



INPP Hosts International Conference in Chicago

Article by *Samantha Peko and Daniel Phillips*

The Department of Physics & Astronomy is dedicated to developing a deeper understanding of the natural world, to educating undergraduate and graduate students, and to conveying the concepts and logic of the discipline to the broader community.

Charlotte Elster and **Daniel Phillips** served as co-chairs of The 21st International Conference on Few-Body Problems in Physics (FB21), an international conference that shares the latest research advances on few-body systems.

The FB21 conference has a fifty-seven year history of bringing together physics experts from around the globe to talk about their research. The conference convenes every three years and has recently been held in Fukuoka, Japan; Bonn, Germany; Santos, Brazil; Durham, North Carolina, and Taipei, Taiwan.

“There’s a class of systems, few-body systems, where there are a small enough number of particles that you can solve for the properties of the systems essentially exactly,” says Phillips. “What this allows you to do is conduct very precise tests so you understand the forces at work, and this is not true when you look at a system that has, say, 100 particles.”

Phillips proposed the idea of having OHIO sponsor the conference in 2009, while he served on the FB series’s International Advisory Committee. Scheduling speakers, finding funding and publicizing the event became a three-year long effort.

Few-body research involves studying systems at varying distance scales, from sub-atomic particles like protons and neutrons, through nuclei, all the way up to molecules and clusters of atoms. The study of Borromean systems, in which three particles are linked, is an area that Phillips is especially interested in.

“You might think that three is just like two. So, you take two particles and you look at how they interact and think that if you put a third one in not much will change, but it turns out that a whole class of phenomena exists that only occur once you bring in a third particle.”

The conference was held in Chicago, Illinois, from May 18-22, 2015. Its institutional sponsors were the Physics Division at Argonne National Laboratory and Ohio University’s Institute of Nuclear and Particle Physics (INPP).

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OHIO
UNIVERSITY

139 University Terrace
Clippinger Laboratories 251B
1 Ohio University
Athens, OH 45701

Greetings Alumni and Friends

Our department continues as an environment in which our students thrive and grow in their intellectual development, realize their potential, and advance the frontiers of science. Our alumni are testimony to the past success of our program and an inspiration as we look to the future. I am delighted to share some updates from our department with this newsletter.

Our faculty members have some significant changes this year. **Kenneth Hicks** has taken a temporary assignment at the National Science Foundation as a program manager in nuclear physics. **Tom Statler** is leaving us permanently to join NASA and **Saw-Wai Hla** has returned, although he will have a joint appointment with Argonne National Laboratory (ANL), as group leader of the Center for Nanoscale Materials. Through this connection he has firmly established a link for us with the facilities he is developing that use the Advanced Photon Source (APS) at ANL. We have already had several students take advantage of his presence at ANL, including that of soon-to-graduate Heath Kersell.

Two pieces of work **Heath Kersell** did for his dissertation are cited in the future roadmap of DOE Basic Energy Sciences Advisory Committee. This is leading to the construction of a new beamline at the Advanced Photon Source dedicated to x-ray spectroscopy at the single atom level – the first in the world. We hope many more students will be able to follow Heath's success in working at the APS.

Another graduate student whose work has been lauded is that of **Andrada Mandru**, a graduate student working with **Art Smith**. She has won the Russell and Sigurd Varian award at the annual American Vacuum Society (AVS) meeting. She also won the Leo M. Falicov Student Award from the Magnetic Interfaces & Nanostructures Division of the AVS.

We hope to have news in 2016 of future plans for the Clippinger Research Laboratories, the formal name for the building most people know as Clippinger. In Spring semester 2016, the Trustees are expected to approve a new master plan for the University that will contain plans for Clippinger. It is anticipated that the recommendation will be for the building to be renovated once an addition has been built to house laboratories that have to be relocated during the renovation. This has always been an obstacle to renovating Clippinger. The only swing-space, or temporary space, the University has is primarily office and classroom space. In the meantime we expect to have a new roof on Clippinger in 2016.

We greatly value the support we receive from our friends and alumni in helping our department in the pursuit of its mission. We always appreciate visits by our alumni, as a means to educate our students about possible career paths and to help our department remain connected to a larger community. We also express our sincere thanks to those who have contributed financially to our program, as listed elsewhere in this newsletter.

- 77 graduate students
- 70 undergraduate students
- 32 countries represented in the department
- Programs in astrophysics, biophysics, condensed matter physics, surface science & nanoscience, nuclear and particle physics
- International travel opportunities for both graduate and undergraduate students
- 4.5 MV high-intensity tandem Van de Graaff accelerator
- Member of the MDM Observatory on Kitt Peak, AZ
- Alumni receive international awards including one Nobel Prize



David Ingram
Chair



Faculty News



Sasha Govorov received the Outstanding Faculty Research and Scholarship Award from the College of Arts and Sciences.



David Ingram received the Outstanding Faculty Leadership and Service Award from the College of Arts & Sciences.

Saw-Wai Hla returned to full time as Professor of Physics and Astronomy. Prof. Hla has a joint appointment at Ohio University and Argonne National Laboratory.

Kenneth Hicks invited to write a Viewpoint article for the American Physical Society to accompany the announcement in the journal Physical Review Letters of the discovery of a new type of subatomic particle, a pentaquark. In 2004, Hicks was elected as a Fellow of the American Physical Society in part because of his contributions to the search for pentaquarks.

