REVES 2013

Silver Anniversary

THE UNIVERSITY OF TEXAS
— AT AUSTIN —

May 27–29, 2013
AT&T Executive Education
and conference center

Austin, Texas
U.S.A.

REVES
NETWORK ON HEALTH EXPECTANCY
RÉSEAU ESPÉRANCE DE VIE EN SANTÉ

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"Twenty Five Years Old – Looking to the Future"
May 27-29, 2013
Austin, Texas

Welcome to the 25th REVES meeting at the University of Texas at Austin. The number 25 is more than symbolic. It represents an impressive legacy of scientific meetings on health expectancy around the globe. The REVES network has accomplished a lot and has much to be proud of. Members have shaped the development of important conceptual and measurement frameworks of population health, played important roles in collecting data on these frameworks, invented new methodologies to assess healthy life expectancy, and documented trends and important social differences across many countries.

The REVES network's scientific legacy has set the stage for future scientific advances. What will the next 25 years offer in terms of scientific advances? Certainly, some of the seeds of those advances will be evident at this year's meeting. Other seeds will be planted at future meetings. Whatever those seeds are – and whatever the directions of our future work – it is important to remember the critical role that the REVES network will provide. The network furnishes the means to vet new ideas and approaches, have our ideas shaped by collegial input from scholars around the world, form new research partnerships crossing national boundaries, and increase the global mentorship of our developing scientists. It is an exciting time to be a member of the REVES network.

We hope you enjoy this year's program. The topics are wide-ranging and reflect the current scientific interests of our members. The program has been purposely structured to allow for informal conversations alongside of traditional scientific sessions.

The George Myers Lecture will be presented by Dr. Linda Martin. She is a senior fellow at the RAND Corporation, and she has held numerous scientific leadership positions over her career. She has served as a scholar-in-residence at the Institute of Medicine, president of the Population Council, vice president of the RAND Corporation, director of the National Research Council's Committee on Population, and research associate at the East–West Center in Honolulu. Dr. Martin received her A.B. in mathematics from Harvard University and her M.P.A. and Ph.D. in economics from Princeton University. She has had a highly distinguished research career, making numerous contributions in the area of population health and aging. Dr. Martin is one of the foremost authorities on disability trends in the United States. In addition, her scientific contributions enhancing scientific understanding of population health trends and differences in other countries are numerous and remarkable.
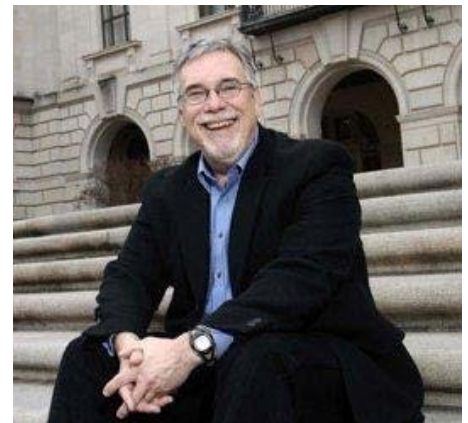
REVES 25 is hosted by the Population Research Center (PRC) at the University of Texas at Austin. The PRC is one of the largest and most distinguished centers of population science in the United States. Celebrating its 52nd birthday, the PRC is home to 75 faculty researchers, 85 graduate students and 11 staff members.

http://www.utexas.edu/cola/centers/prc/

Thank you for attending. We look forward to a great conference. Welcome to Austin!

Mark D. Hayward
The University of Texas at Austin
Professor of Sociology
Centennial Commission Professor in the Liberal Arts
Director, Population Research Center

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Conference Location:
AT&T Executive Education and Conference Center
1900 University Avenue, Austin, Texas 78705
Room 204

Monday, May 27 (Day 1)

7:00a-8:30a **Conference Check-In and Onsite Registration** – outside of Room 204
(Only cash, checks and money orders can be accepted at the onsite registration.)

7:30a-8:30a Breakfast buffet, Tejas Dining Room

8:30a-8:45a Welcome Remarks from Mark Hayward and Jean-Marie Robine

8:45a-10:00a Session 1: SES and Health Expectancy in Retirement
Chair: Jacqueline Angel

1.	Ethnicity and inequality in health expectancies in England and Wales	Wohland, Pia Rees, Phil Jagger, Carol
2.	Trends in Working Life Expectancy in the US: 1998 to 2008	Reynolds, Sandra Jagger, Carol
3.	Health inequality at the age of retirement: Belgian data on health by occupational status and income	Deboosere, Patrick Gadeyne, Sylvie
4.	Early and mid-life socioeconomic status and late-life co-morbidity trajectories	Zimmer, Zachary Hanson, Heidi A. Smith, Ken R.

10:00a-10:45a Poster Session 1

1.	How Far Disability Life Expectancy Could Be Shortened by End of Life Decisions in Europe	Brouard, Nicolas Desesquelles, Aline Pontone, Silvia
2.	The Changing Mobility Limitations of Elderly Singaporeans, 1995 to 2011	Kang, Soon Hock Saito, Yasuhiko Chan, Angelique Yong, Vanessa
3.	Sick or Just Old? Patterns of Functional Limitations and Care Consumption among Older Persons in Sweden	Lagergren, Marten Bennett, Anna
4.	Longer Life but Sicker Life? The Compression of Morbidity among Mexican American Elders	Angel, Jacqueline Angel, Ronald Hill, Terrence

10:45a-11:30a Session 2: Biodemography, Survival, and Frailty among the Oldest-Old
Chair: Carol Jagger

1.	Biodemographic Study of Mortality Trajectories at Advanced Old Ages	Gavrilova, Natalia S. Gavrilov, Leonid A.
2.	Polymorphisms in Interleukin genes and their association with longevity and successful ageing in elderly Costa Ricans	Rosero-Bixby, Luis Clas, Une
3.	Survival of the Fittest in the AHEAD Cohort	Verbrugge, Lois M. Liu, Xian

11:45a-1:15p Lunch buffet, Tejas Dining Room

1:15p-2:30p Session 3: Spatial Variation in Functional Limitations, Disability, and Healthy Life Expectancy
Chair: Sandra Reynolds

1.	Regional Variation in Happy Life and Healthy Life Expectancies in the U.S.	Bardo, Anthony R. Lynch, Scott M. Brown, J. Scott
2.	The Socio-Economic Influence of LLTI Reporting in England, 2001	Evans, Eleanor
3.	Spatial regression models: from theory to practice	Herrmann, Francois Robine, Jean-Marie Saito, Yasuhiko

2:45p-4:00p Session 4: Early Life Conditions and Health Outcomes in Mid to Late-Life
Chair: Emmanuelle Cambois

1.	Smoking during Pregnancy and Offspring's Smoking Behaviors	Novak, Beatriz, Palloni, Alberto
2.	Predictors of Exceptional Longevity: Effects of early-life childhood conditions, mid-life environment and parental characteristics	Gavrilov, Leonid A. Gavrilova, Natalia S.
3.	The Importance of Region of Birth and Early Life vs. Current Residence to Healthy Life Expectancy in the US: Evidence from the Health and Retirement Study	Lynch, Scott M. Brown, J. Scott Taylor, Miles G.

4:15p-5:15p George Myers Lecture: Linda Martin "Revisiting the Disablement Process: What Do We Mean by Healthy Life?"

6:30p-9:00p REVES Dinner – Mexican buffet at College of Liberal Arts Building (CLA) – Room 1.302 in the Julius Glickman Conference Center. See program for walking directions to CLA from the AT&T Conference Center.

Tuesday, May 28 (Day 2)

7:30a-8:30a   Breakfast buffet, Tejas Dining Room

8:30a-9:45a   Session 5: Innovations in Life Table Methodology
                   Chair: Yasuhiko Saito

1.	Comparison of methods and programs for calculating health life expectancies	Matthews, Fiona O'Neil, Vikki Jagger, Carol
2.	The Impact of Rising Longevity on Medicare Spending – Perspectives from the Economists, Demographers and Actuaries	Cai, Liming Shatto, John Madison, Andrew Smith, Sheila
3.	Explaining the Effect of Current U.S. Region of Residence on Health Expectancies: The Role of Health Care Infrastructure	Brown, J. Scott Lynch, Scott M.
4.	Age-specific variation in adult mortality rates in developed countries	Zheng, Hui

9:45a-10:30a   Poster Session 2

1.	A limited view of disability: The effects of visual acuity decline on active life expectancy	Hagedorn, Aaron Saito, Yasuhiko
2.	Gender Differences in the Disablement Process: The Case of Mexico	Diaz-Venegas, Carlos Wang, Ching-Yi Reistetter, Timothy Protas, Elizabeth Wong, Rebeca
3.	Factors Associated with Successful Aging in Brazil	Andrade, Flavia Schwingel, Andiara Lebrao, Maria Duarte, Yeda
4.	Predictors of Longevity among Older Mexican American Adults living in the Southwestern U.S.	Rote, Sunshine Eschbach, Karl Kuo, Yong-Fang Markides, Kyriakos
5	Sex differences in the evolution of health expectancy at 65 years old in Spain 1993-2009. A new trend for the new century?	Gomez-Redondo, Rosa Unai, Martin

10:30a-11:45a   Session 6: Cross-National Comparisons of Disease Incidence and Healthy Life Expectancy
             Chair: Jean-Marie Robine

1.	Educational differentials in activity limitations across the European Union: methodological issues and first results	Cambois, Emmanuelle Katchadourian, Vladimir Solé-Auro, Aïda JA-EHLEIS Team
2.	Disease Incidence and Mortality Among Older Americans and Europeans	Solé-Auró, Aïda Michaud , Pierre-Carl Hurd, Michael Crimmins, Eileen M.
3.	Frailty-Free Life Expectancy at age 70 between European Countries	Jagger, Carol Fouweather, Tony Romero-Ortuno, Roman
4.	Disparities in healthy expectancy in Eastern Europe	Minagawa, Yuka

11:45a-1:15p   Lunch buffet, Tejas Dining Room

1:15p-2:30p   Session 7: Sex and Gender Differences in Disability and Mortality
             Chair: Dorly Deeg

1.	Contribution of specific chronic diseases to gender differences in disability and life expectancy with disability in France	Nusselder, Wilma Cambois, Emmanuelle Wapperom, Dagmar Looman, Caspar JA-EHLEIS Team
3.	The variability of mortality in women and men: a 'serendipity-type' meta-analysis	Luy, Marc Gast, Katrin
4.	Health expectancies in Europe: a typology of gender gaps	Robine, Jean-Marie JA-EHLEIS Team

2:45p-4:00p   Session 8: Healthy Life Expectancy in the Americas
             Chair: Eileen Crimmins

1.	Estimating the life-expectancy with and without cognitive impairment in Brazil and exploring the role of demographic, social and health determinants of cognitive impairment	Ligiana Pires Corona Andrade, Flavia Maria Lúcia Lebrão Duarte, Yeda Aparecida de Oliveira
2.	Estimation of life expectancy and health adjusted life expectancy by BMI categories: a national population-level approach	Loukine, Lidia Steensma, Colin Waters, Chris Lo, Ernest Orpana, Heather Choi, Bernard Martel, Sylvie

