Remarks on Receiving the John W. Knutson Distinguished Service Award

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The Rap Chorus Line, from left to right: Tom Drury, Bruce Dye, Mayte Canto, Jonathan Shenkin, Rob Selwitz, Margo Adensaya, Harry Goodman, Stuart Lockwood, and Caswell Evans.

I am pleased and honored to be the recipient of this award. The John W. Knutson Distinguished Service Award is, arguably, the most prestigious of dental public health awards. Thus, it is overwhelming to be a recipient, especially when, like most of you, I am just doing a job that I believe in and love. It is particularly rewarding to receive this award inasmuch as I am not a man, I am not a dentist, and I didn't graduate from the University of Michigan. Further, I must echo Myron's comment upon his receiving this award, in that I, too, am delighted the committee selected a "mid-career" recipient.

My sincere thanks go to those who nominated me, the Awards Committee, chaired by Karen Kopriva, Colgate-Palmolive, and to everyone with whom I have had the opportunity to work over the past 30 or so years. Thank you Hersh, Myron, Dushanka, Harry, and Stuart for your comments on my behalf. My very special thanks also go to Mayte Canto and Dushanka Kleinman for organizing this "toast-roast." You definitely have set a new high standard of practice for this memorable event. The Rap Chorus Line was nothing short of outrageous; thanks to each of you who were cajoled by Dushanka to participate. Just a thought, however: you may not want to give up your day jobs just yet!

I am also grateful that Hersh has forgotten so many items with which he could have roasted or even broiled me. I am compelled to respond to one of his comments regarding my obvious pride at being a fourth-generation Californian. First, you need to understand that he is a first-generation Detroiter. He has never understood that native Californians are few and far between, and second, third-, fourth-, fifth-, and sixth-generation Californians are even less common. Further, most native Californians stay there! How many stay in Detroit? He certainly did not! Seriously, thank you, Hersh, for being my strongest critic and best advocate and friend. He has always been supportive (if not exasperated at times) of my public health activities and educational pursuits.

I also must thank my children, Bob and Jan, who were present when I graduated from high school and when I earned my bachelor's, master's and doctoral degrees, for their tolerance and support. It wasn't easy for them, I am sure, to have a mom in school throughout their elementary and middle school years. They always knew when it was mid-term and final week because we had the same five meals, which consisted of one meal each of either: McDonald's hamburgers, fries and a milkshake, frozen chicken potpies, hot dogs and beans, or frozen fried chicken dinners (with green peas and applesauce). I felt guilty at the time about serving that kind of food, but I have since learned that they missed those gourmet meals when the exams ceased.

Many if not most recipients of this award have provided information on how and why they got into dentistry and dental public health. I will not be an exception. On more than one occasion, it has occurred to me that I must have been destined for this field. I grew up in a small oil town in Kern County, California. We were a family of six; I was the second oldest child. My parents had very little money; but to my mother's credit, she never served a meal without a green salad and a vegetable. She, too, was a Californian and had grown up having access to fresh, inexpensive fruits and vegetables. We were practicing "five a day" long before it was popular. In contrast, my father was a meat-and-potatoes person, born and reared in Iowa. What his diet may have lacked, his mother instilled in him certain rules of hygiene. Thus, father insisted that we wash our hands before meals and no matter what the hour or how tired we might be, all four children had to bathe and brush their teeth before going to bed. Much later in life, while learning about the evolution of public health, I realized that his little German-born mother of 13 children likely was a product of Germany's public health attempts to stamp out disease through hygienic measures. My father also placed a very high value on education, although both he and my mother had only two years of college.

Taft, California, where I spent my early years, had an excellent school

system and looked after the health of its students. Although I did not know it at the time, my early introduction to dental hygiene was in elementary school. Each year, every student—kindergarten through the sixth grade—was taken to a centrally located elementary school, where there was a dental unit in a large room adjacent to the nurse's office. Students were taken eight at a time and seated at a table in the same room with the dental unit. It was a clever arrangement because the dental hygienist could keep an eye on the children seated at the table while she tended to each of us by providing an examination and a prophylaxis. She distributed dental health education materials mostly of the dancing carrots and laughing teeth variety and crayons to keep us busy. She also showed us how to brush our teeth, but we were provided with neither toothbrushes nor toothpaste. For those children who could not afford a dentist, local dentists provided necessary treatment in their respective office. I do not know if the dentists donated these services or if the school district paid for them. It was not until I was in dental hygiene school that I realized a dental hygienist, not a dentist, had taken care of us in this school setting.

