Chapter 10
University of Wisconsin-Parkside
Early Years

Sometime during my last year as instructor at Madison, Dr. Hugh Richards, the Chairman of the Physics Department, called me into his office and said that Dr Norbert Isenberg, Chairman of the Science Division at UW-Parkside, was looking for a physics professor qualified to teach electricity and magnetism. Since I had taught the E & M lab at Madison Hugh was pleased to recommend me for the job. He knew of my interest in teaching and my qualifications in electronics.

However, I did not know where the University of Wisconsin-Parkside was. When told that it was south of Racine and north of Kenosha, it did not help. The only two cities I knew were Madison and Milwaukee. I had heard of smaller cities like La Crosse, Eau Claire, Racine and Kenosha but had no idea where they were. I contacted Norbert, and he invited me down to visit the new campus and become familiar with the physics program.

I could not help but be impressed by the beauty of the new campus set on lovely rolling hills and meadows and forests adjacent to beautiful Petrifying Springs Park. As Norbert drove me through the park I could not help but compare it to the west parking lot of UW-Madison with its bus transfer. I talked with the dean about the possibility of moving expenses and he just laughed. No one in Wisconsin got moving expenses paid. But he did offer to pay me a month early, in August of 1969, to join the faculty and unpack the new physics equipment in Greenquist Hall. Norbert did paint an attractive future for UW-Parkside - a 25,000 student campus, graduate programs, and freedom to research in any direction I chose on the beautiful 800 acre campus.

Joyce and I toured the campus, checked out the school systems of both Racine and Kenosha, and decided to accept the offer. The common wisdom was that Racine had the better school system, so we restricted our search for a home to Racine. However, one very attractive home for sale was on the south side of Country JR, immediately opposite the UW-P soccer fields. I could have walked to work!

First Home, Racine

Greenquist Hall in 1969

Our initial search for a home was discouraging. Joyce was in tears as we drove up Route 32 from UW-Parkside to Racine. The smoke-belching stacks of J. I. Case and numerous foundries appeared to doom us to an industrial wasteland. But as we followed up on For Sale ads and learned to know the city we found our ideal "starter home", 700 Crabtree Lane. It was just a few homes from Goodland School which had a sterling reputation and had many couples with children of ages similar to ours. In addition, it had an attractive corner fireplace and a completely finished basement with plenty of room for a shop.

The final advantage of this place was that it had an assumable VA mortgage of 5.25% which was several points lower than existing mortgages. So we paid the asking price of $27,000 and sold it twenty years later for $75,000.

My first month at UW-P was to be very useful for my eventual career. I unpacked several $100K worth of electronics and computer equipment. There were Hewlett-Packard (HP) oscilloscopes and meters, Tektronics oscilloscopes, and lab equipment from all of the major scientific houses. I labeled it and stored it all away, which made it easy to equip and administer the future E & M labs and electronics labs.

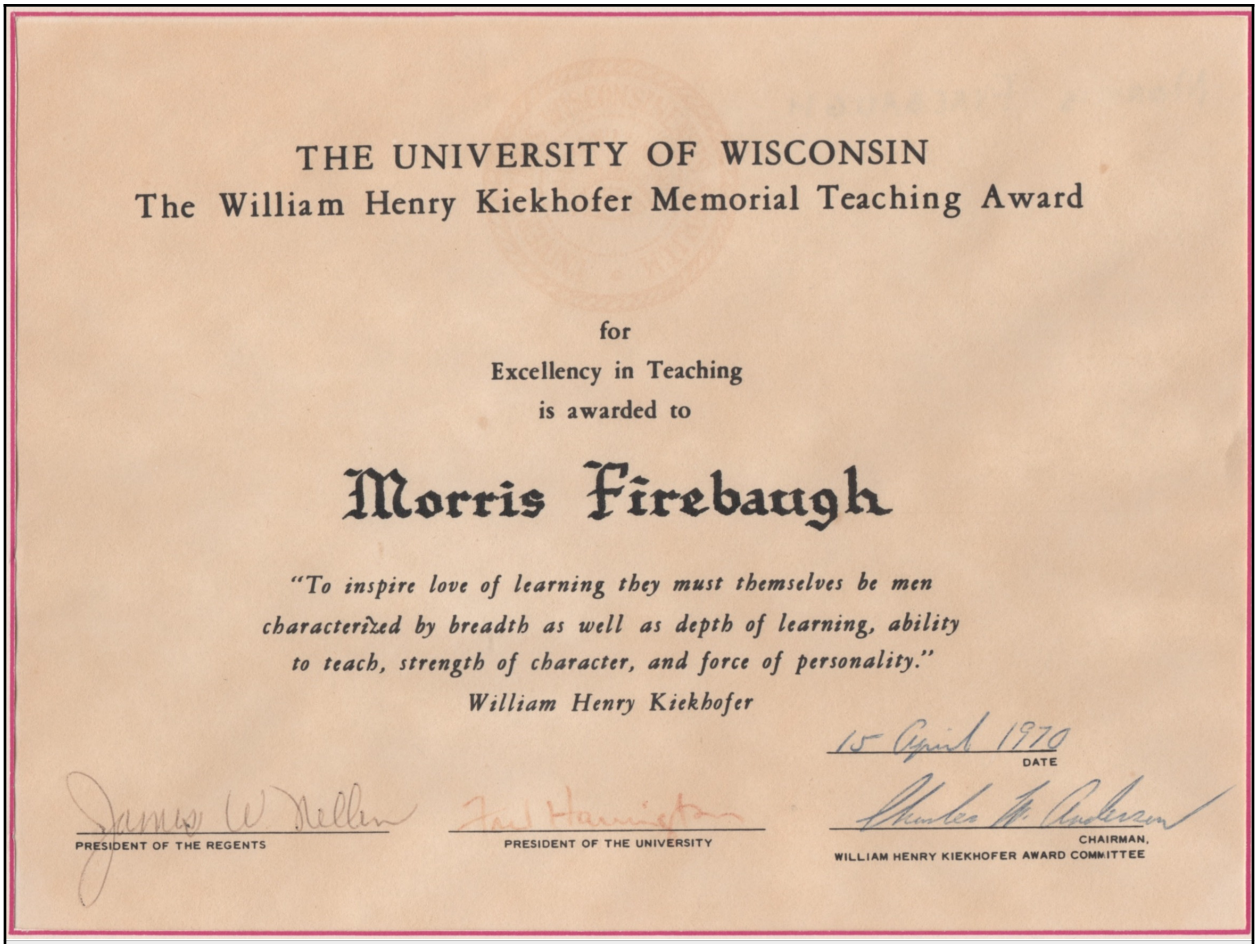
The first years at UW-Parkside were particularly difficult for the following reason. The campus has opened in 1968 as the merger of two UW Centers - the Racine Center and the Kenosha Center. The university still owned both centers and continued to teach at both. So my first years I taught at all three locations, the Racine Center, the Kenosha Center, and Greenquist Hall on the UW-P campus. General Physics was offered at the Centers and the upper level Electricity and Magnetism 321 and Electronics 423 courses were offered at Greenquist.

