Greetings, fellow/sister summiteers, thank you for coming to this important conference for CSU gerontologists. I think the first thing we ought to do is work on a theme song. If you are in my age group, a tune probably comes readily to mind. All we have to do is to find the lyrics, make sure they include excellence in teaching, and we will be the summiteers of CSU and go forward to do great things in gerontological instruction.

I would like to talk with you today about three different aspects of gerontology, and, if time permits, add a fourth for your consideration. I would like to talk about some of the (1) important conceptual issues and (2) emerging patterns that seem to be on the horizon as we enter this new millennium. The third key point will address our (3) instructional agenda and how we ensure it remains consonant with the first two issues. One of my main concerns is to make sure that our instructional approaches dovetail closely with the latest thinking and findings in gerontology as the frontiers of knowledge move rapidly these days. I neglected to bring one of the transparencies that I intended to utilize but if you will take a dollar bill out of your pocket and refer to the backside at the appropriate time, you will have about the same inspiration as I did when I prepared the transparency. Finally, if time remains and your interest is sustained, I have a fourth point to make about (4) conceptual integration and theoretical issues that can help us, in our role as teachers and mentors, as we attempt to connect together some of what we need to do in the field of aging. As I was uncertain of some of your interests when I was in the process of preparing these remarks, I will discuss the first three points, and then, as I say, if interest remains we will move on to the fourth and final point.

With feet firmly planted in mid-air, I would like to do a little prognostication, and we all recognize that doing so is risky business. At the beginning of the last century, Lord Kelvin, the man who brought us the Kelvin scale, said heavier than air flying is impossible and, furthermore, radio has no future either. So though Kelvin is known to most of us for a brand of refrigerators we have in our kitchens, and for his temperature scale, he was not a particularly astute predictor of things to come. In much the same spirit, in 1940, Thomas Watson, then president of IBM, is reputed to have said, “Worldwide, there’s a need for maybe five computers.” Interesting commentary, no doubt, and I do not really relish following in either Kelvin or Watson’s footsteps. I agree with those who point out that it is the learners who will inherit the earth, while the learned will find themselves well equipped for a world that no longer exists. If gerontology is to retain a position on the cutting edge of new knowledge, it needs to focus on preparing learners to deal with what is yet to come, and not be too concerned about the needs of those primarily concerned with just mastering the content of gerontology.
The Times They Are A-Changing

I do not think that there is much debate that one of the achievements of the last century was a lengthening of life expectancy. From its beginnings to the end of the twentieth century, overall life expectancy increased and age-specific life expectancy among older persons increased by an even larger percentage. During roughly the same period gerontology arrived on the scene, spread across the academic compass and came of age. As the fourth quarter of the last century began, the National Institute on Aging became a reality and the study of aging burgeoned with an influx of new resources and new investigators. Like its subject matter, gerontology matured with the passing of the years and this maturation brought not only vitality, but also reflection and reappraisal.

Another major transformation in the second half of the twentieth century was a shrinking of the world stage, so to speak. Unprecedented and comprehensive changes circumnavigated the globe, reverberated through every realm of endeavor, and drew together places that used to take weeks to communicate with one another. Now scant moments are required and the issues of one location are readily apparent in another and oftentimes are just as consequential. Together these shifts make it all the more important to formulate sound explanations for what happens over the life course and to ground the patterns identified in factors known to effect the daily life regardless of where a person lives or where the events occur.

In fact, the latter is one of the more profound alterations the world experienced as we passed into the twenty-first century—the realization that the context of aging has become considerably more inclusive, and what happens in one place reflects events that may be taking place half a world away. One need only think of the importance of a global division of labor, say the movement of heavy manufacturing from one location to another, to begin to appreciate the ramifications of that claim. Factor in health incidents and social welfare policies predicated on existing revenue streams and the picture becomes appreciably more complicated. Political realities add another degree of complexity but are nonetheless as profoundly implicated in what happens to the life course. As an illustration of the latter the World Bank has set forth certain guidelines for social welfare policy among those nations seeking financial assistance. The emerging reality is that the world has gotten smaller and the situation of older persons no longer reflects only the most proximate circumstances without consideration of an array of other factors.

Another important change is evident in worldwide demographic patterns. As can be seen in Figure 1, showing the worldwide distribution of aging, the biggest growth of the elderly population in the years immediately ahead is going to occur among countries that would not currently be considered as developed. I recognize that any descriptor is politically charged, but regardless of whether they are labeled as developing countries, oppressed countries, or third-world countries, the point is that they will be where the greatest increases in life expectancy in the first half of the twentieth-first century will occur—in fact the shift in the distribution is fairly dramatic. In 1950 (as seen in Figure 1), developed countries accounted for the lion’s share of the aging that went on in the world. By 1990 changes of considerable magnitude had taken place and substantial population growth was occurring in developing countries. As can be seen by looking at the lower portion of the figure, by the year 2030, the bulk of the world’s population is going to live in countries we currently think of as developing nations.
Figure 1

Population by Age and Sex: 1950, 1990, and 2030

- Developing countries
- Developed countries

Age:
- 80+
- 75-79
- 70-74
- 65-69
- 60-64
- 55-59
- 50-54
- 45-49
- 40-44
- 35-39
- 30-34
- 25-29
- 20-24
- 15-19
- 10-14
- 5-9
- 0-4

Millions

CSTU - Northridge
As you examine the darkened shaded center column, bear in mind that it represents the population distribution by age and sex at three points in time in developed nations of the world. The unshaded portion represents developing countries at the same three points in time. Comparing light and dark population shifts, it is apparent that aging in the developed portion of the world is slowing down, relatively speaking. In 1950 the center is where population growth was occurring. By 1990, population aging continued in the same countries to be sure but the developing regions of the world was where the population boom was occurring. By 2030, the developed portion of the world is going to be fairly stable with the population spread equally among the age categories shown. There will be some growth at the top, in what we commonly call the oldest-old categories as demographers commonly use that phrase (often inaccurately), but otherwise the column is pretty much vertical. The developing regions of the world are going to be where the bulk of the population is becoming old. These statistics were compiled from U. N. and U.S. Census reports within just the last year or two, so they can be considered among the latest projections we have available. They tell us a great deal of interesting information.

