

SPEECH AT 90TH BIRTHDAY FOR DR. IGNACIO PONSETI, JUNE 8, 2004

Joseph A. Buckwalter, M.D.

Welcome to the celebration of the 90th birthday of a friend, colleague, one of the most remarkable faculty members in the history of The University of Iowa, and an inspiration for us all—Dr. Ignacio Ponseti.

Much can and should be said about Dr. Ponseti's skilled and compassionate medical care, his inspirational teaching and his commitment to The University of Iowa Orthopaedics Department. I want to comment on one of his most important contributions to the specialty of orthopaedics—his life-long effort to give orthopaedics a firm foundation in biology, an effort that has benefited millions of patients throughout the world.

Orthopaedics is a very physical specialty—we use cables, saws, hammers, drills, nails, screws, plates and cement, and from time to time, a certain amount of physical force. I recall, several years ago, when I sent a grant proposal to the University Vice President for Research, a very thoughtful and knowledgeable person for whom I have the greatest respect. He made a number of very helpful comments and then said this is a pretty good proposal, I thought you guys were over there pounding nails into people's bones.

If we are doing more than pounding nails into bones, Dr. Ponseti deserves much of the credit. I remember Dr. Ponseti's observation that while orthopaedic surgeons were refining their techniques of joint fusion and tendon transfers for the treatment of limbs paralyzed by polio, others were finding the cause of the disease and, eventually, a method for preventing it.

Dr. Ponseti was born in the Balearic Islands on June 3, 1914. In 1930 he entered the University of Barcelona where he obtained a degree in biology in 1932 and an M.D. degree in 1936. The Spanish Civil War began just two days after Dr. Ponseti graduated from medical school. He worked as a physician and surgeon, providing fracture and wound care for injured soldiers, from 1936 to 1939. During the war he used the "closed plaster treatment" of open fractures, advocated by one of his teachers at the University of Barcelona. His treatment of open fractures consisted of washing and debriding the wound, excising necrotic tissue, denuding bone fragments and foreign matter, followed by manual

reduction of the fracture, packing the wound with sterile gauze and immobilization of the limb in a circumferential plaster dressing. The only inconvenience of this method was the bad smell. Trueta reported that the success rate of this biologic treatment was high and stressed that internal fixation by any means was to be avoided. Undoubtedly, this approach saved many limbs.

After the war Dr. Ponseti immigrated to Mexico where he practiced from 1939 to 1941, and in June of 1941 he arrived in Iowa City to work with Dr. Arthur Steindler.

Dr. Ponseti's strong belief in the importance of understanding tissue biology has been a powerful force in shaping The University of Iowa Orthopaedics Department.

Along with Dr. Ernst Freund, he helped establish the orthopaedic pathology program. He developed one of the first connective tissue biology and biochemistry laboratories, with the goal of discovering the causes of skeletal deformities including scoliosis and dwarfism. His pioneering studies of the effect of aminonitriles on collagen cross-linking laid the foundation for much of current understanding of collagen biochemistry and matrix biology. Jerome Gross, the scientist recognized for opening the field of collagen biochemistry, credited Dr. Ponseti as the man who inspired him to study collagen. Dr. Ponseti's commitment to finding a method of non-operative treatment of clubfoot deformity has helped tens of thousands of patients. The success of his method has been confirmed by multiple independent investigators and has spread throughout the world.

I was fortunate that when I was a medical student, Dr. Ponseti was assigned to be my advisor. He helped me see orthopaedics as a field of great opportunity for progress, based on advances in understanding of the biologic processes responsible for disorders of the musculoskeletal system. He has been my advisor, teacher and inspiration since the first day I met him more than 30 years ago, and not a day passes that I do not think of him and rely on much that he taught me.

Dr. Ponseti, thank you very much for all you have done for me and for orthopaedics.

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Stuart L. Weinstein, M.D.
Ignacio V. Ponseti Chair and Professor of Orthopaedic Surgery

Dr. Ponseti, Helena, Bill, friends and admirers of Dr. Ponseti and distinguished guests:

How lucky we all are to be here today to celebrate this wonderful occasion to honor a man who has profoundly affected all of us in one way or another and changed the lives of thousands of patients, not only here in Iowa City or in the Midwest, but around the world.

