Physics Majors Enjoy Best Job Market in 30 Years

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For job-seeking seniors, last year and this year have been two of the best years I have seen since coming to UMR nearly 30 years ago. Interviews are producing offers and salaries are high. This year one senior accepted a job at $44,000/yr and turned down two higher offers to hopefully capitalize on better future opportunities.

About one-third of our majors take industrial jobs and often work as part of a team on applied physics research and development projects. A lot of these jobs involve programming or lab work in areas such as optics, magnetism, condensed matter physics, or electronics.

Another third of our students go to graduate school in physics to get advanced degrees so they can teach in academia or become research group leaders in industry.

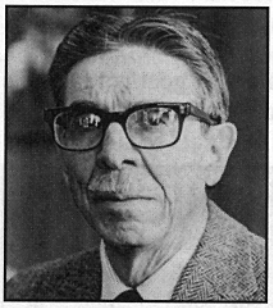
The last third go on to get advanced degrees in areas other than physics, such as computer science, biophysics, medicine, or law. Some of our most successful alumni are patent lawyers, which requires an undergraduate degree in science or engineering, or entrepreneurs who ultimately found their own companies.

Why do companies recruit physics majors? There are several reasons. First, physics majors are trained to solve difficult research and engineering problems with a broad perspective; hence, they often suggest potential solutions different from those who are principally concerned with the intricate details. In a team project, someone with a more global point of view is often quite valuable.

Physics majors tend to have other special expertise. Most physicists like to solve puzzles and enjoy examining data to figure out what it is "saying." Thus, they often do applied mathematics and computer programming to analyze data and deduce what is actually going on. There are many situations where this approach is of great importance, and physicists are adept at doing the needed scientific detective work.

The Physics Department is proud of the caliber of students attracted to the field. Each year there are about 12 students in Missouri who score perfectly on college entrance exams. Such students are highly sought after by schools all over the country and the three who have attended UMR have all been physics majors. The grade point average of all physics majors is routinely the highest of any science or engineering department on campus. Although physics students are only 1% of the UMR student body, they often account for 10% to 15% of the distinguished freshmen scholars. Physics students must welcome this challenge and know there is a unique niche in the job market for their problem-solving skills.

Louis Lund Remembered



Prof. Louis Lund

Louis H. Lund was born in Jefferson City, Missouri on March 17, 1919. He died in his eightieth year in Farmville, Virginia, on December 16, 1998, a short week after leaving Rolla, where he had lived for over fifty years. He is survived by his wife **Marian**, his sons **Carl** and **Michael**, his daughter-in-law **Anne**, and two grandchildren **Meredith** and **John**.

Louis grew up in Clay Center and Salina, Kansas. In 1940 he obtained his BA in physics from Kansas Wesleyan University in Salina. He obtained his MA in 1943 and PhD in 1949 at the University of Missouri-Columbia, where he worked under **George H. Vineyard** who became his life-long friend and mentor.

After graduating from Kansas Wesleyan, Louis worked for the State Board of Health in Jefferson City where he met and married Marian in 1942. During 1944-45 they lived in Indianapolis, Indiana, where Louis worked on the Norden bomb sight.

Louis came to the Missouri School of Mines as an assistant professor in 1948, and was the first theoretical physicist at the school. He was instrumental in developing a graduate program and research in the Department of Physics. His first graduate student was the late **Richard H. Kerr** who obtained his Master's degree in 1950 and later became an assistant professor of mathematics at UMR. At least ten more graduate students obtained their Master's degrees under Dr. Lund. In August 1964 **Russell V. Cochran**, working under Lund, obtained the first PhD in physics. Dr. Lund graduated six more PhD students. Three of Lund's students became chairs in the departments they joined: Cochran became chairman of the physics department at Drake University in Des Moines, Iowa; **James Phillips** (PhD '65) became chairman of the department of physics at the University of Missouri-Kansas City; and **Ralph G. Tross** (PhD '68) became chairman of the physics department at the University of Ottawa in Canada. Dr. Tross adds another distinction, he holds the record for the longest dissertation in the physics department – 334 pages!

Lund's research interests were in statistical mechanics, liquids, scattering of x-rays and neutrons, and nucleation theory. He authored or co-authored about twenty-five technical papers. His contributions to the cell model of a liquid have been applied to the study of amorphous materials and thin films. In teaching and research, Dr. Lund set high standards for himself and his students. He emphasized basic principles and concepts, and had little patience with what he often called "highfalutin' jargon."

In 1952 Dr. Lund was promoted to associate professor, and to professor in 1955. In 1969, he was a co-winner of UMR's Outstanding Research Award. He spent the summers of 1952 and 1954 at Oak Ridge National Laboratory. He also spent a sabbatical leave at Brookhaven National Laboratory (where Vineyard was) during the first half of 1964.

In 1980, after thirty-two years of service, Louis retired and was greatly missed. In retirement Louis pursued his interest in literature and wrote and published some short stories. It is remarkable that Louis' two interests in theoretical physics and literature were inherited by his two sons, one interest each: Carl became a theoretical physicist and is now at Los Alamos National Laboratory, and Michael obtained a PhD in literature and now writes and teaches at Longwood College in Farmville, Virginia. Louis also played tennis and table tennis for many years and was fond of high-performance automobiles. He was a member of the American Physical Society and Sigma Xi. We rejoice in his life achievements and lament his passage. It is requested that this memorial resolution be incorporated into the official minutes of the UMR General Faculty Meeting of May 4, 1999, and that copies be sent to Louis' widow, Marian, and to their two sons, Carl and Michael.

Ibrahim H. Adawi
John C. Carstens
Robert Gerson