

From Here To . . .

August, 1964 – ??

By the Fall of 1964 I would have completed ten rather tumultuous years at Purdue. I had been a graduate student with the rank of Instructor for three of them and for seven of them in ranks from Assistant Professor to Professor. I had been heavily involved in administrative matters as well as teaching, as the previous chapter indicates. Having completed the Ph. D. at age thirty-seven, I had never sought to follow a career in research in pure mathematics, but did feel that I had become rather far removed from the subject. I felt that it was time for a break and decided to apply for a Sabbatical Leave. Under most conditions, such leaves are due to professors after six years of service and, normally, pay half the usual salary for a year or the full salary for half a year.

Dean Felix (Phil) Haas felt that it should be possible to raise the amount needed to make the leave one for a full year. I applied to the National Science Foundation, but there was no program directed toward supporting sabbaticals and my lack of research background did not qualify me for a research grant.

At Phil's request, Leonard D. Berkovitz agreed to put me on his NSF grant for three months and NSF agreed to this use of funds in a letter dated March 20, 1964, from Robert H. Owens of the Mathematical Sciences Section. I had one month of vacation leave due me. These together with the half year at full pay sabbatical leave provision provided me with the nine months salary needed to be away for the academic year.

Thus equipped, I applied to President Frederick L. Hovde for a Sabbatical Leave on May 26. The request was approved by Vice President Paul Chenea on June 8, although presidential assistant John Hicks wondered why an administrator needed such a leave.

M. H. Protter (Murray), Head of the Berkeley Mathematics Department, agreed, in a letter dated March 19, to provide me office space which I would share with another visitor. He also arranged for library and university faculty privileges for me. This he accomplished by appointing me as a Research Associate without pay.

Finding housing was a major problem. Harley Flanders suggested that I contact Sarah Hallam, the departments head's secretary and administrative assistant for guidance. Sarah was one of those people people that keeps things working; the oil that lubricates, the fuel that powers. Wonderfully knowledgeable about campus affairs, she put me

in touch with Ronald Shephard, whose house we ended up renting. See *Life with . . .*

While these activities were continuing I was doing my usual work as Assistant Dean and Professor of Mathematics. I didn't usually teach during the summer, but other aspects of directing the Science Counseling Office and preparing for the new Mathematics building went on. Also, I took a week in June to participate in an NSF sponsored Principals Conference, organized by Ralph Niemann at Colorado State University in Fort Collins.

On the Berkeley campus, I had an office across the street from Campbell Hall, the math building at that time. I attended courses in Algebraic Topology, a area I had not been exposed to in my graduate study. I also attended seminars in Differential Equations with Professor Steve Diliberto and his students.

Exploring the bookstores along Telegraph Avenue, south of the campus, was a never ending source of pleasure. A distraction was the co-called "Free Speech" movement about which I'll say more in the Chapter *Life with . . .* I also relaxed.

Back in West Lafayette in August of 1965, I was ready to return to my duties at Purdue.

In a letter to Phil Haas written July 29, 1965, from Berkeley, I indicated that in addition to my duties in the Deanery, I wished to be involved with undergraduate concerns. Among other areas, I felt that my observation of the Berkeley administration would be helpful if similar events occurred at Purdue. I felt that the administration there has been less than forthright with the students. I offered such help to some people in the Executive Building. They assured me that they had followed the events in Berkeley and were well prepared. In any case, such happenings appeared unlikely at Purdue which had been characterized in a national news magazine as a "hot bed of rest." In spite of this snub, I served on the Committee on Special Student Problems, created by the University Senate to deal with such eventualities.

I returned to Purdue University as Associate Dean of the School of Science. Dean Haas had sought this promotion for me in March, 1964, but President Hovde and Vice President Paul Chenea thought that, in view of my impending leave, this action should be postponed until I returned. Phil confirmed their expected approval of this promotion in a letter dated March 3, 1964. Apparently he felt, as had Carl Kossack before him, that mere verbal agreements are somewhat tenuous and needed to be backed up in writing. In any case, I returned as Associate Dean – with a reserved

parking space!

At that time the Deanery was located on the third floor of the Engineering Administration Building. The Computing Center occupied most of the first floor. A series of vacuum tube based computers, leading up to the IBM 7090, provided the computing power for the campus. The new Mathematical Sciences Building was under construction. The professional staff of the School of Science consisted of Dean Felix Haas, Associate Dean William R. Fuller, Head Counselor William T. Kiernan and Mr. James Thatcher, Business Manager. The latter was actually a member of VP and Treasurer Lytle Freehafer's staff, but permanently assigned to us.

