# James Jerger

# A Life in Audiology

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**James Jerger, PhD**

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5521 Ruffin Road
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e-mail: info@pluralpublishing.com
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# PREFACE

In *Memoirs of a Geisha*, Arthur Golden commented that—in autobiographies—rabbits sometimes try to tell us what they looked like running across a field. He noted that rabbits are not our best source for that question because they really don't know what they looked like when running across the field. Rabbits are, however, our best possible source if we want to know what the field looked like. This book is a treat for those of us interested in a "rabbit's" view of what the field of audiology looked like from its infancy to adulthood. In this preface, I will climb up to the balcony, so to speak, and look down on this story to see, if I can, what the "rabbits" looked like.

## The Early Years

Jim's years at Northwestern University exemplify a coming together of the right people, asking the right questions, in times that were ready for the people, questions, and answers. The individuals forming this new culture came from diverse backgrounds which may have been important because they saw things from different perspectives, which in turn gave the culture a fresh viewpoint. We should remember to keep in touch with our roots and promote this heterogeneous thinking together and avoid the "talking to sameness" that can permeate the perspectives of those in established fields with ever increasing specialization. The diverse group at Northwestern was on a quest to understand and measure different types of hearing loss. And they exhibited a refreshing freedom of thought and resourcefulness as they seized their opportunities, such as scaffolding together the equipment

needed to research their questions. One can see them learning from their day-to-day experiences and work in research labs and using this to ground their thinking and refine their questions. As only one example, a participant in an experiment spontaneously commented that the experimental tone had faded away and he no longer heard it – a comment that eventually resulted in the clinical tone-decay test. The research questions and experiences of this group were like seeds; they sprouted new questions and built the body of knowledge that helped found a field.

## Continued Personal Renewal

In clinical and research endeavors, flexibility and continual learning and re-learning are your best friends. The arc of time in this book illustrated how one clinical audiologist-scientist continually updated himself and his research. The change over time in the research—from the early basic behavioral techniques to the later sophisticated cross-correlation functions of evoked potentials—reminded me of Ramon y Cajal's advice for young investigators: Avoid becoming a one instrument/technique addict. Interestingly, however, the arc of time also illustrated one constant among Jim's many changes, namely the value of learning from day-to-day experiences and work in the research lab and using this to ground thinking and refine questions. As only one example, one section of the book talked about research on a patient with bilateral temporal lobe lesions. After one experimental session, the patient was asked how the testing was going. The patient commented that he had been confused during the sound localization testing because he didn't know whether to point to where the stimulus started or where it ended. This comment led to newly thought-up experiments the next day (with complicated equipment miraculously set up overnight) that revealed important evidence—for the first time—about auditory functions in the presence of bilateral temporal lobe lesions.

## A Life in Audiology

Let me close by sharing some thoughts (slightly paraphrased) from John Gardner, Secretary of Health, Education, and Welfare for President Lyndon B. Johnson:

> Meaning is something that you build into your life. You build it out of your past, out of your affections and loyalties, out of your talents and understanding, out of the things you believe in, out of the things and people you love, and out of the values for which you are willing to sacrifice something. The ingredients are there, but you are the only one who can put them together into the unique pattern that will be your life.

And when you have lived a meaningful life with meaningful contributions—if you have been successful—others will step in as you step out. And so the world goes.

—Susan Jerger
July, 2016

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# INTRODUCTION

This is the story of my life as an audiologist. It is an account of some positive achievements, scattered among mistakes and blunders. My principal purpose is to influence students who may be contemplating, or have already begun, a career in a field that has rewarded me so richly. Along the way I hope to tell you something of my research, and of the many colleagues and friends who have influenced my thoughts and my work in ways that I can never fully repay.

If there is a recurring theme through these pages it is a certain tendency to challenge the status quo, to explore the road less travelled. One of my fellow graduate students at Northwestern once cautioned me, "Jim, you can't fight City Hall. You have to accept what is." I never believed this. I have been willing to accept new ideas for change, and to ask how they can help audiologists. This philosophy has led me down a few blind paths, but, on the whole, I think it has kept me in a positive and productive direction. Little would have been accomplished, however, without the contributions of so many of my students, research assistants, and colleagues.

# ACKNOWLEDGMENTS

At Northwestern University our research was generously aided by George Allen, Raymond Carhart, Earl Harford, Robert Harrison, John Peterson, Tom Tillman, Laszlo Stein, and Herbert Wright.

