“You can't help getting older, but you don't have to get old” - George Burns

In 1989, Saint Louis University officially began a geriatrics program. Prior to this they had already started a geriatric psychiatry program under the leadership of George Grossberg, and in collaboration with the St. Louis VA Geriatric Research, Education, and Clinical Center (GRECC), had begun to have an impact on gerontological research and education. Over the past quarter of a century, Saint Louis University has had major impacts on geriatric research as well as on education and development of clinical programs throughout the world. This article will briefly review its major successes.

CLINICAL PROGRAMS

Saint Louis University, together with its community program at Des Peres Hospital, is the leading provider of clinical care for older persons in the greater St. Louis area. It has developed Acute Care for the Elderly (ACE) units at both the University and Des Peres Hospitals. In addition, under the leadership of Joseph Flaherty, it pioneered the development of Delirium Intensive Care Units at both hospitals. These units have been shown to improve the rate of resolution of delirium, the functional status of persons with delirium, and reduce the number of days in hospital.¹

The geriatric program at Saint Louis University was a leader in developing both post-acute (sub-acute) care services together with LifeCare.² The program has also developed a series of academic nursing homes. At NHC

(continued on page 4)
Morley Receives Presidential Award
John Morley, M.B., B.Ch. is the 2013 recipient of the International Association of Gerontology and Geriatrics Presidential Award. He was honored at the organization's annual meeting in Seoul, Korea, where he also delivered five presentations.

Dr. David Thomas Retires
In 2013, after sixteen years as a member of the faculty of the Division of Geriatric Medicine, David R. Thomas, M.D., has retired. He continues to contribute to the field of geriatric medicine through his part-time practice with the St. Louis PACE. Thank you, Dr. Thomas, for your many years of service to Saint Louis University.

Dr. Berg-Weger Named Executive Director
Marla Berg-Weger, PhD, LCSW, has joined the Gateway Geriatric Center as the Executive Director. Marla has been a member of the faculty at the Saint Louis University School of Social Work for the past 18 years and has an appointment in the School of Medicine as well. She is a Fellow in the Gerontological Society of America and is involved in research and education related to older adult driving and mobility.

Gammack Recognized for Outstanding Leadership
Julie K. Gammack, M.D. was recognized by the Saint Louis University Women's Commission as a YWCA Leader for her outstanding leadership and contributions to the University. This event is one of two sponsored each year by the Women's Commission to recognize the contributions of Saint Louis University's women administrators, faculty, and staff.

Dr. Cruz-Oliver Designated Certified Medical Director
Dulce Cruz-Oliver, M.D., has been designated by the Board of Directors of the American Medical Directors Association as a Certified Medical Director. Congratulations to Dr. Cruz-Oliver!

Dr. Sanford is Latest Addition to SLU’s Geriatric Faculty
After completing both her Internal Medicine residency and Geriatric Fellowship at Saint Louis University, Angela M. Lipka Sanford, M.D., has joined the Geriatric Medicine faculty. Dr. Sanford’s area of clinical and research interest is in providing medical care in the nursing home setting.
As I look back over the past 25 years, I clearly see the faces of my sweet patients as they were growing old. Most of them came initially with graying hair or wrinkly skin; others with more complex issues of aging. Some, their funerals I have attended.

I’ve seen countless young medical students walk through the doors to learn to treat older patients. Bursting with enthusiasm, filled with compassion, they come alongside the trainers to learn this profession. Having had a taste of geriatrics during their med school days, many now have gone on to become skilled pediatricians or podiatrists or dermatologists. But there is a special group who find their joy complete only in helping the aging age well.

Over the last 25 years at Saint Louis University, I have been blessed by meeting an incredible group of older persons, my patients, from whom I have learned a great deal. A few were given great genes, and they successfully age with little effort; but the vast majority have many hurdles to overcome in order to experience truly successful aging. It is the needs of this group that has provided the focus of our training programs for multiple health professions in order to improve geriatric healthcare. In 25 years of training those medical students and geriatricians, I have stressed that being a great doctor is to help aging older persons overcome the road blocks to continued good health.

Geriatricians are key to safely pruning unnecessary drugs from the medication regimen previously assigned to our patients, thus diminishing the potential for compounding side effects and improving his or her quality of life.

Next, we train geriatricians to seek to prevent illness in their aging patients by improving nutrition and recognizing reversible causes of protein energy under-nutrition. Then, in order to improve strength and prevent future falls, encourage their patients to be involved in aerobic, balance, and resistance exercises.

In addition to providing guidance on physical health issues, geriatricians are experts in working with persons who, as they age, experience depression or fatigue, both major hurdles to aging successfully. With early identification and prompt treatment, these seniors are able to age well, and maintain a good disposition.

From declining cognition to faints and falls, having a well-trained geriatrician spotting issues early on and establishing a sound treatment plan provides the best opportunity for each patient to age successfully.

It is well recognized that treating a disease is not enough. The whole person needs to be considered – from health status to financial status, from social supports to health literacy, from health goals to involvement of family and friends. No one ages in a vacuum. Aging successfully is hard work and requires a team of health professionals who actively participate in caring for the patient, being vigilant and proactive on their behalf.

Aging successfully also requires good advance directive planning to eventually allow one to go gently into that good night.

We, the team of geriatricians and healthcare providers, along with our outstanding staff here at Saint Louis University, would like to thank all of our older friends in Missouri and Southern Illinois for giving us the opportunity to help you navigate the Aging Successfully process.
Maryland Heights, it has successfully pioneered a number of innovative programs including physical restraint reduction from 44 to 0%; polypharmacy reduction (presently at 6.9 medicines/day); 3 psychotropic reduction (16.8% neuroleptics); novel exercise and fall programs; 4 cognitive stimulation therapy; 5 an Eden alternative; and pioneered the use of a robotic dog, AIBO. 6 Pioneered by Miguel Paniagua, the geriatric program developed an Introduction to Aging program for premedical students at Beauvais Manor Nursing Home.

