
Physics Department News



WESTERN MICHIGAN UNIVERSITY

COLLEGE OF ARTS & SCIENCES

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A word from the Present Chair:



Welcome to the second edition of our department newsletter. I'm sorry so much time has passed since volume 1 #1, but that just means we have lots to write about.

I succeeded John Tanis as chair of this department on July 1. We are grateful that he agreed to serve for these past three years, and thank him for all of his hard work. His most recent term has seen many changes in our department, and I hope you will read his account of some of them elsewhere in this newsletter.

Before I go on, I also wish to thank your faculty editor and the dedicated staff who have put this newsletter together. Many demands are placed on their time, as you will see, and it is not easy to fit another significant project like this in with all the rest. I think they have done a marvelous job.

As I see it, the mission of this department is to support the goals and mission of the College of Arts & Sciences, and the university as a whole. Since our last newsletter, the university has revised its mission statement, so that we now formally define WMU as "...a student-centered research university... Nationally recognized and globally engaged". It is not hard to see many ways that the physics department directly contributes to this mission and to the specific goals it contains (see

<http://www.wmich.edu/sub/mission-and-goals.html>). Our faculty continue to be very active in

research, enhancing Western's national recognition while providing excellent opportunities for our students to learn and experience what physics really is. Our doctoral program is in good health, producing a few quality Ph.D. graduates every year. It is not always easy, but maintaining a balance between forefront research and excellent teaching at all levels will always be my highest priority.

I hope that elsewhere in this newsletter you will learn about some of the many projects, plans, and accomplishments of our faculty, staff, and students. By way of broad overview, the most significant change in our department recently is a major expansion of the faculty, mainly because we have added a new research area: physics education. The Science Education Department which was chaired by our own Larry Oppliger until his recent retirement, was formally dissolved, and its faculty dispersed among the science departments. As a result, and since the physics discipline has had a strong presence in science education both locally and nationally, our full-time faculty now number 20 the largest ever. This total is bolstered by newly hired faculty who specialize in physics education research. Add to this our participation in the federally-funded PhysTEC project, and you see that we plan to do significant work in this field well into the future.

Last year we were sorry to lose one of our valued office staffers, Beth Steele, who transferred over to Geosciences. Fortunately, she is close by (virtually next door) and can still keep us on our toes. We were equally fortunate to find an excellent replacement in Kerry Cochran, who is largely responsible for putting this document together, among many other duties. Kerry comes to us from the WMU development office.

I come to the chair's office after 12 years on the physics faculty, filled with trepidation but eager to do my best. I was away from campus

working on research for most of the summer, so I am just beginning to get comfortable in my new role. I have very little experience in administration and a lot to learn about running a physics department at a major university. I will be relying heavily on our excellent staff to cover my mistakes, and on the many more senior faculty for good advice and to keep me from embarrassing myself too badly. Please feel free to drop me an email if you have any suggestions or juicy stories of prior bumbles that I can avoid.

Paul V. Pancella, Chair
paul.pancella@wmich.edu

Message from the Outgoing Chair:



After serving three years as department chairperson, I recently stepped down to return to full-time faculty status, thereby giving me more time for the (more enjoyable!) activities of teaching and research. During my tenure as chairperson, several significant changes took place within the department in the areas of our undergraduate program, our graduate program, our research efforts and focus, and the size of our faculty. I believe that each of these changes have contributed to the strength of our department and position us well for the foreseeable future.

Our undergraduate program has seen considerable growth, both in terms of course offerings and in terms of enrollments. At the beginning of my term as chairperson, the department's one-semester introductory astronomy course that is taken primarily by

general education students had been split into a two-semester sequence with a consequent change in the numbering of these courses (PHYS 104 and 106). Under the new numbering scheme, the overall enrollment initially dropped somewhat, perhaps due to confusion among students about what was actually being offered. However, after just two semesters of the new astronomy offerings the enrollment for each course, about 140 students per semester, equaled what it had been for the previous single course offering alone! Also, our one-semester introductory physics class (PHYS 107) that was previously taken mainly by students in occupational therapy and in speech pathology saw a huge enrollment increase due to the big influx of aviation science students, all of whom are required to take this course during their freshman year. Presently, this course now serves on the order of 350 students per academic year.