All departments and schools except the Physics Department had a member of the business office staff assigned to maintain the financial records and protect the university's financial integrity. Somehow Hubert James, head of Physics, had successfully avoided this intrusion.

In 1967 I interviewed for and was offered the deanship in Arts and Science at Colorado State University. Although CSU offered a pleasing locale in which to work, the emoluments were insufficient and I was happy at Purdue so I declined the offer. I speak more about this passed opportunity in the chapter *Life with . . .*

I have remarked that both Phil Haas and I kept a strong attachment to the Division of Mathematical Sciences and especially to the Department of Mathematics. We both taught courses every semester. My focus came to be on the Freshman/Sophomore Engineering and Science calculus courses. In the mid-60s these courses enrolled in excess of 6,000 students.

Unfortunately, these courses were, nationwide, often marked by uneven teaching and high failure rates. In the Spring semester of 1967-68, 41% of freshman students in Calculus received grades of D or F.

Our Engineering colleagues were distressed by these facts. Some of them wanted to take over the teaching of calculus within the Schools of Engineering. From the standpoint of our graduate program, these courses were important; they supported approximately 100 graduate teaching assistants who were working toward advanced degrees in our department.

At this point I proposed, and the department accepted, a policy with regard to calculus instruction which involved the appointment of a Calculus Coordinator, who had the confidence of our engineering colleagues, to chair a Calculus Committee,

involvement of engineering colleagues as members of the committee, engineering professors as classroom teachers of calculus (in practice, these only participated as lecturers), and to improve the fit of freshman courses to the entering class. I was named Coordinator and held the post until 1979, when other demands on my time (the PNC adventure; see *My Life on the Road*) required that I give it up.

The committee was no less a Mathematics department committee than it ever was. It was appointed by the Head of the department from departmental professors and a set of nominees provided by the Dean of Engineering. Engineering professors to lecture were selected the same way and were given temporary appointments in mathematics and paid from its budget. As Coordinator of Calculus, I was involved in making these decisions.

The inclusion of engineering colleagues in the calculus program not only gave them first hand knowledge of it, but also underlined the problems in teaching large masses of students.

A bright student and an excellent teacher is often held as the exemplar of education. One-on-one instruction was not possible. I conceived of a tri-furcated approach based on the idea that there are ill-prepared students who can be remediated, well prepared students who should be allowed to develop, perhaps to becoming mathematicians or scientists, and a large majority of competent students whose main goal was a degree, the admission ticket to the "good life." The first group was to be served by a three-semester sequence covering the material of the standard freshman course, but providing time for review of Algebra and Trigonometry, inadequately covered in high school, and taught in small classes. The second, by an "advanced placement" course, again taught in small classes. The large middle group was to be taught by the lecture-recitation method. This pattern continued for several years.

The three-semester sequence suffered from the fact that no text book existed which integrated material in the correct way, making it incumbent upon the teacher to provide the integration and, largely because of this difficulty, was eventually discontinued.

Advanced placement also provided for students qualified for multivariate calculus and even differential equations.

An interesting aside is that, in 1972, one student successfully established credit for all the courses of the first two years in mathematics. She

was Janice Voss who went on to become an astronaut and make five trips into outer space.

To start with, I conducted a study of grade variations by instructor at Purdue over a five year period and found that the average grade in Freshman/Sophomore calculus, by section, could vary by two letter grades, e.g., from an average of D for one section to an average of B for another in the same semester.

To remove the variability between sections, thorough coordination was provided. Each course had a set of "Ground Rules" which was given to each student, problem assignment sheets were prepared for each course, common examinations were given to all students in a particular course at the same time, grading "keys" and uniform grading procedures were employed. Although the lecturers determined the ranges of scores for each letter grade, guidance, based on the averages of the five year study, were supplied.

Further to assist the students, a program of "common office hours" was established. Under this program, all teaching assistants, in addition to whatever office hours they might provide for their own students, signed up for two hours per week when they would be available to any student in the course. This resulted in approximately 40 hours per week at which times a student could find a teacher teaching his/her particular course.

A *COUNSELORS CALCULUS PACKET* was written to summarize all this for academic counselors. This 99 page booklet included lists of texts, how placement was achieved, sample tests on the various courses and other details to assist counselors, and hence students, in appropriate courses. Feed back was provided to counselors in the case of students who were performing badly for whatever reason.