The world’s population of people over the age of 65 is expanding almost exponentially while overall population growth is slowing. Estimates place the number of people turning 65 at approximately 800,000 people a month. In mid-2000, there were 420,000,000 people over the age of 65. That is a 9.5 million in the period of just one year. Let us not quibble with the fact that 65 works for defining someone as old in some countries yet may be way too old in other countries where life expectancy is curtailed. Let us accept it as an operational definition just to keep the discussion simple. The most clear-cut indications are that roughly 77 percent of the growth in the older population is occurring in developing countries. These are places where health care is making dramatic in-roads in mortality and where industrialization is only now taking root. In short, aging is occurring in that portion of our world where there is a surge in the number of people reaching their 65th birthdays but where the financial picture may lag behind ability to provide economic and social safety nets for older segments of the population. The overall pattern poses some real difficulties for us as gerontologists, especially those of us used to talking about aging in local, regional or national terms.

Making sense of aging as it is going to unfold tomorrow and the day after requires an appreciation of the dynamic interaction occurring between diverse arenas of life. I think we need to structure our course work offerings, and our opportunities provided to our students reflect that interaction. As we passed into the new century, there was plenty of debate and a proliferation of commentaries aligned along the kind of standard fault lines that those who believe that age is increasingly irrelevant and those who believe that age is all the more salient. The meaning of age, especially old age, gets drawn in even bolder relief in times of economic short fall, when surplus is not part of everyday experiences. Of course there is room for a legitimate difference of opinion, provided we are on guard lest the challenges shred the basic fabric of gerontology.

In the decades ahead, there will be an increasing number of people who spend twenty, thirty and even more years on the far side of age 65, what we used to think of as retirement age and an age that demarcated the on-set of old age. Certainly, it was considered the termination of middle age. But is that distinction any longer accurate if you are twenty, even thirty years beyond the other side of that line? Maybe our mindset, our terminology, or our jargon is holding us back from the kinds of innovative perspectives that might make a difference. What do you think?
There are important incongruities, as I have said, between developed and developing countries with the latter group aging more rapidly and those patterns reflecting differences in fertility and mortality. There are also differences within each category and among countries labeled as either developed or developing. Nonetheless, there are some valuable insights lodged in the trends. By looking at Figure 2, at the annual average percentage growth of the elderly population, you can see that there is going to be a dramatic spike in the developing countries in the next ten years. During the same period there will be a less dramatic crest, but an upturn, nonetheless, in developed countries that mirrors the same pattern. Meanwhile, because of declining fertility, the total of the world’s population shown by the bottom, straight-line is going to continue to decline.

Figure 2
The implications of what is implicit in the three lines shown in Figure 2 are profound. I am not saying that demography is destiny, but the patterns we see just on these three lines is enough to convince me there are going to be some hard issues facing us as citizens and as gerontologists not very many years down the road. The number of wage earners per retiree is going to decline, never mind for now that the wage profile is declining at the same time. Often called the age-dependency ratio, the number of workers per older person is going to continue to decline. Most of us recognize that not everyone over the age of 65 is unproductive and neither is everyone between the ages of 15 and 65 productive——used here in the narrowest economic sense. Nonetheless, the ratio is useful in guiding us, if only as an indicator of the potential political pressures that is going to befall many governments in the near term. If you look at the point at which both of those spikes on the top and the middle bar turn upwards, you can see that we are closing in very soon on what is going to be a dramatic upsurge in the number of elderly. By 2005 or so political dialogue is going to become quite heated. There are a number of important caveats that we need to keep in mind as we look at the spikes that seem like they are just around the corner—in terms of time.

Before jumping to conclusions and making sweeping generalizations we need to ask if there is a universal older person to be found hither and yon, around the world, and up and down the social-economic hierarchy? Is there a “standard issue,” statistically average older person who is going to an obliging model for us as we teach gerontology? My long-time colleague, Robert Kastenbaum used to say when he was discussing the idealized, statistically average older person, “Any resemblance to persons living or dead is purely accidental.” Interpolating a bit we might also ask whether both genders are subject to the same influences?”

If you look at the sex ratio, another of the demographer’s mainstays shown in Figure 3, you can see that in developed countries, in the age range of 65 to 79 there are about 72 males for every 100 females. Because of the likely nature of the next generation of health breakthroughs, in all probability men are going to experience the greatest proportionate increase in life expectancy over the next 25+ years. As you can see, pretty soon there are going to be 81 males per 100 females. Among those aged 80 or older, you can see currently there are about 45 males per 100 females, and that ratio is expected to move to be about 57 males per 100 females not very many years down the road.