Besides the outpatient geriatric assessment program, the Division has developed an innovative Falls and Faints clinic for older persons and persons with diabetes mellitus under the leadership of Fred Yap. We also developed a baseball reminiscence program in collaboration with the Alzheimer’s Association under the leadership of Nina Tumosa. 7

The Geriatric Program provides faculty leadership for a student-run free clinic in the St. Louis City. The Saint Louis University Hospice and Palliative Care program is under the directorship of Dulce Cruz-Oliver and is run by the Division, as are a home care program and a program in an assisted living facility. Dr. Cruz-Oliver has developed educational videos in both Spanish and English on end-of-life care for patients and their families. The division provides medical direction for a number of nursing homes (Bethesda Dilworth, LifeCare Center, Beauvais Manor, and two NHC homes), as well as two home care services (Nurses and Company and NHC) and a hospice company (Alternative Hospice). Dr. Gerald Mahon leads a physician home care program used to train medical students, residents, and fellows.

**EDUCATION**

Under the initial leadership of Douglas Miller and David Bentley, and subsequently Julie Gammack, the Geriatric program has trained 131 geriatric fellows. The program also trained 2 geriatric dentists. Internal Medicine residents at Saint Louis University receive between 4 and 6 months of exposure to geriatrics. There is a medical student interest club and during their training, medical students receive intensive exposure to geriatric principles and interdisciplinary training.

Thanks to long-term funding from the Bureau of Health Professionals, the Missouri Gateway Education Center (GEC) has been extraordinarily successfully in providing interprofessional training for 21 different health care disciplines throughout the Midwest. Programs have included our yearly Summer Geriatric Institute Conference in St. Louis and a variety of conferences in Kansas, Missouri, and Southern Illinois. The program has organized and hosted a number of international conferences, most recently the first International Nursing Home Research Conference. Our leaders of the GEC have been Susan Hopper, Diana Dittes, Nina Tumosa, and Marla Berg-Weger.

The Gateway GEC has utilized a number of innovative education practices. Most recently it developed a Communities of Practice program to reduce falls and fractures in NHC nursing homes in the Midwest. It has also worked with the St. Louis Alzheimer’s Association and Professor Martin Orrell from London to provide training for health professionals in cognitive stimulation therapy.

We have developed a variety of enduring materials including the *Aging Successfully* Newsletter (aging.slu.edu), the mnemonics Geriatrics Booket (SLUGEMS), Geropady, and the Geriatric Crosswords Booklet. John Morley has a regular Aging Successfully column in the St. Louis Post Dispatch (www.stltoday.com). Milta Little is starting a geriatrics education twitter program for residents and students.
Over the 25 years, the Geriatrics Division has provided Editors-in-Chief or Associate Editors for the Journal of the American Geriatrics Society, and the Editor for the Journals of Gerontology: Medical Sciences and the Journal of the American Medical Directors Association.

RESEARCH

Over the last 25 years, the geriatrics program has published approximately 100 papers per year. It has made major contributions to a variety of areas:

ANOREXIA OF AGING: We have published a variety of animal and human studies investigating the role of peptides in the regulation of food intake with aging. This includes demonstrating the antral role of nitric oxide synthase in the hypothalamus in regulation peptide produced effects on food intake and the importance of gastric emptying and cholecystokinin in the pathophysiology of the anorexia of aging. Andrew Silver played a key role in establishing the role of cholecystokinin in appetite regulation in older persons.

Other studies in nutrition included the finding that depression accounts for one-third of pathological anorexia and weight loss with aging. The division also developed a rapid screen for anorexia in older persons, the Simplified Nutrition Assessment Questionnaire (SNAQ), which is highly predictive of future weight loss. David Thomas made major contributions for nutrition and pressure ulcers as well as an approach to dehydration in the nursing home.

LATE LIFE HYPOGONADISM: Under the early leadership of Fran Kaiser, (continued on page 6)

SERVICES

Services of the Division of Geriatric Medicine include clinics in the following areas:

- Aging and Developmental Disabilities
- Bone Metabolism
- Falls Assessment/Prevention
- Geriatric Assessment
- Geriatric Diabetes
- Medication Reduction
- Menopause
- Nutrition
- Podiatry
- Rheumatology
- Sexual Dysfunction
- Urinary Incontinence

Call
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or 314-966-9313
(at Des Peres Hospital)

each and every issue of
Aging Successfully
is online at http://aging.slu.edu

SLU GEMS

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Questions? FAX: 314-771-8575email: aging@slu.edu

Aging Successfully, Vol. XXIV, No. 1
the Division pioneered the potential role of low testosterone in aging, demonstrating that low testosterone was related to loss of muscle mass and strength, as well as libido. We developed and validated a highly successful screening test for late life hypogonadism, the Saint Louis University Androgen Deficiency in Aging Males (ADAM) questionnaire. Ita Sih undertook pioneering studies in the administrations of testosterone to older males. Ramzi Hajjar published the important studies on the safety of testosterone. Over the years the Division has played a key role in developing the guidelines for testosterone therapy in older males.

MEMORY AND ALZHEIMER’S DISEASE.

Studies originally under the leadership of James Flood, and after his death, by Susan Farr, with assistance from William Banks and Vijaya Kumar, have established the SAMP8 mouse as an excellent model for Alzheimer’s disease. This mouse has a spontaneous increase in amyloid precursor protein, amyloid-beta protein, amyloid plaques, early memory deficit, increased oxidative damage, and decreased egress of amyloid-beta protein across the blood brain barrier. It also has low testosterone, and testosterone replacement improves its memory and reduces the amyloid precursor protein. In studies in humans, we showed that declines in bioavailable testosterone are closely related to age-related memory decline, and that low bioavailable testosterone in males with Alzheimer’s disease accelerates the progression to Alzheimer’s disease.

A major component of the research was a development of antisenses (these act as antagonists to messenger RNA blocking protein production). An antisense to amyloid precursor protein has been shown to reverse the Alzheimer’s like findings both in the SAMP8 and in a transgenic mouse model of amyloid-beta overproduction. This is potentially an excellent treatment for Alzheimer’s disease as it can be administered

<table>
<thead>
<tr>
<th>PART</th>
<th>QUESTION</th>
<th>SCORING</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>How much difficulty do you have lifting and carrying 10 pounds?</td>
<td>None = 0</td>
</tr>
<tr>
<td>A</td>
<td>How much difficulty do you have walking across a room?</td>
<td>None = 0</td>
</tr>
<tr>
<td>R</td>
<td>How much difficulty do you have transferring from a chair or bed?</td>
<td>None = 0</td>
</tr>
<tr>
<td>C</td>
<td>How much difficulty do you have climbing a flight of ten stairs?</td>
<td>None = 0</td>
</tr>
<tr>
<td>F</td>
<td>How many times have you fallen in the last year?</td>
<td>None = 0</td>
</tr>
</tbody>
</table>

**TABLE 2. SARC-F Sarcopenia Questionnaire**

**TABLE 1: The Rapid Cognitive Screen (RCS) – International Version**

**Recall:**
Five objects - Apple, Pen, Tie, House, Car. [Recall objects after clock drawing; 5 points.]

**Clock Drawing:**
Draw with time at ten minutes to eleven o’clock. [4 points]

**Insight:**
Jill was a very successful stockbroker. She made a lot of money on the stock market. She then met Jack, a devastatingly handsome man. She married him and had three children. They lived in Rome. She then stopped work and stayed home to bring up her children. When they were teenagers, she went back to work. She and Jack lived happily ever after.