In addition to these established courses, two new general education courses were added. Clem Burns developed one course; PHYS 101 entitled "The Physics of Sound". This course, which has been offered only one time to date with an enrollment of about 70, is aimed primarily at students in the fine arts. Additionally, I developed another new general education course, PHYS 100, entitled "How Things Work:

The Physics of Everyday Life" that includes an accompanying laboratory. This course is nonmathematical in nature and is designed specifically for non-science liberal arts majors seeking to fulfill their general education science requirement. The first offering of this course in Winter 2001 produced an enrollment of 45 students, while the second offering in Winter 2002 resulted in an enrollment of 140 students.

The graduate program continues to flourish. Since the fall of 1995 when we awarded our first Ph.D., fourteen

students have now successfully completed the Ph.D., placing physics at the top of university departments granting Ph.D. degrees in science, mathematics, and engineering during recent years and ahead of our projections when we started the Ph.D. program. It is notable that two of these degrees were awarded to women, both in the past year and a half. Several more students are on track to finish in the next year or so. Most of our students completing a graduate degree have gone on to continue their careers in physics, either in postdoctoral positions or in industry. It is also notable that several of our undergraduate students, and sometimes high school students too (usually from KAMSC), become involved in faculty research, and participate in experiments at national laboratories and have presented papers at national conferences.

Our research efforts have grown as well in each of the areas of departmental expertise, namely, astronomy, atomic physics, condensed matter physics, and nuclear physics. In addition to previous ongoing grants held by Drs. Berrah (DOE), Halderson (NSF), and Tanis (DOE), significant new grants were awarded recently to Drs. Burns (DOE), Gorczyca and Korista (NASA), McGurn (U.S. Army Research Office), Paulius (NSF), and Rosenthal (NSF). Most of these grants include collaborations with colleagues at other universities and laboratories, both nationally and internationally. Department faculty continue to publish prolifically in the most respected journals in the field, and to receive invitations to present talks at national and international conferences, in addition to numerous contributions of research results at these same conferences. In Fall 2002, Dr. Alan Wuosmaa, a senior scientist from Argonne National Laboratory, will join the faculty and is expected to contribute significantly to our experimental nuclear physics program. We also hope to add a second astronomer (in addition to

Kirk Korista) to our faculty in the very near future to bolster our teaching and research efforts in this area.

In addition to so-called traditional physics research, the department recently added a significant physics education component to its research efforts that included (1) the merging of former Department of Science Studies faculty into the department, and (2) participation in the NSF-funded PhysTEC grant. In the case of the former, when Larry Oppliger retired as chairperson of Science Studies, the Dean decided to disband this department and merge the faculty of this department into appropriate existing departments. With this change, Drs. Robert Poel and Aletta Zietsman-Thomas, both physics educators, joined our faculty beginning Fall 2001, and additionally, Dr. David Schuster, another physics educator who had been hired by Science Studies before it ceased to exist, joined our faculty in Winter 2002. Concerning the PhysTEC project, which is being co-directed by Drs. Poel and Rosenthal, WMU joins five other universities nationwide that are participating in this 5.5 million-dollar project over five years. The goal of this project, which is jointly sponsored by the APS, the AIP, and the AAPT, is to improve the preparation and number of physics teachers for grades K-12 in the U.S. In this regard, our present efforts are directed towards revising the introductory calculus-based physics sequence, that is required of all secondary education physics majors, to an "inquiry-based" format. Future efforts are expected to include the algebra-based sequence as well. Notable in connection with our new physics education efforts is the addition of a new faculty member, Dr. Charles Henderson from the University of Minnesota, to our faculty for Fall 2002.

In summary, the department has seen many important changes and has experienced significant growth during the past three years. Despite

the strong emphasis on the graduate program and research in recent years, I am proud of the department's continuing commitment to its undergraduate program, which I believe has also become stronger. In this latter regard, it is notable that we remain one of the few departments on campus for which essentially all of the undergraduate classes are taught by faculty, while our TAs are used as laboratory instructors and as graders for faculty.

So, I leave the position of chairperson with much satisfaction of where we stand, with high hopes for the future, and with full confidence in the new leadership of the department. And, I look forward to resuming the life of a "normal" faculty member. Good luck Paul!