During my first year at UW-P two events occurred which were the most formative of my career. The first was the award of the Kiekhofer Memorial Award for excellence in teaching that I received

Greenquist Hall Looking Northwest

in April of 1970. This was an award made annually to between one and four University of Wisconsin faculty who were judged to be outstanding teachers. Until the year of my award, 43 winners had been from UW-Madison and 6 from UW-Milwaukee. The award included a check for $1000.

This award was unsolicited and seems to have been a project of Science Division Chairman Norbert Isenberg and Professor Herbert Kubly. Norbert wrote a very com-



THE UNIVERSITY OF WISCONSIN

The William Henry Kiekhofer Memorial Teaching Award

for

Excellency in Teaching

is awarded to

Morris Firebaugh

"To inspire love of learning they must themselves be men characterized by breadth as well as depth of learning, ability to teach, strength of character, and force of personality."

William Henry Kiekhofer

15 April 1970
DATE

PRESIDENT OF THE REGENTS

PRESIDENT OF THE UNIVERSITY

CHAIRMAN,
WILLIAM HENRY KIEKHOFER AWARD COMMITTEE

Kiekhofer Award

plimentary letter and included two very complimentary letters, one from my friend Dr. Charles Kugel, Director of Programs for Gifted Students and one from Physics Professor Paul Moran for whom I had taught the electronic lab at UW-Madison. Included also was a three page handwritten letter of recommendation from one of my most gifted students, Eric Kant.

The citation for the award quotes Dr. Moran as saying "I have been teaching at the University level for twelve years; I regard Dr. Firebaugh as the most hard working, dedicated and competent instructor at his age level I have ever had as a teaching associate". So my hard work at UW-Madison paid off at UW-Parkside.

The second event my first year at UW-Parkside that had a strong influence on my career was my appointment as Acting Dean of the College of Science and Society. The very same day that my Kiekhofer award was dated I received the letter of appointment from our Chancellor, Dr. Irving G. Wyllie. The previous Dean, Prof. Harlow Mills, a distinguished biologist, had to retire from the position immediately on order from his physician. When I received the phone call offering me the position, I hesitated. After all, I was just an Assistant Professor with less than a year's teaching experience. I asked Dr. Alan Grossberg, the senior physics professor at UW-P what I should do. H said "Take it! If you don't you'll kick yourself around forever." So I took it!

The letters of appointment stated clearly that the terms of the appointment was until July 1 of 1970 when the new Dean and Vice Chancellor would take over. However the duties of the Deanship during this short term had extremely long lasting effects on the University. This was because the University was at the peak of hiring new faculty. As I recall, I interviewed and hired thirty some faculty during this period. I wrote letters to prestigious institutions inviting faculty inquires. I worked closely with division chairmen to help arrange interviews. Throughout subsequent years UW-Parkside faculty would remind me that our interview with them was one of their first experiences on our campus.

Perhaps the most gratifying experiences in my role as Acting Dean was to take part in the graduation of the first UWP class. There were 36 candidates for graduation, and I shared the stage with Chancellor Wyllie and University President Fred Harvey Harrington. Graduation itself was held in the center of the main concourse of Greenquist Hall with chairs filling the concourse to the north entrance. I got to call the candidates' names and the Chancellor handed them their diplomas. My wife and parents all attended this ceremony.

Attending the graduation ceremony were Carmon Villa, our artist in residence, Hilda Greenquist, and her two daughters. Hilda was the wife of Bernard Greenquist after whom our first campus building was named. After the ceremony I ask them out to the north door for a photo.

Carmen Villa, Hilda Greenquist and Daughters

During the first year or two there was good rapport between the faculty and administration. The administration sponsored cookouts, Christmas parties, and baseball outings which were well attended and very enjoyable. One of the most enjoyable outings was a clam bake on the shore of Lake Michigan at the Racine Lighthouse. In addition to clams baked in the traditional fashion in the sand, there were lobsters. We had

learned to love lobster while in Champaign-Urbana, so this was a memorable occasion. Cooking the clams, in the white sweater, is my biology colleague, Dr. Gene Goodman. He joined UW-Parkside the same day I did.

