physics book, they asked the team to write another, *Idiot’s Guides: Physics*, this time aimed at students who might need some extra help in their first physics course.

With Berrah busy in her new position, Humphrey and Pancella decided to take on this second project as a duo, with Pancella taking the lead role. Once again, they managed to satisfy the publisher’s deadlines.

2015 Distinguished Alumni Award

The WMU College of Arts and Letters recognized **Dr. Vladislav Malyshkin** with its 2015 Alumni Achievement Award in Physics. Malyshkin is a senior scientist at the Ioffe Physical-Technical Institute in St. Petersburg, Russia. His interests lie in energy generation and accumulation and in the dynamics of stochastic systems.

Since graduating from WMU in 1997 with a Ph.D. in theoretical condensed matter physics, Malyshkin worked in the New York financial district. He was an Internet entrepreneur during the dotcom years and founded two successful Internet companies, including NYBits, a top New York rental website. For the past 13 years, Malyshkin has taught physics courses at the St. Petersburg Polytechnical University, advocating for the importance of international contacts in educating scientists.

Physics Hosts Science Olympians

Faculty and students team up
to welcome young competitors



In recent years, WMU Physics staff and students have been heavily involved in the **Region 10 Science Olympiad** held at WMU, which brings more than 400 students from Allegan, Barry, Branch, Calhoun and Kalamazoo counties to campus each March to compete in middle school and high school divisions.

These young scientists participate in dozens of events that test their knowledge of physical, applied and health science areas.

Events are rotated to reflect the ever-changing nature of genetics, earth science, chemistry, anatomy, physics, geology, mechanical engineering and technology.

Emphasis is placed on active, hands-on group participation toward the goal of sparking interest in scientific inquiry. Just as teamwork is a required skill in most science careers today, the Science Olympiad encourages group learning with events that forge alliances.

Science Olympiad is a national nonprofit organization that promotes scientific literacy for all students—a goal shared by education, business, industry and government.



Each year, undergraduate students from the WMU Physics Club help run hands-on events in Rood Hall, including the “Mission Impossible” and “Simple Machine” challenges pictured here, which required students to fabricate machines that performed a predetermined task—like measuring mass or transferring energy—within a set timeframe.

Special thanks for this event go to faculty Manuel Bautista, Paul Pancella and Zbigniew Chajecki; laboratory manager Chris Hoffmann; and our dedicated students: Kenwood Hoben, Jared Foote, Enrique Gamez, Liz Creager, Gene Kopf, Ioannis Nearchou, Mady Higinbotham, Kyle Simpson, Mike Pirkola and Adam Newton.

STUDENTS RECOGNIZED

We were pleased to honor these most recent recipients of Department of Physics scholarships and awards. In most cases winners are selected by faculty recommendation, and all were recognized at an awards ceremony held in the spring.

George Bradley Award
Darshika Keerthisinghe

George and Jean Bradley Scholarship Award
Rasanjali Jayathissa
Indiras Khatri
David La Mantia
Masoud Shabani Nezhad
Navrood
Madhushani Wickramarathna

David Carley Memorial Graduate Fellowship Award
Katrina Koehler

Haym Kruglak Graduate Student Teaching Excellence Award
Rasanjali Jayathissa
Masoud Shabani
Gaetan VanGyseghem

Haym Kruglak Undergraduate Student Teaching Excellence Award
Matthew Stoos

Nathan Nichols Physics Scholarship Recipients
Cristien Arzate
Bryan Bremiller
Christian Hartman
Nathaniel Nimitz

Leo Parpart Scholarship
Ehab ElHoussieny
Jagjit Kaur
Nuwan Kumara

Paul Rood Physics Scholarship Recipients
Jordan Baughman
Ian Brown

Wilcox Memorial Award
Jagjit Singh Sidhu

Annual Physics Course Awards
We are pleased to recognize the most recent top performers in each section of our introductory physics classes:
PHYS 1000 Quang V. Truong
PHYS 1020 Bryan J. Bremiller

