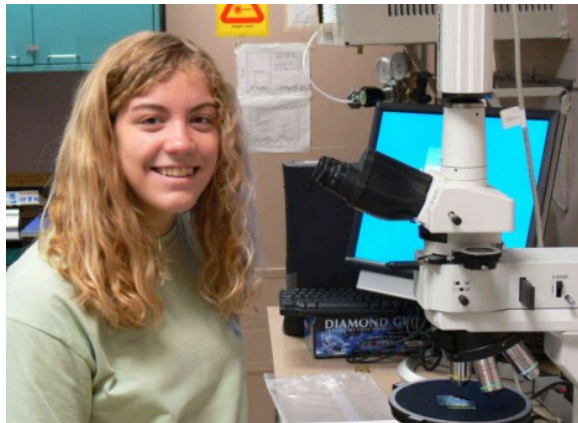


PHYSICS STUDENTS

Kali Allison

A former high school student in Dr. Glushchenko's lab, Kali was excited about studying textures of liquid crystals. Now she is a Physics student at Harvey Mudd College.



Dr. Olena Zribi, Dr. Glushchenko's graduate student, became our first PhD graduate of the Bio-Physics program. She is continuing her research as a postdoctoral fellow at UCCS.

One of our previous postdoctoral fellows, Dr. Kathrin Spendier, became one of our newest faculty members in the Physics and Bio-Physics program.

Miriam DeJong is in her last semester of an undergraduate physics degree. In 2014-2015 she won an Undergraduate Research Academy position and an LAS Student-Faculty Research Award. She is currently preparing her research results for publication in *Physical Review B*, a prestigious physics journal. Miriam hopes to continue her studies in the UCCS Physics Master's program, with an interest in theoretically exploring the quantum nature of magnets.

Roshni Kalkur, a high school student, has worked with Dr. Kathrin Spendier for two years. She won the 2014 Grand Prize in senior division at the Pikes Peak Regional Science Fair and participated at the 2014 Intel International Science and Engineering Fair. Her work resulted in a publication "Effects of deuterium oxide on cell growth and vesicle speed in RBL-2H3 cells," which has been published in *PeerJ*.

Dr. David Smith, the first graduate student who graduated from Dr. Pinchuk's group in 2013, was recruited by Langevin Institute at Paris VII University where he is now a postdoctoral fellow.

Two of Dr. Camley's former UCCS students have achieved outstanding success. Brad Johnson, is now Chair of the Physics Department at Western Washington University. Bob Stamps, is currently a Professor of Physics at Glasgow University.

Dr. Camley's current students include Nick Anderson, Matt Phelps, and Aaron Ferona. Nick is working on his PhD at UCCS, and has just published a research letter in a top international journal; Matt was the first author on a research letter with co-authors Dr. Camley, Dr. Livesey and Aaron Ferona.

Introducing Our Department Staff



Kristina Woods
Program Assistant



Scott Rehorst
Lab Coordinator



Taylor Hargis
Student Assistant

Department of Physics and Energy Science

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www.uccs.edu/~physics/

UCCS University of Colorado
Colorado Springs
College of Letters, Arts & Sciences

MEET THE

PHYSICS

Department



Department Chair,
Jim Burkhart

Jim, Professor of Physics, came to UCCS in 1977 when the Physics Department was in its infancy. He has seen the campus grow from one with free and sandy parking lots to what we have today. Jim has been the chair of the Department for more than half of his 38 years at UCCS. He loves teaching and has been awarded the LAS Outstanding Teacher Award and the UCCS Outstanding Teacher Award. Rounding it off nicely, he received the Chancellor's Award in 1995 and is a CU Presidential Teaching Scholar. Jim's research is focused on low-level radiation, and he is the Director of the Western Regional Radon Training Center. He serves on the State of Colorado's Radiation Advisory Bd. and numerous committees which write national and international standards for a radon-detecting device's design and use. Jim has measured radon in military and civilian housing and schools in Guam, Okinawa, mainland Japan, Alaska, most of the lower 48, and, most interestingly, the glass vault housing the Shroud of Turin!