Mark Lucas promoted to Senior Lecturer in the Department of Physics and Astronomy.

Tom Statler resigned from Ohio University to take a full-time position as a Program Director at NASA.

Heather Crawford took a staff position with Lawrence Berkeley National Laboratory. She will continue to advise **Andrea Richard**, one of our Ph.D. students. Being offered a rare staff position at a national laboratory is an opportunity that is difficult to turn down. We wish Heather every success in her career.

Alumni News

Sir Venkatraman (Venki) Ramakrishnan (PhD, 1976) was elected as President Elect of the Royal Society.

Petra Stumm (PhD, 1997) was promoted to Program Manager at AMD, specializing in GPU-based computing and applications.

Jack Steiner (BS, HTC, astrophysics) was awarded the Einstein Postdoctoral Fellowship.

Rakitha Beminiwatha (PhD, 2013) was awarded the Jefferson Science Associates Thesis Prize for the best dissertation based on research done at the Thomas Jefferson National Accelerator Facility.

Aurangzeb Khan was (PhD, 2007) joined the Abdul Wali Khan University Mardan in Pakistan as a full professor.

Philip Spickler (MS, Physics, 1988) was promoted to be Head of the Division of Natural Sciences at Bridgewater College.

Steve Pellathy (BS, HTC Physics, 1994) was named Assistant Principle at Hampton High School in Pittsburgh.



Sir Venkatraman
Ramakrishnan



Petra
Stumm



Jack
Steiner

Student News

Nilaj Chakrabarty was awarded Outstanding Teaching Assistant by the College of Arts & Sciences.

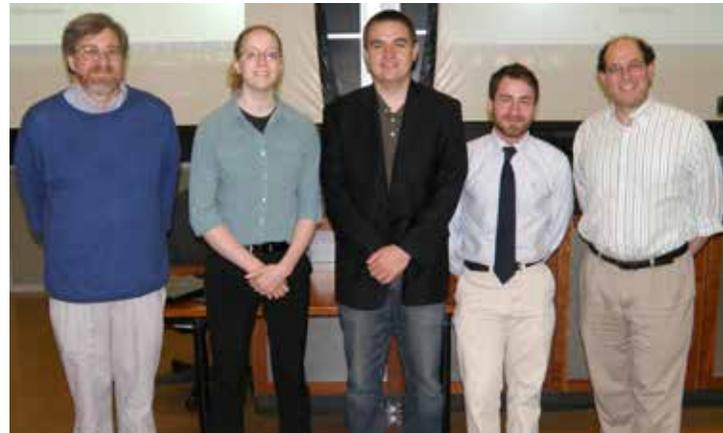
Christopher Johnson was presented an invited talk titled “Is the Axonal Transport of Neurofilaments a Tug-of-War?” at the Axonal Transport & Neuronal Mechanics Workshop, held at Ohio State University.

Sam Johnson received best presentation at the 2015 Undergraduate Physics Research Conference, organized by the Society of Physics Students at Ohio University. Honorable Mention was awarded to Maxwell Camp and Natalie Klco.

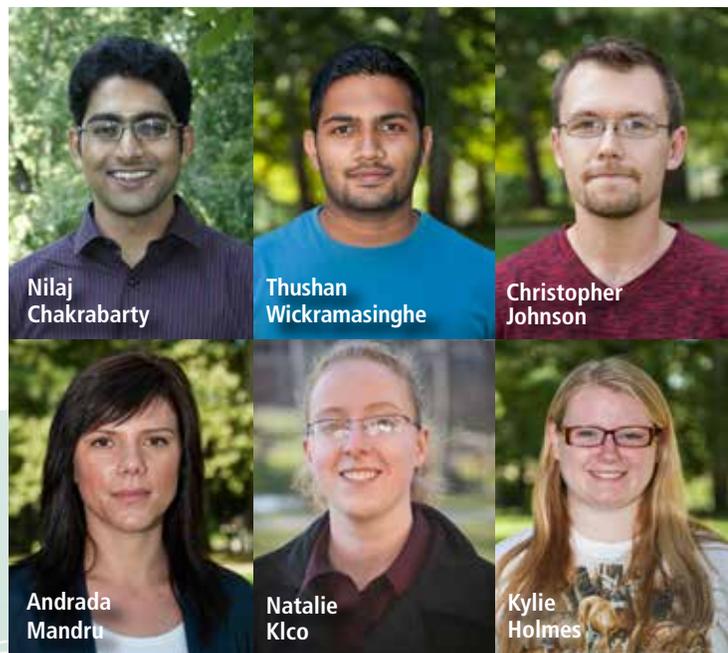
Natalie Klco and **Kylie Holmes** were inducted into Sigma Pi Sigma, the honor society for the Society of Physics Students.

Andrada Mandru captured the Russell and Sigurd Varian award at the annual American Vacuum Society International Symposium in San Jose, CA, one of three national-level named student awards at the meeting. She made two presentations and also won a second award in the Magnetic Interfaces & Nanostructures Division.

Thushan Wickramasinghe received the Graduate Associate Outstanding Teaching Award by the Department of Physics and Astronomy.