Clam Bake on Lake Michigan

In addition to the clam bake, there was a cook out in the Tallent Hall parking lot, a Christmas party at the Bristol Oaks Country Club, and at least one baseball outing at Johnson Park in Racine. With so many new faculty, everyone was out to greet and meet new friends.

Two of our first and closest friends were Dr. Robert and Trish Dilligan of the English department. Bob was proficient in computing and had compiled a computer concordance of some famous author. Because their children were about the same age as ours, and because his computer project so closely mirrored the one I was preparing on an Environmental Qualify Index funded by American Motors, we became natural friends. Sadly, mainly because of his computer abilities, Bob was lured away from UW-Parkside, by Stanford University as I recall.

In the fall of 1970 the sweet rapport between faculty and administration came to an end. On July 1 Professor Arthur MacKinney replaced me, and Professor John Harris became the Vice Chancellor of UW-P. I personally got along well with both gentlemen, and I believe they respected me.

However, Chancellor Wyllie had assigned them both the task of evaluating the plethora of incoming faculty and deciding which were worthy of continuing. As a result, 27 faculty members were called into the offices of either Harris or MacKinney and told that their appointments for the following year would be cancelled. That is, they were fired.

Robert and Trish Dilligan and Kids

Unfortunately, most of the 27 had not yet completed their Ph.D. degree or accumulated an acceptable publishing record. In fact, they were quite vulnerable to such a review. But, on the other hand, according to respected University of Wisconsin tradition, the hiring and firing of faculty is faculty business.

The administration tried to make some faint-hearted arguments about needing

to hire faculty consistent with our "industrial society" mission. There were student protests, faculty protests, UW Board of Regents concern, threatened law suits, and demands by state legislators for clarification. In the face of all this opposition, Chancellor Wyllie had to back down and say there would be no faculty firings. Instead he fired the Dean and Vice Chancellor. The University Committee was deeply involved in negotiations with Chancellor Wyllie to resolve the issue.

There were rumors that the Board of Regents were considering firing Chancellor Wyllie over this fiasco. Some of us were concerned about the lack of leadership on campus were he to be fired. So during the Christmas program of the UW-Waukesha madrigal choir, Professor Jim Shea and I met with the President of the Board of Regents to make the argument that Chancellor Wyllie should stay. In any case, Chancellor Wyllie remained as Chancellor until his unexpected death October 25, 1974.

While Vice Chancellor Harris faded from view into Madison's "Siberia", Dean MacKinney went on to a successful university career in Iowa. A curious coincidence involving Art MacKinney occurred some time after Ray and Helene DiIulio retired to Door County, Wisconsin. Ray had been President of St. Lukes Hospital, and Ray and Helene had been instrumental in involving us in the Unitarian-Universalist Church of Racine. After moving to Door County they had helped start a UU Fellowship up there. The evening we were visiting, they had a church board meeting and invited us to go along. We did, and one of the other board members was Art MacKinney. We recognized each other and got along well.

By around 1972 what was to become the Wyllie Library Learning Center was started. Here you can see the pilings begun just southeast of Greenquist Hall. My office, at the time, was on the southeast corner of the second floor of Greenquist Hall, giving me a bird's eye view of the construction.

One advantage of my previous associations with Argonne, the UW-Madison, and FermiLab was that arranging tours for my physics classes was simple. Besides the tours of Fermi Lab and the CP-5 reactor at Argonne, I had my students in nuclear and reactor physics do criticality experiments at the UW-Madison's TRIGA Reactor in the nuclear engineering laboratory for several years. One of UW-Parkside's physics majors, Ed Furst,

Greenquist Hall and the Library Pilings

Physics Class at CP-5 Reactor

went on to become supervisor of one of the Zion, Illinois, reactors, and we scheduled several tours of this plant and the Westinghouse Training Simulator at the Zion plant.

One of the most exciting experiments my nuclear physics class performed was on the UW-Madison TRIGA reactor. After running several standard control rod experiments from the control room, the class was invited up onto the swimming pool reactor itself. The blue glow of the Cherenkov radiation was visible in the vicinity of the reactor core which was at full power. The reactor operator then said, "Stand by as we go prompt critical." He then counted down from 30 seconds to zero and withdrew the control rods. The reactor went exponentially ("prompt") critical, there was a white flash in the core, and steam bubbles rose from the reactor core. But, according to physical law, the control rods heated, the absorption lines for neutrons in uranium expanded as they do when heated, the excess neutrons generated by the prompt criticality were absorbed, and the reactor quenched itself.

This safety feature, intrinsic to TRIGA reactors, is why there are more than 70 of these training reactors in use throughout the world. It was designed by Edward Teller and Freeman Dyson, so it had good credentials. This negative coefficient of reactivity with temperature is the secret of its safety. That is, the hotter it gets, the less it reacts. It is also the basis for the Chernobyl accident. That reactor had a positive temperature coefficient of reactivity. The hotter the core got, the faster the reaction, leading to a miniature nuclear explo-