If you look at the right hand side of Figure 3, in the developing countries, because of rapid transformations in mortality, the sex ratios are quite disparate when compared to developed countries. Greater female mortality in the years prior to the 65-79 range results in a greater proportion of men in that age-interval than there are in developed countries. In the 80+ categories the sex ratio rebalances itself, suggesting the events responsible for female mortality do indeed occur earlier and are not directly implicated in the later years.
So my question is, are both genders subject to the same influences with variations in time and place? Interpreting just these three figures suggests two prevailing foci are essential: the first is call for a global perspective for understanding what is going to happen to the aging population. Second, if you add to the expansion of the elderly population, changes in international economics and the movement of both capital and production from one region to another virtually independently of national boundaries and certainly in search of the most favorable concessions—as an example, there are literally hundreds of billions of dollars moved from one country to another and around the world everyday.

In addition to broad-scale economic transactions, there is an analogous shift in patterns of employment and investment in production facilities. We hear in this country that there is going to be a shortage of workers and a plethora of old people. But in some other country, there could be a surplus of workers and a shortage of old people. Furthermore, there is a prospect that should
local conditions be deemed unfavorable in a company or corporation’s eyes, they could pack up and relocate some or all of their operations to a distant site thought to be more favorable. Work life and employment benefit packages are both affected by the shrinking global marketplace.

As a concomitant to economic currents we need to also think about cultural changes and consumer curves. I was in rural Korea awhile back and heard a couple of American popular singing groups on the speakers at a grocery store a long way off the beaten path. I had no idea who they were, but my wife said, “Well, that’s so and so and so and so, what are you a shut-in?” It struck me, as I was walking around, eating whatever it was that we bought at that little grocery store, that American popular music is in every corner of the world, in every country that you can find and blaring from the speakers of even out-of-the-way rural groceries. My point, in a nutshell: consumer currents flow worldwide and no place is insulated from other places. When politics and policies get added to the mix there is ample reason to justify as inclusive a focus as we can manage when we teach about aging. Although we speak of a crisis of aging because there are fewer wage earners in one country, there is also dramatic growth in the number of people entering the paid labor force in other countries. So what is the source of the crisis? Much as a multifaceted and transnational perspective seems like a Sisyphean task, it is always tough to get that rock up the hill; it is still an effort that is worthwhile. The alternative is that gerontology is going to assume a subsidiary role and we gerontologists need to rise to the occasion.

**Market Forces and Market Mentalities**

Market forces, or what might be called market mentalities, are another factor changing the way we look at aging. No doubt most CSU faculty interested in gerontology could do as adequate a job as I can in talking about some of the relevant factors, but why don’t we go through them nonetheless and see if we have something to teach one another?

There are at least two aspects of the market mentality that are relevant to how we approach gerontological instruction. The first is the proverbial “bottom line”. We tend to cast it in terms of the cost of aging and the availability of revenues generated by the number of workers as a ratio to the number of claimants on public provisions. Yet, in and of itself, demographic aging does not portend any particular meaning; the meaning derives from our ideology and from our politics. If the future of gerontology were based on forecasting life expectancy and improving morbidity in population growth alone, there would be little doubt that the need justifies ample growth in the number of trained gerontologists. Demands in the health arena, in service delivery, in social security provisions, and so on and so forth, are likely going to multiply dramatically in the decades just ahead—as we started off, and as you saw in the second transparency, the near term demographic pattern is pretty clear. There are uncertainties in the mix, “x’s” in the equation, as it were, and they come in the form of political decisions, and with the emerging emphasis over the past fifteen years on market-driven solutions, what some call the commodification of life and the commodification of individuals.

Here is a question to ponder: Do we ask if the education budget is balanced? Do we ask if the defense budget is balanced? Or if Home Land Defense is breaking even? Do we look for a return on those dollars? Why then should we ask if social security or social welfare in any of its guises
is in balance? Or out of balance? Now there is an ideological question sure to raise the pulse rate and stir spirited debate.

If social policies have been adopted that promote continued participation in the labor force, what is the underlying rationale for describing older persons as staying too long on the job? Alternatively, if a person is precluded from working by formal retirement laws or policies, is it fair to point a finger at that person for living off the public dole? There are many ramifications of policy decisions that we need to consider their reach before we draw conclusions about the worth of a person or the cost of a program.

The second aspect of a market mentality I would like to offer for your consideration has to do with the fact that old people are not all that poor when considered as a statistical group. It is true, depending on how one does the calculation that 16 percent, or 28 percent, or 32 percent of older persons are near poverty or below the poverty line. The figures for women are even higher than the overall pattern and the older they get the more dire their circumstances become. Nonetheless, a large share of the elderly have enough financial wherewithal to outspend their younger colleagues in the 25 to 34 year range by a factor of two to one. Looking at a two to one differential suggests an obvious conclusion: there is gold in gray. And you better believe marketers are not oblivious to that fact; they have figured out that a sizable percentage of the elderly have money to spend and use it as a form of self-confirmation.

The gray market has attracted extensive attention as age-specific spending is high, and earmarked allocations for older persons were politically sacrosanct from the second to the fourth quarter of the twentieth century. The dollars involved are substantial and the financial repercussions are staggering. Old age is good business, and it is not going to get any less lucrative for those who have something to sell to older persons. Because our spending habits are unlikely to change unless financial wherewithal diminishes, consumer spending among older cohorts is probably not going to decline. For one thing, a person’s needs in terms of the symbolic relevance of consumption are unlikely to wane. It is doubtful if those people moving into old age as they start up that steep slope are going to trim their spending in any significant manner, despite the wide variation in fiscal capacity and the fact that marketers refer to them as slightly predisposed to well-tailored appeals. When you add in the importance of affable living situations, institutionalization, and the many forms of consumption that are increasing among that portion of the age group, there is clearly untapped potential, but just as clearly there are also potential problems. Each of those trends, the bottom line commodification and the fact that old age is big business, stands as pretty portentous on its own, but they are also indicative of other changes that are going to play out in the years ahead.