3.	A Socioeconomic Index to Measure Health Inequalities in the Elderly Population: San Juan, Puerto Rico and La Havana, Cuba	León Díaz, Esther María Dávila, Ana Luisa García, Alberto Larriuz, María
4.	HealthPaths Dynamics II - Using Functional Health Trajectories to Quantify Impacts on Health-Adjusted Life Expectancy (HALE) in Canada	Rowe, Geoff Wolfson, Michael

Wednesday, May 29 (Day 3)

8:30a-9:45a   Session 9: Disability and Disease Burden in Developing Regions
                Chair: Zachary Zimmer

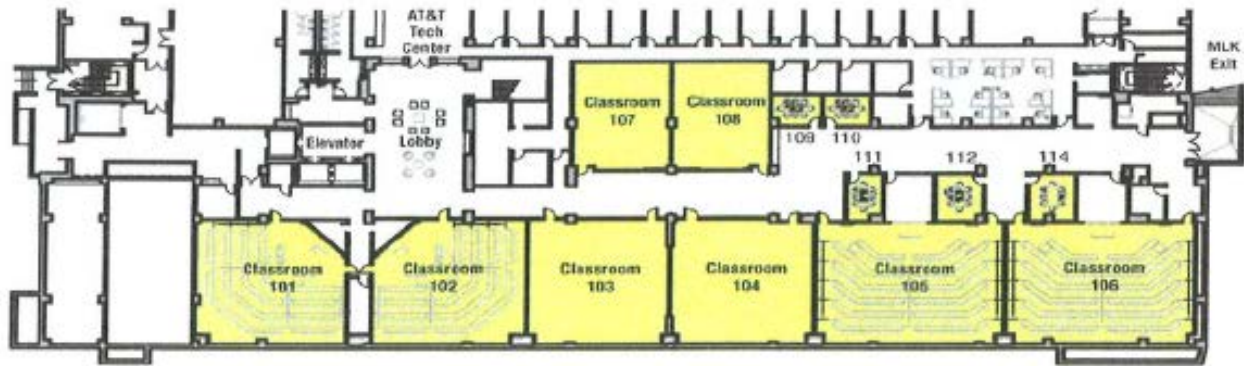| 1.	Healthy Life Expectancy in Sudan: An Empirical Investigation	Ahmed (Hamid), Mohamed
2.	The impact of HIV/AIDS in Tanzania: A Case Study of Women 15-49 Years in Kyela District, Tanzania	Ngalinda, Innocent Chuwa, Albina
3.	Future Trends of Older Adults with Disability under the Demo-Socio-Economic Factors in China, 2006-2050	Zhang, Lei Zheng, Xiaoying

10:00a-11:15a Session 10: New Frontiers in Health Expectancy Research
                Chair: Robert Hummer

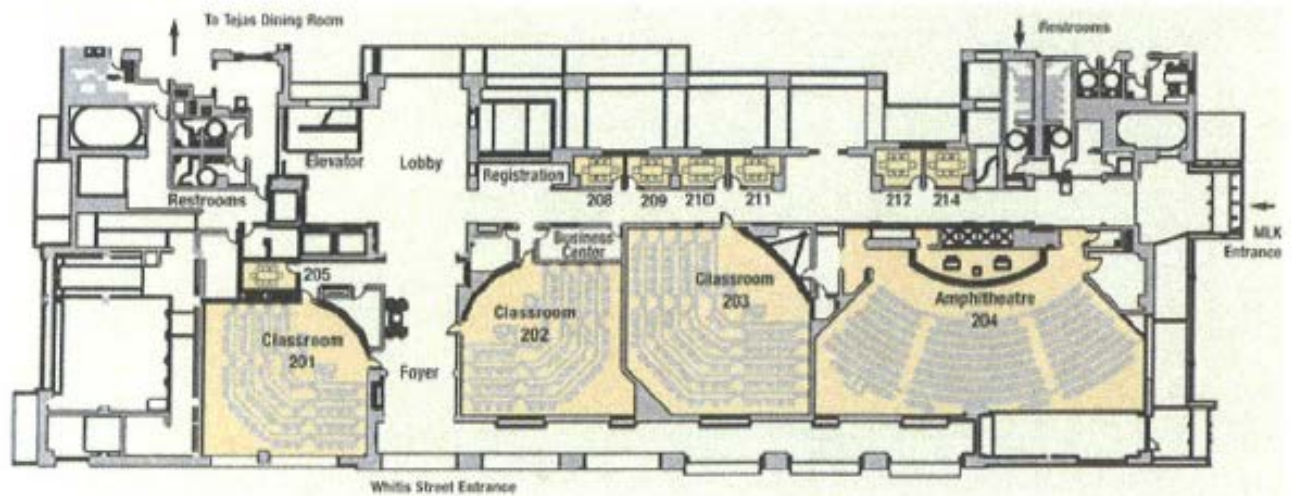| 1.	Change Over time in the Morbidity Process	Crimmins, Eileen
2.	Race Differences in Life Expectancy With and Without Cognitive Impairment in the United States	Zhang, Zhenmei Hayward,Mark D. Chiu,Chi-Tsun Yu, Yan-Liang
3.	Life expectancy is increasing - does the experience of older people change with it?	Deeg, Dorly J.H. Galenkamp , Henrike Janssen, Fanny Huisman, Martijn

AT&T Conference Center Floor Plan

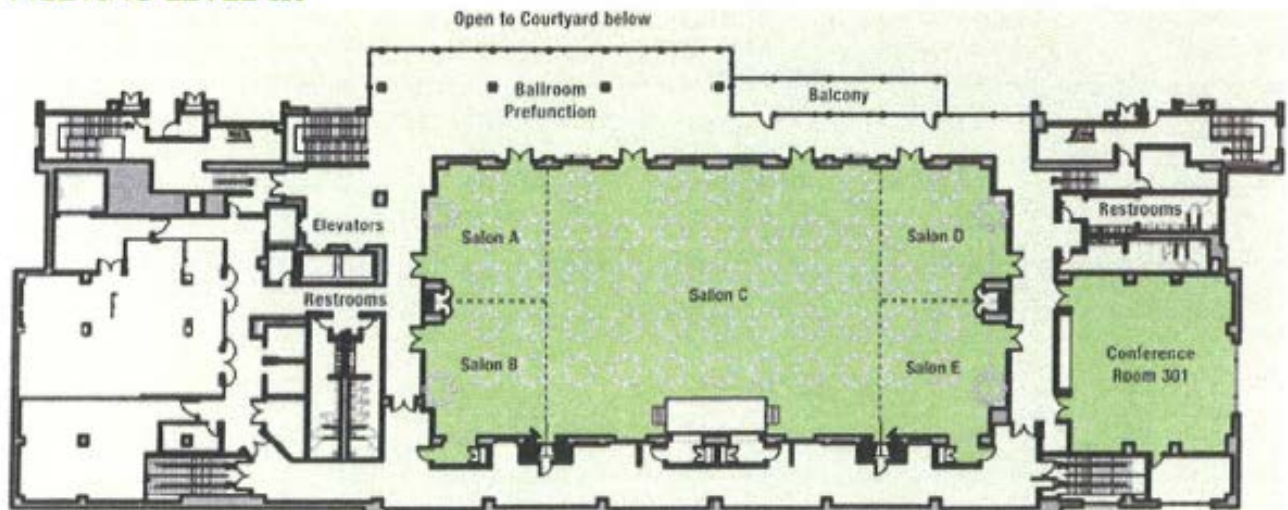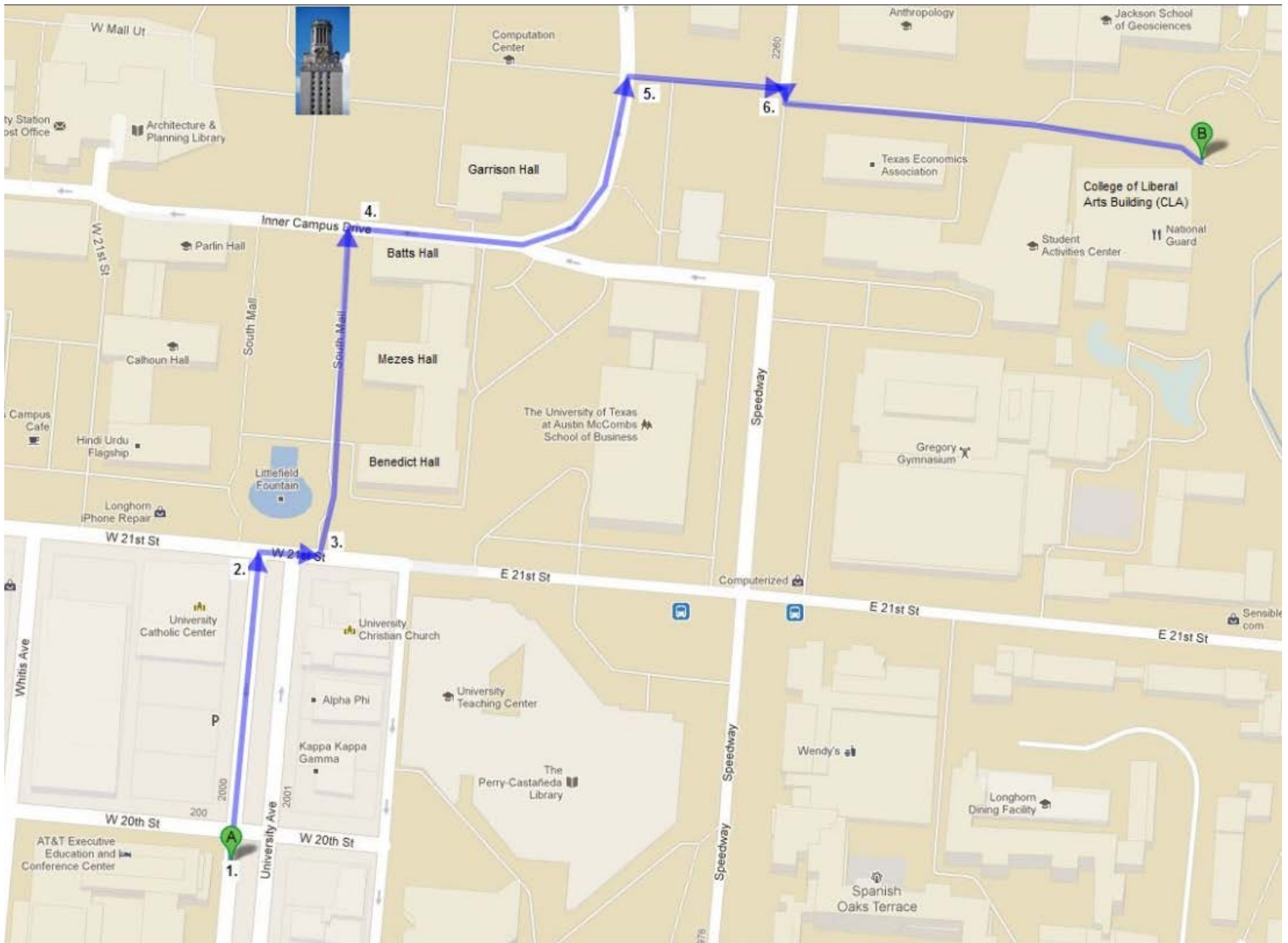## MEETING LEVEL II

MEETING LEVEL III

Walking Directions for **AT&T Conference Center** to dinner at **College of Liberal Arts (CLA)** building.
Dinner on Monday, May 24, 2013 will begin at 6:30p. Please allow 10-15 minutes for the walk.