PHYS 1040 Chelsea M. Tungate
PHYS 1060 Wesley J. Esterline
 Spencer J. Henning
PHYS 1070 Seth M. Laws
 Thomas P. Vanhowe
 Kurtis J. Guillan
PHYS 1130 Alyssa B. Murray
 Kelsey A. Berry
 Tyler A. Tran
PHYS 1150 Jordan M. Butler
 Alyssa B. Murray
PHYS 2050 Michael R. Melbow
 Kody J. Plummer
 Lainey R. Barber
 Matthew R. Haan
 Quentin A. Piaskowski
 Daniel J. VanZweden
 Clayton B. Carter
 Bo Ching Wong
PHYS 2070 Luis F. Silva-Velasco
 David Moussa Salazar
 Brian M. Bartley
 Jorden S. Kegeler
 Michael R. Melbow
PHYS 3090 Paulina M. Yu
 Sarah K. Seng
 Kyoichi Kitaura

RECENT GRADUATES

Ph.D.
Asmaa Ayyad
Shadi Bedoor
Xuan Gao
Darshika Keerthisinghe
Chengyang Li
Samanthi Wickramarachchi

M.A.
Aeshah Alasmari
Mohammed Almeshal
John Carpino
Priyanka Chakraborti
Justin Harris
Mohamed Ibrahim
Indiras Khatri
Katrina Koehler
Nuwan Kumara
Amila Madiligama
Sarah Towers
Lubna Tunusi

B.S., Physics
Theodore Carter
Gongxiaohui Chen
Dennis Chitko
Jared Foote
Enrique Gamez
Aaron Henry
Mady Higinbotham
Peyton Irmien
Nathan Larsen
Ioannis Nearchou
Adam Newton
Jagjit Sidhu
Benjamin Thompson
Danniel Ulrey

B.S., Physics, Electrical Engineering emphasis
Kyle Simpson

B.S., Physics Secondary Education
Adam Hastings
Alexander Hoopes
Adam Miller
Nickolas Swanson

B.S., Geophysics
Heather Monarch
Chase Schepke
Philip Wujkowski



VISIT TO FERMILAB

With the collider ring now completely shut down, we were able to enter the vault of the Tevatron itself, once the highest energy particle accelerator in the world.

Physics Club



ROAD TRIP TO GVSU

A large group of Physics Club members and friends carpoled to Grand Valley State University to hear a talk by astrophysics rock star Neil deGrasse Tyson.

Physics Department News

- **Dr. Thomas Gorczyca** has been elected a Fellow of the American Physical Society. He was nominated by the organization's Division of Atomic, Molecular and Optical Physics for "advancing our fundamental understanding in the photoionization, spectra and opacities of atomic ions in astrophysical plasmas."
- A new book by **Dr. Arthur McGurn**, *Nonlinear Optics of Photonic Crystals and Meta-Materials* has been released by Institute of Physics Publishing. It introduces graduate students in physics and engineering to nano-photonics, including topics relating to crystals, meta-materials and their nonlinear optical properties.
- **Dr. John Tanis** received an NSF grant to look for RDEC (radiative double electron capture) in fully-stripped ion collisions with gas targets. Students **Nuwan Kumara** and **David LaMantia** are working on the project. Kumara spoke on the topic at the Highly-Charged Ion Conference in Bariloche, Argentina.
- Doctoral student **Jagjit Kaur** received a travel grant from the WMU Graduate College to present her research at the XXIX International Conference on Photonic, Electronic, and Atomic Collisions (ICPEAC) in Toledo, Spain in July.
- **Jenny Snyder** has joined the Physics Department as a part-time administrative assistant to manage the department's website, newsletter and other communications projects and to provide student and faculty support.