Each of us in our own way has a special relationship with Dr. Ponseti, which I'm sure all of us are reflecting on tonight. Each of us, as we go through life, is influenced by many people: our parents, our family, our life experiences, our environment, things that happen to us by chance, what college we attend, where we went to medical school, etc. However, most of us can count the one or two people who have profoundly affected us and helped to shape who and what we are. For me that special person is Dr. Ponseti. It is Dr. Ponseti who had the most profound effect on shaping who and what I am.

As we come together tonight to celebrate the anniversary of Dr. Ponseti's birth, it also gives us another unique opportunity. As we go through our lives we often look back on the things that we didn't take time to say to our friends, colleagues and relatives, to those we love and care about, to tell them how we feel about them or to say thank you. We all have that opportunity here tonight and for me it's a unique opportunity to be able to tell Dr. Ponseti what he has meant to me.

I came to the orthopaedic world by a circuitous route. I was bound and determined to be a gastroenterologist. Thanks to my advisors, Drs. Allen Mark and Phil Schmidt, I had already secured a residency post at the University of California, San Francisco, but I decided to do an elective. That elective changed my life and career goals forever. I came into the Orthopaedic Department at Children's Hospital, a department that was built on the foundations laid by Dr. Arthur Steindler and further developed, matured and enhanced by the leadership of Dr. Carroll Larson. Unfortunately, as with many medical students at that time, I had this stereotypic view of an orthopaedic surgeon as a physician who was strong as an ox and half as smart. However, in walking into Children's Hospital in late 1969, I walked into the land of giants, legends in orthopaedics, Dr. Carroll Larson, Dr. Mike Bonfiglio, Dr. Adrian Flatt, Dr. Don

Kettlecamp, Dr. Jerry Laros, a young Dr. Dick Johnston, Dr. Reg Cooper and of course, the already legendary Dr. Ponseti. Dr. Ponseti was revered by medical students for his kindness to them and also by the fact that he taught them something, something useful. He had a weekly session on how to apply plaster casts, a skill that most physicians would use in community practice. We also all knew that Dr. Ponseti bridged the history of the department at that time, as he had trained under Dr. Steindler and now was a senior faculty member under the regime of Dr. Larson. As we all know today, Dr. Ponseti has bridged the entire history of our department from Steindler to Larson to Cooper to Buckwalter.

That rotation convinced me that I wanted to be like these men and be an orthopaedic surgeon. So, after one year in San Francisco, I came back to Iowa City to embark on my orthopaedic career. When I came into the department in 1973, I finally got to meet and study with the man who would become my role model. What impressed me most about Dr. Ponseti was his overwhelming concern for the well-being of patients and his sincere desire to provide them with the best possible care. What I saw in Dr. Ponseti was not only a master surgeon, but a scientist and a teacher, and I knew from the beginning that I wanted to be like him: his caring manner; his quixotic quest for the understanding of the fundamentals of disease affecting children; his making certain as we proposed treatments that we had a full knowledge of the pathoanatomy of the condition, its natural history, and how follow-ups of treatments had affected this natural history with respect to outcomes; and how patients and their families perceived this treatment. I think you all realize that what we are talking about is what is today called "evidence-based practice," taking the best evidence available and merging that with the clinical skills of the physician based on careful observational follow-ups of his practice and incorporating patient desires. This "evidence-based practice" had been practiced by Dr. Ponseti and, in fact, by all the members of the Department of Orthopaedic Surgery for a very, very long time.