At the Houston Speech and Hearing Center our studies were facilitated by a productive partnership with Charles Speaks, ably assisted by Susan Jerger, Larry Mauldin, Don Golden, Jim Thelin and Jane Trammel.

The research work we produced at the Baylor College of Medicine was due to the dedication of several graduate students, BCM staff, and clinical audiologists employed by the Methodist Hospital. I owe a great debt to Bobby Alford for his strong support over many years, and to John Allen, Denise Brown, Rose Chmiel, Alfred Coats, Robert Fifer, Jay Hall, Maureen Hannley, Deborah Hayes, Susan Jerger, Karen Johnson, Craig Jordan, William Keith, Henry Lew, Louise Loiselle, Larry Mauldin, Emily Murphy, Terrey Oliver, Sharon Smith, Lois Sutton, and especially Brad Stach.

For all of the auditory event-related potential (AERP) work carried out during the UT Dallas years, I am indebted to Ross Roeser and Dean Bert Moore, for their unfailing support, and to the many graduate students who participated in lab activities: Tara Davis, Rebecca Estes, Katharine Fitzharris, Ralf Greenwald, Jyutika Mehta, Deborah Moncrieff, Mary Reagor, Gail Tillman, Ilse Wambacq, and especially Jeffrey Martin.

Finally, thanks to Rich Tyler of the University of Iowa for suggesting the idea for this book. For the dedication of all these individuals, and for the cooperation of the many listeners who participated in our investigations, I will be eternally grateful.

*Dedicated to the memory of Helmer Myklebust,*
*an extraordinary teacher, who was mainly responsible*
*for channeling my life into audiology*

CHAPTER

# 1

# The Early Years (1928–1945)

## Family

I was born on April 20, 1928 at the Marquette University Hospital in Milwaukee, Wisconsin. On every April 20 since then I have been reminded by an overzealous media that I share my birthday with Adolf Hitler, wherever he may be. Even as a baby I showed an interest in audiology. Figure 1–1 shows me pointing to my left ear, perhaps anticipating an awareness of the right ear advantage.

Both of my parents were German; they emigrated from the former Austria-Hungarian Empire around the turn of the century. My father, Nicholas Jerger, was born in 1896 and came to the USA in 1909; my mother, Anna Jerger (née Huber), was born in 1900 and arrived here in 1906. My father's family settled on a farm near the small community of Union Grove in southeastern Wisconsin; my mother's family settled in the Milwaukee area. After military service in the First World War, my father moved to Milwaukee and met his bride-to-be through mutual friends. They married in 1919. My brother, Edward, was born in 1922; I arrived six years later. Figure 1–2 shows an informal family portrait, circa 1935.

**Figure 1–1.** Even at an early age, I showed an interest in the ear.

**Figure 1–2.** Family portrait circa 1935. From left to right, Ed, Mom, Jim, Dad.

Ed and I were not close as children, due perhaps to the six-year difference in our ages, but found common ground in later years. We both attended Bartlett Avenue elementary school and Riverside High School, on Milwaukee's northeast side; then our paths diverged, his to a career in engineering, mine to lifetime devotion to audiology. Ed earned a BS degree in mechanical engineering from Marquette University in Milwaukee, then served in the US Army's Finance Center in Indianapolis during World War II. After discharge from the army he earned a PhD degree in mechanical engineering from Iowa State University in Ames.

Ed spent the bulk of his academic life at the University of Notre Dame, in South Bend, Indiana, where he rose to the post of Associate Dean of Engineering. After a long and interesting career, he retired to the Hilton Head region of South Carolina, where he competed successfully in senior swimming events until a few years before his death in 2015 at the age of 93.

The thing I remember most about Ed was his wonderful sense of humor. He was a great fan of the "Garfield" cartoon strip, perhaps because he saw in that wily feline some of his own personality. His first wife, Dorothy, had a good deal of insight on that topic. She once told my wife this story. They owned a beach house on Hilton Head Island, to which they often traveled on weekends and holidays. The automobile trip from South Bend to Hilton Head took two days, with an overnight stop at a motel in Kentucky or Tennessee. On one of these trips they checked into a motel in a small town in Tennessee. After Ed signed the register, the young desk clerk turned it around and read the name.

"Jerger," he said thoughtfully; then, "Are you *thee* Dr. Jerger?" Ed, thinking that the clerk was probably an engineering student who had studied his book on thermodynamics, modestly affirmed that he was, indeed, that individual. "Wow," said the clerk. "Would you sign my copy of your book for me?" "Of course," said Ed and reached for his pen. The clerk ducked into a room behind the desk and emerged with a copy of *Modern Developments in Audiology*.