John A. Tanis, Professor of Physics

What's New at the University

In case you haven't heard, President Elson S. Floyd has accepted the position of President of the University of Missouri. Floyd served as WMU's president for nearly four-and-a-half years following former President Diether Haenicke's retirement. Dan Litynski, who replaced Fred Dobney as Provost last year, will act as Interim President until a new President is selected. Elise Jorgens, Dean of the College of Arts and Sciences, has been named Interim Provost and Vice President for Academic Affairs.

Faculty Highlights

Nora Berrah has been appointed by the US secretary of Energy, Spencer Abraham, to serve as a member of the Department of Energy, Basic Energy Science Committee for four years. The Federal Committee, which was established in 1986, provides significant advice and commendations on policy issues and other matters relating to the basic energy science program. The Committee formally reports to the director, Office of Science, and is

expected to meet about four times a year, usually in the Washington, DC area.

PhysTEC



Researchers have known for years of a crisis in science education in the United States. Exams administered internationally show that our students are among the leaders in the fourth grade but are almost last in the world by high school graduation. American political leaders, assessing the results of educational research, have demanded that our universities train teachers to teach by process of inquiry and discovery, to show students by hands-on methods that *how* we learn is as important as *what* we learn.

The PhysTEC project (Physics Teacher Education Coalition) is one attempt to address these issues. Consisting of six universities at present (Ball State, Oregon State, U. of Arizona, U. of Arkansas, WMU, and Xavier), the project tries to reform the training of prospective physics teachers by using proven methods to help students understand the basic concepts at the heart of physics. All six universities representatives attended the 3rd National PhysTEC conference this past June at Western Michigan University.

At Western Michigan University the PhysTEC project has taken the form of a major revision of those introductory physics courses taken by prospective secondary education science and mathematics teachers. We are in the second year of a five-year experimental program to improve student conceptual understanding and problem solving ability. The experiment consists of simultaneously teaching two sections

each of PHYS 205/206 (Mechanics and Heat and its laboratory course) and PHYS 207/208 (Electricity and Light and its laboratory). One of these sections is taught traditionally, the other using techniques developed by science education researchers. These techniques include: small group work, context-rich problems, interactive lecture demonstrations and simulations, and peer-assisted instruction. The revised laboratories emphasize conceptual issues over "verification" – type activities and attempt to link directly to the corresponding lecture course.

An important feature of the PhysTEC program is the assistance of a master high school science teacher, the so-called Teacher-in-Residence (TIR). Duties of the TIR include providing a "reality check" on all proposed teaching innovations, assisting with the lectures, providing feedback from the education majors, monitoring the lecture/lab interface, documenting the progress of the project, working with the education majors in their final semesters, and helping with in-service mentoring. The department was fortunate to secure the services of Dale Freeland, a 30-year teaching veteran, as our TIR for '02-'03. Dale has been active in the Michigan Physics Teachers Association and Michigan Science Teachers Association. His professional activities have included training in various NSF projects: Physics Teacher Resource Agent (PTRA), Operation Physics, and Constructing Physics Understanding (CPU) in a computer supported environment. He has taught several WMU Science Education summer classes for teachers desiring to improve their conceptual understanding of Physics concepts or teaching methods.

Assessment of PhysTEC classes will occur via nationally recognized instruments such as the Force Concept Inventory and the Conceptual Survey of Electricity and Magnetism, as well as by performance on exams of standard type. An important goal of the project is to enhance retention in the

program of training for science educators by engaging students in a hands-on curriculum that emphasizes the process of scientific discovery.

Robert Poel, David Schuster, and recently Charles Henderson, all Western's Science Education Institute and the Department of Physics have helped to develop these new courses. Other faculty members involved include Nora Berrah, who is teaching the very first revised course, and Lisa Paulius and Alvin Rosenthal, who will be teaching revised courses in Spring '03. Graduate student Michelle Tuel-Benckendorf worked with the Department's laboratory coordinator Robert Scherzer and Alvin Rosenthal to develop the revised laboratories, and she and Jeffery Wardwell are PhysTEC lab instructors for this semester.

As education students near the end of their pre-service careers at Western, they take a capstone course in methods of science education. This course is presently taught by Marcia Fetters who is also a member of the PhysTEC project and who is working with Bob Poel to develop an in-service mentoring program.