I was also impressed with Dr. Ponseti's, for lack of a better term, "anti-surgical mentality." Most surgical

training programs, then and now, seemed to have an attitude of "I'm a surgeon, what surgery can I offer this patient" as opposed to looking critically at the disease process, knowing its natural history, knowing the known outcomes of treatment and which of those treatment options had promise for altering natural history in a positive way. I was so deeply impressed by this thoughtful caring for patients that I just wanted to be like him. At the time I never dreamed that I would have a chance to work with him. I think you all should know too, that at the time I was a resident, if you read the pediatric orthopaedic literature, you would realize that no one in pediatric orthopaedics around the world had contributed more to the basic understanding of pediatric orthopaedic musculoskeletal conditions than Dr. Ponseti.

In about October of 1975, the Chairman of the Department of Orthopaedic Surgery, Dr. Reginald Cooper, called me into his office. As any resident will tell you, that usually meant bad news. But much to my surprise and delight, Dr. Cooper offered me the opportunity to join the faculty to help Dr. Ponseti. What did I think about that idea? I could hardly believe what he was saying to me. What a dream! As a baseball fan, it would be the equivalent of asking me if I want to join the 1927 New York Yankees and play alongside Babe Ruth, Lou Gehrig, Bill Dickey and the rest of this dream team. What a thrill and what an unbelievable opportunity.

When I joined the faculty then in 1976 I began a new relationship with Dr. Ponseti. He became my mentor. He was so generous and unselfish in sharing with me his 30 years of experience in pediatric orthopaedics. I was like a sponge trying to absorb everything I possibly could. And I must tell you, I was the envy of all of my pediatric colleagues around the world, for they knew of his great contributions to this specialty. How they would have loved to have this same opportunity, to be starting their career as an apprentice to the master. What I think is important to stress about being mentored by Dr. Ponseti is that he wasn't looking for a disciple, someone just to sing his praises in the orthopaedic community. He was truly interested in the future of the university, the future of our department and the future of this specialty, and I felt that he wanted me to succeed and that he would do anything necessary to help me in my quest.

After several years of working together, my real education began. The Ponseti's had invited us to come out to Colorado with them for their annual summer hiking adventure. So Lynn and I joined Helena, Ignacio and Bill Ponseti and his children for about five or six summer vacations at the Longs Peak Inn in Estes Park, Colorado. In our long hikes through the Rocky Mountain National Park in Indian Peaks Wilderness, both

Helena and Ignacio taught us about literature, art, music and wildflowers, in addition to orthopaedics. This was in a sense, like a private two-or-three-week tutorial. From Dr. Ponseti I learned about growing up in Spain, his experiences in the war, his experiences as a general practitioner in Mexico, his wonderful story about coming to America and the changes he noticed immediately as he crossed the border into Texas in June of 1941. He also taught me about the legends of the ever-growing specialty of orthopaedic surgery that he had seen from the 1930's to the 1970's. As many of you know, the orthopaedic surgeons in Dr. Steindler's generation were really the first true orthopaedic surgeons who had separated from general surgery. Most of the great centers were located in Europe until the turn of the century, when men like Steindler, the forefathers of American orthopaedic surgery, established the great departments in the United States. All of those great leaders came through Iowa City and Dr. Ponseti had a chance to meet many of them firsthand. So, I learned a lot about Dr. Arthur Steindler and the giants who passed through the halls of Children's Hospital. I learned about the other great physicians who had been members of the faculty at University Hospital. I learned about childhood diseases and conditions that I would never see. What a priceless education and privilege I had. These little chats are things that I have treasured throughout my 30 years of working with Dr. Ponseti. As my life has gotten busier and busier with orthopaedic and outside orthopaedic activity responsibilities, these are the things that I miss most.

About 20 years ago, in 1984, Dr. Ponseti retired. I know that's a surprise to all of you! We had a celebration, a two-day academic symposium and a banquet held here at the Athletic Club. The participants in that symposium were the household names in orthopaedics, men who had made great contributions to the specialty and who were honored to come and participate in this retirement celebration for Dr. Ponseti. They included Dr. Henry Mankin, Chairman at Harvard, Dr. Alf Nachemson, a noted spine researcher from Goteborg, Sweden, Dr. Sherm Coleman, a world-renown pediatric orthopaedic surgeon who was particularly interested in problems of the pediatric hip, Dr. Jip James, Chief of Orthopaedics at the University of Edinburgh and a renown specialist in spinal deformity, Ruth-Wynne Davies, a researcher also from Edinburgh who was interested in many of the genetic conditions that Dr. Ponseti had written about, and Anthony Catterall, probably the most famous name in Legg-Calve-Perthes disease. The event was attended by hundreds of former residents, fellows, and community leaders, a true attestation to the love and respect that all of them had for Dr. Ponseti because