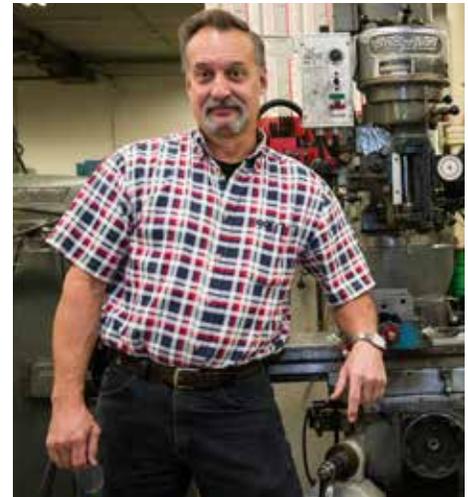
Sam Johnson (center) received best presentation at the 2015 Undergraduate Physics Research Conference, organized by the Society of Physics Students at Ohio University. Honorable Mention was awarded to Maxwell Camp and Natalie Klco. L to R: Dr. Mark Lucas, Natalie Klco, Sam Johnson, Maxwell Camp, Dr. David Tees



Staff News



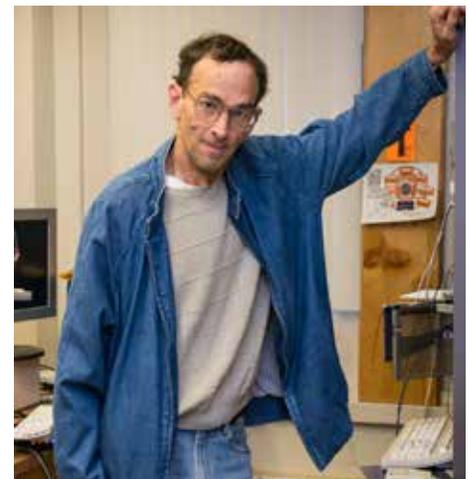
Photos: Rob Hardin



Doug Shafer was recognized for 10 years of service in Physics & Astronomy.

Outstanding Staff Award

The Department of Physics and Astronomy gave the Outstanding Staff Award this year to **Julie Goettge**. As those who work with Julie know she is essential to our success with our many international visitors. Julie, as are all of our staff, is dedicated to the success of the department. Julie is particularly concerned with ensuring that our visitors, whether from the US or overseas, have a great time while they are with us: they evidently do because many come back for repeat visits. She is a delight to work with, always with a smile and a friendly word, and most important the willingness to help find the answer in the rare event she does not know it.



Don Roth was recognized for 20 years of service in Physics & Astronomy.

Course Development

Eric Stinaff and Daniel Phillips both taught in courses associated with the College of Arts & Sciences Curricular Themes initiative. Stinaff designed and taught the Tech Matters course as part of the “Fire to iPhone” theme. Phillips was part of a team that developed and taught Knowing What We Know, the introductory class for the “Knowing the Future” theme.



Tech Matters investigates the creation, application, and implications of technologies throughout history. Topics will include the physical foundations of technological achievements, the moral and ethical issues associated with technology, the use of technology to enhance human interactions, and the effects of technology on society.

In both subtle and profound ways the influence of technology is inescapable. From fire to iPhones, human beings have always engaged in developing new technologies to improve their work, quality of life and relationships with others. Our culture speaks of “technology” as though it describes the most cutting-edge digital inventions. And it does. But technology itself is nothing new. Humans have been developing new technologies throughout our history.

One of the fundamental goals of the class is to help students gain an appreciation of the engineering, research, and scientific underpinnings involved in creating modern technologies. Students investigated ways technologies shape our individual and societal identities while critically analyzing the benefits and consequences of technologies. The class also examined how technologies are used within various fields of study or professions.

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Daniel Phillips



Eric Stinaff



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The conference was held in Chicago, Illinois, from May 18-22, 2015. Its institutional sponsors were the Physics Division at Argonne National Laboratory and Ohio University's Institute of Nuclear and Particle Physics (INPP).

Accompanying Phillips and Elster were faculty members **Carl Brune**, **Julie Roche**, post doctoral researchers **Mohammadreza Hadizadeh** and **Vasily Eremenko**, **Xilin Zhang**, and five graduate students: **Bijaya Acharya**, **Nick Compton**, **Linda Donald Hlophe**, **Cody Parker**, **Andrea Richard**, **Arbin Thapaliya**, former OHIO doctoral student **Chen Ji** and former department post-docs **Lucas Platter** and **Matthias Schindler** (not pictured) also attended.

The conference provided an opportunity for the group to meet others in the Few Body community and to highlight faculty and student research in the field. The conference ran very smoothly thanks to great administrative work at both Argonne and OHIO, with special thanks to **Jean Andrews**, **Wayne Chiasson**, **Julie Goettge**, and **Chris Sandford**.

Over 240 participants from 29 countries around the world attended the conference. FB21 featured 31 invited plenary talks, 32 invited lead parallel session talks and 127 contributed talks, resulting in a total of 190 oral presentations. In addition, there were more than 30 poster presentations in a separate poster session on Tuesday afternoon. The week in Chicago provided a snapshot of our vigorous and diverse field.

OHIO's Office of the Vice-President for Research and Creative Activity provided key funding to facilitate the publication of the conference proceedings, which will appear in the European Physical Journal's Web of Conferences in 2016. Those proceedings reflect the impressive breadth and excellent quality of contributions to the meeting. That — combined with

the strong presence of younger scientists in Chicago — augurs well for the next conference in this series, which will take place in Caen, France in July 2018.