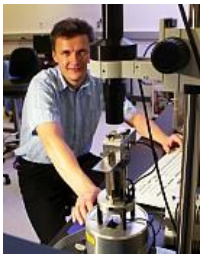
Physics Department History

1968
to
2015



The Physics Department split off from the Math Department in 1968, and was initially chaired by then Associate Professor Dr. Richard Blade (now, Professor Emeritus), a 1964 CU graduate who had recently arrived from the University of Wisconsin La Crosse. From 1968 until 1982, the Department offered only an energy science distributed studies degree, and the focus of their early research was related to solar energy. In fact, the Department had a research facility on the bluff to the east of the campus, but over the years the facility was closed down and replaced with microwave towers for cell phones.

The Physics Department currently has over 100 undergraduate students in the B.S. major, and almost 30 students in its graduate programs. At present, they have 9 tenured or tenure-track professors, 4 instructors and 3 staff.



Dr. Anatoliy Pinchuk is an associate professor with research interests in plasmonics, biophysics, metamaterials and photovoltaic structure. In somewhat less-opaque language, he does experimental and theoretical work related to nanostructured metal films and nanoparticles. He has received grants from the National Science Foundation and NATO. (NATO award for 2014-2017 is 360,000 euros—which, until this past half-year, was much more substantial than \$360,000) He is the author of more than 50 publications, with a few pending patent applications. He is a reviewer of a number of research journals, including *Physical Review* and *Nano Letters*.



Karen Livesey is an assistant professor of theoretical physics, working in condensed matter. She has experience calculating the high-frequency (microwave) behavior of magnetic, dielectric and multiferroic materials. Her research seeks a deeper understanding of the electromagnetic properties of soft matter systems such as liquid crystals, bio-magnetic nanoparticles and suspensions of colloids. She has been at UCCS for just over 3 years and in that time has taught 8 different physics classes, supervised 5 undergraduate, 3 graduate, and 2 postdoctoral researchers. Dr. Livesey judges contests for the international IEEE Magnetics Society and has refereed papers for 9 journals.

DIVERSE FACULTY COMMITTED TO EXCELLENCE IN TEACHING & RESEARCH



Professor Tom Christensen joined the faculty in 1989. He has served the campus as a faculty member, department chair, associate dean and dean. (Thank you Tom!) He is the co-director of the *UCCSTeach* program preparing future secondary science and math teachers. Tom has received both the College and campus outstanding teaching awards and the Chancellor's Award. His research in experimental surface physics has led to 21 published papers in international science journals and over 90 presentations at scientific meetings. He has taught 25 different classes at UCCS at all levels from introductory classes for non-majors to graduate-level classes. He serves his primary professional society by being an active member of national education and diversity committees. In his spare time, Tom plays string bass with the Pikes Peak Philharmonic orchestra and bass guitar with the *Physics Classic Rock and Roll Orchestra*.

Dr. Tim Fal, Instructor, was a graduate student of the Applied Science PhD program at UCCS. He researched electromagnetic wave propagation in microstrip wave guides, and that resulted in about 10 publications—not bad for a student! He became a postdoctoral fellow at Memorial University of Newfoundland, and now he is back as a full-time Instructor in the Department, teaching general physics courses. To quote him, “I love presenting a lecture and interacting with students. I love working on a physics problem and showing them that physics is not about regurgitating an answer, but building a solution based on a series of rules and relationships.”

Robert Gist has been an instructor since 2004. In that time, he has shared the wonder of scientific reasoning to thousands of undergraduates. In 2010 he was promoted to Senior Instructor, and he continues to serve as a part-time lecturer to engineering students, for which he received an Outstanding Part-Time Instructor award in 2006.