Ed was slightly mortified at first, but then broke into a broad smile and said, "That's a very good book but it's not actually mine."

My own path was more erratic than Ed's, and certainly vastly different.

## Riverside High School (1941–1945)

Riverside was a remarkable high school for its place and time. Situated between upper and lower class neighborhoods on Milwaukee's northeast side, it drew students of varying ethnic and socio-economic levels. Most families were either German, Irish, English, or Polish; a sizable portion of the student body were the children of immigrants who had been drawn to Milwaukee by its jobs in the heavy manufacturing industries; farm machinery, casting, and forging, and, of course, the brewing of beer. Not, you might think, a promising environment for an enlightened classical educational experience. But Riverside high school was organized around three academic tracks, "x," "y," and "z," apparently based largely on IQ scores ("x" highest, "z" lowest). In our current era of political correctness we, of course, blanch and squirm at such blatant elitism, but in those days few seemed to regard the scheme as anything other than supremely sensible. In any event, as a member of the "x" track, I had little contact with those in the other two tracks and, in the vanity of youth, gave little thought to them.

For those assigned to the "x" track, there were no electives. The curriculum was:

- 4 years of Latin
- 4 years of Science
- 4 years of English
- 4 years of Mathematics

I did well enough in all four areas but enjoyed Latin and Mathematics more than Science and English. Indeed, to this day

I will tell anyone who asks that four years of Latin was my favorite—and most useful in later life—educational experience.

My high school years were time-locked to the Second World War. I entered as a freshman in September of 1941 and graduated in June of 1945. The events unfolding in Europe and the Pacific during those years impacted all of our lives. Gasoline, sugar, rubber, and steel were strictly rationed; loved ones and friends went off to war; some did not return. We followed the war news eagerly, although in the early years, from 1941 to 1943, the news was usually bad. Place names like Dunkirk, Guadalcanal, Midway, Tarawa, El Alamein, Coral Sea, Tinian, Stalingrad, Bastogne, and Auschwitz still ring in our ears 70 years later. The future was not at all certain. In so many ways WWII impacted our present and future lives. I will never forget, for example, the meaning of the word "imminent," because early in January of 1942, our English teacher, Miss Andrews, opened class by holding up the morning newspaper. The headline read "Fall of Manila Imminent." Now that is an educational tool surely familiar to every teacher at every level—using a jarring current event to make a pedagogical point, in this case vocabulary building. And it certainly worked. Words enter and leave my brain continuously but I have never forgotten the meaning of "imminent." Whenever I hear it spoken or see it in print my mind goes back to those early months in 1942 when our future seemed to be fragmenting.

I was never much of an athlete in high school, although I did qualify for the track team (Figure 1–3) as a long distance runner. I was probably weighted down too much by a heavy burden of hair (Figure 1–4).

## Camp Red Arrow for Boys (Summers of 1945, 1946)

My Latin instructor over the entire four years, Mr. Merton S. Lean, was an unusually talented teacher who went on to become principal of the school. He was also instrumental in arranging for me to enjoy the summers of 1945 and 1946 as a junior counselor at Camp Red Arrow on Trout Lake, just north of Woodruff,

**Figure 1–3.** Riverside High School track team, 1944. I am fourth from right on the bottom row.

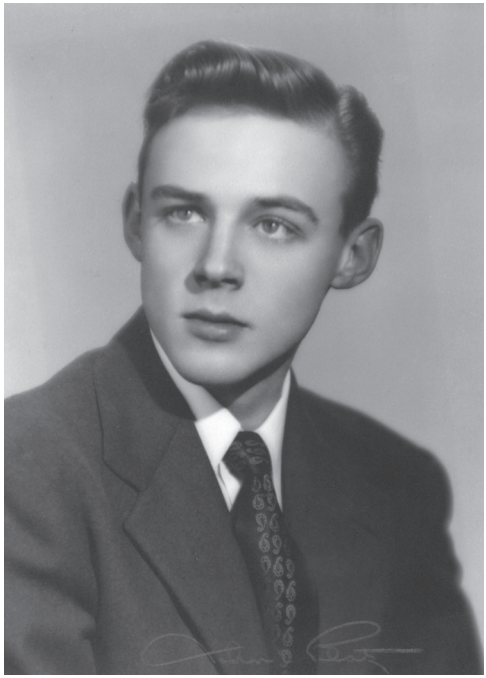

**Figure 1–4.** Riverside High School graduation, 1945. Can you believe that hair?