I was not very interested in school and much to my father's chagrin, I dropped out of high school to get married. After several years and two children it was clear to me that I needed at least a high school education. So, when my husband was transferred to Mountain Home AFB and when my son enrolled in kindergarten, I investigated how I could earn a high school diploma. I went to the local high school principal who listened to my request and immediately told me that he would have to take it up with the superintendent of schools. Weeks went by and I did not hear a word. Shortly before school was out that spring, I contacted the principal again; he informed me that a decision was pending and he would let me know during the summer. The Friday before school started, I was called to the school and told that I could enroll, but it had to be with the understanding that I would not mingle with the other students. The concern was that I might "lead their students astray"—after all, I was a married woman.

I learned a great deal both from the teachers and from the students. I was several years older than my classmates and about the same age or older than a few of my teachers. As an adult student, there were times I thought that the teachers were eminently unfair, whereas at other times I wondered why some of the students were not expelled immediately. Initially I was self-conscious about the age difference between my classmates and me, but I soon learned the students had no idea I was so much older and really didn't care (a valuable lesson). They were far too busy with other interests and not only accepted me, but also frequently came to me for consultation on a variety of topics. Parents would sometimes call me to find out something about their son or daughter. I never divulged secrets. The night of graduation from high school my English teacher and his wife had a small party for me. During the evening the principal and superintendent admitted that they had taken a big gamble on me—and were glad they had.

While I was completing high school I also worked part time in a furnished model townhouse on the base, which was made available for incoming married personnel to see what base housing looked like. It was during one of these house-sitting afternoons that a young officer and his wife came in to size up the place because they soon would be living in similar housing. He was a dentist and she was a dental hygienist. Both graduates of Kansas City Dental School, Edith and Keith Ritter introduced me to dentistry. We became very close friends and spent a lot of time together, even though Keith was an officer and my husband was not. Before I finished high school, I knew that I wanted and needed to go to college; their influence to consider dental hygiene was pivotal in my career choice.

Shortly after I graduated from high school, my husband received orders to move to a base in Kansas. That fall he received orders to report to Greenland. I decided that I was going to college. Over Thanksgiving of that same year I visited the Department of Dental Hygiene at the University of Iowa when we visited my father's family in Iowa City. My hope was that I could apply for admission to the next year's class of dental hygiene. Because I had no prerequisites and because the next year's class had already been selected, I was told that it was highly unlikely that I would be admitted. It was suggested, however, that if I could enroll in the university the next semester, it definitely would be to my advantage. So we (my two children and I) moved to Iowa City and lived in married student housing, which consisted of tin barracks left over from WW II. Barracks life was another unforgettable learning experience, this time in community living.

During my first semester at the University of Iowa, I was a routine visitor to the dental hygiene department because I didn't want them to forget me. Apparently they didn't, because the following summer I received a letter from the department indicating that although I was not officially accepted into the forthcoming dental hygiene class, I could take all the first-year

From left to right, Jonathan Shenkin, Rob Selwitz (hidden), Margo Adensaya, Harry Goodman, Stuart Lockwood, Caswell Evans, Candace Jones, Myron Allukian, and Dushanka Kleinman.

courses. At that point, I had no intention of not getting my dental hygiene certificate. Perseverance pays off.

I was always looking for places to borrow money. After learning from a dental student that the dean had money to loan to dental students, I mustered the courage to determine if he had any to loan to dental hygiene students. After all, I reasoned, the worst he could say was no. "Not really" was his immediate answer. But, he later found some to loan me, and each semester thereafter when there was money leftover from the dental students, he would let me borrow it to pay tuition. I also worked on Saturdays as a dental assistant for a dentist who was a graduate student in the orthodontic program. It was in this rural practice that I honed my skills as a dental assistant and an office manager and to ask departing patients would they like to pay by check or cash. Giving people positive choices, I've learned, is a good public health practice.

During dental hygiene school I volunteered for several different assignments, which ultimately impacted on my career. Jan Burnham, our professor who taught dental health education, asked for a volunteer to go to the university's preschool program to talk about dental health. I volunteered. Having no competitors, I was selected. I loved working with the children. We took plaque samples and grew bacteria on agar plates and the children learned how and why to brush their teeth. This experience whetted my appetite for oral health education. Another time, despite having two children of my own, I became a volunteer "big sister" to several children at the university's Hospital for the Handicapped. I learned about special needs children and, among other things, helped devise some interesting approaches to assist children who had no arms to brush their teeth. I later worked at the same hospital for four months while the regular dental hygienist was on pregnancy leave.