Robert Camley is a University of Colorado Distinguished Professor in Physics and a CU President's Teaching Scholar. He is the Director of the BioFrontiers Center at UCCS and Co-Director with Zbigniew Celinski of the Center for Magnetism and Magnetic Nanostructures. Bob has an international reputation, with over 230 publications and over \$10 million in grant funding. He is perhaps best known for his theoretical work explaining the giant magneto-resistance effect shortly after its discovery — the discovery itself ultimately won a Nobel Prize in 2007. Dr. Camley is a co-editor for the journal *EuroPhysics Letters* as well as an international book series, *Solid State Physics*. Bob has a long history of working with both undergraduate and graduate students and has published over 80 papers with 25 plus different students. Bob enjoys giving talks on oddities in physics including “Secret Lives of Dead Physicists” and “Why do Scientists Cheat?” Bob plays keyboard and guitar in the *Physics Rock and Roll Orchestra* which is ably lead by lead singer Jim Burkhart.

Ramon Tirado, Sr. Instructor, has taught energy science, renewable energy, solar energy, wind energy, physics, astronomy, and astronomy labs—including astrophotography, all since 2005. He was originally an adjunct for the Computer Science & Math Depts. Prior to that, he worked for Georgia State University, Dist. 20 Colorado Springs, the US Navy, NATO, United Nations Protection Force, the Pentagon, Hewlett-Packard, & IBM. Originally born and raised in Mexico City, he has lived in Italy, Germany, Switzerland, and the U.K. Ray speaks several languages, enjoys photography, and loves art.



Professor Zbigniew Celinski is an excellent researcher and teacher. Zbigniew's research is concentrated in three areas: (1) preparation and characterization of magnetic materials, (2) applied physics and engineering related to development of on-wafer microwave devices using magnetic materials and liquid crystals, and (3) medical physics. He directs a research team of graduate and undergraduate students and research associates. He has published over 150 papers, and his work has been cited over 3000 times. He primarily teaches upper division undergraduate and graduate level classes. Zibigniew also classically trained in guitar, and occasionally plays with the *Physics Classic Rock and Roll Orchestra*.



Associate Professor Marek Grabowski's research spans a wide range of interests in theoretical physics, focusing on fundamental problems of discrete and non-dimensional structure of space-time, from the electronic properties of graphene, to the self-assembly and replication of DNA in complex biological systems. Marek is involved in collaborative efforts with groups in the Netherlands, Canada, Poland and Iran. He is an integral part of the graduate program, teaching over half of all departmental graduate core courses. He also teaches upper division undergraduate courses and is a dissertation/thesis advisor for several students.

Department Of Physics Instructors

Sam Milazzo joined the physics faculty in Aug. 1992 and is now a senior instructor. He has taught nearly every class in the undergraduate curriculum and his student count is up to 10,000. Sam has won every teaching award for which he is eligible. Away from campus, he was the lead alto player in the *Springs Contemporary Jazz Big Band*, in which he has given over 1000 performances.



Professor Anatoliy Glushchenko's Center for Advanced Technologies and Optical Materials is one of the research units of the Department. It unites the research effort of more than 10 faculty, research associates, visiting researchers and students. The Center is a powerful inter-connection between education, research and development, and industrial sectors in the areas of nanoparticles, applied optics, display and non-display applications of liquid crystals. The research work of the Center is supported by government agencies such as NSF, DARPA, Air Force Research Lab, Navy Research Lab, and the Army Research Office. The Center is committed to providing educational and research opportunities to future scientists. Many high school students with research experiences in the lab continued their study of physics: Eva Pokorny (Yale), Mollie DiBrell (CU Boulder), Kali Allison (Harvey Mudd); and Diana Qui (Yale).



The newly acquired optical samples pilot production line, donated by Miyota R&D Center of America—one of the Center's industrial partners.

Physics Classical Rock & Roll Orchestra