What country did they live in? [1 point]

**SCORING:**
(0-5 = dementia; 6-7 = MCI; 8-10 = normal)
intranasally. Other antisenses developed include an antisense to glycogen synthase kinase and one to presenilin.\textsuperscript{19,20} Both of these also enhance memory in the SAMP8 mouse.

These scientists have shown that the physiological role of amyloid-beta protein is to increase memory and it is only when amyloid-beta levels reach pathological conditions that cognitive defects occur.\textsuperscript{21}

The VA-Saint Louis University Mental Status (SLUMS) questionnaire has been developed as a non-copyrighted, well-validated screen for persons with mild cognitive impairment and dementia.\textsuperscript{22} It has been demonstrated to be at least as efficacious as any of the other screeners. A shorter version, the Rapid Cognitive Screen (RCS), has now been validated and submitted for publication (see Table 1 on page 6). It takes 2.5 minutes to do, and as such, is ideal for screening by family practitioners and internists. Given the increasing awareness of the potential therapies for mild cognitive impairment (MCI) this represents a major addition to the field.

**Sarcopenia and Frailty:** The Division was one of the early leaders in establishing the importance of sarcopenia\textsuperscript{23} and has been among the leaders in developing guidelines for sarcopenia.\textsuperscript{24} More recently, it has developed a rapid questionnaire to recognize sarcopenia, viz the SARC-F (see Table 2 on page 6).\textsuperscript{25} These simple questions are as useful as measurements of muscle mass and strength to predict future functional deterioration, hospitalization, and death. The validation of these questionnaires was undertaken by Ted Malmstrom.

Together with the Toulouse group, we developed the FRAIL questionnaire (Table 3).\textsuperscript{26} This has been shown to be an excellent predictor of poor outcomes and can also be utilized to guide the management approach.

The Saint Louis University - Toulouse Mini Falls Assessment (MFA) has been developed to guide the approach to treating persons at risk for falls.\textsuperscript{27}

**International Collaboration**

Our program has been fortunate to develop a series of international collaborations which have led to fruitful joint research adventures. With the Eastern Chinese University (Professor Birong Dong) we have successfully explored the aging changes in a very successfully aging 90+ year old population, including the effects of an earthquake. Studies in South Australia at the University of Adelaide (Professor Michael Horowitz, Ian Chapman, and Garry Wittert) have examined the pathophysiology of the anorexia of aging and the effects of testosterone on older individuals. Working in Hong Kong with Professors Jean Wu and Chu has led to exciting studies on frailty and sarcopenia as well as the role of testosterone in dementia. Studies with the Gerontopole group in Toulouse, France (Professor Bruno Vellas and Yves Rolland), have explored sarcopenia, frailty, and longitudinal aging including the first study demonstrating that 25(OH) Vitamin D declines longitudinally with aging done by Mike Perry in collaboration with Bruno Vellas.\textsuperscript{28} Separately, James Armbricht conducted multiple studies probing the effect of vitamin D cellular actions. Sandra Ribeiro from

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### TABLE 3. The Simple “FRAIL” Questionnaire Screening Tool

<table>
<thead>
<tr>
<th>Question</th>
<th>SCORING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatigue: Are you fatigued?</td>
<td>3-5 affirmative answers = frail; 1-2 affirmative answers = prefrail</td>
</tr>
<tr>
<td>Resistance: Cannot walk up one flight of stairs?</td>
<td></td>
</tr>
<tr>
<td>Aerobic: Cannot walk one block?</td>
<td></td>
</tr>
<tr>
<td>Illnesses: Do you have more than 5 illnesses?</td>
<td></td>
</tr>
<tr>
<td>Loss of weight: Have you lost more than 5% of your weight in the last 6 months?</td>
<td></td>
</tr>
</tbody>
</table>

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Brazil is the first Fulbright scholar in the program.

**Geriatric Psychiatry**

Under the leadership of George Grossberg, numerous studies examining the natural history of Alzheimer’s disease (utilizing the Saint Louis University Brain Bank) as well as the development of agitation and aggression in dementia have been completed. They have also been involved in numerous studies on the effects of memantine on dementia.

**Nursing Homes**

Besides extensive studies on nursing homes, we have also studied polypharmacy, pain, difficult behaviors, falls, and the lack of utility of therapeutic diets for diabetes mellitus.

**The Saint Louis African American Aging Cohort**

Douglas Miller and Ted Malmstrom have studied a group of African Americans living both in East St. Louis (original cohort) and in the city of St. Louis. In the older last St. Louis Cohort they found extreme protein energy undernutrition and an increase in injurious falls in diabetics. Other studies have shown a pronounced effect of neighborhood characteristics on functional impairment and a high level of untreated depression.

**Translation Studies**

Studies demonstrated that utilizing an advanced practice nurse in the Emergency Department to do geriatric assessments improved patient satisfaction and recognized a large number of persons with delirium who otherwise would not be diagnosed.

A study on geriatric assessment in a family practitioner’s office showed improved diagnosis and care. Studies in home care showed a high level of polypharmacy and a high need for increased socialization in persons receiving home care.

Joseph Flaherty has developed a new screen for delirium in older persons. Terry Zenser elucidated the mechanism by which dietary toxins produce bladder cancer. Doug Powers undertook a variety of studies on the effects of vaccination in older persons. Miriam Rodin has studied the interaction of cancer, frailty, and aging.

**Blood Brain Barrier**

William Banks conducted a large series of studies on the blood brain barrier (BBB) and aging. He showed that defects in the BBB occur with aging. He found that antibodies to amyloid-beta crossed the BBB and improved memory and provided neuroprotection. He found that the gut hormones, ghrelin, and glucagon-like peptide, crossed the BBB and improved memory, and that high triglycerides prevented leptin crossing the BBB. Cytokines cross the BBB at the septum to directly impair memory but also stimulate ascending fibers of the autonomic nervous system to release cytokines within the central nervous system to impair memory.