New Faculty

Since the last newsletter, we have hired three more faculty members to our department.

Alan Wuosmaa is an experimental nuclear physicist who received his B.A. and Ph.D. from the University of Pennsylvania. Before coming to WMU, Alan was a Physicist at Argonne National Laboratory.



Alan's research focuses on the structure and properties of atomic nuclei and, in addition, how nuclei interact with each other. Such knowledge is important in order to

understand how elements were created in the early universe, as well as in the stars and supernovae that are observed today. He and his colleagues perform experiments to study nuclei and their properties at nearby laboratories, such as the ATLAS (Argonne Tandem Linac Accelerator System) facility at Argonne National Laboratory outside Chicago, and the Michigan State University National Superconducting Cyclotron Laboratory in East Lansing.

Another of Alan's areas of interest is in the properties of nuclear matter at conditions of extreme pressure and density, conditions that may resemble those that existed just a few millionths of a second after the Big Bang that began our universe. He takes part in current experiments trying to reproduce these conditions at the Relativistic Heavy Ion Collider (RHIC) located at Brookhaven National Laboratory on Long Island in New York.

David Schuster specializes in Physics Education. He was originally a nuclear physicist, but changed fields as he became more and more interested in the learning and teaching processes in physics. His interests include cognition; conceptual understanding and qualitative reasoning; problem-solving; structured problem tasks; educational design; curriculum development; assessment; research methodology; epistemology and inquiry.



David received his BS from the University of the Witwatersrand, Johannesburg, South Africa, his MS from the University of Wisconsin, and his PhD in nuclear physics from the University of the Witwatersrand. He comes to Western from the University of Natal, Durban, where he was on the physics faculty for

some twenty years. He has received numerous awards and grants for his work, and has held many external consultancies, most recently that of Chief Examiner for Physics for the International Baccalaureate.

Charles Henderson specializes in Physics Education research. He received his B.A. in Math/Physics from Macalaster College, and his M.S. and Ph.D. from the University of



Minnesota. Before coming to WMU, Charles also taught physics at Macalaster College, high school physics and chemistry at the International School of Minnesota, and conceptual physics at Anoka-Ramsey Community College. He is currently teaching the PHYS 106 Introduction to Stars and Galaxies course at Western.

Charles is primarily interested in the teaching and learning of physics. His current work is focused on physics teachers/faculty beliefs about teaching and learning and how these beliefs affect the adoption and use of research-based instructional strategies.

Alumni News

William Sigourney Hough (B.A. '48) wrote us since the first newsletter with the following words:

Great event! So glad I got one. Intend to use the reply form soon and contribute a few short "sea stories" of the 1944 V-12 units and Mr. Marburger and Dr. Rood. ... (I was an) I.G.Y. 1957 member of the first wintering over group at the South Pole Station, Antarctica. Ionospheric physicist, Geomagnetism and Earthquake Seismic Observer.... Do not let the Physics Department Newsletter die.

We received a very nice letter from **Hal Gaut**, BS Physics 1965 from

Western Michigan College. Here are some excerpts:

It was great to receive the Premier issue of the Physics Department News. It looks like a first rate undertaking. Well done! ...we have made frequent trips back to the area and have been able to watch the growth of the University over the years. It's a far cry from the days when the Physics Department, under Dr. Rood, shared the second floor of McCracken Hall with the OT program. As a senior I remember a lot of midnight oil burned working with Dr. George Bradley in the High Vacuum Lab we built adjacent to the old Planetarium in the basement. Primitive, but a great experience.

Became involved in Health Physics at Argonne Labs. During the dismantling of CP2, I obtained a 2" cube of graphite used in the original (CP1) structure under the Stagg Field stands. Some years later (after my wife declared it a "dust-catcher") it found a new home in Dr. Rood's office. Often wonder what happened to that chunk of history.

Had a short tour of military duty, where I was fortunate enough draw duty teaching mathematics to prefix-5 (nuclear deployment) candidates. My old Western lab partner, Richard Doolittle (now Dr. Doolittle, honest!) got stuck in a bakery company. Go figure.

Moving back to Michigan I joined the Federal Civil Defense organization and helped develop their regional CBR Defense programs. This subsequently precipitated our move to Maryland where I soon transferred to the AEC, just before they split into the NRC and ERDA. During this time I formed a multi-agency task force charged with helping states develop off-site emergency plans around nuclear reactors. Ten years ago I decided to retire from formal employment. It's great but I'm even busier.