The Providence of Gerontology

Several years back the late Bernice Neugarten predicted that gerontology might well disappear in the next two decades. Dr. Neugarten was an astute observer, there is no doubt about it, and when she made that statement in 1994 and again in 1995 gerontologists took notice. She suggested that the field would disappear, because age per se was going to become increasingly irrelevant. Neugarten was not a fan of strict chronological definitions, saying the way we speak of age is
way too arbitrary, the delineation of middle-age, old age and other ages reflect something other
than functionality and they have taken on a life of their own.

We have always attributed the delineation of old age to Bismarck, or to the British poor laws of
the 17th century. But from British poor laws of 1635, to Bismarck in the 1880’s, to the present,
policies have been formulated using age as cleavage points of demarcation and embarkation, for
different forms of eligibility for one or another purpose. How an individual experiences the later
years is in no small measure a result of those policies, added to circumstances that they endured
or experienced in earlier stages of life. Dr. Neugarten asserted that it is a person’s level of
functioning that is more important, or their particular level of need, and not age, per se. Each of
these factors is going to vie with age as a policy criterion in times of scarce resources. But what
we see instead is age being sanctified and used as a justification for benefit and for denial.

Think for just a moment of the psychological effect of any border or boundary. They are used as
an explanation for the people who are on the other side and the seeming differences between
them and ourselves. And as we undergo our border crossings, boundary crossings if you will, we
use that transition in and of itself as an explanation for whatever change occurs. I think even
though each of these observations is appropriately debatable, do they necessarily portend the end
of gerontology? I think not. And I think that Dr. Neugarten, were she still living, would be
willing to join the debate.

I think an emerging tenant of gerontology implores us to examine variability within and between
older populations. I just said there is gold in gray and readily acknowledge that a sixth and more
of the older population does not have two dimes to rub together and has few alternatives in their
lives. Understanding the diversity that occurs among the elderly requires attention to that whole
gamut of what we might call master status characteristics: age, sex, gender, ethnicity, or race. We
could as easily add any other factors that we might want to explore for disaggregating that
portion of our population. Doing so is a prerequisite for mapping circumstances and conditions
of older people, and, indeed for effectively directing the resources in times of scarcity at those
with greatest need. So what we have to learn to do in gerontology is explicate those master status
characteristics and examine their effect on the process of growing old. In order to do so,
disaggregation is going to be necessary.

The second reason I think gerontology is not going to go away and the end is not in sight is that
aging is a global phenomenon with wide-ranging social, political, and economic implications for
developed and developing nations alike. I would worry less about who has nuclear capacity and
more about the demographic transitions that are occurring globally. I will not be very many more
years before countries that are in need are going to tire of standing in line and asking for
assistance and begin to use those population resources to press their demands for assistance.
Gerontology is well positioned and should be in demand to predict, to monitor, and to interpret
the changes likely to be induced by this graying of the globe.

The third reason I think gerontology is not going to fade is that our multidisciplinarity, our
interdisciplinarity, or even if you want to call it that, our cross-disciplinarity, are distinguishing
characteristics of our field. Most of us have spent our academic careers working along the
margins of traditional disciplines. Sometimes that is a strength, and sometimes it is a weakness.
But either way, it is certainly a common trait of that focus we call gerontology. And if a cross-disciplinary strategy promotes an understanding of aging and old age, I think that is what should become *de rigueur*. We should all promote it in our instructional programs.

Lastly, I do not think gerontology is going to shrivel away because it fosters an invaluable life course orientation. I do not mean a life course perspective that is limited and constrained, or inhibited by arbitrary chronological boundaries, but a life course perspective that recognizes that environmental constraints and opportunities shape how the aging process unfolds, I think that if such a perspective is seen as valuable in any way—if you see environmental opportunities and experiences as giving life its shape and its form—if that is successful in furthering knowledge, I think that viewpoint can be taken as an indicator that gerontology has matured rather than become outmoded.

**What Lies Ahead?**

There are some emerging issues in various sub-facets facing gerontology in the years ahead. In my opinion, not only is the end of gerontology nowhere in sight, there is every indication that its vitality will persevere and perhaps even snowball. It takes no particularly skillful crystal ball gazing to posit some of the more obvious near term directions. Political scientists are going to be occupied answering questions about whether old people will act as unified political actors. Robert Binstock has been asking this for years without any clear-cut answers. I think it is likely to become the case as benefits in return for life-long contributions turn into political fodder. The patterns of the past, well documented as they are, may not preserve in the years to come. What would happen if people over the age of 65 ceased to define themselves in terms of their previous master status characteristics and started to define themselves in terms of their present, or one of their present master status characteristics? It might just happen that a common age-group will emerge, one bounded by policy mandates, stipulations and challenges. Labor markets and retirement policies are always hot-button topics, and they are going to remain critical determinates of late-life lifestyles. For a variety of reasons they are going to demand and deserve additional attention.

John Henretta, not so many years ago, asserted that for most people the best advice he might offer is to give up the notion of life-long career projections. Labor markets are going to resemble stock markets, where economies and industries are going to move people in and out as necessary to maintain their productive bottom line, as well as their profit line. If Henretta is correct, as a society we are going to see life-long career trajectories for fewer than about 20 percent of the adult labor force, with the remaining 80 percent subject to the whims of service industry labor markets. If you look at what has happened in the last decade, or even the last half a decade, of white-collar employment, it suggests that Henretta might have just hit the nail on the head.