**Postprandial Hypotension**

Postprandial drops in blood pressure lead to falls, syncope, myocardial infarction, and death. Beatrice Edwards showed that this is due to a vasodilatory peptide calcitonin releasing peptide, that causes peripheral vasodilation. Amy Lee found that alpha-1-glucosidase inhibitors increase glucagon-like peptide-1, explaining how they prevent postprandial hypotension. (continued on page 22)
Building on the theme of “Promoting Excellence and Enhancing Outcomes in Geriatric Education,” the Gateway GEC partnered with three other GECs in 2012 to form the Faculty Development Collaborative in Geriatrics Initiative. Partners include: Central Plains GEC at the University of Kansas, New Jersey GEC at Rowan University-School of Osteopathic Medicine, and Consortium of New York GECs at the James J. Peters VAMC, GRECC.

Now in its third year, this professional development program is aimed at providing and enhancing the evidence-based knowledge and skills of educators working in the health professions. The year-long program includes completion of 160 hours of training and self-directed and mentor-supported work on a capstone project that will focus on strengthening the scholar’s teaching, institutional curriculum, or improve a practice in her or his professional arena. The competency-based curriculum incorporates multiple teaching and learning methods, including self-study, synchronous and asynchronous webinars, career development with mentoring, quarterly peer-to-peer mentoring sessions and completion of an individual capstone project related to curriculum development or a quality improvement initiative. Content areas have included: Health Promotion, Risk Reduction and Disease Prevention, Assessment and Evaluation, Managing Acute and Chronic Health Conditions, Caregiver Support, Managing and Negotiating Healthcare Delivery Systems, Interprofessional Team Care, Healthcare Systems and Benefits, and Leadership in Education and Practice. Dr. Sue Tebb, a Gateway GEC faculty mentor shared this insight about the program: “Being in the Scholars Program allows scholars to develop skills in gerontology and to bring this knowledge to students so we can better serve the growing older adult population.”

The Gateway GEC Faculty Scholars have included a diverse group of professionals and institutions from across Missouri, Illinois, and Utah, including medicine, nursing, social work, occupational therapy, and physical therapy.

Members of the 2014 Faculty Scholars cohort include:
- Melanie Ramel, MS, MPH, RD, LD, Saint Louis University Department of Nutrition & Dietetics
- Denise King, PhD, Lindenwood University School of Human Services
- Yvonnda Ford, JD, MHA, Lindenwood University College of Individualized Education
- Donna Gloe, EdD, RN-BC, Missouri State University Department of Nursing
- Cynthia Germain, MBA, Continuing Education Institute of Illinois
- Stephanie Stewart, MSN, RN-BC, Missouri Western University Department of Allied Health and Nursing
- Katherine Supiano, PhD, LC-SWA, FT, F-GSA University of Utah School of Nursing
- Pi-Ming Yeh, PhD, Missouri Western University Department of Nursing

Each of the Faculty Scholars are paired with a Gateway GEC Faculty Mentor who works with the Scholar throughout the year to address teaching, research, and program development issues. Saint Louis University faculty who currently serve as mentors include:
- Milta Little, DO, Division of Geriatric Medicine
- Susan Tebb, PhD, LISW, School of Social Work
- Helen Lach, PhD, School of Nursing
- Carolyn Philpot, GNP, Division of Geriatric Medicine
- Marla Berg-Weger, PhD, LCSW, School of Social Work

As one former scholar and now mentor, Dr. Milta Little notes: “I found my experience as a scholar to be very useful when transitioning to mentor. It gave me the ability to understand the rigors of the program and offer both encouragement and strategies for program completion. I was very impressed with the projects that our scholars developed and hope that my support as a mentor played a role in their success.”

Applications are accepted each November for a February start time. If you are interested in learning more about the program, contact Marla Berg-Weger, Gateway GEC, bergwm@slu.edu or 314-977-2151.
Older Adults and Mobility Transitions: When is it time to plan?

By Marla Berg-Weger, PhD, LCSW, and Thomas M. Meuser, PhD

Have you thought about a time when you, your parents, or your spouse or partner may be unable to safely drive a car? If the answer is no, you are in the majority of people in the U.S. In fact, research suggests that fewer than twenty percent of Americans plan for a time when they cannot drive themselves when and where they want to go.1,2

Driving one’s own vehicle to valued destinations is often equated with independence, the one area of aging that many fear losing the most. The realities of aging, however, are that most of us will outlive our ability to safely operate a motor vehicle. On average, men will live approximately seven years beyond their safe driving years; women will live a decade after they are no longer medically fit to drive themselves.3,4 Age-related changes in vision, cognition, attention, motor function, and range of motion (among other physical and cognitive processes) do impact one’s driving and non-driving mobility. While most older adults are able to drive safely, approximately ten to fifteen percent are not safe drivers due to the impact of age-related health and functional changes.

Despite a lack of formalized planning, many older adults decide for themselves the point at which they are no longer safe to be on the road. They “hang up the keys” and develop alternative forms of transportation, often with support from family, friends, health and social service providers, community transportation services, and less often, public transportation. Other older adults may continue to drive beyond the point they are safe to do so, in part, out of necessity, lack of viable alternative forms of transportation, the urging of others to keep driving, or inability to accept their physical and cognitive limitations.

The proportion of drivers over age 65 is currently at fourteen percent and will continue to rise as the Baby Boom generation reaches their seventh decades and beyond.5 With as many as one-fifth of older drivers who are seeking license renewal possibly experiencing a cognitive impairment,6 the issue of ensuring that older drivers are medically fit to be on the roads has become a concern for public safety. When an individual has been diagnosed with dementia, the issue becomes not if they should stop driving, but when they must stop driving.7

On both the professional and personal levels, two questions must emerge as we think about the transition from driving to driving retirement:

1) How do we know when we (or others) should make the transition to driving retirement?

2) How do we intervene with and support the older driver who is exhibiting unsafe driving behaviors and decisions?