...I introduced a "Physics of Sound" course in the curriculum of a choir

camp at Lebanon Valley College in Pennsylvania. Guess all I'm really doing now is singing with International Champion Barbershop Chorus, the Alexandria Harmonizers. Interesting to note that the barbershoppers have their own Physics of Sound course at their annual Harmony College in Missouri. When I took it, the instructor was Dr. Jim Richards, a Ph.D. from 3M. Really tough going "back to school", but he was fantastic. Reminiscent of Dr. George Bradley, who was always able to mix his music with his physics. He and Walter Marburger are two of my best memories. They taught me a lot more than "just Physics".

Thomas Dickinson, 1963 WMU graduate in physics, has been elected a Fellow of the American Physical Society. He was previously chosen as one of the first 20 fellows of the American Vacuum Society. Dickinson was recognized for "his pioneering and innovative work in basic bond breaking mechanisms, and the forces on particles at solid surfaces during mechanical or radioactive stimulation." After getting his bachelor's degree at Western, Dr. Dickinson did graduate work at the University of Michigan and received his Ph.D. in physics in 1968. He immediately joined the faculty at Washington State University in Pullman, where he has taught and conducted research ever since.

Dickinson has earned distinction for both his research and his teaching, especially in recent years. In 1993, he was awarded the WSU President's Excellence Award for Research, and in 1991 he delivered the Distinguished Faculty Address. He received the College of Sciences Outstanding Researcher Award and was named a Westinghouse Professor in 1994. In 2001, Dickinson won the Thomas Lutz Teaching Award, and he was recently named as WSU's first Paul Anderson Distinguished Professor of Physics. He has developed laser techniques that may help national

laboratories analyze part of the nation's nuclear waste materials, such as those in Hanford storage tanks.

Stephen R. Lewis (Roger) (B.S. '65) informs us that he went on to become an Engineering Manager with Hughes Aircraft Co., specializing in automating manufacturing tests for spacecraft for commercial communications, weather satellites, and defense department Command, Control, Communications, and Intelligence systems on satellites. Stephen adds:

Since 1989 I have kept busy with recycling projects and learning programming and configurations of PCs. Unfortunately they seem to be able to develop changes faster than I can keep up as a part time hobbyist. But it is a great race trying to keep up... Again, great job and thanks for the effort.

We've learned that **Chun Ming Leung** (B.S. '69), formerly a physics professor at Rensselaer Polytechnic Institute, is now Vice President of Technology and Development at The Open University of Hong Kong.

Pete Anderson (B.S. '80) earned his M.S. in physics from the University of Notre Dame, and went on to teach physics at Lawrence Technological University (LTU), at Woodbury University in Burbank, CA, and now at Oakland Community College (OCC). He has been there for six and a half years now, and last year he became the Chair of the Science Department at the Highland Lakes campus of OCC. Pete is married with one child. They live in Farmington Hills, MI.

One of our most recent alumni, **Daniele Bortolotti** (B.S. '01), married shortly after graduation, and he, his wife, and 1-year-old twin daughters now live in Boulder. Daniele is a graduate student at the University of Colorado and JILA, working with John Bohn on theoretical Bose-Einstein condensation (and collaborating with the experimental group that won the 2000 Nobel Prize in Physics!).

Although not technically an alumnus, **Benjamin Sunday** was enrolled in WMU physics courses while a student at Schoolcraft High School. He has since been selected as Michigan's Heisman Winner for his athletic and academic performances, and is now enrolled in the Honors College at the University of Michigan. Ben, who was only 16 at the time, received two WMU Physics Book Awards for earning the top grades in both Physics 205 and Physics 207.

Alumni Achievement Awards

The College Alumni Achievement Awards are given annually to alumni that are recommended to the Dean by their departments. The Awards are given in recognition for the recipient's achievements in their fields and for their service to their departments. Not every department will make a recommendation each year. On the Friday of Homecoming the recipients usually give a seminar and talk with graduate and undergraduate students in their department. The College pays up to \$500 for the travel of the alumni. The College sponsors a reception where the Dean awards Certificates of Achievements. This award is not the same as the University Distinguished Alumni Award which is nominated by the Alumni Association.