Physics Class at TRIGA Reactor

Touring Pleasant Prairie Coal Plant

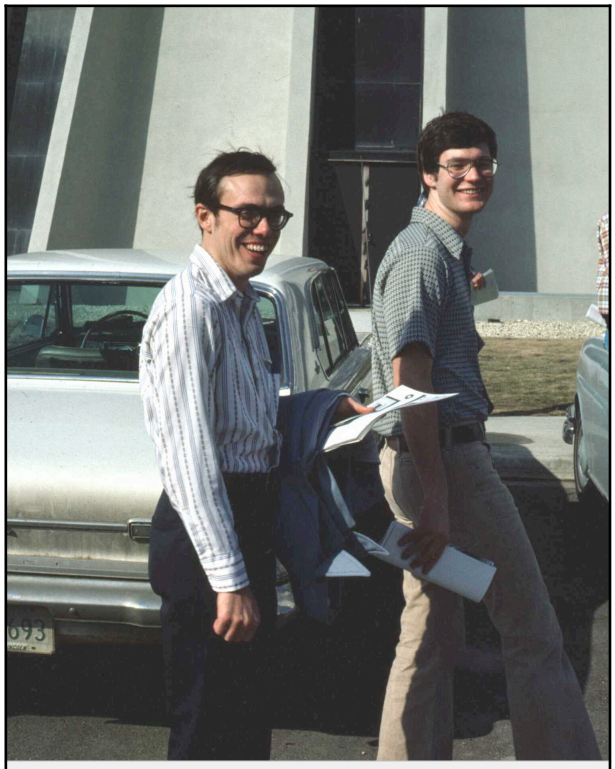
sion.

This experience, along with the training experiments on the Zion Westinghouse Reactor Simulator, gave me confidence in the safety and feasibility of nuclear power. However, a curious coincidence occurred in 1979. I was invited to a debate on nuclear power which was held at Manchester College. My opponent was a Catholic nun who was against nuclear power. I made what I thought was a pretty good case for nuclear power and came home. The next day, the Three Mile Island accident happened. I must say, I felt like "I just dodged a bullet!"

Later analysis indicated, that had the reactor operators simple walked out after getting warning indications, the accident would have never occurred. However, the operator misinterpreted the readings on the pressurized cooling tank system, and the partial melt down occurred.

Another major accomplishment in my early days at UW-Parkside was the production of six digital logic trainers. My friend, Murray Thompson, a member of the Walker-Erwin group at UW-Madison had designed and built about four of these digital circuit trainers for the Madison electronics laboratory, and since Murray and I were good friends, he allowed UW-Parkside to borrow one so that our excellent science department technician, Bill Stone, could duplicate it. In fact, during some of the years, 1969-19773, when I taught the Electronics 623 graduate course in the UW-Madison Physics Department, I took some of UW-Parkside's logic trainers to Madison so that each laboratory group would have one.

Murray was an electronics expert,



Dr. Ray Hanft and Bill Jaeger at Fermi Lab

and many of the experiments in both the UW-Parkside 423 and the UW-Madison 623 were performed with the trainers. They consisted of several dozen NAND gates and registers from which almost all electronic circuits can be designed.

Megan, Susie, Murray, and Joyce

Our association with Murray Thompson and his wife, Megan, and their twin boys, Bruce and David, has been a long and happy one. During one of the summers I taught at Madison, they were on vacation or sabbatical and allowed our family to stay in their home during summer school. This photo was their house.

During the winter they visited our campus, and both families went for a walk. Upon Murray's retirement Murray and Megan moved back to Auckland, New Zealand, their home country. They built a magnificent, four-story home on the bluff overlooking Auckland and the bay. One floor served as Megan's Mom's apartment and was accessible by elevator. We spent nearly a week visiting them on the north island and several more weeks kayaking, biking, and hiking with the tour group, Active New Zealand, on the south island. Our visit was in 2009, and we were thankful we did since Murray died a few years later.

Thompson Family, Steve and Susie

Since our family's move to Wisconsin in 1967, Devils Lake has been an important part of our lives. It turns out that the over 100 foot granite cliffs offer the best climbing in the Midwest. One Sunday morning when we were there, climbing clubs from five different states were represented: the UW-Madison Hoofers, the Minnesota NorthStar Mountaineers, the Chicago Climbing club, a Michigan climbing club and an Indiana group. Murray himself led the Physics Department of UW-Madison on a picnic and hike from Devils Lake to Parfrey's Glenn.

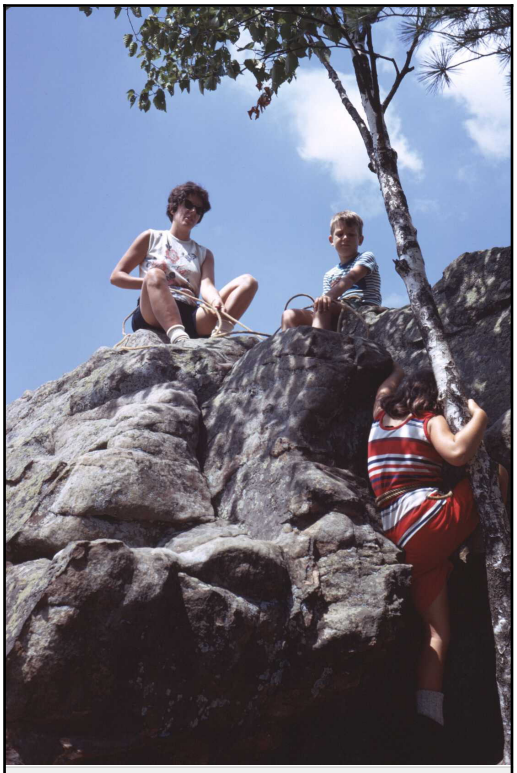
When my UW-Parkside colleague, Bob Grueninger from Physical

UW-Parkside Climbing Class at Devils Lake

Education heard that I had taken climbing courses in the Grand Tetons, he asked if I would take one of his physical education classes to Devils Lake for rock climbing experience. Here is a photo of the class. Bob has the red shirt just right of center, Steve has the rope, and Joyce is far left next to our friend Jack Elmore.