As professionals working with older adults, we should be incorporating the issue of driving and medical fitness to drive into our daily practice with seniors and their families. Our goals in addressing driving and mobility transition is to aid the older adult and their support network in determining the bounds of safe driving in context with other transportation and mobility options. Respect for the individual person and their dignity is paramount, even in situations where fast action may be needed. While identifying those older drivers who may be “at risk” for a safety concern is a responsibility shared by all geriatric professionals, there are few clear-cut answers. Promoting a successful aging process and maintaining quality of life should be the first priority in discussing age-related mobility transitions. We do not want to influence the older driver to retire from driving too early or too late but we do want to assure the older patient or client that mobility transitions are normative.

Consider integrating assessment and planning for these transitions into your usual practice:
think of driving as an independent activity of daily living (IADL) as essential as arranging a doctor appointment or balancing the checkbook. Regardless of your professional discipline, a respectful, realistic approach to raising issues of driving and mobility transitions can become a routine part of your assessment and treatment interventions. To aid you in the inclusion of mobility into your work with older adults, think of mobility counseling as a collaborative, professional intervention to facilitate and implement a planned transition for optimal mobility that is aimed at optimizing older adult mobility, mobility counseling strategies are grounded in the following principles (see Figure 1 for additional information on talking with older adults about their transitions):

• The intervention is person-centered with the primary focus being to optimizing mobility for the older adult.
• Optimal mobility planning involves facilitating collaboration between the older adult and her/his support network, health and social service providers, and other resources to promote independence.
• Utilizing the strengths possessed by the older adult and her/his support network ease the transition and planning processes.
• The development and access of resources to optimize mobility may require creative approaches, particularly in those situations in which formalized resources are unavailable.

As professionals working with older adults, we should be incorporating the issue of driving and medical fitness to drive into our daily practice with seniors and their families.

- Facilitating mobility-related transition and planning is a process that can be lengthy and non-linear as health, social, and financial status fluctuates.
- Establishing specific, achievable, and measurable goals can ease the transition from one phase of mobility to the next.
- Optimal mobility and independence is not solely dependent on one’s ability to operate a vehicle.

Individuals bring various attitudes, beliefs, concerns, needs, etc., to their personal mobility transition. It is important for the geriatric practitioner to understand such “individual differences” early in the discussion so as to tailor future plans for maximal potential benefit. The Assessment of Readiness for Mobility Transition (ARMT) is designed for this purpose and to provide person-specific information in support of the mobility transition process.

ARMT scores can help predict who will approach a mobility transition in an open, adaptive way (low scorers) vs. a hesitant, fearful attitude set (high scorers) which may hinder productive, proactive planning. The older driver’s responses can determine the approach taken by the geriatric practitioner and/or family members. For older drivers who are more resistant to mobility transitions, the intervention strategies used may be more incremental while a more open individual needs little assistance in transitioning into the next phase of her or his mobility.

(continued on page 14)
Foundation laid for the future of Geriatrics

Questions? FAX: 314-771-8575  
email: aging@slu.edu
copy of the full scale and administration instructions and a planning tool, visit: http://www.umsl.edu/mtdc/ and www.Mobileage.org.

A shortened version of the scale is provided in Figure 2 on page 15.

As a geriatric professional, you have a range of options for intervening with older adults on driving issues. While they must be individualized to the person and to your practice setting, strategies may include:

• Initiate a dialogue about mobility change in aging and the reality of driving retirement when the first signs of a problem appear so as to avoid an either/or crisis.
• Raise awareness and empower patients/families to learn about their options. Use the We Need to Talk guide or the At the Crossroads guide (available through The Hartford at: http://www.the-hartford.com).
• Administer the ARMT Short Form to assess your patient’s readiness for mobility transition.
• Gradual transitions are often better than stopping cold. Are there alternatives available that can supplement personal driving?
• Enlist other stakeholders to build your case and apply friendly, caring pressure for change.
• Refer the patient to obtain a private, professional driving evaluation. Often such evaluations can help with compensatory strategies to stay behind the wheel safely.
• Utilize your State’s Voluntary Reporting Law to report someone unfit to drive. This may sound harsh, but sometimes it is necessary. Reporting also provides legal protections should a crisis happen later.
• Refer your patient to the Area Agency on Aging, Alzheimer’s Association, or like organization, to work with a social service professional and develop a viable mobility management plan for the future.

If driving retirement is the goal, consider:
• Setting a tone for eventual retirement from the point of determination.
• Seeking to preserve the dignity of the older adult.
• Helping support network address driving issues and implications of retirement.
• Assessing family dynamics (grief, power, and role reversal).
• Suggesting a driving evaluation and negotiate an outcome based on the finding.
• Enlisting the help of police, clergy, physician, or others to address driving problems.
• Identifying viable alternative forms of transportation, i.e., taxi service, public/non-profit transportation, transportation programs, senior vans, private driver, and support network members.

Remember, as geriatric professionals, we should all strive to “Promote Positive Mobility” which encompasses the:

• Freedom to travel to valued destinations
• Independence & choice in transportation
• Roadways & systems designed for their needs
• Knowledge of available options for mobility
• Support to make choices for access and safety

References
Figure 2: ASSESSMENT OF READINESS FOR MOBILITY TRANSITION (ARMT)
This 8-item short form captures the core meanings of the full ARMT total score quite well (.90 correlation). While based on the original validation datasets (n = 297; 135), this short form has not been validated separately and should be used only when full scale administration is not realistic. This version of the ARMT-SF is intended for oral administration.

Read the following to the interviewee/respondent:
“Consider what would happen if you could not get yourself to valued destinations and activities independently. Maybe this is occurring already in your life; maybe it could happen in the future. I will read a series of statements to you. Consider if you agree or disagree and how strongly. You will respond on a five point scale: 5 = Strongly Agree, 1 = Strongly Disagree. You would respond 4 if you generally agree, but not strongly so. Likewise, you would respond 2 if you generally disagree, but not strongly so. You would respond 3 if you agree and disagree with the statement.

<table>
<thead>
<tr>
<th>ARMT-SF</th>
<th>Strongly DISAGREE . . . . . . .</th>
<th>Strongly AGREE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I am a burden if I ask others for help with transportation.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>2. It is devastating for older people to have someone take away their car keys.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>3. I feel depressed at the thought of being limited in my mobility.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>4. There is no way to plan for loss of mobility in aging.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>5. My future independence hinges on my ability to get myself around.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>6. I have not thought much about my future mobility before today.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>7. I’ve seen others become frail and immobile in older age, and I am determined to avoid this fate at whatever cost.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>8. It is not easy for me to ask for help with transportation when I need it.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>

Sum of Responses (Total Score) = _____________ >28 High Risk

INTERPRETATION: A total score of 29 or more is characterized by significant felt anxiety, worry about a loss of personal independence, and concern about becoming a burden on others. Pessimistic, inflexible thinking may also be part of this profile. High scorers may resist depending on others for transportation and so delay making mobility-related plans until a crisis ensues. In these ways, a high total score suggests that the respondent may not be fully ready (i.e., from an emotional and attitudinal perspective) to adapt successfully to a new mobility loss/change.