As the aerospace industry and as the information technology industry have moved workers in and out with a rapidity that the 1950’s labor economists could never have foreseen, it is clear that spot-market employment is not a phenomena restricted to the ranks of blue-collar occupations. They used to think it was the blue collar and occasionally the pink collar occupations that were subject to the caprice of the short-term marketplace, and we now realize, perhaps more than ever, that white collar and knowledge industry workers are subject to those vagaries with greater
volatility than the blue collar and pink collar jobs in our society. Family involvements and interpersonal relationships are also key elements of what in recent years we have started to call social capital. We are all fairly familiar with the concept of human capital, what the worker or the citizen brings to the market place: skill, knowledge, information, and personal attributes. But we also have social capital, and some of those social capital characteristics are tough to measure, so we discount them.

For a large number of years, we have tended to measure what we treasure in this society. And what we cannot figure out how to measure, we discount. But some of those things, like family involvements and interpersonal relationships, social class backgrounds and status characteristics, are elements of social capital that not only ameliorate the experience of stress, they actually deflect and insulate against stress. Social capital is integral to what happens in the later years and it is also closely linked to policy preferences. If you have aid to families with dependent children, the old AFDC, saying that a married woman is not eligible for AFDC, what is that doing to the nature of the family? Were marriage desirable, and I am not saying that it necessarily is, or should have been, but were it desirable and the choice is living under holy wedded matrimony or continuing to receive supportive welfare payments, what decision would we all make? My point is simply that policy stipulations shape a great deal about our individual-level of identity and we need to keep that in mind as we provide instruction in gerontology.

I think a few other examples should suffice to demonstrate gerontology’s stance on the cutting-edge of scientific and technological discovery and innovation in the new millennium. The demographic trends are apparent, even if the meanings of those patterns are not. An important facet of the equation that is in need of further attention is how aging plays out in some of the sub-populations that I have been referring to, minority populations, and by gender. One size does not fit all and even some of our basic concepts might be misapplied if we put them into practice across ethnic and racial groups in the same manner without close specification.

I am reminded of a gracious dialogue a few years back between the late Powell Lawton and an insightful minority scholar named Renata Hartung in the Journal of Gerontology: Social Sciences (48:1993 S33-34). Lawton with all his expertise, and he was a man of great sagacity, talked about the influence the income level on the perception of hardship or burden among caregivers. Lawton had presented a straightforward kind of economic analysis of the nature of stress. Hartung, bringing in the notion of relative deprivation, pointed out that crossing over and then being made to cross back over an economic threshold in order to care for people has to have some sort of psychological malaise attached to it. We would all dearly love to launch a study of that nature. Professor Hartung said, in effect, “Wait a minute. In my particular ethnic group (which happened to be ethnic African American), the concept of relative deprivation is virtually ignored. Most of us have never lived above that threshold to experience the type of surplus that he talked about. And furthermore, crossing back isn’t viewed necessarily as onerous; it might be viewed as an opportunity. Have you thought about the difference, Dr. Lawton, in the nature of what caregiving means for different ethnic groups and even by gender?”

She and others have also suggested that men view caregiving as instrumental tasks to be accomplished. Women, especially African American women, view caregiving as relationship management. Might that not lead to very different interpretations or kinds of consequences,
viewed as tasks versus viewed as relationship management? And I am not saying relationship management should only have a positive tinge to it, I am not saying that at all. And Hartung was not saying that. She was saying that it means different things, so we need to proceed cautiously before we take a concept for granted and apply it willy-nilly to all portions of our population. It was one of those dialogues in the journals that just made you proud to be a gerontologist and proud you learned to read in the first place. And hopefully, it will give us all a standard to live up to the next time we have a scholarly disagreement. And Lawton, who by that point was aware that he did not have a whole lot of time left gratefully noted that Hartung had a great many valid points and that she taught him some valuable lessons and that the rest of his research would be informed by what he had learned.

Some of the unknowns facing us in the years ahead hail from areas that at first blush might seem fairly far afield from gerontology's preoccupations. Elsewhere, a colleague and I have made reference to advances in molecular biology and the fact that those break-throughs hold considerable promise of yielding insight into genetic diseases and thereby reducing morbidity and mortality and extending life expectancy. Let me add that I do not believe that advances in molecular biology and other fields of that nature are all that distant from social and behavioral inquiries if only because they involve questions of access. And I think its relevance in cross-linked interdisciplinary research is far broader than that.

Developments in computer technology have spawned a revolution in access to information and to participation in supportive social networks. I was talking with Dr. Debra Sheets, our wonderful host, just as the conference began about how important my e-mail family has become for me and how much I value the contact it provides. I totally disagree with colleagues who debunk electronic communication saying, “It is so impersonal.” You know, I think they are unfamiliar with what the medium provides, is that a polite way to put it? I know I am able to have connections and maintain relationships with people that I see infrequently and certainly not enough. I am able to have contact with friends around the country, even if they just send me the kind of bum jokes think all of us receive—at least it means I am on their scope one way or another. I know they are thinking of me and I am grateful for that.