FB21 conference participants outside the Crowne Plaza Chicago Metro Hotel.



Rajesh Srivastava (second from left) from the Indian Institute of Technology, Rorkee, explains a concept to Daniel Phillips during a poster session.

Photos: Vasily Eremenko and Mohammadreza Hadizadeh

Outreach Activities

Faculty and students enjoy stepping aside from research and studies to share the excitement and fun of science with the community through a wide variety of outreach opportunities.

As opportunities present themselves, faculty and students head out into the schools or help host K-12 students on campus. Among other things, the past year **Sergio Ulloa**, **Nancy Sandler** and **Mark Lucas**, along with a number of graduate and undergraduate students, represented the Department at local School Science Nights. **Arthur Smith** and **Jeonghim Pak** ran their Science Investigators series of Saturday workshops for West Elementary 5th graders.

The Astronomy group continues to host its ever-popular star walks and telescope nights.

With the campus as a whole becoming more involved with outreach programs, groups from the department have been plugging in with a number of events. The local chapter of the American Association of University Women (AAUW) runs an annual TechSavvy workshop for middle school girls at which **Julie Roche** and **Nancy Sandler** presented a hands on session on ‘measuring’ with the help of graduate students **Shannon Quinn**, **Andrea Richard** and Elisabeth Kager (College of Education). A group of students presented a room of physics demonstrations at the Family Science Saturday run by the chemistry

undergraduates. In September **Eric Stinaff** and **David Tees** ran workshops and gave talks at the Young Scholars Ohio workshop for profoundly gifted students.

The ‘maker movement’ represents a resurgence of the do-it-yourself mentality spurred on by the accessibility of a whole new range of open-source tools. With support from the Department of Physics and Astronomy for space and resources, a group called the Athens Makers has organized a series of informal science-based ‘maker’ workshops for area elementary, middle school and high school students during the past three summers. In addition, Jesus Pagan (Engineering Technology and Management, second from left) and **Mark Lucas** ran a one-week manufacturing camp for middle school students in conjunction with Athens County Entrepreneurial Network (ACEnet). Students in the camp worked on Science, Technology, Engineering, Arts and Mathematics (STEAM) projects while learning more about manufacturing jobs in Athens County. In related work, Mark Lucas and various students have been helping kids learn how common materials conduct electricity through the Makey-Makey, a small electronic board that mimics a keyboard or a mouse through the use of everyday objects, like fruit, aluminum foil, play-dough and gummi worms. Workshops at the local libraries, the Ohio Valley Museum of Discovery and on campus reached a wide range of kids and educators.

Community Outreach



Local School Science Nights

Sergio Ulloa, Nancy Sandler and Mark Lucas along with a number of graduate and undergraduate students represented the Department of Physics and Astronomy at a number of local School Science Nights. Here Patton College of Education physical science undergraduate student Joe Paterson (right) and physics graduate student Rajib Pandit (center) assist with the ping pong ball canon and electrical circuits at an Amesville Elementary School Family Night.



Athens Makers

With support from the Department of Physics and Astronomy for space and resources, Mark Lucas organized a series of informal science-based ‘maker’ workshops for area elementary, middle school and high school students during summer of 2015. Here Nelsonville-York physics teacher Nick Conroy helps with an Arduino micro-controller.