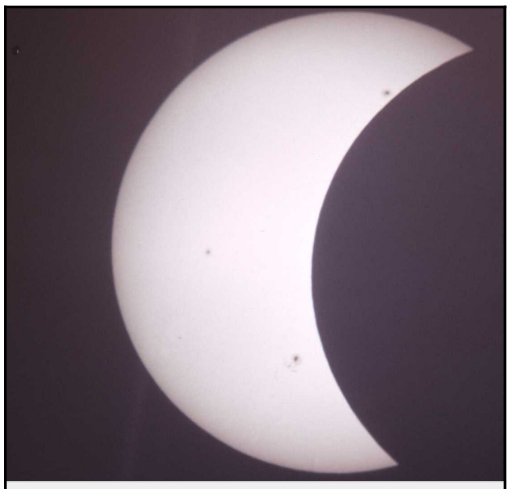
Jack was in the UW-Parkside administration, responsible for teacher training. When he heard that Joyce had a Master's degree in education, he offered her the position of teaching intern supervisor. She performed this job for three semesters at UW-Parkside. Jack had also gone through Outward Bound and assisted me in the fundamentals of climbing. He and his wife Vonnie were also members of the Racine Unitarian-Universalist Church as were we.

After teaching the class some climbing fundamentals such as climbing knots, belay procedure, and climbing commands, Jack and I be-



Joyce Belaying Susie

layed the student climbers up various pitches such as the "30 Second Crack". I decided to climb "Ship's Prow" which is an overhung corner with one of the girls I had just taught as my belay from above. I climbed the first 25 feet in good style, but as I grabbed for the summit rock, I fell. Fortunately, my student did her job and caught me about 5 feet above the rocks! It really pays to teach them well!



Partial Eclipse

On February 26, 1979, the midwest witnessed a partial solar eclipse. Using a physics telescope, I focussed the eclipse on a sheet of paper and photographed it. You can even see the sunspots on the surface of the sun. This was a good way to view the eclipse without looking directly at the sun.

By 1974 a good share of the main campus was complete. Here we see Greenquist Hall, the Library-Learning Center, Molinaro Hall, the fine arts building, the new gymnasium, and the inner-loop road. This is a view looking west, with the new gym on the left and the recently completed Molinaro Hall on the right. The only additional buildings added in subsequent years are the new and expanded student union, the expanded fine arts building and the student dormitories.

The UW-Madison has more than a dozen Hoofers Clubs - clubs devoted to the special interests of students. We've already mentioned the Hoofers Climbing Club that we climbed with, both at Devils Lake and in the Tetons. Another club I joined my last year of summer teaching at Madison was the Hoofers Sailing Club. The Club has more than 120 boats, and at the time I was there, charged $25 for membership and all of the on-shore and sailing instruction to earn a sailing certificate. The mail fleet is composed of Badger dinghies, a modification of the M.I.T Tech dinghy.

Main Campus, UW-Parkside, 1974

I quickly learned the principles of sailing, soloed the Badger dinghy, and got my certificate. The final test for certification was to capsize the boat in high winds, right it again, and get it sailing. I took my family out several times for a recreational sail after my certification. As a member of the club, I got all the free use of the boats for which I was certified. I eventually got certified for the

470, a fine boat with a jib sail.

Sailing so intrigued our family that we decided that we should have a sailboat. Main Marine had a delightful sailboat, about the same size as the Badger dinghy, but with a jib. It was called a Chinook 13' and was made in Canada. We bought one and began our sailing career on Lake Michigan.

Launching the Sailboat on Browns Lake

And not only on Lake Michigan. We sailed on Browns Lake, Lake Nagawicka, Eagle Lake, Pewaukee Lake, and Lake Delavan. We even trailered it to Island Lake and launched it by hand near the pier. Joyce's Dad helped me with this task.

Only three mishaps marred the joy that this little sailboat brought our family. First, one Sunday afternoon our family was sailing close to the west shore of Browns Lake. Our mast was just brushing the lower limbs of trees along the shore, when I noticed we were sailing between a rock pile on the lake side and the shore. Just as I was commenting on this our rudder hit a submerged wall of rock, about a foot below the surface, which broke the aluminum fixture which held the rudder to the boat. I had it pinned down so that it was unable to tip up when striking the rocks as the center board had.

I held the rudder by hand to get us back to the pier and then took it to a specialty shop which handled welding jobs on rare metals. They were able to fix it and all was well.

The second mishap occurred as we were entertaining our UW-Parkside math colleagues, Dr. Tim Fossum and Dr. Ron Gotterdam and their wives, sailing off the North Beach in Lake Michigan. Ron and I were lounging on the beach while Tim and our three wives were sailing. For reasons unknown, the sailboat suddenly capsized. Ron and I were concerned, because, although all four had life preservers, Becky, Ron's wife, had a medical condition. Fortunately,

The Chinook on Island Lake

Launching Harold's Boat on Lake Michigan

a nearby fisherman brought his fishing boat near them, tossed them a line, and towed them to the beach. Luckily, no harm was done, and we all had a good laugh!

The third mishap took place on Lake Nagawicka. My son, Steve, and I were sailing this sizable lake when a sudden summer storm came up. Tornado warnings were issued, we lowered the mainsail, and headed for shore under jib. However, a sudden gust hit us and capsized the boat. Unfortunately, we had the Johnson 2 h.p. outboard mounted on the boat, and it got completely submerged. We managed to get to shore with no harm done except to soak the motor. That evening I spent a good share of the night taking the motor all apart and drying out each element. I managed to get it all together again, and low and behold, it started! So, again, no harm done, but considerable excitement experienced!