Early one year during dental hygiene school, it was announced that the Indian Health Service (IHS) was recruiting for a dental hygiene student to work in Red Wing, Minnesota, for the summer. Although I didn't have a clue about what the IHS was, it sounded great because it was not only clinical dental hygiene, but also conducting education in the community. I applied. Because I was reasonably optimistic I might be accepted, I had my two children all primed to go spend the summer in Red Wing (wherever that was). Unfortunately, facilities were available for students, but not for their children; much to my disappointment, I was not accepted. And I have never made it to Red Wing.

Teaching preschool-aged children how to brush their teeth. University of Iowa, circa 1961.

Unlike today, in the early 1960s, many of the mouths we saw had textbook cases of black, green, or orange stain, calculus and dental caries. I learned the value of fluorides in dental hygiene school and routinely doused my children's teeth with 8 percent stannous fluoride—the prevailing and most popular topical fluoride at the school. The solution was mixed fresh for each patient and I have since wondered just how precise all of us measured the water and the fluoride powder. The solution was wretched-tasting stuff and many, if not most, children gagged. It took years for my children to forgive me for those treatments.

After earning a certificate in dental hygiene I worked part time in private practice and completed my bachelor's degree. After receiving my bachelor's degree I was hired to teach in the College of Dentistry. Concomitantly, I enrolled in the master's degree program in the College of Education. I taught dental assisting for two years, as well as clinical dental hygiene, and subsequently taught in the dental hygiene program full time for two years. The academic positions were nine-month appointments, which paid the handsome sum of $4,800. I worked in private practice most summers. Once I had a job at the dental school as a research assistant. My first foray into research consisted of selecting (randomly, of course) mandibles out of a bin of hundreds—some attached to skulls, others not—that belonged to the medical school; inserting a thin metal wire through the mandibular foramen and threading it through to the other side; and taking a radiograph of the mandible with the wire. I never did get a copy of the final report, but I think I figured out why the extraction of third molars frequently resulted in paraesthesia.

During my third year on the faculty at the University of Iowa's College of Dentistry, Bob Hansen, a dentist from the US Public Health Service, contacted me to determine if I might be interested in joining the Division of Dentistry at the Dental Health Center in San Francisco. The Dental Health Center was a relatively new "outpost" on the West Coast brought about largely through the efforts of Don Gallagan. Bob Hansen and his branch chief, Bob Weiss, were recruiting for a

dental hygienist with a background in education because they were gearing up for multiple educational activities in connection with the War on Poverty programs, including Head Start. Although I loved working with university students, the idea of expanding my experiences was appealing and I believed that public health might do just that. Admittedly, the thought of returning "home" to California also was an enticing factor. My initial plans were to give the position and the division five years and if I didn't like it I would return to academia. I never did, except for guest lectures.

During the early years in public health, I worked primarily with Head Start. We developed educational programs and culturally and ethnically appropriate materials for this young program. During this time I had my first experience at developing bilingual oral health educational materials. To accomplish this, we worked in a migrant community health center at the southern tip of the San Francisco Bay. These particular materials consisted of records and filmstrips both in Spanish and English. The contents were related to the topics predictable for the time: see your dentist, brush your teeth, and watch those sweets. Although these educational materials were intended to teach about oral health, they also were used as bilingual educational tools in a variety of settings. These educational materials, which were recorded in Mexico City, didn't go over quite so well when we tried to use them in the Bronx, where most Spanish-speaking people were from Santa Domingo. This experience paved the way for later Spanish educational materials we developed at the National Institute of Dental Research in that we had them reviewed by Spanish-speaking people whose origins were from several different countries and not solely Mexico. Recently, more than 25 years after the filmstrips and records were developed, we used them in a project in Washington, DC, in which most of the participants were from Central America. I hasten to add we also provided extensive education regarding the need for fluorides and dental sealants.