Recent Colloquia

X-ray Reverberation Mapping of Supermassive Black Holes

Edward Cackett, Ph.D., Wayne State University

Before the Big Bang: New Insights into the Birth of the Universe and the Dawn of Spacetime

Grant M. Mathews, Ph.D., University of Notre Dame

Nuclear Structure and Astrophysics at the Edge of the Nuclear Landscape

Alfredo Estrade Vaz, Ph.D., Central Michigan University

Hyperfine Physics in Alkali-Metal Vapors

Brian Saam, Ph.D., University of Utah

Design, Synthesis and Characterization of Topological Insulators and Graphene-beyond 2D Materials

Lei Fang, Ph.D., Argonne National Lab, Northwestern University

WMU Department of Physics colloquia are held on many Mondays at 4 p.m. in 1110 Rood Hall. Refreshments are served beforehand at 3:30 p.m. in 2202 Everett Tower. All are welcome, free of charge.

[Upcoming dates](#)

Alumni Updates

Shahin Abdel Naby (Ph.D. 2010) is an assistant professor at the American University of Sharjah in the United Arab Emirates.

Dan Adams (M.A. 2008) is a cleaning and metrology Engineer with Dow Corning, Midland, Michigan.

Salem AlFaify (Ph.D. 2011) is assistant professor at King Khalid University in Abha, Saudi Arabia.

Mohammad Al-Amar (Ph.D. 2011) is a postdoctoral research associate at the University of Toronto, Canada.

Ali Alnaser (Ph.D. 2002) is associate professor and chair of the Department of Physics at the American University of Sharjah in the United Arab Emirates.

Ileana Dumitriu (PhD 2010) is an assistant professor at Hobart and William Colleges in Geneva, New York.

Xuan Gao (Ph.D. 2013) teaches at the Chinese Academy of Sciences in Chongqing, China.

Subramanian Ganapathy (Ph.D. 2013) is a postdoctoral research associate at the Centre for Nanoscale Science and Engineering in Bangalore, India.

Elias Garratt (Ph.D. 2013) is a postdoctoral research associate at the National Institute of Standards and Technology in Gaithersburg, Maryland.

Khalil Hamam (Ph.D. 2013) is a professor of physics at Hebei University in Jordan.

M. Fatih Hasoglu (Ph.D. 2008) is an associate professor at Hasan Kalyoncu University in Gaziantep, Turkey.

Mady Higinbotham (B.S. 2015) is a sensing systems engineer at Evigia in Ann Arbor, Michigan.

Darshika Keerthisinghe (Ph.D. 2015) is instructor of physics at Kalamazoo Valley Community College.

C. Nalaka Kodituwakku (Ph.D. 2007) is a scientist with Exelis Optics in New York.

Vladislav Malyshkin (Ph.D. 1997) is a senior scientist at Ioffe Physical-Technical Institute, St. Petersburg, Russia.

Scott Marley (Ph.D. 2012) is assistant professor of physics at Louisiana State University.

Manjula Nandasiri (Ph.D. 2013) is a postdoctoral research associate in the Environmental Molecular Sciences Laboratory at Pacific Northwest National Laboratory in Richland, Washington.

Andra Petrean (Ph.D. 2000) is associate professor of physics at Austin College in Sherman, Texas.

Daniel Renusch (Ph.D. 1999) is an engineer with General Electric in Fairfield, Connecticut.

Ayman Said (Ph.D. 2004) is a staff scientist with Argonne National Laboratory in Argonne, Illinois.

Valentina Tobos (Ph.D. 2001) is associate professor of physics at Lawrence Technological University in Southfield, Michigan.

Michelle Tuel (M.A. 2004) works in business operations for Boeing in the state of Washington.

Lucian Undreiu (Ph.D. 2005) is associate professor of physics at University of Virginia's College at Wise, Virginia.

Samanthi Wickramarachchi (Ph.D. 2015) is instructor of physics at Kalamazoo Valley Community College.

Not on this list? Email us at physics-department@wmich.edu to let us know what you're up to!



WESTERN MICHIGAN UNIVERSITY

WMU Physics Department – 2003



We thought it would be fun to include this picture of our faculty, staff and graduate students, originally published in the *Physics Department News* in 2003. How many familiar faces can you find?