Manufacturing Camp

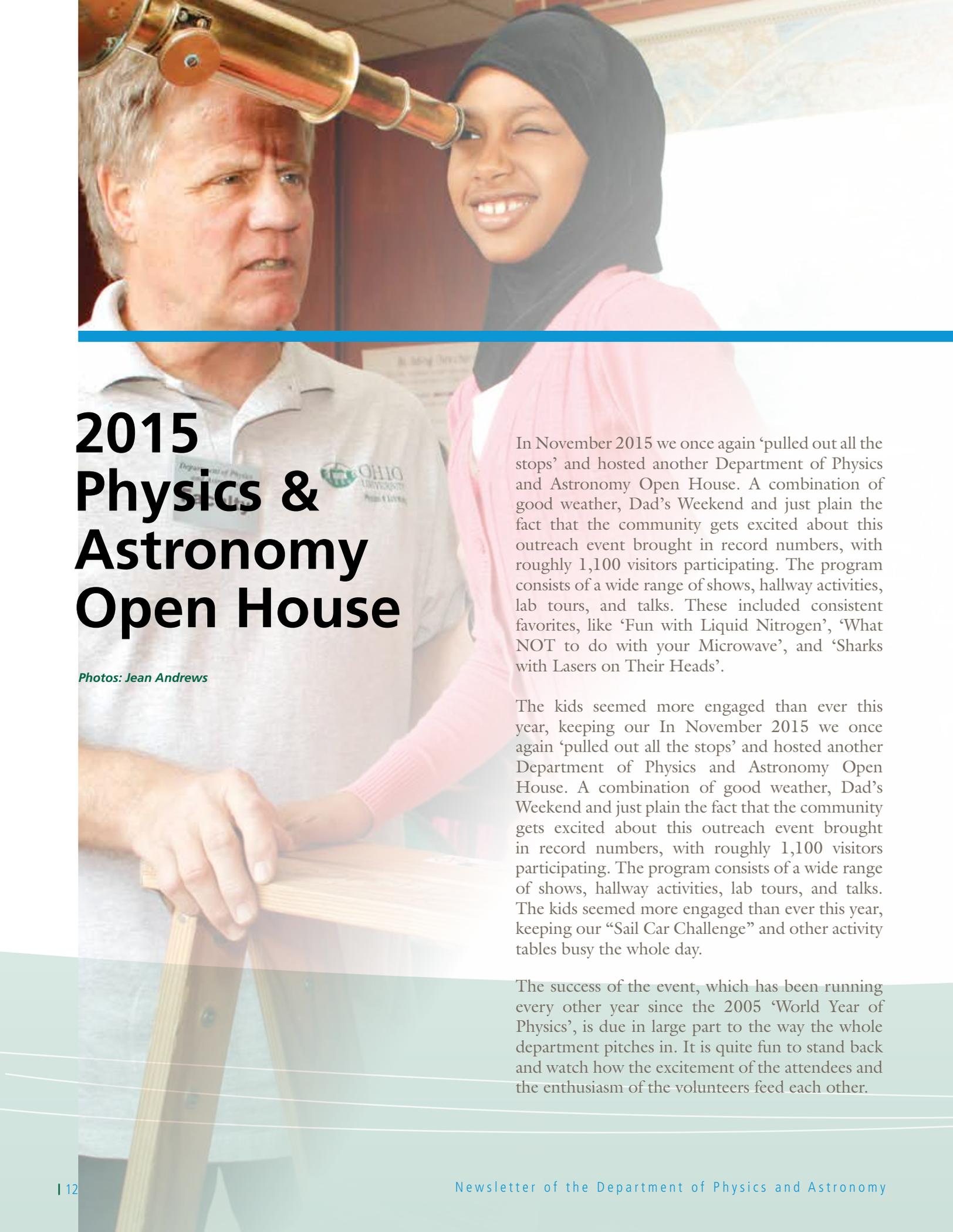
Jesus Pagan (Engineering Technology and Management, second from left) and Mark Lucas ran a one-week manufacturing camp for middle school students in conjunction with Athens County Entrepreneurial Network (ACEnet). Students worked on Science, Technology, Engineering, Arts and Mathematics (STEAM) projects while learning more about manufacturing jobs in Athens County.



Banana Pianos and More

Mark Lucas has been helping kids learn how common materials conduct electricity through the Makey-Makey, a small electronic board that mimics a keyboard or a mouse through the use of everyday objects, like fruit, aluminum foil, play-dough and gummi worms. Workshops at the local libraries, the Ohio Valley Museum of Discovery and on campus reached a wide range of kids and educators. Here Lucas and physics graduate student Mehdi Rezaie are assisting students in the Trimble Middle School Kids on Campus program.

Photo: Daniel Hinderliter



2015 Physics & Astronomy Open House

Photos: Jean Andrews

In November 2015 we once again ‘pulled out all the stops’ and hosted another Department of Physics and Astronomy Open House. A combination of good weather, Dad’s Weekend and just plain the fact that the community gets excited about this outreach event brought in record numbers, with roughly 1,100 visitors participating. The program consists of a wide range of shows, hallway activities, lab tours, and talks. These included consistent favorites, like ‘Fun with Liquid Nitrogen’, ‘What NOT to do with your Microwave’, and ‘Sharks with Lasers on Their Heads’.

The kids seemed more engaged than ever this year, keeping our In November 2015 we once again ‘pulled out all the stops’ and hosted another Department of Physics and Astronomy Open House. A combination of good weather, Dad’s Weekend and just plain the fact that the community gets excited about this outreach event brought in record numbers, with roughly 1,100 visitors participating. The program consists of a wide range of shows, hallway activities, lab tours, and talks. The kids seemed more engaged than ever this year, keeping our “Sail Car Challenge” and other activity tables busy the whole day.

The success of the event, which has been running every other year since the 2005 ‘World Year of Physics’, is due in large part to the way the whole department pitches in. It is quite fun to stand back and watch how the excitement of the attendees and the enthusiasm of the volunteers feed each other.



David Tees and his assistants don safety glasses for the demonstration of the 'optical tweezers.'



Graduate student Rajib Pandit helps some of our younger participants learn about angular momentum.



Graduate student Sean McGraw and Charlotte Elster help kids 'take aim' with the Airzookas in the Physics and Toys Corner.



Martin Kordesch demonstrates 'standing waves' on the Ruben's using his homemade PVC flute.



Clyde Baker prepares to dip a coil of wire in liquid nitrogen during the 'Fun with Liquid Nitrogen' show.



Undergraduate students Claire Schrantz and Anita Friedman show a feather falling like a rock in a vacuum tube during the Power-of-Air show.

George Eberts helps a young visitor check out the view through one of the department's refracting telescopes.



Nancy Sandler and visitors investigate the laser chess setup at the Physics and Toys corner.

More photos may be viewed on the department's Facebook 2015 Open house album.