A AT&T Executive Education and Conference
Center
1900 University Ave
Austin, TX 78705

B College of Liberal Arts Building
305 E. 23rd St.
Julius Glickman Conference Center, Room 1.302

1.	Head north on **University Ave** (toward campus) and **W 20th St.**	500ft	/	140m
2.	Turn slight right onto **W 21st St.**	100ft	/	27m
3.	Turn left onto **South Mall.**	500ft	/	150m
	(Take the stairs to the right of the fountain toward the **UT Tower.**)			
4.	At the first street, turn right onto **Inner Campus Drive.**	0.1mi	/	180m
5.	Turn right at **East Mall**. Take the stairs down, walking **away from Tower.**	250ft	/	72m
	(There will be a round statue on your left.)			
6.	Continue across **Speedway.**	20ft	/	6m
7.	CLA Building is after **MLK Statue**, just before the fountain, on the right.	0.1mi	/	190m

Welcome to Texas Y'all

Across the globe, in places far and wide, we speak a language that unites, inspires and defines us. All with only three words:

"Hook 'em Horns!"

The University of Texas at Austin
What starts here changes the world.

The University of Texas at Austin is one of the larges public universities in the United States and is the largest institution of The University of Texas System.

Founded in 1883, the university has grown from a single building, eight teachers, two departments and 221 students to a 350-acre main campus with 17 colleges and schools, about 24,000 faculty and staff, and more than 50,000 students.

The university's reach goes far beyond the borders of the main campus with satellite campuses and research centers across Texas.

Campus Sights

The Blanton Museum of Art (BMA)
The largest university art museum in the nation, The Blanton holds paintings, prints, drawings, sculptures, and works in new media. The Blanton has more than 17,000 works of art.

The Perry Castañeda Library (PCL)
Housing 2.5 million volumes, the PCL is named for Dr. Ervin S. Perry, the University's first African-American professor, and Dr. Carlos E. Castañeda, a professor of Latin American History and a developer of the University's Benson Latin American Collection.

East Mall / Statue of Dr. Martin Luther King, Jr.
The statue of civil rights leader Martin Luther King, Jr., was completed and unveiled in an emotional ceremony in September 1999. It is the second statue of the civil rights leader to be erected on a college campus.

The Drag
Students nicknamed Guadalupe Street "The Drag." It is popular for shopping, picking up the latest UT paraphernalia at the Co-op, or grabbing a bite to eat. After big athletic victories, students often cruise The Drag honking horns in celebration.

West Mall/Cesar Chavez Statue
Student organizations use this space to tout their programs, recruit new members, or to protest the issue of the day. A bronze statue honoring Cesar Chavez, the late civil rights activist and labor leader, is located on the West Mall.

Harry Ransom Center (HRC)
The Harry Ransom Center houses 36 million literary manuscripts, 1 million rare books, 5 million photographs, and more than 100,000 works of art. Highlights include a Gutenberg Bible (c. 1455) and the first photographer (c. 1826)

Main Building and Tower (MAI)
The iconic Tower, which stands majestically at the top of what was once known as College Hill, has 30 floors. The University's official timepieces are the Tower clock faces, which are trimmed in gold leaf. The 56-bell Knicker Carillon crowns the structure, chiming every quarter hour. Usually bathed in white light, the Tower glows orange on special occasions

LBJ Presidential Library
LBJ Presidential Library is one of thirteen Presidential Libraries administered by the National Archives and Records Administration. It houses 45 million pages of historical documents which include the papers from the entire public career of Lyndon Baines Johnson and those of his close associates. President Johnson insisted that the Library that bears his name tell future generations

Life in Austin
If you hosted a meeting of the minds — a place where the right-brained dreamers inspired the left-brained doers — Austin would be the perfect place to gather. At the heart of the Austin community, the university offers a home where the creative, artistic minds of the world live side by side with the scientific and technological innovators of tomorrow.

Austin is regarded as an open-minded, friendly and innovative city. The city has been consistently rated a national creative center that draws talented people from across the world to its high quality of life, abundant resources, lively entertainment and active lifestyle.

Top 10 Things to Do in Austin

Barton Springs: The three-acre spring-fed pool stays at 68 degrees year round.

Bob Bullock Texas State History Museum: The story of Texas is told through films and exhibits; home to Austin's only IMAX theater.

Texas State Capitol: Built in 1886, the Texas State Capitol is the largest state capitol in the country.

Sixth Street and Warehouse Entertainment District: Popular, trendy areas of downtown Austin known for clubs, live music and unique restaurants.

Congress Avenue Bats: Home to the largest urban colony of Mexican free-tailed bats in the country.

Lady Bird Lake: A major recreation area for the city of Austin. Its banks are bounded by the Lady Bird Lake Hike and Bike Trail, and businesses offer recreational watercraft services along the lakefront portion of the trails. Austin's largest downtown park

South Congress (SoCo): Home to eclectic shops and retro clothing stores and the very popular First Thursday event each month.

Zilker Park: The 350-acre park just minutes from campus is home to the Austin Nature and Science Center, Zilker Botanical Gardens, Zilker Hillside Theatre and the Zilker Zephyr — a train that travels around the perimeter of the park.

Mount Bonnell: A must-see for any Austin visitor, this popular tourist spot offers the best views of Austin and the Hill Country.

Abstracts

Session 1:	SES and Health Expectancy in Retirement
Chair:	Jacqueline Angel

Title: Ethnicity and inequality in health expectancies in England and Wales
Authors: Pia Wohland, Phil Rees, Carol Jagger
The UK population is not only ageing, as countries worldwide, but its composition is also subtly changing. From 1991 to 2011 the non-White population in England and Wales (E&W) has almost doubled in size to 7 million or 14% of the population. Additionally ethnic groups who migrated forty years ago as young adults are now forming a growing proportion of the older population. In this study we estimate disability free life expectancy (DFLE) and healthy life expectancy (HLE), for 16 ethnic groups in E&W for 2001. The focus of this study is to investigate how DFLE and HLE vary across ethnic groups at different ages and to see to what extent the observed variations resemble those observed in mortality. Mortality estimates, show variations across ethnic groups in E&W with a gap in life expectancy (LE) at birth of about 4 years for men as well as women. But variation in DFLE at birth was almost double to that in LE, amounting to a difference of 12.7 years DFLE at birth between men and 13.9 years DFLE between women. In addition over half of the ethnic groups had significantly lower DFLE and HLE at birth than the White British, mostly the Black, Asian and Mixed ethnic groups. Our results are the first DFLE estimates by ethnic group for the UK and suggest, that mortality inequalities may severely underestimate health disparities; especially at younger ages.

Title: Trends in Working Life Expectancy in the US: 1998 to 2008
Authors: Sandra Reynolds, Carl Jagger
Along with other developed countries continuing to grapple with funding benefits for older adults, the United States is considering a further increase in the age at which workers are eligible for full Social Security benefits. Currently, the normal retirement age is 66, and will rise to 67 for workers born after 1960. Proposals are being discussed that would increase the full eligibility age to 70. The question we address here is whether trends in working life expectancy (WLE) indicate whether such an increase would be feasible. Data from the 1998 and 2008 Current Population Surveys and U.S. lifetables are used to estimate WLE by the Sullivan Method. Initial findings for 60 year-old males, for example, show an increase in total life expectancy of 1.7 years, an increase in WLE of 3.1 years, and a decrease in non-WLE of 1.4 years. The implied age at which the 60 year-old male leaves the workforce increases accordingly, from 65 to 68. Further analysis will be presented showing estimations of WLE for females, and for white and black males and females. Results anticipated include lower WLE for blacks of both genders.

Title: Health inequality at the age of retirement: Belgian data on health by occupational status and income
Authors: Patrick Deboosere, Sylvie Gadeyne
The Crossroads Bank for Social Security in Belgium has been created in 1993 to elaborate and coordinate the E-government projects in the Belgian social sector. The Belgian social security is composed of tree insurance systems (workers, self-employed workers and civil servants), covering social risks as work incapacity, work accidents, occupational diseases, unemployment and old age. In addition four assistance systems (subsidies for the handicapped, guaranteed family allowance, minimum income and income guarantee for the elderly) complete the system. The CBSS covers almost the whole population with more than 10 million socially insured persons. The mission of the CBSS is to support in a coordinated approach all actors in the Belgian social system with efficient services and minimal administrative formalities and costs. In addition, the CBSS contains information with regard to type of work, work conditions, working hours and income, information that is updated by the employer every trimester. The CBSS offers a unique opportunity to monitor population health and health inequalities by socio-economic position through the combination of information on occupation, income and health status. The data are linked to the Belgian Population Register, adding information on place of residence, migration, household composition and mortality follow-up. As more variables are gradually integrated into the database, research opportunities on work related matters are growing. A 10% sample of the population aged 51 to 59 on the 1st of January 2004 has been drawn and followed over a period of 4 years. 42.519 men and 27.583 women in the sample were professionally active in 2004. For men, the relative mortality risk of the lowest income group proves to be twice as high compared to the highest income group with, in between, a clear gradient. This pattern is almost non-existent among women. Income is a SEP indicator that most directly measures

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material circumstances (Lynch and Kaplan, 2000) but clearly tells only part of the story. Not all problems can be addressed with the BCSS data, but the dataset most definitively opens new possibilities. For instance, we can distinguish current income and life course income. By using a longitudinal approach reverse causality can be better disentangled and the information on intermediate changes in occupational status, allow to document the healthy worker effect and to calculate transition rates for each health state, including death. Further investigation of the data will be useful to analyse the implications and the limitations of increasing the age of retirement.

Title: Early and mid-life socioeconomic status and late-life co-morbidity trajectories
Authors: Zachary Zimmer, Heidi A. Hanson, Ken R. Smith
The purpose of this study is to estimate the effect of early and mid-life socioeconomic status (SES) on morbidity trajectories using data from over 100,000 individuals aged 65 and older. SES is measured using a combination of Nam-Powers scores with separate SES scores for father's and own occupation, and contextual estimates of area level income. Trajectories of diseases are based on the Charlson Co-Morbidity Index. This design is made possible through data sources existing in the Utah Population Database (UPDB), a population-based research resource that links large, numerous population-based records providing information on individuals from birth to death and linking parents to their children. The UPDB is used to access a unique combination of information derived from birth and death certificates, a U.S. Decennial population census that provides area level measurements, and Medicare records (CMS). The analysis is conducted in two stages. The first involves the determination of co-morbidity trajectories over the period 1992 to 2009 using a group based trajectory modeling strategy. The model we assume includes a recent adaptation of the approach that allows for joint estimation of morbidity and mortality, permitting mortality to be considered simultaneously as part of a morbidity process. The second stage involves multinomial logistic regressions that associate early and mid-life SES to specific late-life trajectories. Preliminary analyses have found that occupational categories of fathers associate with four specific trajectories, with results being more robust for women than for men. Findings will expand upon a broad body of literature on early and mid-life conditions and later-life health and will add to our understanding of how, when and for whom the association exists.