Here are the recent physics awardees.

1998



Richard L. Boudrie received his B.A. in physics from WMU in 1969 and continued on at the University of Kansas to receive a Ph.D. in nuclear physics. After postdoctoral appointments at Argonne National

Laboratory and the University of Colorado, he joined the scientific staff at Los Alamos National Laboratory, where he has led work in such interesting areas of physics as pulse power systems, electron beam systems, and high field magnets, among others. Dr. Boudrie has numerous publications in the most prestigious nuclear physics journals. Highly regarded by the nuclear physics community, he is a fellow of the American Physical Society and the 1998 recipient of the Distinguished Service Award from the National High Magnetic Field Laboratory.

2000



Norman Grant received his B.A. in Physics from WMU, Summa cum Laude, in 1970. After accepting a position as Systems Programmer at the Computer Center in 1972, Mr. Grant redesigned the TOPS-10 process scheduler; his work was subsequently adopted by Digital Equipment Corporation and by many other TOPS-10 sites, such as First National City Bank. In 1975, he was promoted to Manager of Systems and in 1980 to Assistant Director of Systems. Mr. Grant had a significant role in a shift to the VMS and Unix platforms in the late 70s and early 80s, and in the late 80s, led the implementation of Confer, and in 1997 implemented a Web version that is presently used. He has implemented several other CGI/JavaScript applications such as the current E-mail directory and phone book. Mr. Grant was involved in WMU's Y2K systems compliance effort, and in the summer of 2000, within the Office of Information Technology, he led an effort to integrate accounts on the VMS and Unix platforms for the use of a

common password, implemented this fall. Mr. Grant is currently heading a team within the Office of Information Technology, which is once again beginning a major platform migration effort.

2001



Leo Parpart (right, with Dean Halderson) graduated with a B.S. from WMU in 1980. He began his career as the accelerator engineer in the Tandem Van de Graaf Laboratory at WMU. In 1985 he became the accelerator installation engineer for National Electrostatic Corporation where he traveled to more than 30 countries supervising the installation of multi-million dollar accelerator systems. He later joined Eaton Corporation as a product support engineer and was primarily involved in the implementation of ion-implanting systems in Europe and Southeast Asia. He joined the U.S. Department of State in 1999 and became the information management specialist for the U.S. Embassy in Cameroon. Most recently he became the information processing officer at the U.S. Embassy in Mongolia.

Annual Student Awards 2001 – 02

George & Jean Bradley Fellowship

2002

Ali Al Naser

David Carley Memorial Graduate Fellowship Award

2001

Osama Abu-Haija
Ayman Said
Lucian Undreiu

2002

Bogdan Danila
Zsolt Rak
Xue Wang

Dewitt Outstanding Teaching Award**2002**

Sabbir Hossain
Rod Price

Leo Parpart Scholarship:**2001**

Valentina Tobos

2002

Ximao Feng
Ayman Said
Osama Abu Haija

Nathan Nichols Physics Scholarships:**2001**

Britt Metzger
Patrick Murray
Michelle Tuel-Benckendorf
Richard DeBoer

2002

David P. Hoogerheide
Futaba Okamoto
D. Joseph Pole

Presidential Scholar**2002**

D. Joseph Pole

Wilcox Memorial Award**2001**

Daniele Bortolotti

2002

Futaba Okamoto
D. Joseph Pole

Book Awards**2001**

100 Eric Bender
Todd Schisler
101 Amber Wilde
104 Scott Badham
Nicholas Buchholz
Crystalyn Gusse
106 Matthew Pasztor
107 Michael Attard
Rachel Bemis
Ryan Buehler
Nathan Herbert
113 Cortney Gladstone
Nichole Johnson

115

Katherine Keller
Jamie Longhurst
Benedict Walters
Thomas Sanders
Kristen Bekke
Frank Bosworth
Christoph Coppeans
Jason Wegrzyn
205 Alana Dumasius
Matthew Hanley
David Hoogerheide
Jason Parker
Deborah Twardowski
George Waluskiewicz (207