2015 Summer Research Internships

Ari Blumer (with Martin Kordesch) ‘Growth of 2-dimensional transition metal dichalcogenides’

Zak Blumer (with Martin Kordesch) ‘Solar water heater’

Max Camp (with Kenneth Hicks) ‘Assembly of CLAS12 Forward Tagger Calorimeter in Genoa, Italy’

Justin Courtright (with Eric Stinaff) ‘Building an Arduino-based tuning fork atomic force microscope’

Andrew Dewald (DAAD, Greifswald, Germany) ‘Sensitivity Analysis of Wendelstein 7-X Plasma Confinement by Ion Temperature Gradient Turbulence Modeling’

Miguel Gomez (With Ryan Chornock) ‘Spectroscopy of a young Type II supernova’

Erin Grimes (with David Ingram) ‘Trying to steer the accelerator beam into the air by focusing it through a millimeter hole’

Cates Harman (with Justin Frantz) ‘Study of jet particle correlations in He+Au collisions at RHIC’

Benjamin Hirt (with Arthur Smith) ‘Design and application of magnetic Halbach arrays’

Michael Jaramillo (with Doug Clowe) ‘Positional covariance in multi-wavelength astronomy’

Miles Lindquist (with Eric Stinaff) ‘Photolithography for micron-scale device fabrication’

David Overton (with Carl Brune) ‘An indirect way to study $^{18}\text{F}(p,\alpha)^{15}\text{O}$ in novae’

Gabriel Reineck (with Hee-Jong Seo) ‘Understanding how cosmological parameters affect the observations’

Sara Sand (with physicist Lukas Schmidt-Mende, University of Konstanz, Germany) ‘Understanding electronic properties of titanium dioxide’

Heath Scherich (with David Drabold) ‘Computer simulation and analysis of silicon clusters’

John Theibert (with Julie Roche) ‘Simulation of a pion trigger for the DVCS experiment at JLab’

Jacob Williamson (with Ryan Chornock) ‘Burning out swiftly: SN 2005da and its curious nature’

Yonry Zhu (with Arthur Smith) ‘Design and setup of a pulsed laser deposition system’

Undergraduate Degrees (Through May 2015)

Helen Cothrel (BS, HTC, Physics) She is in graduate school at the University of Toledo.

Natalie Klco (BS, HTC, Physics and BA, HTC Music) She is in graduate school at the University of Washington, Seattle, working with the Institute of Nuclear Theory.

Alexander Marshall (BS, Applied Physics and BS, Mathematics)

Mario Spinosa (BS, Applied Physics)

Samantha Thrush (BS, HTC, Astrophysics) She is in graduate school at the University of Illinois in Urbana Champaign, studying astronomy with a focus in computational physics.

Chris Wolfe (BS, Physics)

Austin Wood (BS, Physics)

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Course Development: Knowing the Future

Knowing What We Know is an interdisciplinary course taught by College of Arts & Sciences faculty members from English, History, Philosophy, and Physics & Astronomy. All are interested in the advantages and limitations of different means for understanding our society, our world, and the cosmos. Beginning with the historic branch of philosophy devoted to the analysis of knowledge, evidence, and similar notions, known as epistemology, instructors introduce students to the way different forms of mathematical, statistical, and scientific reasoning enable us to grapple with problems ranging from the everyday (“Should I bring an umbrella?”) to the cosmic (“How did the universe begin?”).

Exposure to different sorts of quantitative and qualitative reasoning helps equip students to better evaluate

arguments and assertions on their merits. In the process, the course aspires to show students how knowledge is pursued on the cutting edge of contemporary research. The course includes a final project, where students work together, applying the concepts of knowledge, uncertainty, and prediction to tackle a specific challenge of contemporary import.

Knowing What We Know ran in Spring 2015, with an enrolment of 78 students. Their interests spanned the spectrum from Communication Sciences, to Studio Art, to Physics. Final projects included an assessment of the probability of alien existence, discussions of climate change, and the pros and cons of legalizing narcotics. The course will be taught again during spring semester 2016.

Graduate Degrees (Through May 2015)

Anup Pandey (CMSS Theory) with David Drabold
(CMSS Theory) with David Drabold

Andrea Richard (Nuclear Experiment) with Carl Brune
Mohammed Srouf (CMSS Experiment) with

Gang Chen

Arbin Thapaliya (Nuclear Theory) with Daniel Phillips

Tyler Danley (Nuclear Experiment) with Justin Frantz

Sai Dong (Nuclear Theory) with Madappa Prakash

Normal Israel (Nuclear Experiment) with Julie Roche

Sai Teja Pusuluri (CMSS Theory) with Horacio Castillo

Zakia Alhashem (CMSS Experiment) with Arthur Smith

Nicholas Compton (Nuclear Experiment) with

Dr. Kenneth Hicks

Martin Graham (CMSS Theory) with Nancy Sandler

Sudiksha Khadka (CMSS Experiment) with Eric Stinaff

Shannon (Quinn) Thompson (CMSS Experiment)

with Martin Kordesch

Bijaya Acharya (Ph.D., Nuclear Theory) with
Daniel Phillips

‘Properties of One- and Two-Nucleon Halo Nuclei in
Effective Field Theory’

Sajida Khan (Ph.D., CMSS Experiment) with Saw-Wai Hla

‘Investigation of Molecular Wires: Molecular
Superconductors to Proteins’

Yang Liu (Ph.D., Biophysics) with David Tees

‘Measurement of Force Dependence of Receptor-Ligand
Bonding’