he had touched their lives in such meaningful ways. I must admit that I viewed this occasion with mixed emotions. It was a wonderful celebration of the contributions by Dr. Ponseti to our specialty, but it also meant what I thought would be the end of our working relationship. For the two years that he was absent from the hospital, I truly missed him. I missed the opportunities to discuss cases with him, talk about totally unrelated matters in the world or in the department and just the comfort of having him across the hall. However, like Michael Jordan, his retirement was short-lived. He came out of retirement rejuvenated and on a crusade like Don Quixote de la Mancha aided by his squire, Sancho, in this case his devoted wife, Helena. I apologize, Helena, for drawing the comparison between you and Sancho Pancho, but I must admit when Dr. Ponseti came out of retirement and started writing his clubfoot book, you were his inspiration, his trainer, and his coach. You kept him on target, motivated, focused, and provided the necessary support to bring this project to fruition. Obviously you all know that Helena is one of the top Cervantes scholars in the world. What you don't know about Helena is that she is probably the second-most knowledgeable person about clubfoot in the world. Dr. Ponseti, our modern day Don Quixote, prepared himself to take on the windmills, not of La Mancha, but of the pediatric orthopaedic world, which had totally dismissed his previous papers which had clearly shown the benefit of the non-surgical management of clubfoot treatment that he developed in Iowa City. Despite the fact that long-term results were published, pathoanatomy was well understood and the treatment had 20- and now 30-year follow-up documenting its success, these surgeons, looking for the magical "surgical bullet", had totally dismissed this treatment saying that it only works in Iowa. At first, like Don Quixote, Dr. Ponseti lost many battles and actually became discouraged, and was beginning to teach the method to the only group who would listen, the podiatrists. But then several things happened. First, the Pediatric Orthopaedic Society of North America was having a pre-annual meeting symposium on clubfoot. Thinking that Dr. Ponseti had now long since retired from active life, they invited me to give a presentation on clubfoot. I immediately called the chairman of the session and suggested to him that he invite Dr. Ponseti. I told him Dr. Ponseti was extremely active running a busy clubfoot service, would have a lot to offer the audience, and that it would be a treat for them to hear him make the presentation. This presentation, although I'm sure it was shocking to most, provided the first crack in this almost impenetrable clubfoot surgical treatment wall. The second and most important breakthrough came when this man born

in the second decade of the twentieth century was united with the most significant breakthrough in the last decade of the century, the Internet.

It was the Internet that helped Dr. Ponseti harness the most important force for change in the medical world, patients. One of my clubfoot patients here in Iowa City, noting that there was no information available on the Internet for parents of children with clubfoot, started a web site. Then one of Dr. Ponseti's patients further developed that information and the floodgates were opened. It was essentially a "field of dreams" once again happening in Iowa, a "build it and they will come" mentality. The revolution had begun and pediatric orthopaedic surgeons from around the United States and the world started to come to Iowa City. It was interesting for me to watch these individuals come to Iowa City and almost beg for forgiveness for thirty years of "sinning." Most of them, as I see them today, have been "born again" after their visits to Iowa City and seeing the wonderful results firsthand in this method of clubfoot treatment.

Now, on a weekly basis pediatric orthopaedic surgeons from around the world come to study at the feet of the master. Dr. Ponseti now spends countless hours with these individuals, tutoring them on a one-on-one basis as to the appropriate application of the method, application of the post-treatment splints and follow-up care. How wonderful it is for me to see the patients coming through the clinic, as Dr. Ponseti does most of his castings in one of the rooms in my clinic. I see these parents come to Iowa City with despair and tremendous anxiety, most of them misinformed about treatment of clubfoot. Many of them feel this is their last chance to have a normal child and to prevent them from becoming crippled. To see the love and gratitude that these parents have after the first cast is removed, and their almost-disbelief at the end of treatment as to how normal their children's feet are—what a sight to behold.