One of my duties as Acting Dean was to hire senior faculty in the psychology discipline. We hired two: Dr. William Morrow and Dr. Harold Coppock. Bill Morrow was destined to become Acting Dean after Art McKinney was fired and Harold Coppock was a member of our UU Church. He was also a sailer and had a nice 23 foot boat and invited us to join him for pleasurable sails on Lake Michigan. This was partly our inspiration to become "big boat sailers" on Lake Michigan and buy our 26 foot Thunderbird.

This event took place during the summer of 1978. Jim Romanchek's Thunderbird named Gretch was for sale and anchored in the north harbor. We sailed our Chinook around it several time, with our interest in buying it growing each time. Unfortunately, a tremendous easterly storm blew in before we offered to buy it. Dozens of boats were damaged or destroyed in the Racine Harbor, the Kenosha Harbor and the Milwaukee Harbors. Although the Thunderbird broke off its anchor, fortunately, some one was able to get a line on it to keep it from crashing the rocks on shore as many boats did.

Sailing Harold's Boat on Lake Michigan

Jim had insurance on the boat,

so after examining the minor damage under repair at the Palmer Johnson Boat Works, we bought it. One of our first moves was to rename it "Joy of Racine" rather than "Gretch". Jim's wife's name was Gretchen. It is difficult to describe the pleasure this boat has given us through the years. I sailed it around Lake Michigan twice with Steve as crew, we sailed in the MORC (Midget Ocean Racine Club) to Door County, we sailed with friends to the Milwaukee Yacht Clubs and the Waukegan Harbor, and innumerable day sails out of Racine. For several years we offered it as an auction item for the Racine UU Church and made many new friends in the process.

Storm Damage by the Racine Yacht Club

The only downside to the Joy of Racine was that the basic structure was plywood. The cockpit seats, the hatch boards, and the cabin walls were teak and had to be sanded and varnished regularly. The bottom required annual copper paint and the sides and deck needed regular paint. I got in the routine of devoting the month of May to these jobs, getting it ready for launch by June 1.

The only mishaps during our sailing career with Joy of Racine were three. The first was our crossing from Door County to the Manitou Island off Leland, Michigan. During the crossing, a brief, southwest squall blew up with rain. I got on my rain gear but left Steve, who was seasick, asleep below deck. I was heading to the South Manitou Island which had a nice harbor. Unfortunately, the squall had blown me off course, I was between the North and South Islands. The south side of the North Island is quite shallow, and as I noticed that the water was turning light green instead of blue, the boat suddenly hit a rock on the bottom. I quickly called Steve to examine the charts to find out where we were, turned on the outboard, and headed for the mid channel deep water. This was as close as we ever came to running ashore on the rocks, the ultimate fear of all sailers.

Sailing with Students on the Thunderbird

The second incident occurred as Monica Miller and her daughter and her daughter's husband were returning from a weekend at the South Shore Yacht Club in Milwaukee Harbor. We were sailing nicely, just a

hundred yards off the north side of the Racine light house when the boat suddenly struck the bottom with the keel. It was just one bang, and no harm was done as we headed out into the lake.

The third incident occurred at one of the nice ports in Michigan. Steve and I had docked the boat and gone out to a restaurant for a fine dinner and good beer. We were so tired that we both fell immediately to sleep in our berths on the boat. About 3:00 a.m. we were wakened by the Coast Guard knocking on the boat, politely reminding us that we had forgotten to call home. By prearrangement we had agreed to call home each evening to confirm with Joyce our location and safety. When we forgot, she frantically called the Coast Guard who reminded us of our duty! Which we promptly did!

By this time, several things should become obvious. First, I define the "early years" at UW-Parkside as those years between my being hired at UW-Parkside and my first sabbatical in 1979-1980. These were the formative years for the campus and for the direction of my career. Second, and on a more nonacademic level, it is obvious that my nonacademic interest was shifting from flying to sailing. As I told our friends, "One expensive, dangerous sport is enough.

Much of the above narrative ignores my central occupation and concern. This was my academic activities during this period. As I scan back to the "ANNUAL SUMMARY OF ACADEMIC ACTIVITIES" for the years1970-1978 I must admit at being a bit overwhelmed. As I reported in the 1971: We took our physics students on a tour of FermiLab. I worked with my physics colleague, Robert Moore and the Keller Plan for personalized instruction generating study guides and exams. I arranged for Dr. Bernard Spinrad, former head of the Reactor Engineering Division of Argonne National Laboratory to offer s short course on "Social Problems of Nuclear Power" at UW-Parkside. I collaborated with Dr. William Morrow on an NSF-COSIP proposal and traveled to Washington, D.C., to promote it. I worked with Dr. Mike Marron of Chemistry to expand our first computer, the PDP-8. I arranged for Dr. John Cameron, head of the Medical Physics Department at UW-Madison, to visit UW-Parkside and help us with the curriculum development for medical students. I was promoted to tenure as an Associate Professor. I worked with three UW-Parkside colleagues to obtain funding from American Motors for a project creating an Environmental Quality Index for Southeastern Wisconsin. I wrote the proposal to WARF to fund my research for the