Poster Session 1

Title: How Far Disability Life Expectancy Could Be Shortened by End of Life Decisions in Europe
Authors: Nicolas Brouard, Aline Desesquelles, Silvia Pontone
Before the demographic transition, almost 200 years ago, half of the children did not reach the age of 5 and after that age death could occur at any time until the age 60-65 with equal probability: there was no 'age to die'. A child was losing his first parent at the age of 14 years. Even 100 years ago i.e. before the World War I, when life expectancy was 50 years, most people did not 'complete' their life. Today most people are dying around 85-90, having 'completed their life'. This success is due to the long term medicalization of our societies but hyper medicalization is raising the question of therapeutic obstinacy. The population is going four times less at the cemetery and physicians are reluctant to explain death to their patient and its family. End Of Life Decisions (ELD) is a recent subject of research and first national surveys started in Europe in 1998 related to sometimes controversial laws largely debated. In France, the question of euthanasia was an election issue and a recent report from Pr Sicard, if condemning the Belgian and Dutch current laws, could authorize 'assisted suicides', not similar to the Swiss de facto interpretation of their old Criminal Code of 1899, but analogous to the American legislation which prevails in the Oregon State.   The proposed communication will compare some results of the European ELD surveys including the new recent (2012) French survey, highlighting current legal or illegal practices. Those practices will be compared to 'End of Life suicides' which can be appreciated from the numerous annual death certificates in France since 2001. Also, the presentation will raise the question on how far disability life expectancy could be shortened by End of Life Decisions.

Title: The Changing Mobility Limitations of Elderly Singaporeans, 1995 to 2011
Authors: Soon Hock Kang, Yasuhiko Saito, Angelique Chan, Vanessa Yong
Singapore continues to experience improving life expectancy; currently, according to national statistics, the life expectancy at birth in Singapore for males is 79.6 years and for females is 84.3 years. At the other end of the age spectrum, life expectancy at age 65 for males is 18.3 years and for females is 21.8 years. It is this latter part of the age spectrum that this research is concerned with; specifically, the mobility limitations experienced by this segment of the population. How has the elderly population's life with and without mobility limitations changed since the last cross-sectional survey carried out in 2005? This research replicates earlier work with the availability of new data on the elderly

population in Singapore. It employs the prevalence based Sullivan method to calculate the lifetime free of mobility limitations for this population. Initial observations suggest an improvement in the prevalence of mobility since 2005. The current cohort's self reported mobility levels are better compared to 2005 and are comparable to that observed in 1995. In 2011 increases in mobility limitations were more pronounced for females after age 74; however, while males shared similar trends it was not as pronounced. The respondents surveyed in 2011 were not the same respondents surveyed in 2005. Thus, these preliminary observations suggest the need to account for the visible improvement observed. More specifically, could this be a result of the policy measures put in place by the Singapore government over the last few years; or, could these observations be attributed to survey design?

Title: Sick or Just Old? Patterns of Functional Limitations and Care Consumption among Older Persons in Sweden
Authors: Marten Lagergren, Anna Bennett
The Swedish national government launched a few years ago a large initiative with the aim of improving the coordination of acute health care and long-term care among the most sick older persons. It turned out that the knowledge about the target group was rather vague and a special sub-project was started in order to define the group in terms of numbers, health status and care consumption. This resulted in defining three groups according to the criteria 'extensive consumption of acute health care' and 'extensive consumption of aged care and services' - both or either one. It turned out that the combined group was rather small and that the two groups satisfying either one of the criteria were very dissimilar. In the paper the three groups, simplistically labeled 'old and sick', 'just old' and 'just sick', will be described with regard to functional limitations and care consumption using data from the SNAC-project- the Swedish National study on Aging and Care.

Title: Longer Life but Sicker Life? The Compression of Morbidity among Mexican American Elders
Authors: Jacqueline Angel, Ronald Angel, Terrence Hill
This study employs a longitudinal data set, the Hispanic Established Epidemiologic Studies of the Elderly (H-EPESE), and growth mixture models to identify the correlates of different patterns of decline in functional capacity, measured by objective Performance Oriented Mobility Assessments (POMAs), among 3,050 Mexican-origin individuals 65 and older at baseline in 1993-94. The panel was recontacted six more times over the subsequent fourteen years.   Results reveal three general patterns of decline (1) high initial functioning followed by decline (48% of the sample); (2) moderate initial functioning followed by decline (37.5% of the sample) and (3) poor initial functioning followed by continuing poor functioning or slight improvement (14.5% of the sample). Individuals with the most seriously impaired physical functioning tended to be older, more poorly educated, and less financially stable than respondents with better functioning or less decline. Implications of the patterns of decline are discussed for public policy.

Session 2:	Biodemography, Survival, and Frailty among the Oldest-Old
Chair:	Carol Jagger

Title: Biodemographic Study of Mortality Trajectories at Advanced Old Ages
Authors: Natalia S. Gavrilova, Leonid A. Gavrilov
The growing number of persons living beyond age 80 underscores the need for accurate measurement of mortality at advanced ages. Our earlier published study challenged the common view that the exponential growth of mortality with age (Gompertz law) is followed by a period of deceleration, with slower rates of mortality increase (*North American Actuarial Journal*, 2011, 15(3): 432-447). This refutation of mortality deceleration was made using records from the U.S. Social Security Administration's Death Master File (DMF). Taking into account the significance of this finding for mortality studies we tested these earlier observations using additional independent datasets. In particular, the following new additional data sources for the U.S. mortality at advanced ages were analyzed: (1) Data from the Human Mortality Database (HMD) on age-specific death rates for 1890-1899 U.S. birth cohorts; (2) Survival data on 1,711 siblings of validated centenarians drawn from verified U.S. family histories (initially taken from Rootsweb with subsequent validation). In the case of HMD data, the analyses were conducted for 1890-1899 birth cohorts in the age range of 60-105 years. Mortality was fitted by the Gompertz and the logistic (Kannisto) models using weighted non-linear regression and the goodness-of-fit for these models was compared using Akaike and Bayesian information criteria. All analyses were conducted separately for men and women. It was found that for all studied HMD birth cohorts the Gompertz model demonstrated better fit of mortality data than the logistic model in the studied age interval. Similar result was obtained for dataset of centenarian siblings. In addition to the HMD dataset, a full DMF file obtained from the U.S. National Technical

Information Service (NTIS) was used for further analyses of mortality at advanced ages. It was found that mortality estimates obtained from the DMF records are close to estimates obtained using the Human Mortality Database cohort data. Computer simulations demonstrated that some widely used estimates of mortality (Nelson-Aalen estimate, actuarial estimate) as well as kernel smoothing of hazard rates may produce spurious mortality deceleration at extreme ages, while the Sacher estimate turns out to be the most accurate estimate of hazard rate at advanced ages. Possible reasons of finding apparent mortality deceleration in earlier studies are also discussed.

Title: Polymorphisms in Interleukin genes and their association with longevity and successful ageing in elderly Costa Ricans
Authors: Luis Rosero-Bixby, Une Clas
Although polymorphisms in the IL1 gene cluster could affect longevity and successful aging by modulating pro-inflammatory responses to some critical diseases, previous studies have failed to find associations between this gene cluster and longevity by comparing centenarian or nonagenarian individuals to younger controls. We revisit the issue with information from a population-based sample of 2,700 elderly residents in Costa Rica by 2005 that includes information on 5-year prospective survival and 19 biomarkers of health conditions. Interleukin coding genes IL-1B (site 3954) and IL-1RN were genotyped by PCR on DNA extracted from leukocytes. We found no associations between IL-1RN and being quasi-centenarian (aged 95 or more years) or with 5-year prospective surviving. In contrast, polymorphism in the IL-1B3954 appears significantly associated to 5-year survival, although non-significantly with being a quasi-centenarian. This association with survival is present in the male population only. Elderly males with the minor allele polymorphism in IL-1B3954 show a death rate ratio of 0.76 (0.58 – 0.99, 95% Confidence Interval). This survival advantage translates into about 2 years higher life expectancy and twice higher probability of reaching 100 years for a 60-year-old man. This gene's minor allele frequency (MAF) in this sample was 0.11 with no significant difference by sex. The MAF was 0.09 among the 5-year deaths compared to 0.13 among the male survivors. Carriers of the IL-1B3954 polymorphism showed also significantly lower levels of diastolic and systolic blood pressure and of body mass index, which suggests they may have a metabolic advantage. They also showed higher levels of C-reactive protein, suggesting that they either have higher levels of infection or a higher immune response. In other 15 biomarkers were no significant associations with this polymorphism. More research in other populations is needed before reaching definite conclusions on the role of this gene on longevity.

Title: Survival of the Fittest in the AHEAD Cohort
Authors: Lois M. Verbrugge, Xian Liu
Objective: How do disability rates change in a cohort of older persons over time? One expectation is that disability rates rise steadily, as cohort members age and acquire new disabling conditions, and their existing conditions worsen and prompt more disability. But perhaps mortality acts so strongly that cohort members with activity limitations readily die, leaving a population with fewer disabilities over time. We test both hypotheses with data from the Assets and Health Dynamics of the Oldest-Old (AHEAD) study, a nationally representative panel survey of Americans who were ages 70+ in 1993.
Data Source: The AHEAD panel has been interviewed every ~2 years. This analysis uses 8 waves of data spanning 1993 to 2008 (most recent year with death ascertainment from vital statistics). Within-cohort trends in disability are modeled by nonparametric two-stage longitudinal regression that adjusts for selective mortality and other loss-to-followup. Disability is a composite score (0-15), summing presence of health-related difficulties in activities of daily living (ADLs) and instrumental activities of daily living (IADLs), at each wave. Models control for six chronic conditions and several sociodemographic features.
Results: Disability rates initially rise sharply over time for the cohort, then become quite steady for some years, and then decline. Thus, over time, cohort survivors show a stable and even improving disability profile. This is a strong signal of survival-of-the-fittest; that is, the long-term survivors reveal 'resistance' to having and developing disability.
Discussion and Conclusion: The pattern of cohort disability over time found here is compared with existing literature on frailty and survival selection for older persons. The AHEAD results add to evidence that very old survivors often have good self-rated health and function.

Session 3:	Spatial Variation in Functional Limitations, Disability, and Healthy Life Expectancy
Chair:	Sandra Reynolds

Title: Regional Variation in Happy Life and Healthy Life Expectancies in the U.S.
Authors: Anthony R. Bardo, Scott M. Lynch, J. Scott Brown
Health and mortality have been well-studied for decades in demography, but health is only one dimension to consider when assessing whether life expectancy gains are also bringing 'life to years.' Happiness, while increasingly studied in economics, is relatively understudied in demography. Health and happiness are both key components of quality of life, but they have rarely been studied in conjunction. Trends in both happy life and healthy life expectancies are increasing, and, in the United States, there are substantial differentials by demographic characteristics like sex and race. Disparate literatures have found geographic variation in health and happiness, although rarely in conjunction. For example, the U.S. South is commonly associated with poor health and relatively shorter healthy life expectancies, but at the same time Southerners tend to be relatively happier. Using data from the General Social Survey (GSS), the Health and Retirement Study (HRS), and the U.S. Census, we use Bayesian Sullivan life tables and multistate life tables to explore regional patterns in healthy life and happy life expectancies. Preliminary results reveal that most people are happy and healthy at all ages, but this pattern diverges across age in such a way that happiness is always greater than health, and regional variation is substantial.

