Aging and Oral Health:
Dentist Collaborates with CFA

One of the reasons UAB has become a top scientific research institution is the opportunity it provides its scientists and researchers to collaborate with one another. In this spirit, Gregg Gilbert, D.D.S., M.B.A., has begun collaborating with the Center for Aging by combining his Oral Health Disparity Study with the extensive Study of Aging funded by the National Institute on Aging.

The Oral Health Disparity Study seeks to determine the impact of oral health on the quality of life of lower-income rural adults. The study will focus not only on the impact of oral health on nutrition, but also on issues such as social interaction and life-space mobility (the area in which their daily routines unfold).

Similarly, the Study of Aging, a five-year, $1.2-million study started in 1998, focuses on mobility and independence of community-dwelling elderly in five Alabama counties, and what factors lead to the shrinking of their life-space mobility.

Gilbert says his interest in helping people with disadvantages contributed to his interest in geriatric research.

“In dental school, I developed an interest in the treatment of medically compromised people,” says Gilbert. “Ultimately that interest led to an interest in treating older adults as well. That’s where you find most of the compromising medical conditions.”

THE IMPACT OF ORAL HEALTH
The Oral Health Disparity Study examines how certain oral-health problems can affect a host of conditions, many of which are especially relevant to older adults.

“We are looking at the ways in which oral disease impacts oral-health-related quality of life,” says Gilbert. “In this study that means mainly two things: quality of life that affects nutrition, and quality of life that affects social interaction.”

The effects of poor oral health extend beyond eating habits into the way that people live and what level of social interaction they have, Gilbert explains. People with bad teeth avoid talking, or even laughing and smiling too much, because they are embarrassed about the appearance of their teeth.

“If their social interaction drops, that could ultimately lead to a whole host of things that are common in the geriatric population, such as depression or lack of physical activity,” says Gilbert.

INTEGRATED INVESTIGATIONS
Once both studies are completed, the resulting data will provide the most complete picture of the health status of Alabama’s elderly and underprivileged population in the state’s history. Gilbert, Richard Allman, M.D., and many others at the CFA hope that their efforts will help Alabama’s political, social, and health leaders effectively address the state’s greatest health concerns.

“This collaboration is a tremendous opportunity because it allows us to benefit immensely from the ongoing Study of Aging,” says Gilbert. “It is gathering data that is directly relevant to oral health and oral-health-related quality of life.”
Ali Ahmed, M.D., M.P.H., is no stranger to honors. He topped the merit list of graduates at the Sher-E-Bangla Medical College of the University of Dhaka in Bangladesh in 1982, and since moving to the United States he has received numerous grants from different agencies to conduct his research.

Now Ahmed has added the Mentored Patient-Oriented Career Development Award (K23) from the National Institute on Aging to his list of honors. “When we got the formal notice, we were very excited,” he says, “because we worked very hard for it for three years.”

Ahmed will be mentored by Richard M. Allman, M.D., director of the Center for Aging. “I could not have had a better mentor than Dr. Allman. Without his experience, support and dedication, I would not be able to do much of what I do today.”

Ahmed’s research, which focuses on quality of care and outcomes of heart failure in older adults, began with a research training grant from the Southeast Center for Excellence in Geriatric Medicine and was bolstered by clinical training in heart failure from cardiology division director Robert Bourge, M.D.

**BENEFITS OF BETA BLOCKERS**

Ahmed’s research, currently funded by the NIA, focuses on the integration of medications called beta blockers into the mainstream treatment of heart failure—a goal that Ahmed admits will be difficult to achieve.

In response to decreased blood dispersal caused by heart failure, the heart works harder to meet the body’s demands. “Beta blockers,” says Ahmed, “given carefully in appropriate doses, provide some relief to the overworked and increasingly tired heart.

“However, because beta blockers may worsen heart-failure symptoms in the short run, they are often underused. But if beta blockers are started in low doses and then increased slowly and carefully, they can be given to most older adults with systolic heart failure.”

**CHANGING THE MEDICAL MINDSET**

Working closely with the Alabama Quality Assurance Foundation, Ahmed plans to combat the negative perceptions about beta blockers with a two-pronged approach: by researching existing heart failure data concerning the use of beta blockers and ACE inhibitors, and by conducting a study to boost the use of these two drugs. His study will focus on older adults with diastolic heart failure, a group generally excluded from clinical trials concerning heart failure.

The Career Development award will help Ahmed with this extensive data analysis. “It gives me protected time, and time is of the essence for data collection and research,” he says.

Ahmed’s research, if accepted by the scientific and medical communities, could help millions of heart-failure patients live longer and more comfortable lives “We need to make sure that all eligible heart failure patients receive the drugs they need,” he says.

**Ali Ahmed, M.D., M.P.H., explains the benefits of beta blockers in treating heart failure.**

**Hope for Heart Failure**

**Ali Ahmed’s Research Recognized**

**MESSAGE FROM THE DIRECTOR**

*Community support is extremely important to the Center for Aging (CFA). We thank those who have made contributions since the last edition of Insight on Aging. Such support makes it possible for our faculty to pursue the type of research described in this newsletter. For example, the CFA provided development funds for the UAB Study of Aging, making possible Dr. Gilbert’s Oral Health Disparity Study. Several investigators received pilot grants to pursue work in their areas of interest, including Drs. Mark, Li, Prince, Bertram, and Grabowski. The CFA also supported the recruitment of Drs. Ho and Bertram to UAB. Contributions from our community supporters will help the CFA continue to support such activities in the future.* —RICHARD ALLMAN

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Emerging Innovations in Aging

Victor Mark, M.D., is studying the effects of both strokes and normal aging on visual attention. Increased distractibility and slow processing of information are two effects generally associated with aging, but it is not yet known whether they are directly related. Using a method called a cancellation test, he examines the way in which both stroke patients and healthy elderly individuals cross out certain symbols on a computer screen.