A Calculus Office was established to provide for collection of data, dissemination of information, exam preparation, etc. Dr. Dennis Sorge was the first, and only to date, manager of this office. Because of his excellent work with the calculus program, this office expanded to the Undergraduate Services Office for the whole department and eventually to a service office for the School of Science.

In 1971 Purdue's Freshman Engineering students rated their mathematics courses higher than any other academic experience.

In 1967 I felt that it was time to be involved more broadly in the affairs of Purdue University and I stood for election to the University Senate. I was elected and served a three year term dur-

ing which time I served on the Educational Policy Committee. As chairman of subcommittees of this committee, I led it to rewrite the Final Examination program and also to change the University calendar.

Up to that time, the traditional calendar across the U.S. involved two academic semesters; the first began late in September and was interrupted by Christmas vacation. This created an awkward period known as the "Lame Duck" session. The students went home for Christmas, then returned for a week of classes and final examinations and then went home again for a two week inter-session. This had long been considered ineffective and wasteful.

The alternatives included an earlier start or a trimester system. Some university colleagues, perhaps tongue in cheek, suggested changes in timing of religious observances which would have solved the problem but were unlikely to be accepted. Included were suggestions to celebrate the birth of Jesus on January 6 (Twelfth Night). Another suggested that the birth probably occurred in the Spring and, hence, Christmas could be combined with Spring Vacation. Our final report contained several such interesting contributions.

Nothing kills a proposed academic action as easily as having it found to have overlooked almost any aspect. I saw to it that my committee was very thorough. We checked with all constituencies: The faculty, naturally, the student government and samples of the student body, the counseling staffs of the various schools, student housing administration, physical plant operations, community leaders and, especially, the public school authorities. Many expressions of resistance to change were encountered.

The operators of the Universities facilities were properly concerned about the effects of August temperature because not many buildings were air-conditioned in 1967. There was concern about having enough water for showers. It was claimed that there was no way of telling what the reserve in the water tank was. I never knew if this was a real problem, but I asked for the drawings for the water tank. Then using Purdue's computer and a simple technique that we teach our freshmen in calculus, I computed the volume of water in the tank as a function of depth. Whether real or not, when I presented the physical plant staff with a table of depths versus volume of water, this concern vanished.

As complete as was our report, the change was not wholeheartedly welcomed by any group

except the students. Many people's traditional summer plans had to be changed, etc. A vote of the entire faculty was called for and conducted. With over 1200 votes cast, the new calendar was accepted by a majority of seven votes. President Hovde forwarded the faculty action to the Board of trustees and the new calendar went into effect.

I served another three-year term in 1973-1976. During this term I was assigned to the Steering Committee which determined the agenda for Senate meetings. I chaired this committee during the 1975-76 academic year. I was elected to a third term in the 1980s and elected Chairman of the Senate for the year 1984-85.



Photo By
Jane Beering

This was early in Steven C. Beering's presidency of Purdue. Several new trappings had been introduced by the Board of Trustees. One of these was a new design of academic regalia which the President wore at Graduation ceremonies. Another was the introduction of a "Mace" carried by the leader of the academic procession at commencements. This role was played by the Chairman of the Senate. Thus, it was my privilege to be the first to carry the Mace at a West Lafayette Commencement. I carried at about six other exercises around the state as the President and Chair of the Senate participated in all these events. I can't claim to be the first to carry it in general as one campus insisted that their faculty leader do it on that campus.

I lectured to a large class almost every semester. These classes were typically given in EE 129 to groups of up to 450 students. Thus, I estimate that I taught Calculus to at least 20,000 student between 1965 and 1991 when I retired. I soon learned that it is difficult to judge the reception of the material by such a large group. The technique that I thought worked well was to focus on a group of about 30 students immediately in front of me. From observing them I could judge how well my explanations were going over. Of course, they were probably the more *gung ho* students.

Somewhere I have referred to a national news magazine characterizing Purdue as a "hot bed of rest." That is, while students on campuses nationwide were expressing their frustration and anger with government policies, Purdue had remained quiet. In the spring of 1969 a serious shortfall in legislative appropriations for the Purdue bud-

get forced the Trustees to approve a significant fee increase. This caught the students attention. Efforts to explain the need for the increase failed. Returning from spring vacation rallies were organized and a sit-in was held in the Executive Building (*Later named Hovde Hall*). The police were called in. Members of the Committee on Special Student Problems, of which I was a member, went there to moderate the situation if necessary. However, the students dispersed and no arrest were made.