All of us who are physicians profoundly affect two groups of people in our lives; we profoundly affect our families and the patients we treat. While all of us make contributions to medicine in different ways, few of us will make contributions that will last a lifetime. But all of us in this room must take great pride in seeing how this one man, Dr. Ponseti, has helped change one aspect of medicine, the treatment of clubfoot, for thousands of patients now and hundreds of thousands of patients in the future.

The only sad commentary about this story is that, thanks to the work of doctors like Shaique Pirani, the treatment of clubfoot was solved in the developing world, in his case, Uganda, prior to it being solved in the first world, here in the United States. But how com-

forting it must be to Dr. Ponseti to realize that he has helped change the world and prevent millions of children from being crippled by this disorder.

One of the side benefits that I have seen from this recent success is the rejuvenation of Dr. Ponseti. To me, he looks younger and spryer now than I think he did twenty years ago when he retired. In fact, recently a reporter from the Des Moines Register called me to do an interview about Dr. Ponseti and the clubfoot treatment. I told him that with each passing day, Dr. Ponseti is getting younger and younger, and in fact it wouldn't surprise me if he outlives me and is someday named the Weinstein Professor of Orthopaedic Surgery.

Finally, on a personal note, of all the wonderful things that have happened to me in my professional life, none has been more meaningful to me than being named the Ignacio V. Ponseti Chair of Orthopaedic Surgery. This wonderful honor, which was bestowed on me 17 years ago, was a tremendous personal honor, but with that honor came a very heavy responsibility. When fundraising for this chair from alumni and friends of

the department was begun in 1984, the purpose of the chair was to be able to honor Dr. Ponseti in perpetuity through the actions and deeds of the chair holder. To me, this has been a sacred responsibility.

Dr. Ponseti, I want you to know that I mention your name everywhere I go and in every scientific lecture I present. I thank you publicly for all you have meant to my personal and professional life. Also, as I take care of pediatric orthopaedic patients here at University Hospital, I try to make certain that the patients and families who seek our care get the best possible and most thoughtful care available anywhere in the world. The honor of having a chair in your honor, to me means that you will always be by my side, in my thoughts, my deeds and in my life. As I mentioned earlier in this presentation, life often passes by without our having the opportunity to tell the people we care about how we feel about them. Words really can't express what you have meant to me and to my life. You have been, you are and will always be my hero. I love you very much.

DR. PONSETI'S 90TH BIRTHDAY SPEECH, JUNE 8, 2004

Ignacio V. Ponseti, M.D., Iowa City, Iowa

Thank you, Jody Buckwalter, Stu Weinstein, and the staff for celebrating my birthday among friends and colleagues. My special thanks to Paul Etre for organizing the event and to Naomi Davis and Gavin DeKiwit from England for coming from far away to give distinction to this occasion.

Throughout my life, I have had good luck. When I was a student in the 1930s in the medical school of The University of Barcelona, the school was one of the best in Europe, owing to the fact that following the fall of the monarchy in 1931, the University became autonomous—independent from the central government of Madrid. The faculty was doubled, a large new hospital was added, and a number of promising graduates were sent to Vienna, Berlin, Boston and Chicago to bring back the latest scientific advances in medicine.

Again, I was lucky to finish medical school one day before the Spanish Civil War started in 1936, and to be assigned to work for two years with Jimeno Vidal back from Vienna, where he worked on trauma with Bohler. Then, for one year I worked with Adolfo Ley, back from Boston and Chicago, where he studied neurosurgery with Cushing, Bucy, and Baily.

After my experience during the three years of the Spanish Civil War—the exodus to Beziers in southern France—I spent one-year-and-a-half in the village of Juchitepec, south of Mexico City, where I had to deal with an epidemic of typhoid fever. For me, to come to Iowa City was a stroke of good fortune, for finally I found myself at home.