Title: The Socio-Economic Influence of LLTI Reporting in England, 2001
Authors: Eleanor Evans
Objective: To assess the influence of an ecological measure of area deprivation (the Index of Multiple Deprivation (IMD) 2004) and a number of household and individual characteristics on the reporting of limiting long-term illness (LLTI) in England using the Office for National Statistics Longitudinal Study (LS). This work formed part of the project to investigate the viability of using the LS as a basis for calculating life and health expectancies by National Statistics Socio-Economic Classification (NS-SEC).
Methods: The LS contains information for individuals from Census records and linked life events data (birth, deaths and cancer registrations). The study population was restricted to 347,874 private household residents in England aged over 25 enumerated at the decennial Census in 2001, and have death events that could be traced to the National Health Service Central Register to allow correct linkage of census and death records. Binary logistic regression analysis was used to determine the comparative discriminatory power of IMD and other characteristics on self-reported limiting long-term illness and to test for interactions.
Results: Increasing age and several other included characteristics in the model, notably low educational attainment and high area based deprivation, were found to significantly increase the odds of reporting a limiting long-term illness. At age 50, the odds of reporting a limiting long-term illness were 6.8 times higher amongst those with the most deprived characteristics than those with the least deprived characteristics. A significant interaction between IMD and housing tenure was also present: in the most deprived areas, the odds of reporting a limiting long-term illness were reduced for residents of council and other social accommodation and raised for residents of private rented and other accommodation types when compared to owner occupiers.
Conclusions: This study adds further to the body of evidence linking socio-economic factors with subsequent LLTI reporting and represents an important step in the study of life and health expectancies using the LS. In addition, the finding of a significant interaction between IMD and housing tenure in LLTI reporting warrants further investigation and may signify differences in housing quality, maintenance, and access, disadvantaging those that either don't own their own home or don't have a state tenancy in the most deprived areas.

Title: Spatial regression models: from theory to practice
Authors: Francois Herrmann, Jean-Marie Robine, Yasuhiko Saito
Aim: To describe spatial regression techniques and illustrate their use in the study of the association of geographic, climatic and longevity data from Japan.
Method: Geographic contiguous areas ('neighbors') share common properties, are therefore similar and not statistically independent, thus usual statistical techniques cannot be applied. Two types of spatial regressions, dealing with this spatial autocorrelation, are available: spatial lag and spatial error models. Lagrange multiplier test is used to verify whether the spatial lag regression model differs statistically from a linear model.

Results: The association between geographic physical factors and climate conditions with centenarian rate was studied for Japan's 47 prefectures. Maps and tables of results will be presented and commented.
Discussion: Despite their availability, spatial regression techniques are not yet used very often in epidemiology and medicine.

Session 4:	Early Life Conditions and Health Outcomes in Mid to Late-Life
Chair:	Emmanuelle Cambois

Title: Smoking during Pregnancy and Offspring's Smoking Behaviors
Authors: Beatriz Novak, Alberto Palloni
Background: The negative effects of prenatal exposure to maternal smoking on the offspring's growth, as well as different health outcomes have been extensively discussed and documented. Also studied, but with somehow inconsistent results, is the relationship of maternal smoking and cognition, academic achievement, and behavior. Less numerous are the studies that address the effect of maternal smoking during pregnancy on future smoking behaviors of the offspring. The main objective of this paper is to investigate whether maternal smoking during pregnancy is associated with increased risk of offspring´s smoking. There are two possible explanations for this association: 1. the behavioral one, which states that there children and their parents are exposed to the same conditions and parents' behaviors influence their children behaviors; and 2. the non-behavioral one, which states that in utero exposure to nicotine, increases the likelihood of nicotine dependence in young adult offspring.
Data and Methods: Data for this project were drawn from the linked 1983-84, 1994-95, 2002 and 2005 waves of the Cebu Longitudinal Health and Nutrition Survey study. In order to identify all births 3327 women were interviewed during the 6th to 7th month of pregnancy between 1983 and 1984. Maternal prenatal smoking was assessed during the first interview. There were a total of 3,080 non-twin live births (index children). For each available index child, the 1994-95 follow-up included questions on health history, nutritional status, schooling, and IQ. In 2002 and 2005, the information gathered for the index children included schooling outcomes, labor force participation, health and heath-related behaviors.
Preliminary Results: There were 2051 mother-child pairs identified in 2002. Index children were 17-19 years old (47% females), Preliminary results show that, among those mothers who smoked during pregnancy, compared with those who never smoked the odds that the offspring ever smoked at age 17-19 were around 50% higher (adjusting for mother´s and child educational attainment, child´s self-rated health and depression, as well as for IQ, number of smokers in the household). The odds that the offspring were current smokers were slightly higher.
Conclusions: Regardless of the possible explanation for the results, the behavioral or the non-behavioral one, the conclusion is the same: reducing the levels of smoking in one generation impacts the prevalence of smoking in the next one directly. More research is needed.

Title: Predictors of Exceptional Longevity: Effects of early-life childhood conditions, mid-life environment and parental characteristics
Authors: Leonid A. Gavrilov, Natalia S. Gavrilova
Knowledge of strong predictors of mortality and longevity is very important for improving population health. Earlier studies found that parental characteristics as well as early-life conditions and mid-life environment play a significant role in survival to advanced ages. However, these factors are typically studied separately, so little is known about simultaneous effects of all these three types of factors on longevity. This ongoing study attempts to fill existing gap by comparing American centenarians born in 1890-1891 with their short-lived peers (living 65 years) born in the same time period. The records are taken from computerized family histories at the Rootsweb website, which were then validated and linked to 1900 and 1930 U.S. censuses. In this study we have identified over 700 centenarians born in 1890-91 in the United States and over 600 shorter-lived controls born in 1890-91 in the United States and died at age 65 years. Further linkage to the 1900 census resulted in 95% success rate for centenarians and 92% success rate for controls. 92% of centenarian records and 95% of control records were successfully linked to the 1930 census. Information available in the 1900 and 1930 censuses provides very rich set of variables describing both early-life and mid-life conditions. The 1900 U.S. census contains information on childhood conditions when centenarians and controls were 9 to 10 years old: type of parental household (farm or non-farm, owned or rented), parental literacy, parental immigration status, paternal occupation,

number of children born/survived by mother. Information available in the 1930 U.S. census included type of person's household, availability of radio in household, person's age at first marriage, person's occupation (husband's occupation in case of women), industry of occupation, veteran status. The study demonstrates that midlife characteristics have higher impact on survival to age 100 (compared to early-life conditions) with some gender specificity: famer occupation in mid-life is a significant predictor of longevity for males, while radio availability in household in 1930 is important factor of becoming a centenarian for females. Parental longevity turned out to be one of the strongest predictors of survival to age 100 for both sexes. Significantly more centenarians than controls were born in the second half of the calendar year that confirms our earlier season-of-birth findings obtained using the within-family analysis. This study was supported by NIH grant R01 AG028620.

Title: The Importance of Region of Birth and Early Life vs. Current Residence to Healthy Life Expectancy in the US: Evidence from the Health and Retirement Study
Authors: Scott M. Lynch, J. Scott Brown, Miles G. Taylor
Survey respondents' region of residence is commonly used at least as a control in demographic research on health. An implicit rationale for including region is that regional cultures vary, and cultural practices may affect health. For example, dietary differences between Southerners and others may produce rates of obesity and related health complications that differ compared to those of other regions. Under this argument, an individual's region of birth and childhood should have greater later-life health implications than his/her current region, because early socialization is strong and enduring. Using Bayesian multistate life table methods applied to HRS data from 1998-2008, we investigate regional differences in healthy life expectancy at age 50, where region of residence is measured three ways: (1) current region, (2) birth region, and (3) region during adolescence. We find that the latter measure of region is most important in predicting and differentiating health across regions, and, importantly, that using region at adolescence as one's measure reverses the often assumed view that southerners have poorer health outcomes. These analyses extend previous analyses presented at REVES (2007) which used NHEFS data with weaker measures.

Session 5:	Innovations in Life Table Methodology
Chair:	Yasuhiko Saito

Title: Comparison of methods and programs for calculating health life expectancies
Authors: Fiona Matthews, Vikki O'Neil, Carol Jagger
There are many methods and programmes for measuring life expectancies in health states from longitudinal data. The aim of the inHALE project is to investigate these different methods and evaluate their strengths and weaknesses and provide guidance on the use of the programmes for other researchers. In this work in progress presentation the first few scenarios are presented. Using data from the MRC Cognitive Function and Ageing study where 13,004 individuals at baseline have been followed for up to ten years. To date the packages IMaCh and ELECT have been used to estimate disability-free life expectancies, stroke free life expectancy and cognitive impaired life expectancy. The presentation will discuss the similarities and differences of the results and give some provisional findings.

Title: The Impact of Rising Longevity on Medicare Spending – Perspectives from the Economists, Demographers and Actuaries
Authors: Liming Cai, John Shatto, Andrew Madison, Sheila Smith
As the older population lives longer, they will spend more time under the coverage of the Medicare program. There are different views on the potential impact of rising longevity on Medicare spending. Economists believe that as the share of oldest-old (i.e., age 85+) in the older population grows, Medicare spending will grow accordingly since those beneficiaries age 85+ typically cost Medicare much more than the younger elderly. In contrast, demographers believe that as the elderly live longer, there will be less demand for the expensive end-of-life care; therefore, the expected rise in Medicare spending will be much smaller. A third, intermediate path may be more plausible because, while the elderly are living longer, the pattern of expenditure at the end of life is likely to change as well, thereby moderating the effect of shifting distribution of time to death. In this analysis, we will present preliminary results of incorporating time to death into Medicare spending projections. We will describe the spending trajectories projected under the assumptions of each of these views, and discuss the implications and limitations of each method.

Title: Explaining the Effect of Current U.S. Region of Residence on Health Expectancies: The Role of Health Care Infrastructure

Authors: J. Scott Brown, Scott M. Lynch

Region of residence is commonly included in social research using US data as a control variable, with the expectation that residing in the American South is related to poorer health outcomes. Reasons for this regional association with health often involve some general reference to cultural influences on health such as poor dietary practices. Less often, region is described as a proxy measure for differential health care infrastructure (e.g., health care access, quality of care available, differing health care state policies). However, little research has directly examined whether regional variation in such health care infrastructure is related to the observed regional variation in health outcomes. In this study, we use HRS data from 1998 - 2008 paired with contextual data on health care infrastructure drawn from various data sources to investigate this question. We estimate Bayesian multistate life tables to examine healthy life expectancy at age 50 by region and test whether various aspects of health care infrastructure (e.g., physician density) explain regional differences in healthy life expectancy. Our results suggest that health infrastructure is an important factor for explaining some difference in health expectancy across current region of residence.