At this time the University was preparing to celebrate its Centennial. I was the School of Science representative on the committee to organize the event. A specific task that I had was to secure the attendance of Representative Earl Landgrebe to present a congressional resolution of congratulations.

Just before the *Founder's Day* program a group of student occupied the Purdue Memorial Union. Considerable damage was done and some friends and alumni who had reveled in Purdue's calmness, threatened to withdraw their support. Representative Landgrebe called me the day before he was to appear concerned about the volatility of the situation. I thought things were pretty calm compared to Berkeley, so I told him there was nothing to fear.

That night over 200 students were arrested for "trespassing." Founders Day, May 6, 1969 (See Bob Topping's *The Hovde Years for details*), was then marked by a large group of students entering the Hall of Music, where the official celebration was to be held; standing with a raised clenched fist as the President began his introductions and walked out of the Hall. Landgrebe suffered no ill-effects from these confrontational episodes. Because of the legal controversy surround the arrest for trespassing, The Union was officially closed at night after that.

I don't recall Vietnam being specifically a part of this unrest, but it was a major factor in the general malaise on campuses and in the whole country.

The course I usually taught was the freshman calculus course, taught to about 450 students, usually in EE 129, a lecture hall built to accommodate 480 students. In the course of one lecture period in 1967 or 1968 I had worked out the solution to a complicated exercise which required 5 or 10 minutes of overhead projector work. At the conclusion a student remarked on this length of time and asked me if I didn't "know that a computer could have solved it in 30 seconds?" There

was widespread applause for this question. While I was not at all current on the developments in computing, my past experience told me that it probably wouldn't have taken a computer even 30 seconds to solve the problem, but that it might have taken several hours to get it ready for the computer.

I felt that the students should experience both aspects of this issue – the speed of the computer in producing numbers, as well as the processes associated with programming the solution. The Committee on the Undergraduate Program in Mathematics (CUPM) of the American Mathematical Association had, in the post-Sputnik years, proposed that mathematics should be taught “with an awareness of computers,” whatever that might mean. The National Science Foundation was sponsoring a program along those lines through the Center for Research in College Instruction of Science and Mathematics (CRICISAM) at Florida State University. I decided to explore this approach and also was accepted to their program. In the Fall of 1969, I began a series of approaches to the use of computers in calculus instruction.

My failure to be intrigued by Carl Kossack's offer to show me the new programming techniques ten years earlier now came back to haunt me. I was amazed at how far computing had progressed when I began to examine FORTRAN for use in my course. I studied FORTRAN while sitting at Lou's bedside in a Denver hospital. I describe this ordeal in the Chapter *Life with . . .* I was essentially in the position of the teacher who said to his students: “I'm on page nine; catch me if you can.”

I also found that most books on FORTRAN were not well organized for use in calculus courses. One could simply not wait for mastery in programming to start applying it in calculus. I wrote my own notes and asked the computing center to provide a special subroutine to provide easy output before the students had time to learn about formatting. The Computing Center prepared a special sub-routine named OUT. This allowed to students to obtain the results of computations by simply writing CALL OUT in their FORTRAN programs.

Springer Verlag published my book “FORTRAN, A Supplement for Calculus Courses” in 1977. I applied the computer to all the courses up through differential equations and matrices. Over the years several other colleagues were involved in teaching computer oriented courses using my book.

I gave reports on these efforts at a CUPM

panel on computing at a conference in Atlanta, an AAAS meeting in Chicago and an MAA meeting in Missoula, Montana. I was also invited to present it at an in-service teachers institute in Colorado Springs, Colorado,

Unfortunately, I had caught the “back side” of the wave. My book was based on punched cards and FORTRAN. The wave of the future, which was forming up at that moment was programming and data entry via terminals rather than punched cards. Other high level languages were also being put forth by computer science departments and programs to handle many mathematical problems were being developed.

A question that pervaded many early attempts to use the computer in mathematics courses turned on whether programming would be a teaching device or whether the computer would become a “giant” slide rule. My concept was that by “teaching” the computer to solve a problem, the students would better understand the mathematics involved. Eventually, the “giant” slide rule approach prevailed.

I think I received about \$1,000 in royalties from my book. Obviously, it was not a best seller!

For me, at least, it was very interesting. I continue to program in BASIC and FORTRAN and, more recently, HTML, the language of the World Wide Web. Some of my students from those early days have made careers in computing. One is on the staff of Information Technology at Purdue (ITaP) which succeeded the Computing Center. Another is a distinguished professor at the University of Maryland and one is the Apple representative to the schools in midwest.