My choice of coming to the University of Iowa was guided by Dr. Juan Farill, professor of orthopaedic surgery at The University of Mexico, who had trained in the early 1930s with Dr. Steindler. I arrived in Iowa City 63 years ago, on my 27th birthday, a wonderful birthday present.

Dr. Steindler's Orthopaedic Department was considered one of the best in the United States. Dr. Steindler was a refined and cultured man. My first assignment, before the start of residency in July, was to translate into Spanish the 20 lectures he was to deliver at The University of Mexico, and to teach him how to pronounce them correctly.

The State of Iowa had a very progressive program of medical care—the University Hospitals provided free treatment for indigent patients. Twenty years before I came, the Orthopaedic Department occupied the east

side of the newly built Children's Hospital, with 100 beds. Children's Hospital had laboratories for biochemical research, bone pathology, clinical research, physical therapy, and a brace shop. All the braces for Iowans were made in this shop. We, the residents, lived on the second floor.

The greatest legacy of Dr. Steindler was to establish the basic principles of a model orthopaedic department in a rising university with teaching, research and patient care as full-time occupations. Health care had to be based on sound scientific and clinical research. Extensive files with records and X-rays of *all* patients, going back to 1920, were available through a full-time secretary for research. I spent many a night studying the natural history and results of many orthopaedic disorders treated in Iowa City. Long-term results of club foot treatment I found to be very bad. Those of congenital dislocation of the hip, and of Legg-Perthes, were better.

When the second world war started 6 months after my arrival, many faculty and residents, as well as young doctors in the state, had to enlist in the military. In Orthopaedics, we were left with one staff and about 4 residents to take care of an increased number of patients. We worked 12 to 14 hours each day for twenty dollars a month for the first year, with room and board. Then, and for many years after, salary was not a symbol of one's status. Health care was not for business. At that time, polio epidemics filled our infectious disease area, and in fall we sometimes had over 600 patients, 40 or so needing iron lungs to breathe. How could the afflicted families pay for this? They didn't have to.

At the end of the war, veterans returned to complete their orthopaedic training. Our time for research increased. With Barry Friedman and the help of pediatricians, neurologists and endocrinologists, we did extensive clinical and laboratory studies of close to 400 patients with idiopathic scoliosis. These studies revealed that the prognosis of the spinal deformity varied according to age at onset and to the site of the curves in otherwise normal patients. This study has been continued by Stu Weinstein and Lori Dolan, bringing us much useful information.

In searching for an animal model for scoliosis, I studied this deformity reproduced in rats and rabbits fed a diet containing sweet pea seed. Early in my experiments, I noticed that the young rats fed the sweet-pea meal

died from dissecting aneurysms of the aorta. The skeletal lesions observed in very young rats occurred in the growth plates, causing slipped epiphyses. Kyphoscoliosis was seen to develop as a result of slippage in the weakened vertebral growth plate and detached intervertebral ligaments.

The sweet pea caused the collagen in rats to be weak and soluble in salt saline. My findings opened a new field of study by biochemists. They discovered the structure of collagen to be formed by a triple helical protein with three polypeptide chains wound around each other. The aminonitrile in the sweet pea disrupted the cross-linking, weakening the collagen. This led to the understanding of the molecular defects in Marfan's, Ehlers-Danlos syndrome, and other genetic deficiencies. Much more work on collagen still lies ahead.

My research was possible because of the unique interdisciplinary setup in this university in the 50s and 60s. I worked with Stan Wazoneck in organic chemistry to identify the poison in the sweet pea, with Witschy in zoology to study the lesion in tadpoles. I worked with Warren Nelson and Nick Halmy in anatomy, with Muir in botany, and with Bob Shepard in physiology as he worked on his Ph.D. under my direction. Later on, the electron microscopy laboratory, established by Reg Cooper, was a basic addition for research. Dr. Bonfiglio was in charge of bone pathology. This university was a working paradise.