But computer technology is far more important than simple communications, we tend to view it in a superficial manner as information technology, but there are other components, which are going to reshape our lives. Let me return to the erstwhile Dr. Lawton for a moment. Together with his co-authors he highlighted the concept of the environmental press and how it relates to the experience of aging. Lawton and Nahemow utilized the notion of environmental press in an article in *The Gerontologist* in the fall of 1972. How many of you were reading *The Gerontologist* in 1972? I pondered that article long and hard and tried to get a handle on the notion of environmental press and the ways it might influence how I think about the situation of elderly persons. As Lawton asserted, our ability to cope, our ability to manage, is alive, it is organic and constantly evolving.

Without delving into great detail right now suffice it to say that according to the idea of environmental press, our skills in one context may be transformed with age and by movement to another context. Skills that we once relied on or were useful in one type of situation may not serve us well if fundamental changes take place. In a familiar context, we may function perfectly
well and be oblivious to subtle changes taking place in how we interact with the environment. In an unfamiliar, or marginally familiar context, our ability to function may be challenged and call for adaptations that may be beyond our ability to respond. Due to shifts in visual acuity, or hearing, or adaptability or to shifts within the environment itself, we may feel a real sense of distress. We know when we go to strange towns, and we come out of the airport late at night and it is raining, and we do not know how much it costs to get to town and we are temporarily flummoxed: “Do I take the cab, do I take the shuttle, or do I ride the bus?” Or when we drive into an unfamiliar town and wonder how on earth to ferret out the clues to arrive at our destination without further hassle. When that happens don’t we sometimes ask, “How come they don’t make this town intelligible?”

Just those mundane little examples may help us grasp in a visceral sense what environmental press means and how it preoccupies people who must deal with it as part of the normal course of life. Lawton and his co-author, Lucille Nahemow pointed out that environmental press is a dynamic concept. It comes and goes, ebbs and flows, is sometimes very prominent and visible, and sometimes less so. And, depending on where you are in the cycle when you encounter that stress, it is going to have a differential effect on you. Let me use a simple-minded illustration. Think of the effect of a parent’s death on you if you are four, 14, or 54. Same event, differential effect, but why? At four, you would probably wonder, where your next meal is coming from, or who is going to take you to the park, but the finality of the death is not easily assimilated. At 14, you are likely to be devastated, understanding finality all too well by that age but also questioning your own life. At 54, you think, “They lived a long and productive life, I am glad I had them for as long as I did.” As I just noted, same event, different effect, depending on where you are in your own developmental cycle. Lawton and Nahemow maintained that something that could be stressful for some of one point in time and absolutely not stressful, in fact, perhaps even a resource for others of us at other points in time shift in part because of our ability to assimilate contextual change.

Let me bring that notion back to what I want to say about information technology and the advent of new ways to either monitor or manipulate environmental factors that are a part of daily life. One of the big changes on the horizon is the development of computer technology and the use of that technology imbedded into what are being called “smart houses.” Technology, which, in effect, keeps an eye on residential environments and occupants and reacts to alleviate the slightest environmental stessor. Or at least helps to offset it by compensatory adaptations. We have the capability of smart houses even now and we use it to some extent. We have the gadgets whereby if you clap your hands you can turn lights on, or summon help, or start your sprinklers. We have video cameras that are voice activated, swiveling to focus on the source of the sound and can monitor nurseries where infants are sleeping and we have other applications that amaze us when we tour new residential demonstration developments.

At present these examples represent the simplest kind of mundane applications of this technology but the potential is mind-boggling to say the least. The technology that can be imbedded in houses, in smart houses, can have dramatic benefits in maintaining autonomy and self-sufficiency for many years. It can react to many of the factors that drive older people around the bend and into institutionalization, and congregate living facilities because mundane aspects of their environment interact with personal changes and make management issues seem
insurmountable. Institutionalization is not necessarily bad, but if it is not the desired alternative, the outcome may be necessarily bad. Of course, the question is will these innovations be equally available and accessible to all older persons? Is a smart house a realistic goal for people who are concerned about the availability and the affordability and the accessibility of any kind of adequate housing? It is just not a burning issue perhaps for those folks who are more worried about having a roof and adequate heating and ventilation included as a part of their lives.

Recall my example of a few moments ago about molecular biology: if you were to blend information technology and some of the changes going on in molecular biology, could the information technology lead a kind of genetic discrimination in terms of employability, and insurability? If people could look at your genes at 24 when you came out of college and realize you were going to have chronic health problems in 10, 15, or 20 years down the road, could that possibly become a factor in an employment decision? Or if your insurance company could look at your genes and say, “One day Alzheimer’s, or MS, or Parkinson’s could develop so you are high risk.” Could that become a factor in insurability? Early versions of this very issue are already in the courts and are likely to remain so in the next decade or two. So something that ought to have the most salutary, laudable effects possible, identifying the precursors of chronically genetic conditions down the road, is having an undesirable effect. I can only imagine what type of issues and unintended consequences are going to crop-up in the future as other new technologies come on-line.

Politics notwithstanding, population aging militates for rapid growth in the number of persons trained in gerontology and geriatrics. One of our colleagues, Hazard, made some telling projections for just one aspect of the growing of aging of the population. He noted that “…aggregate healthcare expenditures will be focused progressively among the elderly…” to the point where they will consume more than their current two-thirds of the healthcare dollar.” Doesn’t that fact in itself predict that there is going to be a shortage in the realm of healthcare delivery and a corresponding need for more gerontologists?

There are fewer academic geriatricians than necessary to educate the medical community, as it presently exists. According to recent estimates, roughly one percent of physicians and nurses practicing in the U.S. are certified in geriatrics. Indications are that the number of geriatric psychiatrists and geropsychologists are also going to fall well short of probable needs. Predicted shortfalls in social work, allied health and in a number of other areas tell the same story, demand exceeds supply. According to the International Longevity Center, in a report issued last year, academia will be hard pressed over the next decade and challenged to keep up with the need for trained specialists. Even attempting to do so would mean surrendering some of the other traditional disciplines in favor of training in gerontology. Which among us would be willing to take a bet on that happening?