“We hope our findings will eventually lead to strategies for cognitive rehabilitation,” says Mark.

Mark’s study is funded by a pilot grant from the National Institute on Aging (NIA) along with funding from the Southeastern Center for Excellence in Geriatric Medicine (SCEGM) at UAB and Emory University.

Ling Li, Ph.D., is studying a possible connection between heart disease and Alzheimer’s disease (AD). “Our experimental data suggest that AD and atherosclerosis share causative mechanisms and support the concept that anti-heart disease therapies may be effective in prevention and treatment of AD,” says Li.

If Li’s hypothesis is supported by the final results of the study, it could be one of the most important breakthroughs in Alzheimer’s research in recent years.

Charles Prince, Ph.D., along with Carlos Krumdieck, M.D., Ph.D., and Mel Shipp, O.D., has developed a hypothesis that chronic moderate hyperhomocysteinemia contributes to a number of aging-related conditions, from cognitive decline to vascular disease to presbyopia (gradual decline of vision due to age). Last year Prince received funding from the NIA in the form of a pilot grant to test the hypothesis. They are currently in the recruitment phase.

Michael Bertram, Ph.D., is studying cellular senescence at the molecular level, doing research on transgenic fruit flies that share a homologue gene with humans. His research project is a long-term study of the evolution of cellular senescence, which contributes to all sorts of conditions associated with aging, focusing on the morphor-related gene (MRG) protein family. Cellular senescence leads to physical decline and loss of function in developing tissue. Bertram stresses that he and others are a long way from understanding exactly how cellular senescence occurs, but once that understanding is reached, the clinical applications could be extremely important in improving quality of life for older adults.

“It could mean that the elderly would not experience as rapid a decline in certain abilities as they grow older,” says Bertram.

Bertram’s research is funded by the Ellison Medical Foundation, and the NIA.

Trygve Tollefsbol, Ph.D., is conducting research related to the regulation of the telomerase gene in aging, of special interest because it synthesizes the enzyme telomerase, which, when absent, contributes to cellular senescence.

“It is clear that telomerase is linked to aging and cancer,” says Tollefsbol, “but the mechanisms controlling telomerase in these processes are unknown.”

Tollefsbol is also working to develop the UAB Cell Senescence Culture Facility as a university-wide resource for investigators.

His work has been funded by the National Institutes of Health, the Leukemia Research Foundation, the Breast SPORE (Specialized Programs in Research Excellence), the SCEGM, the Health Services Foundation, the UAB Center for Aging, and the American Cancer Society.
As the population continues to age in America, public-policy research on aging-related issues is becoming more important. Issues such as driver’s license renewal for the elderly—recently thrown into the national spotlight by the fatal crash involving an octogenarian in Santa Monica, California—will create increased policy challenges as Baby Boomers slide into their sixties.

Providing a rich resource to address such challenges is the work of David Grabowski, Ph.D., Vivian Ho, Ph.D., and Michael Morrisey, Ph.D., School of Public Health faculty members and the Center for Aging’s chief researchers into public policy.

THE TEAM

Vivian Ho is currently researching ways in which public policy affects acute care for older adults. She is evaluating peripheral arterial disease (PAD) outcomes, which are poor in the South due to a lack of qualified specialists, and she is also being funded by the National Cancer Society to study outcomes of various types of cancer surgery.

“There’s a large amount of literature showing that hospitals that perform a higher number of procedures actually have lower patient mortality rates and lower rates of complications,” says Ho. “But there’s also a lot of evidence that patients who have to travel long distances for these surgeries might elect not to have them or postpone them.”

Ho hopes her research will shed light on how Alabama should structure its health system to best meet the needs of all of its citizens, including those in rural counties far from big hospitals.

ELIMINATING IMPEDIMENTS

Morrisey and Grabowski have teamed up on a recently completed project examining the efficacy of Certificate-of-Need (CON) laws for nursing homes.

CON laws require nursing homes to apply to the state to increase their number of beds or to undertake other large capital expenditures. “The application is often several inches tall, and you have to get lots of lawyers involved,” says Morrisey. “It’s sometimes a drawn-out process that takes several years.”

“We concluded that those Medicaid expenditures are not significantly affected by CON being repealed,” says Morrisey. “The policy implication is that more states could eliminate their Certificate of Need for nursing homes and not see their Medicaid budgets go out of control.”

THE CFA EDGE

Grabowski and Morrisey also have teamed up on a study jointly funded by the Centers for Disease Control and Prevention and the Department of Transportation to examine older drivers. Grabowski says the study sprang from a talk given by Karlene Ball, Ph.D., another CFA researcher working with age-related transportation issues.

“I went up to her after her talk and asked about work on regulations and fatalities; she didn’t know of any, and now we have a paper on it. It’s that sort of relationship that’s so beneficial,” says Grabowski.

RECOGNIZED RESEARCH

The team’s research directly affects public policy by providing a rich resource to politicians and other advocates. In addition to publishing their findings in peer-reviewed journals, the UAB Lister Hill Center for Health Policy also publishes one-page abstracts of their work. These are sent to members of Congress, state legislators, state health officers, and Medicaid commissioners throughout the Southeast and the nation.

“The staffers in the various offices come across our work and contact us,” says Morrisey. “It’s in that way, quiet and one-on-one, that we can have an impact.”

There are also personal reasons that keep them in the lab, says Morrisey. “We love doing research, and don’t want to do anything else.”