Another problem that I noticed was what might be called a “lock step” approach to teaching. A student starts a course on a specific date and ends on another, passing through a collection of mathematical topics enroute. I felt that there were students who might profit from the opportunity to proceed at their own pace, in an independent study environment. Accordingly, in the Fall of 1974, Professor Jean E. Rubin and I started an independent study approach to MA 262, the first course in Differential Equations. In 1975 the course in multi-variate calculus was added to the program.

We were assigned a room in the physics building which was dedicated to our courses. We supplied the room with auxiliary study materials, course outlines, and exams to be taken as certain bench marks were completed. Several exams covering each block of material allowed students to

take exams as they individually progressed to the point. Many students liked this approach. However, counselors were wary of it as they did not know how their advisees were progressing. Students were required to register for these courses as for any course; if a student did not complete the course within the semester, an Incomplete was given. Many faculty members, especially in Engineering, did not like the idea of these incompletes and the lack of classroom discipline. Professor Bouendi, the Head of the Mathematics Department at that time thought the approach required more man-power than conventional classrooms. After several years, we gave up and abandoned the idea.

While involved with these activities, I continued as Associate Dean of the School of Science. In 1974, Phil Haas accepted the role of Provost and Vice President and I was asked to serve as Acting Dean of the School of Science. This was another busy year, as searches were underway for new Heads for both Biological Sciences and Mathematics. As Acting Dean I kept very close contact with Provost Haas, but much of the negotiating, entertaining, etc., fell to me (and of course, to Lou). It was traditional for the Dean to chair the search committee. As such I met regularly with search committees from both departments, helping them obtain references and other data needed to help them make their final decisions. Leonard Berkovitz, was chosen Head of Math, and Struther Arnott Head of Biological Sciences. Concurrently, a committee chaired by Provost Haas chose Allan Clark, a mathematician from Brown University to be the new Dean of Science.

In 1974 Meyer Jerison, Head of the Mathematics Department, unsuccessfully recommended me for the AMOCO Outstanding Undergraduate Teaching Award. The following year Professor Rubin, Chairman of the Undergraduate Majors Committee, and Professor Robert A. Gambill, Acting Head of the Department of Mathematics, submitted a similar recommendation. This was successful and I received this award at a faculty convocation in April, 1976. (See Page 257) Both proposals contained supporting statements from Beverly Stone, Dean of Students, Clifford S. Gerde, Assistant Dean of Engineering and Director of Freshman Engineering, and Professor Floyd Nordland, School of Science Counseling Staff.

An award of \$1,000 and a certificate accompanied the award. A more lasting recognition came in 1999. At that time President Steven C. Bering created the Academy Park. "The Park was

named for the public garden established by Plato in 387 B.C.E. where he and other Greek philosophers imparted their wisdom. The Park honors faculty who, throughout Purdue's history, have contributed much to the lives of their students through excellence in teaching and scholarship." At the same time a bronze plaque was installed in the Purdue Memorial Union called Purdue's Book of Great Teachers. At that time departments nominated all past faculty members who merited inclusion on this plaque. Winners of past teaching awards such as the AMOCO Award were automatically included.

The first group of inductees included six from the Mathematics Department among 267 persons representing the first 130 years of Purdue history. The six included only one deceased person, G.N. Wollan. History may have overlooked some great teachers of the remote past.



R.E. Zink, M. Golomb, J.J. Price, J. Brown and me

In 1975-76 I continued my usual activities as Associate Dean of Science and Professor of Mathematics, the former under newly appointed Dean Clark.

I was not too happy with the choice of Clark for the deanship. I felt that his background did not equip him to appreciate the "Land Grant" tradition. However, I wasn't unhappy enough to leave

even though I had inquiries about becoming Vice President for Academic Affairs at the State University College of Buffalo and Virginia Polytechnic Institute and State University at Blacksburg. Of course, impending hip replacement surgery was one of the main reason for not following up on these opportunities.

The presentation of the Amoco Undergraduate Teaching Award at a Faculty Convocation in April, 1976 was a bright spot for me. (See Page 257)

In May, 1976, I went on extended “sick” leave in order to have total prostheses installed in both hips, My arthritic problems derived both from my accident in 1937 and a genetic propensity. See *Life with . . .* for more details.

