

BIOGRAPHICAL SKETCH

NAME Carnes, Bruce A.		POSITION TITLE Research Associate	
EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE	YEAR(s)	FIELD OF STUDY
University of Utah	B.S.	1973	Biology
University of Houston	M.S.	1975	Population Biology
University of Kansas	M.A.	1980	Statistics
University of Kansas	Ph.D.	1980	Theoretical Ecology

A. Positions and Honors

Positions and Employment

1980-1981	Research Associate-Biostatistics, Human Health Risk Analysis Group, Biological and Medical Research Division, Argonne National Laboratory
1982-1987	Assistant Biostatistician, Radiation Genetics and Statistics Group, Biological and Medical Research Division, Argonne National Laboratory
1988-1999	Biologist and Biostatistician, Center for Mechanistic Biology, Argonne National Laboratory
1995-1998	Research Associate, Population Research Center and Center on Aging, University of Chicago
1999-2003	Senior Research Scientist, NORC, Center on Aging, University of Chicago
2003-Present	Assistant Professor, Department of Geriatric Medicine, University of Oklahoma

Professional Organizations

Population Association of America; Radiation Research.

Honors

1985: First Recipient: Argonne Pacesetter Award; **1986:** Argonne Pacesetter Award; **1992:** Argonne Exceptional Performance Award; **1993:** Argonne Exceptional Performance Award; **1997:** Laboratory Director's Performance Bonus; **2002:** Inducted into Education Hall of Fame for Duncan, Oklahoma; **2003:** Who's Who in America.

B. Selected Publications

(Publications selected from 90 peer-reviewed publications)

1. Carnes, B.A., D. Grahn, and J.F. Thomson. 1989. Dose-response modeling of life shortening in a retrospective analysis of the combined data from the JANUS program at Argonne National Laboratory. *Radiation Research* 119: 39-56.
2. Olshansky, S. Jay, B.A. Carnes, and C. Cassel. 1990. In search of Methuselah: estimating the upper limits to human longevity. *Science* 250: 634-640.
3. Carnes, B.A. 1990. Survival analysis in long-term animal experiments. *Radiation Research* 124: 369-370.
4. Olshansky, S. Jay, M.A. Rudberg, B.A. Carnes, C.K. Cassel, and J.A. Brody. 1991. Trading off longer life for worsening health: the expansion of morbidity hypothesis. *Journal of Aging and Health* 3: 194-216.
5. Carnes, B.A., and D. Grahn. 1991. Issues about neutron effects: the JANUS program. *Radiation Research* 128: S141-S146.
6. Carnes, B.A., and T.E. Fritz. 1991. Responses of the beagle to protracted irradiation. I. Effect of total dose and dose rate. *Radiation Research* 128: 125-132.
7. Carnes, B.A., and D.J. Grdina. 1992. In vivo protection by the aminothiols WR-2721 against neutron-