Poster Session 2

Title: A limited view of disability: The effects of visual acuity decline on active life expectancy
Authors: Aaron Hagedorn, Yasuhiko Saito
Decline in visual acuity often accompanies aging and leads not only to limited functional capacities, but also increased mortality. This study investigates active life expectancy and its relationship to experiencing serious declines in vision acuity among people 65+ in Japan using five waves of data from the Nihon University Longitudinal Study of Aging (1999-2009). The analysis was done using IMaCh 0.98K revision 1.133. The results indicate that among those who experienced declines in vision over the survey period, total life expectancy at age 65 was nearly 2 years less (20.7 years) than for those who reported normal vision (22.4 years). The largest differences were seen in disabled years, with approximately 7.2 years expected in disability for those with vision difficulties, compared to only 3 years for those without vision difficulty. Women with vision loss could expect 8.6 disabled years, while men only 5.3 years. Given the rising prevalence of vision loss with age, by age 82 more than half of remaining life is spent disabled among those who experience vision loss, with an exponential rise in the proportion of life spent disabled. Testing different measures of the severity of disability and length of time with vision loss will be explored using IMaCh multistate life tables.

Title: Gender Differences in the Disablement Process: The Case of Mexico
Authors: Carlos Diaz-Venegas, Ching-Yi Wang, Timothy Reistetter, Elizabeth Protas, Rebeca Wong
Objectives: This paper seeks to document the progression of disability in a developing country using a hierarchical model that has been previously used for developed countries and to examine how baseline socioeconomic variables associate with this process.
Data/Methods: The data come from the Mexican Health and Aging Study (MHAS), a national sample of adults born in 1951 or earlier, including a baseline survey in 2001 and a follow-up in 2003. An ordinal logistic regression is used to measure the 2003 hierarchical disablement process that progressively consider: 1) no disability, 2) mobility problems, 3) mobility plus limitations with activities of daily living, 4) mobility plus limitations with instrumental activities of daily living, and 5) combinations of the latter three, and 6) death.
Results: Around 43% of the sample remained in the same level of disability. The hierarchy of limitations, especially with two disabilities, differs for men and women.
Conclusions: Contrary to what has been previously found for developed countries, our model reflects the importance of ADLs in the disablement process in Mexico. Varying risk profiles and cultural and gender differences might influence the divergent disability hierarchies followed by men and women.

Title: Factors Associated with Successful Aging in Brazil
Authors: Flavia Andrade, Andiara Schwingel, Maria Lebrao, Yeda Duarte
Objective: Population aging process is accelerated in developing countries. Although previous studies have explored the role of relevant measures related to successful aging, most studies were based on cross-sectional data. We use longitudinal data to evaluate how relevant measures help predict health transitions, particularly those related to maintaining a successful aging.
Method: Two waves (2000, 2006) of the longitudinal SABE conducted in São Paulo city, Brazil was used in the analyses ($n = 2,143$). Successful aging was defined in multidimensional manner, including comorbidity, disability, depression, cognitive impairment, self-rated health and financial security measures. We explored the role of relevant predictors of

successful aging (demographic, socioeconomic, lifestyle, health related). Multivariate logistic and multinomial regressions were used in the analyses.

Results: Only 4.6% of the population had all indicators of successful aging. The main factors restricting successful aging among older Brazilians were presence of physical limitations, comorbid conditions, self-reported poor health and financial insecurity at baseline. Higher education was positively associated with remaining free of disability among men and women. Among women, literacy was positively associated with maintaining good self-rated health and cognitive skills. Physical activity was positively associated with remaining free of disability among women; and free of depression among men. Higher levels of grip strength were positively associated with better self-reported health.

Discussion: Physical activity, grip strength and education were important protective factors associated with successful aging. Interventions aimed at improving levels of physical activities and policies aimed at increasing educational levels can contribute to promote successful aging in Brazil.

Title: Predictors of Longevity among Older Mexican American Adults living in the Southwestern U.S.
Authors: Sunshine Rote, Karl Eschbach, Yong-Fang Kuo, Kyriakos Markides
One central theme of health expectancy research is to understand the probability of a healthy life at different points in the life course. Recent estimates indicate that Hispanic Americans living in the U.S., mostly comprised of Mexican Americans, have about a twenty year life expectancy after reaching age 65 (Arias 2010). In the current paper, we use the Hispanic E-PESE a sample of Mexican American adults 65 and older living in the southwestern U.S. to identify predictors of (a) surviving to age 85 and (b) surviving to age 85 without any disability. Data collection first took place in 1993/1994 (Wave 1) and follow-up interviews were conducted every two to three years until 2009/2010 (Wave 7). Using logistic regression analyses (N=1032) we find that those who survived to age 85 any time during the study were more likely to be female, more likely to be overweight, less likely to have had diabetes, and less likely to have had depression at baseline than those who did not survive to 85. Those who lived to age 85 without disability were more likely to be female, and less likely to have diabetes and depression than those who did not survive to age 85. Overall, results indicate that diabetes and depression are major health concern for the survival of Mexican American adults and that being overweight, while predictive of survival, is not protective of disability-free survival.

Session 6:	Cross-National Comparisons of Disease Incidence and Healthy Life Expectancy
Chair:	Jean-Marie Robine

Title: Educational differentials in activity limitations across the European Union: methodological issues and first results
Authors: Emmanuelle Cambois, Vladimir Katchadourian, Aïda Solé-Auro, JA EHLEIS Team
In the framework of the European health monitoring, the indicator of Healthy Life Years has been selected as one of the European Union (EU) structural indicators. The HLY is a health expectancy indicator based on the global activity limitation indicator (GALI) which is part of the yearly European Study on Income and Living Conditions (EU-SILC) conducted in the 27 member states. The JA-EHLEIS project aims to develop research on HLY to further discuss and explain trends and patterns in functional health across EU. Among these research topics, we aim to assess the feasibility of disaggregating the HLY by socioeconomic status (SES), namely level of education, to explore and compare differentials, using the EU-SILC. This objective is challenging due to issues in data comparability and robustness in this survey. This objective is also challenging due to country specific association between health and social status indicators which impact the overall observed differentials. Indeed, social, health and educational systems have been developing differently across European countries and generation, inducing country-specific and generation-specific association between health and the level of education. In this paper, we analyse EU-SILC 2009 dataset to discuss methodological issues and results on educational differentials in activity limitation across EU 27. A logistic regression first highlight the common pattern linking poor functional health and low level of education. But comparing relative risks across Europe, the study shows that the lower the level of activity limitation in the population, the larger the educational differentials. This pattern is much clearer in older generations driven by reduced educational differences observed in Eastern European countries, where their average education attainment is relatively high and which have high level of activity limitation for all educational groups : higher education turns into smaller 'health advantage' in these countries than in western countries where access to higher education has been more selective. This east-west pattern seems to vanish in younger generations while the Eastern European region underwent massive changes in social organization. Education systems and its changes over generations impact the relation of education to health contributing to the large variation in educational differences in health across

EU27. This is an important element to account for when interpreting educational differentials and to understand the mechanisms behind social determinants of health within the European Union.

Title: Disease Incidence and Mortality among Older Americans and Europeans
Authors: Aïda Solé-Auró, Pierre-Carl Michaud , Michael Hurd, Eileen M. Crimmins
Recent research has shown a widening gap in life expectancy at age 50 between the U.S. and Europe, as well as large differences in the prevalence of diseases and disability at these ages. Little is known about the processes determining international differences in the prevalence of chronic diseases including disease incidence and length of survival with diseases, which can only be estimated from longitudinal data. Higher prevalence of poor health could result from either higher disease incidence or longer disease-specific survival, which have very different implications for assessing health care needs. This paper uses comparable longitudinal data from 2004 and 2006 for populations aged 50 to 79 from the U.S. and a selected group of European countries to examine age-specific differences in prevalence and incidence of heart disease, stroke, lung disease, diabetes, hypertension, and cancer as well as mortality associated with each disease. We find that Americans have higher disease prevalence; however, incidence of many diseases is only higher among Americans in earlier old age, while it is higher among Europeans at older ages; mortality from many diseases is higher among Americans and some of the differences in mortality appear to be explained by the higher co-morbidity among Americans compared to Europeans.

Title: Frailty-Free Life Expectancy at age 70 between European Countries
Authors: Carol Jagger, Tony Fouweather, Roman Romero-Ortuno
It is well known that older European women live longer than men, but spend more years and a larger proportion of life expectancy with disability. The frailty phenotype has been viewed as a precursor to disability and so we compared life expectancy (LE) in four states: robust, pre-frail, frail, severely limited at older ages between European countries. To define the states we used a combination of the Global Activity Limitation Index (GALI) question on which Healthy Life Years are based, and the Frailty Instrument for primary care of the Survey of Health, Ageing and Retirement in Europe (SHARE-FI), both calculated from SHARE wave 4 (2010) for the 15 participating countries (Austria, Belgium, Czech Republic, Denmark, Estonia, France, Germany, Hungary, Italy, Netherlands, Poland, Portugal, Slovenia, Spain, Sweden). These countries represent 86% of the non-institutionalised population aged 50+ of the EU27 in 2010. LE in each frailty state for each country and sex were calculated using Sullivan's method with 2010 life tables obtained from Eurohex (www.eurohex.eu). Overall the countries male LE at age 70 was 14.2 years of which 8.1years (95% CI 7.6-8.6) years were robust, 1.8 years (95% CI 1.4-2.2) pre-frail, 0.7 years (95% CI 0.5-0.9) frail and 3.6 (95% CI 3.1-4.1) years with severe limitation. For women LE at age 70 was 17.3 years of which 6.0 years (95% CI 5.4-6.6) were robust, 3.7 years (95% CI 3.2-4.2) pre-frail, 1.8 years (95% CI 1.5-2.1) frail and 5.7 years (95% CI 5.1-6.3) with severe limitation. Women thus had longer LE but spent fewer years robust and more years pre-frail, frail and with severe limitations. In most countries and both sexes, the fewest years were spent frail but without severe limitation than any of the other three states.

Title: Disparities in healthy expectancy in Eastern Europe
Authors: Yuka Minagawa
Compared to the large body of research on mortality differentials between East Central Europe and the former Soviet Union, little attention has been paid to how overall population health status differs between these two country groups. This article investigates disparities in population health, measured by healthy life expectancy (HLE), for 23 Eastern European countries in 2008. There are substantial disparities in HLE between East Central Europe and the former Soviet Union, amounting to differences of 10 years on average for men and women. Further, I find that factors representing the malfunction of existing social structure are inversely associated with HLE. Accordingly, populations in countries where corruption, restriction of freedom, and violence are present, spend fewer years in good health. This study offers the first comparative assessment of HLE and the structural correlates of population health across Eastern Europe.

Session 7:	Sex and Gender Differences in Disability and Mortality
Chair:	Dorly Deeg

Title: Contribution of specific chronic diseases to gender differences in disability and life expectancy with disability in France

Authors: Wilma Nusselder, Emmanuelle Cambois, Dagmar Wapperom, Caspar Looman, JA EHLEIS Team

Aim: This study aims to assess the contribution of specific chronic diseases to gender differences in disability and life expectancy with disability in France.