High scorers can still plan for their present and future mobility needs, but they will likely need extra 1:1 guidance and support. High scorers may benefit from counseling to discuss their beliefs in light of their present functional status and future mobility needs/goals. Often, strong negative views about non-driving mobility will need to be challenged in this process. Whereas low scorers may come to the mobility planning encounter with attitudes consistent with learning new mobility options, high scorers will need to be eased into a planning process of their own choosing. An immediate presentation of local bus and taxi options, for example, will likely be met with resistance from a high scorer. Their “readiness” must first be understood and cultivated to ensure eventual, successful planning.
Web-Based Innovations in Health Professions Education

By Milta Little, DO

Malcolm Knowles, a founder of adult learning theory, shifted the idea of effective professional education from being extrinsic and passive to being intrinsic, active and self-directed. The role of the educator is to help people learn through discussion and active participation (i.e., experiential learning). The introduction of the internet into mainstream culture led to the rapid development of electronic tools, such as information repositories, search engines, and interactive presentation templates, which are virtual goldmines for the modern educator. The internet has also been used to create a culture of instant connectivity between people around the world for business and entertainment. As new generations of learners enter health professions and more electronic tools become available, information can be disseminated quickly and effectively.

The internet has also been used to create a culture of instant connectivity between people around the world for business and entertainment. As new generations of learners enter health professions and more electronic tools become available, information can be disseminated quickly and effectively. These electronic platforms can serve as distractions to the educational process or be utilized to reach and inspire new learners in medical education. It is imperative that health profession educators take advantage of the available digital tools to create new models of education to reach learners who may sit across the digital divide. An example of innovation in education is the use of electronic presentations and audience response systems to illustrate points and engage an audience.

The Division of Geriatric Medicine at Saint Louis University is active in medical education and strives for innovation in teaching. There are two new programs being developed to disseminate geriatrics education outside of the institution using freely available electronic platforms. The first is through a series of short videos that can be used by health professionals, patients and families to better understand and manage conditions that are common in old age. The videos engage the audience through the use of comedy to tell a sobering story. Developers of the video series created a cartoon doctor by the name of “Dr. Milta,” who happens to be a talking squirrel! Each film is short, running between 1 ½ to 3 minutes, with one or two main take home points. Five videos are in development with expected release Spring 2014. The first is entitled “Guns and Dementia,” whose main take home point is the importance of inquiring about the presence of guns and removing them from homes where a person with dementia lives. The second video is on “Driving and Dementia,” which points out that driving is a privilege, not a right, and that adults with early dementia should plan for a “driving retirement.” The third video is called “White Coat Hypertension” and stresses the importance of measuring ambulatory blood pressures prior to initiating treatment for high blood pressure as discovered in the office. The fourth video is on “Memory Screening” with a focus on the available tools to test for memory loss, including the recently validated Rapid Cognitive Screen. Once the videos are completed, they will be disseminated for free to the public via YouTube, a video sharing website, and at aging.slu.edu.

Another educational program being developed at Saint Louis University is the use of Twitter to disseminate geriatric “pearls.” The Twitter social media platform is the ideal format because of its popularity, breadth of reach, and concise text structure. As defined by Wikipedia, “Twitter is an online social networking and microblogging service that enables users to send and read “tweets,” which are text messages limited to 140 characters.” Tweets are available to anyone with Internet access and registered users can also respond to or “retweet” (forward) messages to further the online conversation. The goal of this educational project is to introduce and/or reinforce to learners of all levels critical pieces of geriatric medical knowledge that can be incorporated into every day practice to improve the care delivered to older adults. Prior health education programs incorporating social media have found Twitter to be an effective way to supplement the curriculum and streamline information delivery. It is also very important to set ground rules to protect health information and maintain professional standards. Collaborations between Saint Louis University and other health profession institutions interested in creating social media educational programs are being developed.

(email: aging@slu.edu)

(continued on page 20)
An Education Intervention for Latino Family Caregivers of Elders at End of Life

By Dulce M. Cruz-Oliver, MD, CMD

The aging of populations in the industrialized nations has been quite different and the societal demand for care of the aging bubble in the US is different in part because of the changing nature of the following generations. In the US, in particular, new (for example Asian and African) and established (Spanish-speaking) streams of immigrants have added cultural differences to the mix of those elders aging within their own cultural communities by also adding the increasing experience of cultural differences between elders and their caregivers. For example, studies have shown that Hispanic elders self-report poorer health; however, it is unclear why they live longer with more disease burden and less access to medical care.1 The extent to which language barriers and limited knowledge of cultural factors likely impact communication in End-of-Life (EOL) care options is an important part of explaining differences in EOL care. The increasing numbers, internal heterogeneity and aging of the Hispanic population make it an important area for social planning and research. These facts make it a national priority to understand how aging and the provision of medical care for aging Hispanics at end of life may benefit all of society.

In order to explore ways to deliver EOL to this population, and as part of my Geriatric Academic Career Award (GACA) work, I started with a literature review2 that identified gaps in EOL care delivery, including the unknown need and acceptance of the hospice concept among Latinos; which is the gap we chose to investigate. Latino elders face end-of-life decisions with family support and are receptive toward hospice if educated. In collaboration with Dr. Sanchez-Reilly (The University of Texas Health Science Center at San Antonio GEC and GRECC, South Texas Veterans Health Care System Barshop Institute for Longevity and Aging Studies, San Antonio, TX) we performed a needs assessment utilizing focus groups among hospice staff in Texas (TX) and Missouri (MO); and an experiential journal based on observations in hospice care in Puerto Rico (PR) and Paraguay. This pilot data confirmed previously described (3) barriers to EOL care delivery: Language, Religion & Family culture. Solutions suggested by participants included education in Spanish by means of religious leaders and use of media. It was also noted that Latinos have high levels of caregiver stress when deciding upon nursing home placement of their family member. Taking into account these preliminary data we developed a bilingual educational intervention for Latino caregivers with the use of the “novela” format (a video-soap opera) that has been widely used in public health for reaching Spanish-language audiences with health information. I hypothesized that educating Latinos will result in decreasing caregiver stress which may result in longer home stay, delayed institutionalization and improved cost effectiveness at EOL.