- induced carcinogenicity. *International Journal of Radiation Biology* 61: 567-576.
8. Olshansky, S. Jay, *B.A. Carnes*, C. Cassel. 1993. The aging of the human species. *Scientific American*, 268(4): 46-52.
 9. *Carnes, B.A.*, and S. Jay Olshansky. 1993. Evolutionary perspectives on human longevity. *Population and Development Review* 19(4): 793-806.
 10. *Carnes, B.A.*, and T.E. Fritz. 1993. Continuous irradiation of beagles by gamma rays. *Radiation Research* 136: 103-110.
 11. Olshansky, S. Jay and *B.A. Carnes*. 1997. Ever since Gompertz. *Demography* 34(1): 1-15.
 12. *Carnes, B.A.* and S. Jay Olshansky. 1997. A biologically motivated partitioning of mortality. *Experimental Gerontology* 32(6): 615-631.
 13. *Carnes, B.A.*, P.G. Groer, and T. Kotek. 1997. Dial workers: dose-response and modeling issues. *Radiation Research* 147: 707-714.
 14. Olshansky, S. Jay, *B.A. Carnes*, and D. Grahn. 1998. Confronting the boundaries of human longevity. *American Scientist* 86: 52-61.
 15. *Carnes, B.A.*, S. Jay Olshansky, and D. Grahn. 1998. An interspecies prediction of the risk of radiation-induced mortality. *Radiation Research* 149: 487-492.
 16. *Carnes, B.A.*, S. Jay Olshansky, L. Gavrilov, N. Gavrilova, and D. Grahn. 1999. Human longevity: Nature vs Nurture – Fact or Fiction. *Perspectives in Biology and Medicine* 42(3): 422-441.
 17. Olshansky, S. Jay, *B.A. Carnes*, R.G. Rogers and L. Smith. 2000. Emerging infectious disease: the Fifth stage of the epidemiologic transition. *World Health Statistics Quarterly* 51: 207-217.
 18. Olshansky, S. Jay, and *B.A. Carnes*. 2001. *The Quest for Immortality: Science at the Frontiers of Aging*. New York: Norton Press.
 19. Olshansky, S. Jay, *B.A. Carnes*, and R. Butler. If humans were built to last. 2001. *Scientific American* 28: 50-55.
 20. Olshansky, S. Jay, *B.A. Carnes*, and A. Désesquelles. 2001. Still in search of Methuselah: Prospects for human longevity in an aging world. *Science* 291: 1491-1492.
 21. *Carnes, B.A.*, S. Jay Olshansky, and Douglas Grahn. 1996. Continuing the search for a law of mortality. *Population and Development Review* 22: 231-264.
 22. *Carnes, B.A.* and S. Jay Olshansky. 2001. Heterogeneity and its biodemographic implications for longevity and mortality. *Journal of Experimental Gerontology* 36(3): 419-430.
 23. *Carnes, B.A.* and N. Gavrilova. 2001. Risk analysis: Divergent models and convergent interpretations. *Radiation Research* 156: 628-630.
 24. Olshansky, S.J., *B.A. Carnes*, and J. Brody. 2002. A biodemographic interpretation of lifespan. *Population and Development Review* 28(3): 28(3): 501-513.
 25. Olshansky, S.J., L. Hayflick. and *B.A. Carnes*. 2002. Position statement on human aging. *Scientific American* (<http://www.sciam.com/explorations/2002/051302aging/html>), also *Journal of Gerontology: Biological Sciences* 57A(8): B1-B6.
 26. Olshansky, S.J., L. Hayflick, L and *B.A. Carnes*. 2002. No truth to the Fountain of Youth. *Scientific American* 286(6): 78-81.
 27. *Carnes, B.A.*, N. Gavrilova, and D. Grahn. 2002. Pathology effects at radiation doses below those causing increased mortality. *Radiation Research* 158(2): 187-194.
 28. Olshansky, S. Jay, *B.A. Carnes*, and R. Butler. 2003. If humans were built to last. *Scientific American* (25 August, Special Edition).
 29. Olshansky, S.J., L. Hayflick, L and *B.A. Carnes*. 2003. Anti-aging medicine: Fact, fallacy, or fraud? *CSA Journal* 19:25-33.
 30. *Carnes, B.A.*, S.J. Olshansky and D. Grahn. 2003. Biological evidence for limits to the duration of life. *Biogerontology* 4(1): 31-45.
 31. *Carnes, B.A.*, D. Grahn, and D. Hoel. 2003. Mortality of atomic bomb survivors predicted from laboratory animals. *Radiation Research* 160: 159-167.

C. Research Support

Ongoing Research

K02 AG00894 (Carnes)

5/1/99 to 4/30/04

NIH / NIA

The Biodemography of Genetic Diseases

The goal of this project is to investigate age patterns of mortality in populations from a biological perspective.

Role: Principal Investigator

NASA (Carnes)

2003 to 2006

Radiation Risk Analysis: Heavy Ion Risks Predicted from Neutron Exposure

Based on comparable RBE values, mortality data from the Argonne National Laboratory database for laboratory mice exposed to neutrons will be used to investigate modeling and dose-response issues for exposure to HZE particles like Fe and Argon.

Role: Principal Investigator

Completed Research

98-HEDS-02 (Carnes)

8/1/99 to 7/31/03

NASA

Radiation Risk Analysis: Model Issues and Interspecies Extrapolation

In this project, Argonne National Laboratory data is used to investigate dose-response models used for the prediction of radiation-induced mortality risks in humans at low doses and dose rates for external exposure to gamma rays and neutrons.

Role: Principal Investigator

Center on Aging Pilot (Carnes)

2002 to 2003

“Measuring the Rate of Aging”

Role: Principal Investigator

Center on Aging Pilot (Carnes)

2000 to 2001

“An Analysis of Mortality Data for Health/Race Disparities, Burden of illness and Dementia”

Role: Principal Investigator