I think another indicator of the state of affairs in gerontology is the expansion of relevant course work. You heard a little bit from Rosalie Gilford earlier and she did a better job than I in sketching the lay of the land, but let me give you a few additional national statistics. There are about 3600 colleges and universities in the United States. At present approximately half of them offer some kind of gerontology instruction according to the best data available and we have not done a good study of late. The last one was done by Peterson, Wendt and Douglas came out in
1994, so we have need for new and better inventories of where and how gerontological instruction is being offered. About half of the nation’s colleges and universities offered some form of gerontology instruction. Let’s make some projections from that bit of information that is now about eight years old. The number reported by Peterson, Wendt, and Douglass in 1994 represented a 19 percent increase over the previous 8 years (from 1985) and 168 percent increase since 1976. So, if we had any basis for projecting either a 19 percent increase over the past decade or 168 percent increase over a two-decade period we would be see a wide majority of the 3600 colleges and universities in the country offering gerontology courses by this time and in the period between now and 2012. Well, we know that is not the case and I would hazard a guess that it is not going to change significantly in the next ten years.

Of those campuses that had accredited instruction in the early 1990’s, the average number of courses was 9.4, and over 40 percent offered some kind of structured program in gerontology, geriatrics or aging that led to a degree, a certificate, a specialization, a concentration, a minor, or another form of a credential. The number of courses per campus may have actually declined from that high-water mark of the early 1990’s according to some estimates. But I think there is every reason to believe that the number of gerontology courses is going to increase and has continued to increase. I think the statistical average is reduced by a couple of really prominent universities dropping out of the panoply of strong gerontology programs. The University of Michigan, certainly one of the stellar programs when I was coming of age, was the place in gerontology, Duke University was another, and so was USC. Neither Michigan nor Duke currently offers undergraduate programmatic gerontological instruction in the unified fashion any longer. There are departmental based offerings to be sure, and there are graduate or professional school offerings, but they are not the dominant gerontology programs that they were a couple of decades back.

I think that the remarkable emergence of Ph.D. programs in the late 1980’s, and continuing on through the 1990’s is indicative of the presence of a perceived unmet need. There is a lively debate in gerontology over whether we are better viewed as a field of specialization or as an emerging academic discipline. If we have the chance, or maybe over lunch, we can pursue the question among ourselves. In recent years we have implemented Ph.D’s in gerontology as far away as South Florida, Kansas, right across the hills at USC and in the further reaches of the country—in Maryland, Massachusetts, and in Kentucky. Furthermore, MGS (Masters of Gerontological Studies), and I always get that confused with what I see on menus, seems to be another thriving innovation in higher education.

I do not much care whether gerontology is a discipline or a concentration. That the proposals to establish those Ph.D.’s or MGSs withstood what you know is rigorous administrative scrutiny during an era known more for entrenchment in steady state policies than for growth, suggests that others charged with managing scare resources also perceived significant need. The fact that just those places that I named were able to push those programs through all the bureaucratic hurdles attests to an ever increasing recognition of the importance of gerontology in higher education.
The Shape of Things to Come

I would like to use the remainder of my time to introduce a couple of things having to do with the structure and integration of programmatic gerontological instruction. I think we need to structure our gerontology programs in such a fashion that we can obtain an integrative framework. We need to teach our students to draw knowledge from across professional boundaries and to create their own integrative explanations for what they see happening around them. Our goal should be the creation of knowledge without boundaries, rather than the converse. I think it takes 3 “I’s” and 2 “C’s” to understand what the future of gerontology is going to be in years to come. Of course I am attempting to play a trick with the verbal sound of those terms but bear with me as I think the point warrants your consideration.

The first of those “I’s” refers to an inter-disciplinary focus—by an interdisciplinary focus we can extend one another’s reach and foster greater fluency. Second, we need to teach in an integrative fashion. As teachers it is incumbent upon us to pull together diverse findings and results and show students how they fit together. Journal authors are unlikely to make that conceptual leap as their focus is rightfully on a narrower topic but in the classroom we have greater latitude. The third “is” has to do with being intercultural. As teachers we need to be mindful that what works or is illustrative of one racial or ethnic group or with one particular socioeconomic category may or may not work with or be illustrative of another. We certainly have no right to claim that it does until we do the appropriate intercultural comparisons. As teachers we need to ensure we hew to the three Is if we take seriously our obligations to really teach.

The 2 “C’s” refer to making sure our instruction and our programs provide knowledge that is cumulative. The impact of our course work has to soar, it has to be well tuned, and it has to build to a dénouement. At the same time, it must be cooperative if we hope to have maximum effect. Passive learning, or passive teaching for that matter, is unlikely to win any awards in the Academy of Great Teaching Strategies. My point is that we need to involve our students themselves. We need to lift all boats by asking for, in fact making clear that we expect student participation. We need fluidity and grace, to be sure, if we are going to use participatory learning as a teaching strategy. Three eyes, to see (3 I’s, 2 C). Interdisciplinary, integrated, intercultural, cumulative and cooperative. To my mind, if we can master that simple formula, we will do a much better job and meet the needs of those whom we say are the reason we became gerontologists in the first place.

