

BIOGRAPHICAL SKETCH

NAME Mark D. Hayward	POSITION TITLE Professor, Department of Sociology and Director, Population Research Center, The University of Texas at Austin		
eRA COMMONS USER NAME mhayward			
EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE	MM/YY	FIELD OF STUDY
Washington State University, Pullman, WA	BA	05/1975	Sociology
Indiana University, Bloomington, IN	AM	05/1978	Sociology
Indiana University, Bloomington, IN	PhD	05/1981	Sociology

A. PERSONAL STATEMENT

Hayward's current and future research addresses two related questions. 1) How do life course exposures from childhood into adulthood influence the health and mortality of older adults? 2) How do inequalities in adult health and mortality arise from a key fundamental cause of disease -- educational experience? The first topic reflects Hayward's long-standing interest in the "long arm of childhood" when events and conditions potentially scar individuals in ways that increase their risk of health problems decades later or launch "social chains of risk" to produce trajectories of health advantage and disadvantage. Recently, Hayward published companion papers with Zhenmei Zhang (Michigan State) examining how early life socioeconomic resources and malnutrition were linked to cognitive function in late adulthood in China, the question being whether these early life conditions left a "biological residue" that heightened the risk of impairment even after controlling for other social and biological pathways. In contrast to a number of studies based on American or European data, the results provided strong evidence of direct effects of these childhood conditions and less evidence of social pathways (e.g., education) and disease precursors (e.g., hypertension). Comparisons of the results with studies based on American and European data pointed to the importance of understanding the balance of differential exposures across life in determining the relative contributions of childhood and adult influences and the pathways linking childhood with adult health. This perspective has implications for understanding the different ways in which life course exposures potentially produce gender and race/ethnic differences in adult health, and future work will delve into these issues.

Hayward's work on the role of education as a fundamental cause of adult health and mortality is primarily in collaboration with Bob Hummer and a team of senior graduate students and postdoctoral fellows. This work has been supported by an NICHD R01 grant (PI: Robert Hummer). Despite seminal work by Kitagawa and Hauser and a host of studies examining the association between education and health, a number of key questions have been overlooked. For example, what is the underlying functional form of the association between educational attainment and the risk of death? How does the association vary across major demographic subgroups and over time? How do period and cohort processes influence long-term mortality trends and what is the role of education in producing these trends? The research has led to a number of important findings. For example, results show for the first time a very steep drop in the risk of death after high school all the way through college and into advanced education. Post-secondary education appears to be fundamentally important in improving life chances. This pattern characterizes all major demographic groups except black males, for whom additional post-secondary education does not appear to lower the risk of death. Black men's inability to translate their post-secondary education into better health points to structural reasons such as lack of access to quality jobs and health care, and discrimination as possible explanations. Another study documents that not only is education associated with a later age of death but it also is associated with increasing compression, pointing to education as a major factor in optimizing life chances. This study also documents that the modal ages of death and compression of the highest educated men are virtually identical to those of the lowest educated women. Gender and education combine such that the most highly educated women are best able to optimize life chances, while low educated men define the other extreme. Current and future work will examine how cohort processes influence long-term trends in adult health and mortality. Preliminary results document important shifts across cohorts in the life course processes influencing mortality. For example, work with Ryan Masters, a former student who is an RWJF fellow at Columbia, and Bob Hummer shows that the establishment of "cohort morbidity phenotypes" has shifted in recent cohorts from childhood to adulthood -- but this shift is largely restricted to whites. In particular, education is playing an increasingly important role in influencing adult mortality among whites, while the consequences of childhood conditions have waned in more recent cohorts. In contrast,

blacks' cohort morbidity phenotype remains heavily rooted in childhood and is less influenced by education. Conceptually, the results illustrate how the racial stratification of resources is differentially altering the balance of life course influences on adult health across the race groups.

As a research associate of the PRC, Hayward relies heavily on the array of research infrastructural resources provided through the center, including grants administration support for the preparation of grant applications and project management. He seeks advice on data base development from the computing core, and he draws heavily on the core for desktop management and hardware and software support of his project team. He has drawn on the development core to support activities of a topical working group in adult health and mortality. This group has morphed into a laboratory in which Hayward, Hummer, Umberson and their senior graduate students and postdoctoral fellows meet bi-weekly to hone new research ideas, review the results of recent analyses, and provide feedback on papers being prepared for publication. The laboratory has become a fixture at the PRC in training outstanding students and producing articles of the highest quality. Hayward's research falls squarely in the signature area of health disparities, and his work intersects another major signature theme, education and opportunity.

B. POSITIONS AND HONORS

Positions and Employment

1981-1988	Research Scientist I and II, Health and Population Research Center, Battelle Memorial Institute, Seattle, WA
1988-1992	Associate Professor of Gerontology and Sociology, University of Southern California, Los Angeles, CA
1992-2005	Associate to Distinguished Professor of Sociology and Demography. Director, Center on Aging and Health in Rural America; Assistant Director for the Social Sciences, Gerontology Center; Director, Population Research Institute; and Director, Social Science Research Institute. The Pennsylvania State University, University Park, PA.
2005-Present	Professor of Sociology and Director, Population Research Center, The University of Texas at Austin, TX
2008-Present	Centennial Commission Professor in the Liberal Arts, The University of Texas at Austin, Austin, TX