Ameneh Mohammadalipour (Ph.D., Biophysics) with
David Tees

‘Mechanical Properties of Cancer Cells: A Possible Biomarker
for Stemness’

Nowo Riveli (Ph.D., Nuclear Experiment) with Justin Frantz

‘Direct Photon - Hadron Correlations Measurement in
Au+Au Collision at Nucleon

Center-Of-Mass Energy of 200 GeV With Isolation
Cut Methods’

Yuan Zhang (Ph.D., CMSS Experiment) with Saw-Wai Hla

‘STM Investigation of Electric Polar Molecular Self-Assembly
and Artificial Electric Polar Molecular Rotors’



Photos: Rob Hardin and Jean Andrews

New Residence Hall Named for The Late Tomoyasu and Sumiko Tanaka



Tanaka Hall was one of the new student residence buildings celebrated during the Ohio University Residential Housing Phase 1 opening ceremony and ribbon cutting event on Saturday, August 29, 2015 at the Living Learning Center on the Ohio University campus in Athens, Ohio.

Photo: Joel Prince

Ohio University recently completed construction of a new dorm complex. It is on the site of the former Wolfe Street Apartments, which have been demolished. The complex was dedicated on August 29, 2015.

Five individuals have been honored for distinctive and substantial contributions to Ohio University by having dormitories named after them. Arthur Carr was the first black athlete at Ohio University. He graduated in 1905 and then attended Harvard Medical School. Evelyn Luchs graduated from Ohio University and made a number of contributions to the Athens community and was chosen as the first female trustee at Ohio University. Claude Sowle served as President of Ohio University from 1969 to 1974.

The late **Tomoyasu (Tomo) Tanaka** and his late wife **Sumiko** were honored together in the naming of one dormitory.

Tomo was a member of the physics faculty from 1971 through 1989. He was the Ph.D. adviser for Venkatesan Ramakrishnan, who was awarded the Nobel Prize in Chemistry in 2009. Tomo also played a central role in the development of the relationship between Ohio University and Chubu University. Sumiko was recognized for her work with the Athens County Board of Developmental Disabilities and the Atco Workshop. She was also extensively involved in programs to support and encourage foreign students at Ohio University.

The ceremony was attended by two of their five children, daughter Norico Tanaka-Wada of Japan and son and daughter-in-law Tim and Tamao Tanaka of Raleigh, NC. Many others who had known and worked with the Tanakas attended the ceremony.



Members of the Tanaka family join President McDavis, and other families and honories to cut the ribbon marking the grand opening of the new residential halls on South Green. The new complex includes Luchs Hall, Tanaka Hall, Sowle Hall and Carr Hall. Children Tim Tanaka and Norico Tanaka-Wada with building dedication plaque ceremony. **Photos: Jasmine Beaubien**



Gifts to Ohio University

Physics and Astronomy Scholarship Awardees

We are very fortunate to have many outstanding majors who hold academic scholarships that partially support them. The amount exceeds \$84,000 and includes three Distinguished Professor Scholarships including tuition waivers. We are grateful for your previous support of these scholarship funds and we would encourage you to be as generous as you can in providing continuing support.

The holders of the Edwin and Ruth Kennedy Distinguished Professor Scholarships are **Maxwell Camp**, **Erin Grimes** and **Jacob Williamson**. Recipients of the John E. Edwards Fellowship include: **Ari Blumer**, **Zak Blumer**, **Arlo Calvin**, **Alexander Carroll**, **Andrew Dewald**, **Taylor Gardner**, **Jacob Hartman**, **Benjamin Hirt**, **Kylie Holmes**, and **Hunter Lawson**. The

holder of the Robert P. Gecsy Physics Scholarship is **Miles Lindquist**. **Sara Sand** received the Darrell Otto Huwe Scholarship. The holders of the James T. Shipman Physics Scholarship include: **Jack Bruno**, **Matthew Fleener**, **Robert Harris**, **Daniel Ivory**, **Emily Ann Mullins**, and **Justin Thompson**. **Thomas Riley** received The Abhishek Singh Scholarship. Holders of the C. Paul and Beth K. Stocker Scholarship include: **David Overton**, **Sara Sand**, **Thomas Riley** and **Ryan Tumbleson**. **Yonry Zhu** received the Jerry and Karen Adams Scholarship and the Lela A Ewers Science Scholarship.

We congratulate all of the students and wish them success. The current Chair of the department's Scholarship Committee is **Madappa Prakash**.



Donors to the Department

During the past academic years the department received contributions from many alumni, friends, and members of the faculty and staff. We are very thankful to all of our donors. Donors from calendar year 2015 are listed below. (We apologize if we have overlooked any contributions made during this period.)