In hindsight, I am surprised that none of us proposed that we include the topic of fluorides in our educational efforts. At the time, there was little education being provided about fluorides. Yet the division had people working in community water fluoridation and Hersh, Stan Heifetz, and Bill Driscoll had long since initiated studies on school water fluoridation and self-applied fluorides. It is important to keep in mind that in the late 1960s and early 1970s, a major focus in US dentistry, including dental public health, was on preventing oral diseases through brushing and flossing. Children were taught to perform dry brushing [without toothpaste] in classrooms and on football fields to prevent dental diseases (dental caries and periodontal diseases). In clinical dentistry patients were taught that if you just brush and floss you can prevent oral diseases. The concept of "a clean tooth never decays" prevailed, although no studies were available to show the effectiveness of brushing and flossing on reducing caries if fluoride toothpaste were not used.

Because of Hersh's influence, I had become well educated regarding the need for fluorides. At one point I suggested that the division publish a leaflet on school-based fluoride mouthrinsing. A prototype was developed and several professional staff members reviewed it prior to review by members of the target audience. Interestingly, one health professional suggested that the word fluoride should be removed from the front of the leaflet because "it might frighten people and they may not read the leaflet." These vignettes demonstrate, I believe, a lack of understanding of the profound role of fluoride in caries prevention by many dental public health personnel at the time. Although the use of fluoride was a major focal point in two different parts of the division, we did not promote its use in the education branch, which was a clear lack of transferring current science.

In 1970, a major reorganization was initiated within the Division of Dentistry. When Hersh, Stan, and Bill transferred to the NIDR, I and others from the Dental Health Center were transferred to the Division of Dentistry in Bethesda. Before leaving San Francisco, I had begun working with Dave Suomi on a couple of research projects regarding toothbrushes and plaque removal. We continued to work together in Bethesda; in fact, he trained and calibrated me on the plaque index we later used in our plaque removal study.

Because the ongoing controversy about just what happens when youngsters brush and floss without the benefits of fluoride toothpaste, I wrote a proposal for a three-year study to answer these questions. The study was funded. Briefly, it consisted of providing training for the students on how to remove plaque using a toothbrush, nonfluoridated toothpaste, dental floss, and disclosing solution. In a special room set aside for us and under supervision of either a dental hygienist or a trained nurse, each student removed plaque by brushing and flossing and then used a disclosing solution to identify any remaining plaque. A supervisor examined each student's mouth to ensure that all plaque had been removed. This toothbrushing regimen was conducted daily for three school years. We had a modest dropout rate. The only way students could leave the study was with written parental permission. We had several memorable letters from parents requesting that their children be allowed to drop out.

We also had a few letters written by students who forged their parent's signature. Once, to help fight boredom of the students, we decided to ask their opinions about what they liked best about the program and how the program could be improved. Two of my favorites include: "You get out of a lot of boring classes." And "It got me out of class to have a cigarette." In response to the question, "What improvements or changes would you make?" the winner was, "This thing is hopeless, I wouldn't make any [suggestions]."

While with the division in Bethesda, I was asked to start an oral health program among Home Start families in West Virginia. In addition to a comprehensive oral health education program, we also initiated a home-based fluoride tablet program. Mouths were outrageously poor and the people were destitute. We found families living in former chicken coops and hog pens, with no running water and little food. One home we visited consisted of a mother who was relatively young but looked very old. She had many children and few teeth. The Head Start nurse and I were there to talk about her children's teeth; her biggest concerns, however, were how to get her washing machine fixed [which we arranged to have repaired] and where she would

get her next cigarette. We provided toothbrushes and toothpaste and lessons on their use. I also talked with her about healthy foods and that it wasn't a good idea to give her children between-meal sweets. I will never forget her expression when she told me that they didn't get in-between meal snacks and that the last meal they had eaten consisted of fried onions for lunch the previous day. It was then mid-afternoon. Needless to say I was more than embarrassed and immediately drove seven miles to the nearest country store to buy food for them.

We were just finishing the second year of our plaque removal study when the Division of Dentistry announced that it was no longer going to be in the "prevention business." It was then that I went to Jim Carlos, head of the National Caries Program at the National Institute of Dental Research (NIDR) to convince him that the program needed me. Before our appointment I looked up the congressional mandate for the institute. Was the NIDR only supposed to conduct research on oral diseases or were they to transfer research findings into practice? Good question, mused Jim. Before long, the NIDR announced a three-quarter-time position. I applied and got the job. Although it was only a four-day-a-week job, I worked five days a week. Within a year and a half I had a full-time position. The National Caries Program was in the midst of initiating numerous research and demonstration studies on weekly fluoride mouthrinsing. My job was to help transfer this technology and other caries preventive procedures to appropriate user groups—health professionals and the public.