Selected Honors, Other Experience, and Professional Memberships

2001-2004	Board of Directors, Population Association of America
2002-2006	Council Member and Chair, Inter-University Consortium on Political and Social Research, University of Michigan
2005-2007	Vice President, Association of Population Centers
2006-Present	Advisory Board, Center on Minority Health and Health Disparities, MD Anderson Cancer Center
2007-Present	Board of Directors, Society of Biodemography and Social Biology
2011-2012	President, Southern Demographic Association
2011-Present	Member, National Advisory Committee, Robert Wood Johnson Health and Society Scholars Program
2012	Chair-elect, Aging and Life Course Section, American Sociological Association

C. SELECTED PEER-REVIEWED PUBLICATIONS

- Hayward, M.D., E.M. Crimmins, T. Miles and Y. Yang. 2000. "The Significance of Socioeconomic Status in Explaining the Racial Gap in Chronic Health Conditions." *American Sociological Review* 65:910-930.
- Crimmins, E.M., M.D. Hayward, and T. Seeman. 2004. "Race/Ethnicity, Socioeconomic Status and Health." Pp. 310-352 In *Critical Perspectives on Racial and Ethnic Differences in Health in Later Life*, edited by N. B. Anderson, R.A. Bulatao, and B. Cohen. Washington, DC: National Academy Press.
- Hayward, M.D., and B.K. Gorman. 2004. "The Long Arm of Childhood: The Influence of Early-Life Social Conditions on Men's Mortality." *Demography* 41:87-107.
- Zhang, Z. and M.D. Hayward. 2006. Gender, the Marital Life Course, and Cardiovascular Health in Late Midlife. *Journal of Marriage and Family* 68:639-657.
- Warner, D. and M.D. Hayward. 2006. Early Life Origins of the Race Gap in Men's Mortality. *Journal of Health and Social Behavior* 47:209-226.

- Crimmins, E.M., M.D. Hayward, H. Ueda, Y. Saito, and J.K. Kim. 2008. Life with and without Heart Disease among Women and Men over 50. *Journal of Women and Aging* 20:5-19. PMID: PMC2994551
- Zhang, Z., D. Gu, and M. D. Hayward. 2008. Early Life Influences on Cognitive Impairment Among Chinese Oldest-Old. *Journals of Gerontology: Social Sciences* 63B:S25-S33.
- Montez, J.K., M.D. Hayward, D.C. Brown, and R.A. Hummer. 2009. Why is the Educational Gradient of Mortality Steeper for Men? *Journal of Gerontology: Social Science* 64B(5):625-634. PMID: PMC2728089
- Crimmins, E.M., M.D. Hayward, Y.Saito, A. Hagedorn, and N. Brouard. 2009. Change in Disability-Free Life Expectancy for Americans 70 Years Old and Older. *Demography* 46(3):627-646. PMID: PMC 2831348
- Zhang, Z., D. Gu, and M. D. Hayward. 2010. "Childhood Nutritional Deprivation and Cognitive Impairment among Older Chinese." *Social Science and Medicine* 71:941-949.
- Montez, J.K., R.A. Hummer, M.D. Hayward, H. Woo, and R.G. Rogers. 2011. "Recent Changes in the Educational Gradient of U.S. Adult Mortality by Race, Gender, and Age Group." *Research on Aging* 33(2):145-171.
- Montez, J.K. and M.D. Hayward. 2011. "Early Life Conditions and Later Life Mortality." Pp. 187-206 in *International Handbook of Adult Mortality*. R.G. Rogers and E. Crimmins, editors. NY: Springer Publishers.
- Cubbin, C., C. Pollack, B. Flaherty, M.D. Hayward, A. Sania, D. Vallone, and P. Braverman. 2011. "Recommending Feasible Measures of Wealth in Health Research." *American Journal of Public Health* 101:939-947. PMID: PMC Journal – In Process
- Brown, D., M. D. Hayward, R. M. Hummer, and J. K. Montez. In press. "The Significance of Education for Mortality Compression in the United States." *Demography*. PMID:PMC Journal – In Process.
- Montez, J. K., R. A. Hummer, and M. D. Hayward. In press. "Educational Attainment and Adult Mortality in the United States: A Systematic Analysis of Functional Form." *Demography*. PMID: PMC Journal – In Process.

D. RESEARCH SUPPORT DURING THE LAST THREE YEARS

Ongoing Research Support

5 R24 HD42849 (M.D. Hayward, PI)

07/01/02-06/30/12

National Institute of Child Health and Human Development/NIH
Population Research Center

The purpose of this infrastructure grant is to support the core service of the Population Research Center, including the administrative, computing/information, and faculty development cores.

Role: Principal Investigator

Completed Research Support

1 R03 HD057507 (P.M. Krueger, PI)

09/01/08-08/31/11

National Institute of Child Health and Human Development

Health and Mortality Risks among Co-Resident Grandchildren, Parents, and Grandparents

This project will examine the health and mortality risks of co-resident grandparents, parents (if present), and grandchildren, and document the demographic and socioeconomic factors that are associated with the health of all family members.

Role: Co-Investigator

1 R01 HD053696 (R.A. Hummer, PI)

08/01/06-07/31/10

National Institute of Child Health and Human Development

Educational Differences in US Adult Mortality

This research will help to inform a great deal of other current work that examines educational differences in health changes, health behavior, and disability trajectories throughout the life course.

Role: Co-Investigator

UTA11-000453 (M.D. Hayward, PI)

05/04/11-06/30/11

American Legacy Foundation

Demographic and Socioeconomic Disparities in the Smoking Patterns of Young Adults

This proposal outlines a scope of work aimed at providing technical assistance to the American Legacy Foundation (ALF) in its development of the Legacy Young Adults Cohort – Longitudinal Study. Both conceptual and methodological advice will be provided, drawing on many years of experience by the investigators with large nationally representative and longitudinal data sets.

Role: Principal Investigator