Data: We use the 'Enquête Handicap et Santé', 2008-2009. The 'Enquête d'handicap et Santé' includes various disability indicators such as functional limitations, restrictions in activity, activity restrictions (based on the GALI question), and ADL disability as well as detailed information on diseases and symptoms.

Methods: We use the attribution tool that was developed by our group to attribute disability to diseases. This tool uses additive regression to derive additive cause-specific disability prevalence and provides insight in the role of the prevalence of specific diseases and their disabling impact, and of disability not associated with these diseases.

Preliminary results: Disability prevalence (age-specific) is higher in women for ADL disability and functional limitations, but not for activity restrictions based on the GALI indicator. The disabling impact of diseases differs between these disability indicators and between men and women. We show to what extend the specific diseases contribute to gender differences in disability prevalence and life expectancy with disability. For GALI we will show to what extend the overall similarity in prevalence masks important gender differences in the contribution of specific diseases.

Title: Sex differences in the evolution of health expectancy at 65 years old in Spain 1993-2009. A new trend for the new century?

Authors: Rosa Gomez-Redondo, Martin Unai

This work is aimed to describe differential health evolution by sex in people aged 65 years and over in Spain during from 1993 to 2009. In a framework of continuous compression and shifting trends of death at advanced ages, we study the differential impact of these processes in the self-perceived health of elder men and women. Our double objective is to address first whether Spain is facing either a compression, expansion or equilibrium between the health attained and the years of life added to the life span. The second and main objective is to know if healthy life expectancy by sex is following a trend towards convergence or divergence during the period studied. The analysis was carried out combining data about health status, mortality, and population data. The health status data was obtained from the Spanish National Health Surveys (1993, 1995, 1997, 2001, and 2003) and the European Health Survey 2009. The mortality for the years 1993 to 2009 was obtained from the Spanish National Institute of Statistics. The life expectancy and health expectancy were calculated for each period using the Chiang´s abridged life table, and the Sullivan method.

Title: The variability of mortality in women and men: a 'serendipity-type' meta-analysis

Authors: Marc Luy, Katrin Gast

Background: Although many different factors have been identified to contribute to excess male mortality it is still unclear which path of the complex cause-effect chain is the decisive driver of the life expectancy gap between women and men.

Objective: The question we intend to answer is whether these sex differences are caused primarily by factors leading to low female mortality or rather by factors causing high male mortality. We hypothesise that they are to a large extent caused by specific subpopulations of men with particularly high mortality levels that decrease the average life expectancy of men.

Methods: To test this hypothesis we investigate in a meta-analysis the variability of female and male mortality--defined as the differences in death rates between subpopulations with highest and lowest mortality levels--in empirical studies analysing specific phenomena of mortality differentials separately for women and men and without focusing directly on the differences between them. Thus, we analyse a specific aspect of sex mortality differences by a meta-analysis of studies that do not investigate sex differences in mortality. This makes our meta-analytic approach (to which we refer to as 'serendipity-type' meta-analysis) different from the classic meta-analyses which summarise or reanalyse studies dealing with the same topic as the meta-analytic study itself. We used the data of 72 empirical studies on specific phenomena of differential mortality published between 1993 and 2007, including 146 total and 1,718 single effects for 21 different risk factors.

Results: In 85 per cent of all total effects and three quarters of all single effects the variability in mortality among men was higher than among women, taking into account the higher overall mortality of men. The corresponding figures for the direct differences (without adjusting for general male excess mortality) in the variability between male and female

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mortality are 92 and 82 per cent, respectively. Cases with higher female variability in mortality are rare exceptions. They appear slightly more often in relation with smoking, obesity and place of residence, and in particular in the highest age groups.

Conclusions: We find support for our hypothesis that the disproportionate high mortality levels of specific male subpopulations are the central cause of the current extent of sex differences in life expectancy. Thus, public health programs should be targeted toward these disadvantaged subpopulations among men which seem to be related primarily to socioeconomic characteristics. Further research is necessary to identify these subgroups more precisely in order to develop the most effective measures to reduce their disadvantages and thus the sex gap in life expectancy.

Title: Health expectancies in Europe: a typology of gender gaps
Authors: Jean-Marie Robine, JA EHLEIS group

Session 8:	Healthy Life Expectancy in the Americas
Chair:	Eileen Crimmins

Title: Estimating the life-expectancy with and without cognitive impairment in Brazil and exploring the role of demographic, social and health determinants of cognitive impairment
Authors: Ligiana Pires Corona, Flavia Andrade, Maria Lúcia Lebrão, Yeda Aparecida de Oliveira Duarte
Objectives: This paper has two aims. First, we estimated the life expectancy with and without cognitive impairment in older adults. Second, we investigated the demographic, social and health determinants of the cognitive impairment and mortality.

Methods: Data from the 2000 and 2006 waves of the SABE Study (Health, Well-being and Aging) were used in the analyses. In the baseline, 2143 people aged 60 and over were interviewed in São Paulo-Brazil. We screened cognitive impairment using a modified version of the mini-mental state examination (score≤12). For the first aim, we used the Interpolation of Markov Chains method to estimate the life expectancy with and without cognitive impairment. For the second aim, we used multinomial logistic regressions to address health transitions and mortality. Models included baseline conditions (sex, age and education), early conditions (rural residence and time of hunger during childhood), midlife conditions (marital status, number of children ever born, work type) and late life conditions (smoking, physical activity, major chronic conditions).

Results: In the baseline, 13.2% of the older adults were classified as having cognitive impairment. There were no gender differences in the prevalence rates in the baseline. Among men, total life expectancy at age 60 was 16.6 years, with 14.5 years without cognitive impairment and 2.0 years with cognitive impairment. Among women, life expectancy at age 60 was 21.8 years with 18.5 years without cognitive impairment and 3.2 years with cognitive impairment. The results from the full models in the multinomial logistic regressions indicate that incidence of cognitive impairment is associated with older age (RRR=1.11), lower schooling (RRR=0.79), being male (RRR= 1.85) and depressive symptoms (RRR=1.58). For those starting without cognitive impairment, death during the follow-up was associated with older age (RRR=1.10), being male (OR=2.16), physically inactive (RRR=0.48), current smoker (RRR=2.38), having diabetes (RRR=1.91), cardiovascular disease (RRR=2.36), pulmonary disease (RRR=2.05) or arthritis (RRR=1.40). Compared to those who remained with cognitive impairment, recovery was associated with lower age (RRR=0.92), residency in rural areas during childhood (RRR=3.49), and absence of stroke (RRR=0.14). Those who were older (RRR= 1.07) or had pulmonary disease (RRR=4.10) were more likely to die.

Conclusions: We found that expected length of life with cognitive impairment is longer among women. This study emphasizes the role of low educational attainment as important predictor of cognitive impairment and chronic conditions and lifestyle in mortality.

Title: Estimation of life expectancy and health adjusted life expectancy by BMI categories: a national population-level approach
Authors: Lidia Loukine, Colin Steensma, Chris Waters, Ernest Lo, Heather Orpana, Bernard Choi, Sylvie Martel
The objective of this study was to estimate and examine life expectancy (LE), health adjusted life expectancy (HALE) and proportion of life spent in poor health by BMI categories using national data available in Canada. The study was limited to the adult (20 years old and over) population. The data were obtained from the National Population Health Survey, the Canadian Community Health Survey and the Canadian Chronic Disease Surveillance System. The estimation method was based on mortality rate ratios, prevalence of BMI and the total mortality rates. By taking into account BMI prevalence and the risk of dying for each BMI category relative to the normal weight category, the mortality rates (by age and sex) for the

total Canadian population were disaggregated into mortality rates by BMI class. These rates were used to construct life tables. The Health Utilities Index mark 3 was used as a measure of health related quality of life necessary for calculation of HALE. The difference in HALE between normal weight and other BMI categories was decomposed into mortality and morbidity components. Overweight individuals had the highest LE and HALE at age 20 compared to those in other BMI categories. Their LE and HALE were 66.5 and 55.6 years for females and 61.0 and 52.9 years for males. Obese (class I) people had the second highest LE: 64.6 years for females and 59.1 years for males. The second highest HALE was identified for obese (class I) males (50.4 years) and for normal weight females (54.1 years). The lowest LE was observed for underweight people. The lowest HALE was observed for extremely obese (class II and III) females (44.1 years) and underweight males (41.0 years). Both LE and HALE for underweight and extremely obese individuals were much lower than those for people with normal weight. Being in the overweight category was associated with a gain in life expectancy but overweight individuals spent more years of life in poor health. The study demonstrates a progressive increase in the proportion of LE spent in poor health as BMI progresses beyond normal weight. Important differences were observed between genders and between obesity sub-categories.

Title: A Socioeconomic Index to Measure Health Inequalities in the Elderly Population: San Juan, Puerto Rico and La Havana, Cuba
Authors: Esther María León Díaz, Ana Luisa Dávila, Alberto García, María Larriuz
The proportion of adults reaching 60 in Latin America is expected to grow quickly. Cuba and Puerto Rico are good examples. San Juan and La Havana have a substantial fraction of people above age 60. The objective of this paper is to study inequalities in health in two cities: San Juan, Puerto Rico and La Havana, Cuba.   This research is based on data from PREHCO (Puerto Rican Elderly Health Conditions) and SABE (Health, Well-being and Aging in Latin America) . A socioeconomic index was calculated for Puerto Rico based on six dimensions: assets, household equipment, household ownership, per capita income, financial debts and health insurance; the index for Cuba (3) was based on five dimensions per capita income, household infrastructure, household equipment, education and neighborhood environment. Using k-medians clustering the elderly population was grouped in three clusters: low, medium and high. Important differences by sex, age and certain health conditions were found between older adults in San Juan and La Havana.

Title: HealthPaths Dynamics II - Using Functional Health Trajectories to Quantify Impacts on Health-Adjusted Life Expectancy (HALE) in Canada
Authors: Geoff Rowe, Michael Wolfson
It is a commonplace that there is significant dispersion in health status in populations, as well as a strong correlation between health status and socio-economic status. However, there remains considerable uncertainty as to the quantitative importance of various causal factors in accounting for these health inequalities. Since health status is intrinsically a reflection of co-evolving dynamic processes, it is essential to employ an analytical framework that combines robust estimates in individual multivariate health status with health determinants dynamics in order to assess realistically the sources of health inequalities. This analysis builds on and extends an earlier series of estimates of multivariate functional health trajectories presented at REVES 2010. We continue with a focus on the Health Utilities Index (HUI), a widely used summary index of an individual's functional health, computed as a non-linear function of eight distinct categorical attributes - vision, hearing, speech, mobility, dexterity, cognition, emotion, and pain. The complex dynamics of HUI in a representative sample have been observed with Statistics Canada' National Population Health Survey every two years from 1994 to 2010. The analysis then applies longitudinal microsimulation to the estimated dynamic relationships among the HUI components and a range of risk factors. The REVES 2010 analysis focused on four major health determinants - obesity, smoking, educational attainment, and Antonovsky's Sense of Coherence (SoC). Perhaps surprisingly, SoC emerged as the quantitatively most important factor. In this analysis, we have broadened the range of health determinants to include income, employment, family membership, leisure and daily physical activity, and institutional residence. The underlying estimation methods have also been significantly augmented.   The microsimulation process is used to synthesize a realistic base case representative longitudinal population sample, and then a series of carefully constructed counter-factual populations, each cutting a link in the estimated 'web of causality'. Comparisons of the distributions of health-adjusted life lengths and summary HALE measures between counter-factuals and the base case are then used to estimate the quantitative importance of the extended set of major social determinants of HALE in Canada.