The Princeton Electronics Product Graphics Terminal

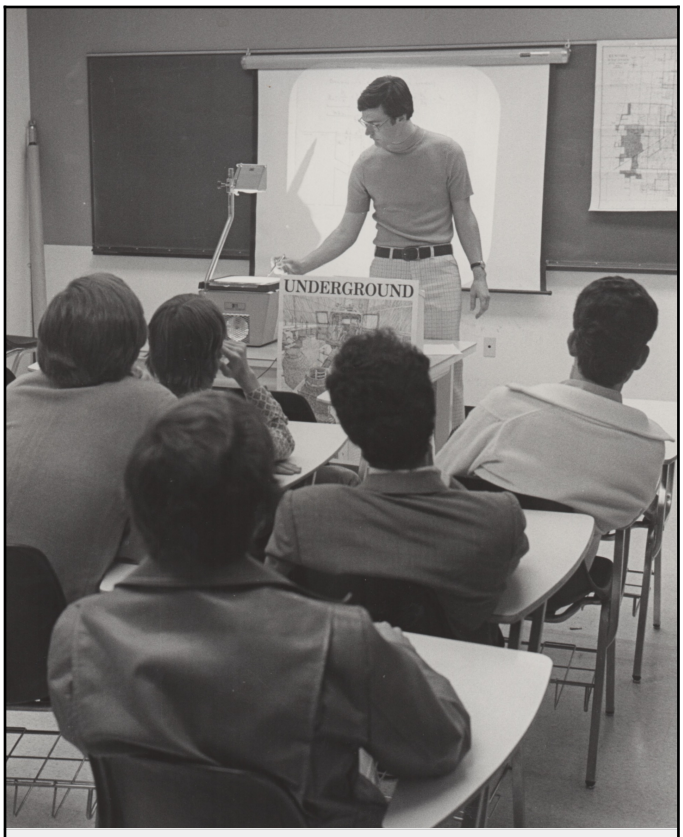
Dr. Mike Marron and the PDP-8/L

1971 summer on UW-Madison's Adage/Univac 1108 computer system. I served on the University Committee, the executive committee of the Senate. I served on the Senate. I served on the Athletic Board. I served on the Teaching Awards Committee. I served on the Course and Curriculum Committee. I served on the Executive Committee of the Division of Science. I judged the Marquette Science Fair. I addressed the University of Wisconsin Board of Regents on UW-Parkside's special mission. And I helped hire Andrey Glassberg as Academic Computing Center Director, Dr. Ben Greenebaum as a colleague in physics, and Bill Stone as the Division of Science electronics technician.

By 1975 UW-Parkside had nine computers on campus, and we were connected to the UW-Madison Univac 1110. In the Final Report on the Instructional Methodology Committee I show pictures of each computer and who was responsible for the policies related to that system. I show just three of these: the Princeton Electronics Products (PEP) terminal driven by the Univac 1110 at Madison, the PDP-8/L that Dr. Marron used in Chemistry, and Bill Stone and the Altair 8800 which he assembled from a kit. This machine was the world's first microcomputer and we had two of them. In fact, Bill Stone, Luther Johnson, one of our brightest students, and I published several papers evaluating both various microcomputers and the BASIC languages which they played.

I should emphasize that programming the Altair 8800 and the digital circuit board that Bill Stone developed from Murray Thompson's design were the first experience that our students in both the Electronics 423 (UW-Parkside) and Electronics 623 (UW-Madison) had with the digital logic that is the basis of modern computers.

Bill Stone and the Altair 8800



Bill Jaeger Talking about Water Distribution Systems

During these early years at UW-Parkside, I introduced and wrote the syllabus for a number of courses. In the order of their introduction, these include:

- Intermediate Laboratory 309 (to replace the lab for the E & M course which was now theoretical)
- Five Physics Modules (ranging from Nuclear Energy to Solar Space Stations)
- Special Topics in Computer Graphics 409 (at student request)
- Basic Electronics 223 and all of the accompanying lab outlines
- Energy and the Environment 120 (a joint collaboration with Jim Shea and Henry Cole)
- Lab outlines for 11 Intro to Physics 104 sections (replacing Physics 105 for pre-meds)
- At least 13 lab outlines for Electronics 423 and Electronics 623

Another project we tackled in the mid 1970s concerned the Kenosha water distribution system.After meeting several times with the system's manager at the pumping station to get an understanding of the problem, Bill Jaeger, one of my best students, and I used a FORTRAN program to model the system. It allowed us to compute the pressure heads throughout the system for initial conditions of hydrant demands and the system structure. Here Bill is presenting a seminar to the faculty on the results of our research.

Another rewarding experience of the 1970s was the development of offering of a course on Introduction to Futuristics with my colleagues Ms Gail Cummings of English and Dr. Wayne Johnson of Philosophy. This successful collaboration resulted in invited speakers on a wide range of topics of interest to our students. Two speakers which come to mind are Frank Zeidler, former Socialist Mayer of Milwaukee and Congressman Les Aspin who narrowly defeated our own chemistry professor, Doug Lafollette.

In 1977 John Boyer and I began a very interesting project. John was a UW-Parkside computing center employee and was deaf and blind. He used a Braille teletype to do his computing. He was also a member of the Racine Unitarian Church. He used a Braille output keyboard to communicate with church members after the service. Here is

a picture of John at his marriage with Hazel Mendenhall.

John and Hazel Get Married

John could distinguish between low and lower notes using headphones. He and I developed a computer-based system, using the Morse Code (which he knew) to communicate. The computer we used, as I recall, was a Commadore 64 computer with BASIC code to convert typed characters to Morse code which John understood. Our hope was that we could perfect the system and allow interested individuals to communicate with John over the telephone.