For the first time the NIDR was establishing its interest in and commitment to community-based projects and working with appropriate people throughout the country. We developed an inventory of Spanish and English educational materials for use in community-based fluoride and sealant programs. We held several conferences specifically for those in dental public health, including state and local dental directors and dental educators. We paid the expenses of the participants and recruited some of the best experts in caries prevention to help us spread the word. Many, many basic and applied researchers, who ordinarily commanded large speakers fees, worked with us gratis to help transfer current research findings into use in public health programs. This effort went reasonably well until a new institute director was appointed who declared that dental caries was no longer a problem. The National Caries Program was abolished and most efforts in caries prevention ceased. I believe that the oral health of many Americans, especially those of lower socioeconomic status, still suffers from this premature announcement. Fortunately, the NIDCR has developed a renewed interest in dental caries prevention in recent years and in decreasing oral health disparities.

Like dozens of others in dental public health, I was involved in developing and monitoring Healthy People 2000. For more than three years I have been a co-leader for the final review of Healthy People 2000 and for the development and implementation of Healthy People 2010, our new national health objectives. This collaborative endeavor has been and continues to be an incredible learning experience and opportunity. The co-workers who persevered on this task are far too numerous to mention, but you can find their names in Volume II of "Healthy People 2010." It was through this experience that I had the opportunity to know and work with two wonderful partners, Stuart Lockwood and Candace Jones. We work hard and play well together!

My transition from a focus on dental caries prevention to oral cancer prevention and early detection was partly serendipitous, resulting from both the change in focus of the institute, as well as a personal interest in cancer prevention. My dissertation concerned women's knowledge and practices regarding ovarian, cervical, and colorectal cancers. About the same time, data became available from the 1990 NHIS Cancer Supplement on the public's knowledge and practices regarding several cancers, including oral cancer. The findings were clear: the public was essentially ignorant about oral cancer. These data and those of the 1992 NHIS data stimulated interest among a small group of us in Maryland. Eventually, with many enthusiastic partners but very little money, we undertook a major effort to conduct a statewide needs assessment regarding what health care providers and the public know and do about oral and pharyngeal cancer prevention and early detection. Harry Goodman, dental director of Maryland, was and remains a pivotal partner in these efforts, along with Tom Drury, Mayte Canto, and Dushanka Kleinman.

I began working on committees of

Alice holding the Knutson Award, accompanied by (from left to right) Dushanka Kleinman, Herschel Horowitz, Fiona Collins (Colgate-Palmolive), and Kevin Hardwick.

the American Association of Public Health Dentists in the mid-1970s. At that time nondentists couldn't vote, but we were allowed to be on and even chair committees. In 1977 I wrote a letter to Dave Striffler, then editor of the *JPHD*, regarding the fact that it was more cost effective to simply buy a subscription to the journal rather than be an associate member. Either way, nondentists could not vote. Dave gave my letter to the president of the organization, Bob Mecklenburg, who along with Dave, Hersh, and a few others championed the cause. The vote was very close. We (nondentists) did get the right to vote and within a relatively short time the name of the organization was changed from the American Association of Public Health Dentists to the American Association of Public Health Dentistry. One person can initiate change—but it takes partners to effect change.

Also in the mid-1970s, Martha Fales called to ask if I would consider running for a position on the Dental Health Section Council of the American Public Health Association (APHA). Somewhat embarrassed, I had to admit that I wasn't a member, but hastened to add that Hersh was, so I suggested his name. I also joined APHA immediately. It was not long after that I attended the section's meeting in Washington, DC. At the time, Myron Allukian was chair of the Dental Health Section. He convinced me to become active in the section and, eventually, to run for several offices within the organization. He continues this practice, but I have finally learned to use the "no" word on this topic.

Practicing dental public health has been and continues to be challenging, rewarding, and a lot of fun much of the time and a lot of work most of the time. A major lesson I have learned is that few in dental public health achieve anything single-handedly; that is what public health is all about. I have been extraordinarily fortunate to have so many partners in dental public health who have helped me and worked with me, which made it possible to be a recipient of this award. It has been my observation that public healthers are primarily givers, not takers. No other group of comparable size does so much for so many with so few resources and so little recognition. It has been and continues to be a privilege to work with all of you. Again, thank you for this honor.