Caregivers are the backbone of good quality EOL care, whether they are family members or professionals. For this reason, we developed a multi-center educational intervention for caregivers of Latino elders at EOL. Three different Latino communities were selected with the assistance of community leaders. Educational intervention was offered to informal caregivers of Latino terminally ill older adults, using a forty-five minute audiovisual presentation, including a culturally appropriate bilingual “novela,” a case-based video in the form of a soap opera. Pre- and post-test questionnaires were administered to participants to evalu-
A Day in the Life of a Delirium Doctor
by Joseph H. Flaherty, MD

“Delirium is a dangerous diagnosis.” I have used this line in hundreds of talks over the years and have started articles about delirium with this phrase. I never once thought it applied to the doctor, or the nurse, or anyone caring for someone with this distressing diagnosis, that is associated with terrible outcomes such as longer hospital stays, a higher likelihood of going to a nursing home, of dying while in the hospital as well as 6 to 12 months later, and most recently, of having permanent cognitive impairment.

However, many health care professionals (HCP) are afraid that these patients may hurt themselves, or others. This fear prevents the HCP from getting the agitated patient out of bed, into a chair to eat, or walking to the bathroom. This fear also prohibits the HCP from letting the sleepy delirious patient “wake up,” as if they were waking an unpredictable sleeping animal.

Not long ago, our geriatrics consult team was asked to see an older male patient in his 80s during his third hospitalization within a couple of months. The initial hospitalization was for a hip fracture, after which he went to a skilled nursing facility, then returned for a second hospitalization for pneumonia and subsequently went back to skilled nursing, and now had come back for weakness and “shaking.” We were consulted because, according to the doctor who called us, he was “not getting better, and the skilled facility won’t take him, and the family does not want him in a nursing home. He may be aspirating, his dementia is getting worse, and we’ve given him antibiotics, and done every test including MRI head, EEG, even lumbar puncture, and everything is negative.”

On entering the room (med-surg floor, not ICU), we observed a rather “big” man (i.e., not thin or frail), in bed, opening his eyes only from time to time, and while doing this, I had the fellow count with me, the number of restraints and tethers: a total of TEN.

Examples of restraints: Restraints and tethers: 1. IV tubing; 2. Nasogastric feeding tube; 3. Oxygen; 4 & 5. Two wrist restraints; 6. Indwelling urinary catheter (Foley); 7 & 8: two sequential compression devices around the legs; 9 & 10: seizure precaution padding on both sides of the bed.
moving various parts of his body (his head at times, then his extremities as much as he could). Every few seconds he seemed to get a surge of energy, would mumble something, then try to sit up, at which time the nurse would say, “now lay back down.” He would try again, then would wear out, and then close his eyes again. His wife was at the bedside, an attentive yet obviously worried lady.

Before I interacted with the patient, I told the geriatric fellow and the wife that I would like to just watch him for a few minutes. While doing this, I had the fellow count with me, the number of restraints and tethers: a total of TEN.

“So…” I looked at the fellow, “can you help me?”

“Uh…I guess.”

Then I asked the patient’s wife, “Would it be okay if I try something? I know he’s been a bit agitated off and on, and I know he’s a fall risk, and I know he may try to pull the IV or the feeding tube, but I’d like to start undoing some of these things and just see how he does, to see if we can get him out of bed.” With a hesitant but hopeful smile, she said, “that would be …wonderful. He hasn’t been out of bed in days.”

One by one, we removed the tethers and the restraints. We got to a point that he was free enough to allow us trying to sit him up. Although he was a big man, we, with a lot of help from him despite his confusion, were able to get his legs on the side of the bed. He did not have good sitting balance, but it appeared that as he became more alert, he was able to sit without falling over.

We almost stopped there (I could see the fellow had broken a sweat at this point), but I knew we could not because the patient started to move, as if he wanted to get out of the bed. The nurse at this point was not too happy, but tolerant (from a distance) of what we were doing. The wife’s mood began to change from one of anxiety to positive expectation, especially as I strategi-

ally moved the chair closer to the bed.

With the gait belt in place (which was no easy task), the fellow and I made our move. It worked. He still had enough leg strength to stand. He could not step very well, but eventually he made it to the chair, 45 minutes after we entered the room.

As he got his breath, he coughed, looked over at his wife and mumbled, “ahem…mm…that’s…better.”

The next two days this “procedure” was the mainstay of our treatment: getting him out of bed. Our other treatments (interventions) included removing the urin-ary catheter, getting the feeding tube out, getting speech therapy to see him while he was sitting in a chair, and, letting him eat and drink while in the chair, and stopping all the antipsychotics.

The delirium started to clear. On the fourth day of our consultation, he was discharged to the skilled facility.

It is important to note that we evaluated the patient for ongoing or new medical illnesses. But the primary team had done that. Most physicians now do this fairly well. What they did not do, because they had never learned to do this, or had depended too much on the hospital system (“call physical therapy” or “wait till he gets better before he’s safe to walk”), or because of fear of the unknown, was to identify delirium as a dangerous diagnosis for the patient, not us who are taking care of the patient, and face delirium head on as quickly and strongly as possible. Tying delirium down, ignoring it, hoping it will just get better, or sedating it, will not make it go away, and will likely prolong it. Until we have that magic bullet that reverses all the complex neuropathophysiological changes going on in the brain, our best strategy is to actively interact with it and promote recovery from the outset, like we would for any serious diagnosis. We know that after a stroke, a heart attack, a total knee or hip replacement, and even after open heart surgery, getting people out of bed as soon as possible is critical to recovery. Why should it be any different for delirium?

ENDNOTES

1 For those of you in geriatrics that think we don’t have a procedure, maybe this should be it, as it took about 40-50 minutes every day, it does take some skill and training (it has taken me years to realize how best to do this) and other specialties are unlikely to call it their procedure. Could we ever bill for it? For more information on the principles behind this “procedure,” please see a full description of the T-A-DA method (tolerate, anticipate, don’t agitate) in Flaherty JH, Little M. Matching the Environment to Patients with Delirium: Lessons Learned from the Delirium Room, a Restraint-free Environment for Older Hospitalized Adults with Delirium. J Am Geriatr Soc 2011;59:S295-S300.