Arnold L. Aronson

John E. Bowdle

Carl Brune

Donald Carter

Horacio Castillo

Donna Cervenak

Gang Chen

Wayne Chiasson

Ryan Chornock

Shannon E. Hayes Clark

Bruce R. Danner

Thomas A. Fox

Justin Frantz

Gosling Family Charitable Fund

Alexander Govorov

Saw W. Hla

Peter Hoffmann-Pinther

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Marie K. Huwe

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Peter Jung

Paul King

Wilfred R. Konneker

Martin Kordesch

Robert Mueller

Alexander Neiman

Jay Oana

Brent K. Park

Daniel Phillips

Irma Rapaport

Julie Roche

Roger Rollins

Nancy Sandler

Joan Sanford

Donna Sayre

Joseph Shields

Arthur R. Smith

Eric Stinaff

F. Burt and Margaret D. Stumpf

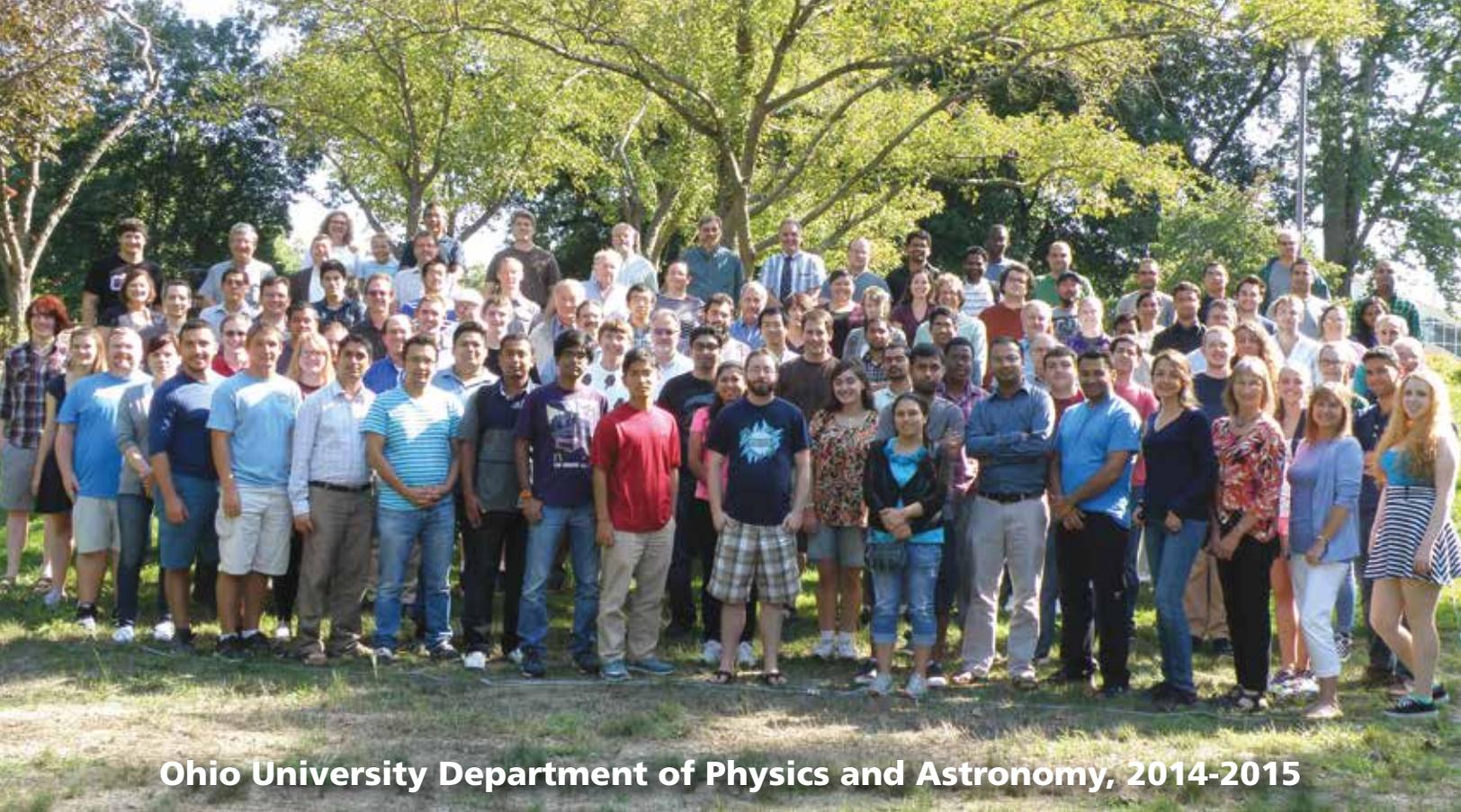
David Tees

Building a Strong Tradition of Networking

Thanks to all of you that have stayed in touch with faculty and friends of the Department of Physics and Astronomy. Your feedback and contributions keep our networking tradition strong.

Throughout the year we invite you to send us news of personal and professional highlights as well as photos to share. To keep in touch with us submit your news at physics@ohio.edu or Newsletter Editor **Kenneth Hicks** at hicks@ohio.edu.





Ohio University Department of Physics and Astronomy, 2014-2015

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Join us on Facebook, Twitter, and Instagram
Check out our YouTube channel!



If you would like to make a contribution to one of the departmental funds, include the following information in a letter to **Professor David Ingram, Department of Physics and Astronomy, Ohio University, Athens, OH 45701** or for on-line giving visit www.ohio.edu/give and select Other on the pull-down menu and enter the fund you wish to contribute to. There is also a toll free phone number to the Ohio University Foundation (800-592-FUND) for making contributions.

I would like to make a contribution of _____ to _____
(Amount) (Fund Name)

I enclose a check made out to The Ohio University Foundation, OR

Credit Card Authorization I authorize \$ _____ to be charged to my Visa Mastercard AMEX

Credit Card Number _____ Exp. Date _____

Signature _____ Date _____

Printed Name _____