In working with John I learned the blind-deaf sign language which uses only hand-to-hand symbols. To get new ideas on devices for communicating with the handicapped we drove to Northwestern University's Prosthetic Institute. I drove with my left hand on the wheel and my right hand in his hand, "talking" with him in sign language. Unfortunately, just as our system was near completion, John decided that he should work towards his Ph.D. in computer science at UW-Madison. I heard via the grapevine that, at Madison, he also started his own company making machines for the deaf/blind.

Two or three more comments are in order for this chapter. First pertains to the academic environment. I served as Physics Coordinator (the equivalent of a department chairman) for about half of these early years. In addition, for more than half of the years I served on the University Committee. As Vice Chair of this committee I was the President of the Senate. Fortunately we had advice from an expert on Roberts Rules of Order, so this was a fairly pleasant task.

The year 1978 was particularly busy. For my forthcoming sabbatical I presented the proposal at Oak Ridge Institute for Energy Analysis. For the Data Processing Management Association (DPMA) I made presentations at Milwaukee and Sheboygan. For the American Association of Physics Teachers (AAPT) I spoke at Terre Haute, IN, and published a paper in their Announcer 8. I was on the speakers bureau of the American Institute of Chemical Engineers (AIChE) and presented at Decatur, IL, Kansas City, MO, Longview, TX, Corpus Christi, TX, Pampa, TX, and Little Rock, AR. It was an exhausting year!

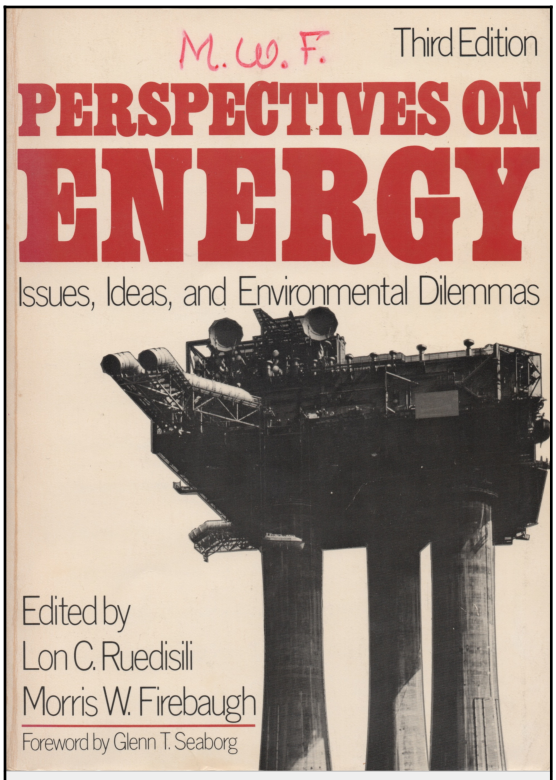
Dr. Lon Ruedisili and Me

Not all of my activities involved academic work. With Oliver Nielsen I served as Webelo leader for the Body Scouts. I was the chief of the "Sassy Seneca" Indian Princess organization of the YMCA for Susie and her friends. I served on the Racine Unitarian-Universalist Church Board and the Search Committee for a new minister. We found the Rev. Dr. Tony Larson who has served our church for more than 41 years. He retired in December of 2017.

The most significant academic accomplishment during the early years was the publication of our book *Perspectives on Energy* in 1975 and again, in second and third editions, in 1978 and 1982. Professor Lon Ruedisili and I had both been teaching courses on energy and nuclear power, and were having to use journal articles and papers for our source material. Lon proposed to me that we team up, pool our resources, and write a book together. We were both too naive to know that it couldn't be done!

We began looking for a publisher, and after talking with several book companies, settled on Oxford University Press. They helped us develop release forms for the authors contributing to our book, and Lon did most of the heavy lifting to secure such releases. My contribution was mainly writing the Introductions to the five sections. I also sent the syllabus to Dr. Glen T. Seaborg and ask him to write a foreword to the book as a whole. He was a Nobel Prize winner for his discovery of ten transuranic elements, and I can't help but think that he knew my thesis advisor, Ned Goldwasser, also from the University of California-Berkeley. In any case, he agreed, and his stamp of approval gave this anthology

Chancellor Irvin G. Wyllie, Lon and Me



Book Cover

a certain credibility.

The publication of this book brought good publicity to the campus. Our Publicity Director, Walt Shirer, made quite an issue of it, and interviewed Lon, me, and Chancellor Wyllie. These black and white photos show this event which occurred just weeks before the Chancellor's death October 25, 1974.

It turns out that this book had a very strong influence on our lives. We sent copies to all the authors involved and the leaders of other energy organizations. A copy ended up in the hands of Dr. Alvin Weinberg, Director of the Institute for Energy Analysis in Oak Ridge, TN. He gave me a call, asking if it would be possible for me to spend a year at the Institute as Visiting Scientist.

I, of course, was thrilled. Alvin and his colleague, Eugene Wigner, had written *The Physical Theory of Neutron Chain Reactors* from which I had studied reactor theory at the University of Illinois. It was the bible of reactor engineering. So I looked into the possibility of a sabbatical. The newly implemented sabbatical policy at UW-Parkside was that a sabbatical would pay one semester at full salary or two at half salary. So we arranged for UW-Parkside to pay one semester at full salary and the Institute for Energy Analysis to pay full salary for the second semester of 1979-1980.

The publication of *Perspectives on Energy* was instrumental in my promotion to full professor after four years at UW-Parkside. And the sabbatical resulted in a rich experience with leaders in the nuclear energy field and several more publications. It was the happy conclusion to my early years at UW-Parkside.


My Office where the Book Originated