2 Although physical therapy had “seen” him, and “recommended SNF placement,” we did not depend on them to get him up. In most hospitals, this just won’t happen on a daily basis, let alone, two or three times a day, which is needed. There are successful models of care and studies about patients in intensive care units who benefit from early mobilization through early physical therapy. Please see Schweickert WD, et al. Early physical and occupational therapy in mechanically ventilated, critically ill patients:a randomised controlled trial. Lancet 2009;373:1874-1882.
Mobility Transitions (continued from page 14)


10. Subcommittee on Elder Mobility & Safety, Missouri Coalition for Roadway Safety (savemolives.org).

Marla Berg-Weger, PhD, LCSW, is the Executive Director of the Geriatric Education Center at Saint Louis University. She is also a Professor in the St. Louis University School of Social Work. Thomas M. Meuser, PhD, is the Director, Graduate Gerontology Program at the University of Missouri-St. Louis.

Innovations (continued from page 16)

formed to strengthen the impact of the intervention.

In the current digital age, innovations in health professions education will need to include a variety of electronic, web-based and social media platforms to effectively reach new learners and disseminate information.

References

Caregivers Like Me (continued from page 17)

ate learning and reaction; and a one-question phone survey to evaluate intention to change behavior (See Figure 1 on page 17). Participants (n=145) were mostly female (79%), mean age 53 years and 91% admitted active learning from intervention. Caregiver stress alertness increased significantly (t(107)=-3.6, p=.001)) and acceptance of professional help from 4 of 5 agencies improved significantly (Figure 2). After video presentation, 72% of subjects correctly defined EOL concepts discussed during the educational intervention.

Data on impact of this intervention on Latino family caregivers demonstrated increase in their awareness of caregiver stress and improve their attitudes toward services available for elders at EOL, even 6-months post intervention. Perhaps the video gave people permission to say they are stressed and it would be interesting to explore ways to manage their stress. Further study is needed to explore how to increase knowledge on EOL caregiving challenges and how this education intervention may impact Latino patient outcomes.

References
Cardinal Reminiscence League (CRL) Train-the-Trainer Toolkit

By Cheryl Wingbermuehle, LCSW, Alzheimer’s Association, St. Louis Chapter

Saint Louis University School of Medicine’s Division of Geriatrics/Geriatric Education Center has awarded funds to the Alzheimer’s Association, St. Louis chapter, to develop a Cardinal Reminiscence League (CRL) Train-the-Trainer toolkit for use in training community partners and volunteers across the country to establish and operate reminiscence programs for individuals with early stage dementia. The toolkit is based on a model adapted from the Alzheimer Scotland Football Memories Project and introduced to the St. Louis community in 2011 by Dr. John Morley, with support from the St. Louis Alzheimer’s Association chapter, the St. Louis Cardinals Major League Baseball Organization, and the St. Louis Cardinals Hall of Fame Museum. In 2012, the program expanded to work with residents at two St. Louis area nursing homes and in 2013, a CRL group was launched at the Alzheimer’s Association chapter office. CRL builds on the reminiscence therapy concept that memorabilia and other multi-sensory prompts can be used to stimulate conversations about shared memories of past experiences for persons with early memory loss. Evaluation results from existing groups suggest that reminiscence therapy based on major sports may help improve quality of life for older people with dementia, whether living at home or in a care community. (For more information, see Wingbermuehle et al., 2014.)

The overarching objectives of the CRL program are to enhance mood, retain communication skills, and strengthen the sense of social engagement for program participants. The current project outcomes are to expand the number of St. Louis-area and nationwide groups developed and persons served. The toolkit will be promoted through the national Alzheimer’s Association to encourage development of similar groups across the country by other Alzheimer’s Association chapters as well as other entities with an interest in replicating the model, building on memorabilia from sports teams in other communities. Additionally, the toolkit will be shared with potential sponsors for future program funding. The toolkit, available Summer 2014, will include program curriculum, a promotional video and brochure, and best-practice guidelines. For more information, contact Cheryl Wingbermuehle, Alzheimer’s Association St. Louis Chapter Senior Director, Client Services (cwingber@alz.org or 314-801-0442).

Reference:
ADVANCED PRACTICE NURSES
Our division has been blessed with the opportunity to work with a series of outstanding Advanced Practice Nurses. They have been seminal in leading studies on delirium in nursing homes, the geriatric-friendly emergency department, nutrition in the nursing home, and advocating for the role of advanced practice nurses in the nursing home. These nursing colleagues are Mary Jo Nork, Myrtle Dukes, Kathy Houston, Dale Kraenzle, Judy Jensen, Candie Ross, Pam Cacchione, Robbie Evans, Elaine Carlton, Carolyn Concia (Zdrowski), Kathy Marren, Marilyn Diebold, Linda Eggemeyer, Christina Traber, and Carolyn Philpot. Numerous other physician faculty have provided excellent care for our older friends including Asif Bhutto, Dale Terrell, Akeeb Adedokun, Angela Sanford, Louay Omran, Chanti Trinh, Syed Tariq, Margaret Wilson, Roque Castillo, Rafi Kevorkian, Seema Joshi, and Devaraj Munikrishnapa.

REFERENCES
18. Farr SA, Erickson MA, Niehoff ML, Banks WA, Morley JE. Central and peripheral administration of antisense oligonucleotide targeting amyloid-β protein precursor improves learning and memory and reduces neuroinflammatory cytokines in Tg2576 (APP) powe mice. *J Alzheimers Dis* 2014; [Epub ahead of print].

Questions? FAX: 314-771-8575
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25 Years
(continued from page 22)
We want to hear from you. Perhaps this is your first issue of Aging Successfully, or maybe you’ve been reading it for years. Have you been to any of our conferences? Are there topics of particular interest you’d like us to cover? Here’s your chance to be heard. Click the HELP button to take a really short online survey. We know your time is valuable, so we won’t take much and we don’t ask often! Please give us some feedback and tell us what you’re thinking! THANK YOU! THANK YOU! THANK YOU! THANK YOU!

If you would prefer to enter the URL for the survey, copy and paste the following using any browser:
https://slu.az1.qualtrics.com/SE/?SID=SV_8uLurdgXk0nxAYB

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