The ideals of the founders of our medical school have been maintained by men of vision, thanks to presidents, administrators, deans, chairmen, and colleagues: Howard Bowen, Sandy Boyd, John Colloton, Jack Eckstein, Bob Hardin, Paul Seebom, Jim Clifton, Carol Larson, Reginald Cooper, Jody Buckwalter, Stu Weinstein, and many others.

Personally, I could not have worked without the commitment of residents, nurses and secretaries: Miss Gould, Gwen Rarig, Stella Horst and recently Maria Paulsen, Susan Crimmins, Joyce Roller, Nancy Love, Gloria Yorek and others.

It is this university's setup that has made it possible for our staff to lead the world in orthopaedic surgery. Drs. Steindler, Weinstein and Buckwalter have been presidents of the American Orthopaedic Association. Drs. Larson, Cooper, and now Weinstein have been presidents of the American Academy of Orthopaedic Surgeons, and six members of our department have been presidents of the Orthopaedic Research Society, which I co-founded in 1954 (Ponseti, Bonfiglio, Cooper, Brand, Buckwalter and Brown). A number of us have been advisers to the National Institutes of Health and members of the editorial boards of leading orthopaedic

journals. A number of seminal articles have come out of our department.

When I turned 70, I had to comply with the mandatory retirement age. I was named professor emeritus. For two years I found enjoyment in studying Renaissance and modern art in the Art Department. Then, I went back to my laboratory to work on elastin in consultation with Michael Solursh.

I missed my patients, however. Stu Weinstein suggested I help with club foot patients. A 30-year follow-up by Doug Cooper and Fred Dietz of patients I treated with my technique in the 50s and 60s revealed good functional results, whereas club foot surgery throughout the orthopaedic world continued to bring disappointments. My papers on this subject were ignored.

My wife, Helen, suggested that I write a book on my method of treating club feet. She offered to type it for me on the computer. No publisher in the U.S. was interested. Stu Weinstein and Jody Buckwalter, who had contacts since his professorship in Oxford, were instrumental in getting my book published by Oxford University Press in 1996.

John Herzenberg from Baltimore was the first to read my book and promote my method. However, only a few orthopaedic surgeons were willing to give up surgery. Charles Saltzman advised me to summarize my work in our Virtual Hospital on the Internet.

A developer in Las Vegas, Martin Egbert, whose sixth child was born with club feet, was horrified, reading for three months the variety of operations performed on babies with this deformity. After calling Herzenberg and others to inquire about my technique, he called me on the phone several times. Finally, I just told him to stop shopping around and let me fix his baby.

After three weeks in Iowa City, his son's feet were corrected. On the way home with his wife, Allyson, they determined to start a web site to inform parents that surgery is unnecessary to correct club feet. Today, hundreds of web sites by parents here and abroad have been instrumental in turning around club foot treatment. John Mitchell, a master craftsman, and I, constructed a club foot model to show doctors and physician assistants how to move the joints to correct the deformity. Today, John Buchanan, a brilliant adviser on the establishment of new enterprises, is making it possible for John Mitchell to expand the production of his new foot appliances to maintain the club foot correction.

It has been touching to me to witness how parents know from the first manipulation and removal of the first cast, that their baby's feet are on the way to normality. This is in shocking contrast to surgeons who cut ligaments, lengthen tendons, open joints and pin

bones to align the foot, unaware of the irreparable damage they do.

Today, after half a century, I feel vindicated as Shafique Pirani and Norgrove Penny, backed by the Rotarians, are introducing my technique throughout Africa, India, and China. Naomi Davis and Gavin DeKiwit are disseminating the treatment throughout Great Britain and beyond, as have Ernesto Ippolito in Italy, Ana Ey in Spain, Berard in France, Sinclair in

Germany, Romanus in Scandanavia, and other doctors in Israel, Turkey, Portugal, Brazil, Uruguay, Argentina, Chile and Japan. Translations of my procedure are being made in seven languages.

I want to express my most profound gratitude to the outstanding leaders, professionals, and friends of this wonderful university for their support and contributions to my work throughout the years. It could not have been done anywhere else. Thank you.