207

also)
Eugen Geisz
Bryon Gloden
Daniel Gunnett
Caleb Shun Tao Wei

2002

100

Joseph Pinto

102

Matthew Alberts
Bryon Golden

104

Michael Branstetter
Mark Allan Plachta

106

Justin Droger
Futaba Okamoto
Kathryn Rich

107

Diane Strohschein
Tristin Thomas
Candice Young

113

Eric Dzieban (115 also)
Bjorn Olsen
Sun Young Wallace
Rebecca Lee White
Justin Vriezema

115

Michael Ahrens
Holly Yettaw

205

Andrea Blyskal
Alejandro Bond
Michael Calbrese Jr.
Benjamin Sondag (207 also)
David Wine

207

Kyle Harris
Justin Vince

309

David Hoogerheide
Robert Nendorf

Recent Graduates**2001****B.S.**

Richard Bell
Daniele Bortolotti
Britt Metzger
Nicholas Murray
Mauricio Posada
Michelle Tuel-Benckendorf

Sandra Wood

Ph.D.

Oleg Nayandin
Valentina Tobos

2002**Masters**

Chaminda Nalaka Kodituwakku
Donya Lambrecht

B.S.

Patrick Murray
D. Joseph Pole
Jeffery Wardell

Ph.D.

Ali Al-Naser
Philip Ugorowski

Recent Guests

During the months of July and August, 2002, **Prof. H. Gulay Birkok** of the Department of Physics at Gebze Institute of Technology in Turkey was a Visiting Scholar in our Department. Prof. Birkok visited Prof. McGurn and worked on the theory of intrinsic localized modes in photonic crystal circuits.

Photonic crystal circuits are waveguide networks in photonic crystals which are used to mold the flow of light through space. They can be used as components in fiber optics systems and in the design of lasers. Intrinsic localized modes are soliton-like excitations that exist in photonic crystal waveguides formed from Kerr nonlinear optical media.

The object of the work of Profs. Birkok and McGurn is to determine the effects of intrinsic localized modes on the transmission characteristics of photonic crystal circuits.

Astronomer and popular educator in astronomy, **Professor James Kaler** of the Department of Astronomy at the University of Illinois, visited the Department last November 1-2 to give a public lecture and colloquium on topics in astronomy. Astronomer

Kirk Korista arranged for Dr. Kaler's visit that was sponsored by the American Astronomical Society's Harlow Shapley Visiting Lectureship

Program. His research area, in which he has published over 100 papers, involves dying stars. He has also published several books for the layperson interested in astronomy. The public lecture, entitled "Spectacular Astronomy: New Results for a New Millennium", was attended by over 250 people from the Department, WMU, and general public, including grade and high school students, and members of the Kalamazoo Astronomical Society (who helped promote the event) and Grand Rapids Amateur Astronomical Association. Dr. Kaler held their attention with humor and spectacular images from the Hubble Space Telescope and newest ground-based telescopes, as well as discussions of what is currently unknown. Many questions from the audience followed. He also gave a colloquium, entitled "Two Hundred and Sixteen Years of Planetary Nebula Research", which was a discussion of the history of the research concerning the brief, yet beautiful, phase in the deaths of low-mass stars. Professor Kaler also gave a

presentation on light phenomena found in the day time sky (rainbows, halos, etc) to one of the astronomy classes, and gave interviews to WMUK radio and the Kalamazoo Gazette.

Department Roster

Faculty

Nora Berrah
Clement Burns
Sung Chung
Thomas Gorczyca
Dean Halderson
Gerald Hardie (Assistant Chair)
Charles Henderson
Emmanuel Kamber
Kirk Korista
Allen Landers
Arthur McGurn
Paul Pancella (Chair)
Lisa Paulius
Bob Poel
Alvin Rosenthal
David Schuster
Robert Shamu

John Tanis
Alan Wuosmaa
Aletta Zietsman-Thomas

Emeriti

Eugene Bernstein
Stanley Derby (Adjunct faculty)
Dean Kaul
Haym Kuglak
Michitoshi Soga
James Zietlow

Staff

Kerry Cochran
Mark Ely
Steve Ferguson
Allan Kern
Lori Krum
Bob Scherzer
Rick Welch

Post-doctoral Research Associates

Ant Wills
Oleg Zatsarinny



Photo Gallery



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first middle last

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city state zip

Home phone _____ Email _____

Employer _____ Job title _____

Work address _____

If alumni, degree and year: _____

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