Now, if you get that dollar bill out and look at the left-hand corner of the back side, you’ll see that there is a little pyramid on there, and if your eyesight’s keen, you can actually see the striations of the pyramid. While you are reaching for your money, get out a $5 bill and see if you can read the names of the names of the states on the top of building on the back. If you can, please give your place in the front of the room to someone who needs it more as you have great visual acuity. Back to the $1 bill: you will see that there is a pyramid there with an eyeball at the top. It symbolizes all kinds of things, including wisdom.

And I would like to suggest to you that whether through distance education or on-campus learning, we might consider the example of that pyramid as a way to structure our gerontological programs. At the base we need to provide a sound and inclusive interdisciplinary survey course
that cuts across all the dimensions of aging and brings together biology, physiology, psychology, sociology, health concerns, and so forth. It might include some topical anthropology, social work and service delivery issues, gender-relevant discussions and any of the other key factors that you feel are essential to have at least a nodding acquaintance with in order to be a good gerontologist.

On the next level up, we might consider disciplinary-based survey courses. Here we might offer a basic psychology of aging or sociology of aging—or anthropology of aging—what have you. Then I would suggest that as we move to the next level we have disciplinary based specialty courses where we go into greater depth on particular topics and issues. I would suggest that there are vertical dimensions that cut across each of these building blocks because of my admonition that learning is cooperative and needs to involve active participation. Two of those vertical dimensions revolve around things you likely know all too well already. One is some kind of opportunity where students can come together and work together cooperatively to create their own syntheses and at the same time, their own sense of ownership. Whether that is called a journal club, or a brown bag seminar series where students make their own presentations, or something else—it is your decision—the point is to provide a forum where active learning is front and center. Furthermore, I think there is real learning and leveraging that occurs when students interact together in pursuit of mastery.

The second vertical dimension is service learning and internship opportunities. I am not talking about the kind where they go make the coffee, or fetch the folders, or drive the van; all very important to be sure but not the type of task that yields an edge. I am talking about the kind of internship opportunities that are conceptual in nature, that involve ethical discretion, that put students in the mix so that they realize any solution comes with strings attached. Sometimes we avoid these vertical dimensions because it does not seem like there is time in the curriculum to integrate everything that needs to be taught. I could not agree more but I am talking about taking full advantage of all the opportunities that we do have to get their internship better focused and to provide service-learning opportunities that promote integration. It we can manage that, we might turn out students who have the curiosity to learn and joy for continuing to expand their own knowledge. Perhaps that is the most we can hope for as in four years it is tough to pass along all that is important.

Instead maybe we can create learners who will continue to learn, who will continue the quest whether we are beside them or not. Perhaps the best we can do is teach them to think. I want to send people out to the end of my pipeline that have the courage to challenge the status quo, to take intellectual risks, and to endeavor to make a difference. I hope our students come out wanting to be responsible and respectable professionals, but not to just live comfortably in that box that they were prepared to occupy. I would also like to send students out who have the imagination to think about new ways of improving life for older citizens. Finally, I want very much to send students out who recognize in their subject matter themselves and their families. If these students have the judgment to temper the imagination that they might have with a clear understanding of the realities of the world and of the human condition, I will have provided a service. In a best-case scenario, I want them to have the judgment to understand and fulfill the responsibilities that they have inherited as a professional in the field, as well as the responsibilities that they have as citizens. I want them to have motivation for independent learning, a sense of ownership. I hope they are not merely passive consumers of knowledge but
to think critically and adapt to new problems using the problem solving skills they were exposed to in our classrooms. If we do our jobs well, they will have communication skills and a sense of confidence that will help them make a difference. If they have strong mentoring relationships and professional guidance from you, we can foster a renaissance without even having to be there ourselves.

I wonder if we could look at one more figure (Figure 4) before turning our attention to other pressing topics. Most likely you have seen a version of this figure before. Billings and Moos published the original upon which this version is based back in 1982. I show it to you now to point out that we can take the social-psychological components of aging and actually blend them with a political economic perspective on aging. My point is merely to suggest that factors generally regarded as the purview of one area of concentration, in this case social psychological issues, are actually linked to factors generally relegated to another area, namely macro-level political concerns. What I am suggesting to you is that the first level of multidisciplinary course, and the second level of concentration that focuses on one or the other topic in particular may indeed help provide that integrative framework if only we are attuned to making the case. Billings and Moos provided a wonderful framework for us so do not let the fact that it is dated 1982 put you off. It continues to provide a good visual representation today and helps illustrate the interconnectivity I have been talking about.
In closing let me say that I think gerontology can well serve as a prism—a prism that focuses on many of the most important aspects of the human condition. I would urge you to consider ways to work cooperatively, with your students, with your campus colleagues and with colleagues in the further reaches of the state. I am sure you have the technology, either computer or video links, to colleagues at other CSU institutions to create a cooperative learning environment. I would urge you to develop collaborations even if those involve cross-campus ties.

In times of scarcity, an innovative solution building on your aggregate strengths may well catch the eye of responsible decision makers. I am an administrator myself and I have plenty of people
who come to me with wonderful ideas—there’s no shortage in petitioners of laudable intelligence on an academic campus. So what you need to learn is creative packaging in terms built from what is new and exciting on the forefront of technology. Perhaps you can conjure up a division of labor that allows each of you to do what you do best. As I said when I started, I feel a little bit like I’m speaking to the choir, and you are likely out in front of me in thinking of innovative solutions. I look forward to learning of what those might be and hope that you are receptive to exporting them so colleagues outside your immediate realm of interaction can share them as well. I hope when we do this again, you will invite me back.

Thank you.