Session 9:	Disability and Disease Burden in Developing Regions
Chair:	Zachary Zimmer

Title: Healthy Life Expectancy in Sudan: An Empirical Investigation
Authors: Mohamed Ahmed
The concept of health expectancy was introduced in the 1960s and further developed in the 1970s (Sullivan 1971). In more recent years, both policy makers and members of the research community have been increasingly interested in the estimation of healthy life expectancy. This interest arises from the fact that measures of healthy life expectancy potentially offer easily comprehensible measures of both the level of, and change in, the well-being of a population.   Sudan is unique in its long and complex emergency situation with regard to war, recurrent droughts and famine that led to massive population movement, whereby the internally displaced from the war areas are estimated at 2.6 million . Indeed, since its independence in 1956 Sudan has suffered from many internal problems that perpetuate the vulnerability factors for the spread of the communicable diseases which added a huge burden on the health sector. These include the long-standing civil strife that has affected one third of the country and contributed to the problem of internal displacement of civilians. The continuous movement of the warring factions both internally and with neighboring countries ranks Sudan as number one world-wide regarding the internally displaced people (IDPs).   In Sudan the epidemiological profile of diseases is still largely dominated by communicable disease . Most of which are common diseases that can be prevented and/ or treated at a relatively low cost using relatively simple strategies. Malaria along with infectious childhood diseases - measles, diarrhea, acute respiratory infections and vaccine preventable diseases all often combined with malnutrition - cause a large burden of morbidity and mortality among the Sudanese population. Lifestyle problems and non-communicable diseases, tobacco smoking and snuffing, alcohol and drug use, lack of exercise, change in sedentary and lifestyles and resultant reportable rise in hypertension, diabetes, cardiovascular diseases, cancer, arthritis and absence of counteracting interventions are new phenomena on rise. Recent data and surveys have shown that non communicable   diseases are emerging as a public health problem in Sudan due to the change in socioeconomic and lifestyle conditions.   There are two aims in this study. The first is to estimate Healthy life expectancy in Sudan (HLE) using cross-sectional data (2008-2010). The second is to identify the most important risk factors affecting health status of population in the country.   Healthy life expectancies are calculated using models that incorporate measures of mortality and morbidity. Age-specific death rates account for the mortality component. Age-specific rates of population morbidity, disability, or some other aspect of health account for the morbidity component. These two components are combined using a mathematical function that transforms the two sets of partial measures into a single composite measure using a life table methodology.   National mortality data were obtained from two sources, the National Health Statistics (NHS, 2009) of Federal Ministry of Health (FMOH) and fifth population census (CBS, 2008). Health data come from National Health Statistics (2009) of FMOH and the Sudan Household Health Survey (SHHS, 2010).   The life table techniques as well as the binary logistic regression models were used to estimate the (HLE) and to identify the risk factors of health status.

Title: The impact of HIV/AIDS in Tanzania: A Case Study of Women 15-49 Years in Kyela District, Tanzania
Authors: Innocent Ngalinda, Albina Chuwa
The study examined the impact of HIV/AIDS for women of reproductive age and assesses how socio-cultural and sexual behaviour factors that are related to determinants of fertility have changed the fertility. The study assumption was that HIV epidemic has to some extent altered the proximate determinants of fertility. HIV epidemic might change socio-cultural factors and sexual behaviour of a woman and reduce fertility through fear of getting pregnant. Thus, some of the proximate determinants of fertility such as marriage and contraceptive use may have both direct and indirect influence on fertility due to HIV/AIDS. Hence, fertility levels, patterns and differentials among HIV infected and un-infected women may also change due to HIV/AIDS. The study covered 1,050 women aged 15-49 years. The sample size of 1,050 women were drawn using Probability Proportional to Size (PPS) and distributed to the entire district using proportional allocation to size in each ward in Kyela District. HIV testing was carried out in the field using professional Nurses trained in HIV counselling. The blood samples were tested using determine HIV-1/2 reagent. The Focus Group Discussions were also conducted using Community Officers. The methods of data analysis included indirect techniques of demography that were used to smoothen age distribution data as well as fertility data. The Fertility Rate Ratio (FRR), which compares the fertility of HIV, infected and un-infected women were also constructed. The bivariate and logistic regression analyses were also used to analyse the qualitative data. It was found that HIV prevalence estimated using cross-sectional data was 18.4 percent compared to prevalence rate of 20 percent based on the Anti-Natal Care (ANC) data - overestimated the HIV prevalence. It was also found that HIV epidemic has influenced and changed fertility levels and patterns among HIV infected and un-infected women -. HIV infected women have recorded low TFR (4.8vs 5.0 children per woman for un-

infected women. It might be concluded that HIV epidemic reduces fertility; the use of contraceptive had both direct and indirect influence on fertility; socio-cultural factors play a big role on the influence of fertility both directly and indirectly among HIV infected and un-infected women i.e. level of education, type of occupation and place of residence. An urgent need of involvement of reproductive women and men at all levels in policy development, programme plans and its implementation to ensure that their needs are understood and reflected in all policies and programmes in Tanzania.

Title: Future Trends of Older Adults with Disability under the Demo-Socio-Economic Factors in China, 2006-2050
Authors: Lei Zhang, Xiaoying Zheng
Background: Population ageing, combined with the fact that disability is most common among the elderly, has focused attention on the future changing of ageing population with disability. While populations throughout the world are ageing rapidly, China already has one of the largest ageing populations who met a big challenge on burden of disability.
Objectives: This study predicted the changing tendency of ageing population with disability, and determines whether demographic, social, and economic factors could account for the tendency.
Methods: A cross-sectional data of Second China Sample Survey on Disability (2006) is used in this study, it covered total 31 provinces, Municipalities and Autonomous Regions, with the sample size of 2526145 (161479 were disabled persons), and six types of disability were included.
Results: Most of the socio-economic-demographic factors were significantly associated with disability among total population except ethnicity (p≤0.05), while age, sex, place of residence, marital status, education, income, provincial GDP per capita are significantly affect the prevalence of disability among the older adults. The future total number and growth rate of older adults with disabilities in China are very striking. Under assumption II (dynamically changes), about 1.5 million of older adults increase annually from 2006 to 2040, and more than 2.5 million increase annually from 2040 to 2050. Total number in 2050 is 3.05 times of 2006. Discussion：The huge size of the population with disability in China will bring social economic environment and health care system a tremendous pressure and burden. And China's population will experience a process of population with disability aging and aging population disabling in the future.
Conclusion: Social and economic factors affect the development process of future changes in size of population with disability, but the most far-reaching impact factor is population aging, so the health expectancy of the elderly population is most worthy of attention. Well education background and economic environment contribute to the reduction of disability risk, which can be used as the primary factor in disability prevention and control.

Session 10:	New Frontiers in Health Expectancy Research
Chair:	Robert Hummer

Title: Change Over time in the Morbidity Process
Authors: Eileen Crimmins
The morbidity process includes the physiological change that begins with the onset of physiological dysregulation; this is followed by the onset of disease and disability; and the process eventually results in death. Examining time change in this process with clarify how, and why, population health has been changing in recent years and how change in health relates to change in the length of life. This analysis examines the prevalence of health problems in each dimension of the morbidity process at multiple time points. It also examines the links between dimensions of morbidity and the links between morbidity and mortality at multiple time points. Differences in these processes by gender are also examined. Data come from three waves of NHANES: 1989-1994, 1999-2002, and 2007-2010. Our analysis includes persons 40 years of age and over. Results of the analysis indicate that the links between biological risk factors and disease and death became stronger; that diseases are less linked to functioning problems; and some diseases are less linked to death. Similar changes occur among men and women.

Title: Race Differences in Life Expectancy With and Without Cognitive Impairment in the United States
Authors: Zhenmei Zhang, Mark D. Hayward, Chi-Tsun Chiu, Yan-Liang Yu
It is estimated that among those aged 71 years and older, Blacks were approximately two times more likely to have dementia than Whites in the United States. However, less is known about race differences in life expectancy with and without cognitive impairment. Do Blacks spend longer years and great proportion of their lives with cognitive impairment than Whites? In this study, using data from 7 waves of the Health and Retirement Study (1998-2010), we analyzed race differences in the transition probabilities among three states: normal cognition, cognitively impaired, and death among 9,044 non-Hispanic Whites and Blacks aged 65 and older in 1998. The SPACE (Stochastic Population Analysis for Complex Events) program is used to estimate life expectancies with and without cognitive impairment for four groups:

White men, Black men, White women, and Black women. Our preliminary results show that older Blacks are more likely to suffer from cognitive impairment than Whites in 1998 and they are also significantly more likely to experience cognitive impairment during the study period. However, Blacks with cognitive impairment are less likely to die than Whites with cognitive impairment. Our paper will be the first attempt to produce important statistics about life expectancy with and without cognitive impairment by race and gender in the United States.

Title: Life expectancy is increasing - does the experience of older people change with it?
Authors: Dorly J.H. Deeg, Henrike Galenkamp , Fanny Janssen, Martijn Huisman
Since the turn of the 21st century, life expectancy in the Netherlands has increased, particularly in the older population. Older people can expect to experience more years of life. The question addressed in this study is how this objective prospect of a longer life is reflected in older people's subjective experience of their remaining life time. Specifically, do older people aged 65-90 years in 2009 feel they are in an earlier stage of life than older people aged 65-90 years in 1999? Data from four waves of the nationally representative Longitudinal Aging Study Amsterdam are used: 1999, 2002, 2006, and 2009. From each wave, participants in the same age range were selected, ages 65-90. At these waves, participants were asked to indicate with a cross on a 25 cm line with 'start' printed at the left and 'end' printed at the right (the 'lifeline') where they felt they were at this moment in life: their self-perceived life stage (SPLS). The place of the cross on the lifeline was measured and coded in percentages so that a cross at exactly the end had code 100, indicating that participants perceived to be in their final stage of life.   Across waves, mean (standard deviation) was 75.7 (12.2). Men's SPLS was 2.3 percent points higher than women's. Age-adjusted generalised estimating equations with SPLS as the dependent variable and wave year as the independent variable showed a curvilinear trend over time. In men, SPLS increased over the first seven years, then started to decrease. In women, SPLS increased over the first three years, then decreased over seven years. Furthermore, the decrease occurred earlier in those with no chronic diseases than in those with one or more chronic diseases. In both sexes and disease groups, these trends over time had a significant linear and quadratic component. In models fully adjusted for mental and physical health SPLS was lower, but the shape of the trends was the same. It is concluded that the trend in self-perceived life stage follows the trend in objective life expectancy across the period studied, but with a delay. Although life expectancy increased faster for men than for women, women's SPLS decreased earlier than men's.

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