

The Physics Leaders

A Success Story



Dr. Linda Godwin

In the fall of 1996, distinguished alumni from every department in the College of Arts and Science gathered in Columbia for the Third Annual Leaders Conference and Banquet. It was the first year alumni from the Physics and Astronomy Department attended, and they attended for a very good reason – one of their own, [Dr. Linda Godwin](#), NASA astronaut, was the Scholar-in-Residence and the featured speaker at the banquet. Words can not adequately describe how spectacular her multimedia presentation was. Everyone in the audience felt like they were riding on the space shuttle with her.

Professor-emeritus Dr. David Cowan, who at the time was Physics Department Chair, had invited a good cross-section of physics alumni to become Physics Leaders and to have the opportunity to meet Linda and support her during her Scholar-in-Residence duties. Dr. Cowan chose his Leaders well. He chose people who in the past had shown an interest in the department and had given their support. He tried to find people who had roots and family in Missouri so they would have reason to return each year. Dr. Cowan created a terrific program for his Leaders. He had them present a panel discussion for the students on their careers emphasizing factors needed for career success. He had them mingling among the students and informally having lunch with

them in the Physics Library. All the Leaders were highly stimulated by their contact with the students, and both students and Leaders enjoyed the experience thoroughly. The Leaders came away acquainted with the state of the department, its faculty, and their research. They could see that the department had many needs, and they felt they could help.

Dr. Cowan had chosen as the Physics Leaders' first president, [Dr. Gerald Fishman](#), an eminent astrophysicist who was doing ground-breaking research on the cause of [intense gamma ray bursts](#) originating from everywhere in the universe. Each alumnus and alumna who were being recruited to join the Leaders received a letter of invitation from Gerald. We were all impressed by this, and many on the list accepted. When I received my invitation, I called several others who were on the list of prospects to make sure they were going to accept too. I wanted to reconnect with some of my friends.

Dr. Fishman had spent many years at NASA working on the design and construction of the [Compton Gamma Ray Observatory](#). When it was finally launched into orbit around the earth in April of 1991, it was Linda who was at the controls of the Space Shuttle Atlantis' robotic arm. The commander of that shuttle was Steven Nagel who is now Linda's husband. Both former astronauts are now with MU; Linda a professor of Physics, and Steven in the Department of Mechanical and Aerospace Engineering. Steve is shown in front of the flag's stars behind and to Linda's right in this crew photo.



Compton Gamma Ray Observatory Launch



Atlantis Crew

Our membership includes academic physicists, government lab physicists, industrial physicists, medical physicists, entrepreneurs, even a lawyer and a retired Air Force General; including [Jim Fergason](#), the inventor of the first commercially successful liquid crystal displays which are still used today, and [Dr. Bill Brinkman](#), the former director of Bell Labs -- all former MU physics students. Remarkably, Bill was on the varsity football team while he was still an MU undergraduate physics major.

The College of A&S wide Leaders program was started by the late Beverly O'Brien. She may have taken as a model the example of the Geology Department, which had enjoyed the very effective support of their alumni for many years. Her idea was



Dr. Gerald Fishman after Lloyd Thomas Lecture in 2012



Physics Leaders at the 2012 meeting

to reconnect successful alumni back to their departments to gain their enthusiasm for and support of MU. Unfortunately, after a few years the alumni from the other departments tired of the program and stopped coming back for the Leaders meetings.

This was not the case in the Physics Department. Each fall since that first year in 1996, the Physics Leaders have returned to MU to support the Physics Department and its students and to try to encourage continued improvements. After the first year, the Physics Chair no longer organized the meeting program. The Leaders organize it with his approval. Many of those founding Leaders are still active in the group, and over the years we have added many more.

From that first meeting, the focus of the Physics Leaders was to help the students and the faculty. They gave career seminars, mentoring and advice to the students, sponsored undergraduate and graduate student research presentations with cash prizes for the top papers in each category, gave advice to the faculty on their curriculum and methods, and advice to the Dean on the department's needs. The ability to give money has never been a factor in our recruiting new members for the Physics Leaders, nor is a donation ever required for membership. Despite the lack of emphasis on monetary giving, the Physics Leaders have been very generous when they have perceived department needs. Most recently, the Physics Leaders mounted an alumni wide campaign to establish a \$500K endowed fund for faculty compensation enhancement. We are part way to our goal, certainly not where we would like to be, but already the fund is making a difference.

We found in our first meeting in 1996 a department which produced good research, but was **small** – far smaller than other physics departments at major research universities. We found a department that was focused mainly on producing future professors. The industrial physicists in the group vehemently pointed out that there were simply not enough professorships available for all the graduates being produced and that most would wind up in alternative careers, so the department needed also to prepare its graduates to be able to succeed in these other career paths. The Leaders as a group, and in some cases individually on their own initiative, began to lobby the dean about the department's need to expand. The Dean at the time, Dr. Richard Schwartz, responded by approving the Physics Department's expansion into the field of biological physics, and the department began to grow. The growth of the department has continued under both former Dean Schwartz and present Dean Mike O'Brien. The department is approximately twice the size that it was when the Leaders started – certainly more in keeping with the physics department size a major research university should have. It has strengthened and broadened its program in many areas. While the Leaders cannot take the credit for all this, surely we have been a factor. Physics is now a department that prepares its students broadly for whatever path their careers may take them, even to the extent of establishing a joint Physics/Electrical Engineering degree. The Leaders have

been very gratified that so many of their recommendations have been acted upon. It gives us all a sense of accomplishment and satisfaction and keeps us coming back each year.

One of the Physics Department strengths the Leaders found in 1996 was the unusually large percentage of students who were women. This is not the case in most physics departments around the country. Most are unwelcoming, some even hostile to women. We felt it was a competitive advantage that our department is female friendly, and we encouraged even stronger outreach to women. At present, MU Physics Department is a national leader among physics departments in terms of the percentage of the faculty and students who are women. One third of the physics faculty are women, and over 25% of the students it graduates are women.

Former Dean Schwartz liked what he saw happening with the Leaders over in the Physics Department, so he decimated our ranks by inviting four of us to join his Strategic Development Board. Now, Dean O'Brien has continued to applaud our efforts, and is pushing to get all of his departments to re-establish Leaders programs. Helping in that effort is the main thing I can contribute to the SDB. Somehow it has been a hard sell for reasons I simply do not understand considering the benefits the Physics Department has received due to our efforts. Surely, I thought, all the Departments would want to gain the support of their alumni and derive similar benefits, but there has been a lot of inertia. During the last few years, however, the A&S wide Leaders resurgence is taking hold and picking up momentum. I have written this article in the hope that some of the A&S alumni who read it will decide that they also want to have the enjoyment and satisfaction of helping the students in their departments. I encourage you to contact the Chair of your department to see if you can join such a group, or perhaps help get a Leaders group organized. You will have a rewarding experience.

Written by Don Packwood, Ph.D. Physics 1971

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