After a year in office, Dean Clark indicated that he would like to have an Associate Dean of his own choosing. It was not hard for me to offer my resignation and to return, full time, to my Professorship in Mathematics. I was succeeded by James Yackel, who later became Chancellor of Purdue’s campus in Michigan City.

The serenity of my professorial life was again interrupted in the Spring of 1978 by a new call to service of Purdue. A delegation of faculty members from the Purdue campus south of Michigan City, Purdue North Central (PNC), visited President Arthur G. Hansen and presented him with a list of complaints about their Chancellor John W. Tucker.

I am unaware of what options were available to Hansen and Haas, but shortly following the visit of this group, Phil asked me if I would be interested in moving to PNC. I didn’t find this appealing. I liked West Lafayette and was involved in the community. I was asked if, as a “personal favor” to the President, I would be willing to spend a year there as Vice Chancellor for Academic Affairs while sorting out the problems and offering recommendations. The actual rationale was something like: “You used to be a rebel, perhaps you can understand these people.” I imagine they thought that I would be captivated by the place and decide to stay. I did agree to this year of investigation. It extended to four years before it was over. The story of these next four years, 1978-1982, is in the chapter *My Life on the Road*.

I returned to full time status in the department in the Fall of 1982. I was still teaching my computer oriented calculus course and lecturing to science and engineering students in calculus courses. But, as a former administrator, I was not allowed to relax for long. In 1980, Eltherio (Terry)

Zachmanaglou, Assistant Head of the Mathematics Department, asked me if would take on the supervision of graduate teaching assistants (TAs). In this capacity, I organized screening programs for new TAs to verify both their language and mathematical competencies, worked out their teaching schedules, handled student complaints about teaching problems, etc.

As Coordinator of Calculus at a major Engineering school, I was frequently called on by representatives of publishers. One of my peripheral activities became refereeing books proposed for publication. Most of these were Calculus books, but there were also books on Elementary Differential Equations, and Linear Algebra. When I recently discarded my file of these reviews, I found that I had read and commented on more than 75 books between 1968 and 1988. I still did one or two more up to 1993. Some of these became successful texts. I may have helped keep some really bad ones out of print. Sometimes a really good teacher would think it possible to translate his/her style into a text. This was almost always a bad idea. This was a period when the public was becoming more conscious of gender roles. I was able to advise against exercises with males plowing, and females grocery shopping, etc. My favorite was: “Mrs. A invites Mrs. B to morning coffee.” It was also a time when the use of metric units was on the rise. Simply changing the name of the units produced surprising results. Changing “cubic feet per minute” to “cubic meters per minute” can be dramatic. I remember urging that a baby be gotten out the tub as soon as possible.

I also refereed a few articles with mathematical or pedagogical content for American Society for Engineering Education (ASSE) journals.



Glee Club Dinner – Upstairs at Bruno’s – ca 1985
 Around the outside: Felix Haas, Ron Fruitt, Jack Stockton, Bill Fuller, xxx, Bill Fischang, Student, Bill Allen, Student, xxx, Fred Ford, Maury Williamson, Al Stewart, xxx, Dick Kohls.

On August 16, 1982, William E. Luhman, Di-

rector of the Purdue Glee Club announced that I had accepted the role of Glee Club Sire. The Sires were a collection of senior faculty and administrators who served as sponsors for the Sires. The latter were the chairs of various committees attending to the details of Club activities. I was the sponsor of the Scholarship Committee. The Sire/Sir concept originated with Albert P. Stewart, founder and longtime director of the Glee Club.

I enjoyed this activity for many years, becoming inactive when I was made Sire *emeritus* in 1991. One of the ways I helped the men of the Glee Club was by interceding with faculty members to provide alternate exam times when a scheduled evening exam coincided with a performance. This was not an inconsiderable task as the group performed somewhere at least weekly. On one occasion, I presented a slide show of some the attractions they would visit on a performing tour of England.

I also entered into two new off-campus activities during this period. In 1984, Professors Harold Michaels and D. Richard Smith approached me about becoming a Rotarian. In 1986, Lou and I decided that we would like to make a trip to South America where we understood Halley's comet could be seen better. This led to an association with the Partners of the Americas. I'll tell more about these activities elsewhere.

I continued thus until June 30, 1991, at which time I retired. Retiring with me were Phil Haas and Meyer Jerison. Growing up in the 1930s along White River north of Indianapolis, I never dreamed of retiring in such company, nor could I have conceived of the professional and personal life I have tried to describe. I cannot give enough credit to my wife Lou for her love, comfort, understanding and endurance as these events unfolded.