

## CURRICULUM VITAE

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### I. **Bruce A. Carnes, Ph.D.**

Donald W. Reynolds Department of Geriatric Medicine  
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### II. EDUCATION

1975-1980	University of Kansas, Ph.D., Theoretical Ecology
1975-1980	University of Kansas, M.A., Mathematics (Statistics)
1973-1975	University of Houston, M.S., Population Biology
1968-1973	University of Utah, B.S., Biology

### III. PROFESSIONAL EXPERIENCE

2003 -	Associate Professor Donald W. Reynolds Department of Geriatric Medicine University of Oklahoma Health Sciences Center
1999 – 2003	Senior Research Scientist National Opinion Research Center (Center on Aging) University of Chicago
1988-1999	Biologist and Biostatistician Interspecies Mortality Risk Extrapolation Program Center for Mechanistic Biology and Biotechnology Argonne National Laboratory
1982-1987	Assistant Biostatistician Radiation Genetics and Statistics Group Biological and Medical Research Division Argonne National Laboratory
1980-1981	Research Associate - Biostatistics Human Health Risk Analysis Group Biological and Medical Research Division Argonne National Laboratory

## VII. RESEARCH and SCHOLARSHIP

### Grants and Funding:

2006-2010	Co-I	Dept of Defense	Neurofibromatosis in Old Age	\$187,000
2003-2006	Site-PI	NASA	Risks for HZE Particles	\$160,000
1999-2006	P.I.	NIH/NIA	Biodemography	\$560,000
1999-2002	P.I.	NASA	Interspecies Risk Prediction	\$858,000
1998-1999	P.I.	Argonne Natl. Lab.	Radiation Risk Analysis	\$50,000
1996-1997	P.I.	Argonne Natl. Lab.	Manufactured Survival Time	\$45,000
1994-1995	Co-PI	Social Security Admin.	Forecasts of Longevity	\$136,000
1993-1994	Co-PI	Department of Energy	Dose-response Modeling	\$67,000
1987-1998	P.I.	Department of Energy	Interspecies Extrapolation	\$300,000/yr
1985-1987	Co-PI	Department of Energy	Radiation Risk Analysis	\$167,000/yr

### Publications Pending:

*Carnes, B.A.*, D.O. Staats and W.E. Sonntag. 2008. Does senescence give rise to disease? Mechanisms of Ageing & Development (under revision).

Carnes, B.A. and J.J. Mulvihill. 2008. An examination of Neurofibromatosis 1 in old age. American Journal of Medical Genetics (submitted)

Nakasato, Y and *B.A. Carnes*. 2008. Myopathy, polymyalgia rheumatica and temporal arteritis. Hazzard's Principles of Geriatric Medicine and Gerontology, 6<sup>th</sup> Edition, New York: McGraw-Hill (submitted).

Olshansky, S.J. and *B.A. Carnes*. 2008. The Future of Human Longevity, In *International Handbook of the Demography of Aging*. (Peter Uhlenberg, Ed.). New York: Springer (in press).

### Books (published):

Olshansky, S.J. and *B.A. Carnes*. 2001. The Quest for Immortality: Science at the Frontiers of Aging. New York: Norton Press (hard back).

Olshansky, S.J. and *B.A. Carnes*. 2002. The Quest for Immortality: Science at the Frontiers of Aging. New York: Norton Press (paperback).

### Reviews of *The Quest for Immortality*:

- London Review of Books, Jan 2002 (Ian Glynn),
- Quarterly Review of Biology 76: 531, 2002 (Brian Charlesworth)
- Biogerontology 3: 191-192, 2002 (Suresh Rattan).
- Natural History Magazine, 3 April 2001 (Steven Austad)
- New England Journal of Medicine, 22 March 2001 (Howard Chertkow, M.D.)
- Chicago Sun Times, March 2001
- Washington Post Book World, 11 Feb 2001 (Susan Okie)
- Radiation Research 156: 334-336, 2001 (Len Hayflick)
- Publishers Weekly, 27 November 2000

### Journal Articles (published):

- Butler, R.N., Miller, R.A., Perry, D., *Carnes, B.A.*, Williams, T.F., Cassel, C., Brody, J., Bernard, M., Martin, G. and Olshansky, S.J. 2008. A New Paradigm of Health Promotion and Disease Prevention for the 21<sup>st</sup> Century. *British Journal of Medicine* 337: 149-150.
- Carnes, B.A.* 2007. Senescence as viewed through the lens of comparative biology. *Annals of the New York Academy of Science* 1114: 14-22.
- Carnes, B.A.* and S.J. Olshansky. 2007. A realist view of aging, mortality and future longevity. *Population and Development Review* 33(2): 367-381.
- Olshansky, S.J., R.N. Butler, and *B.A. Carnes*. 2007. What if humans were designed to last? *The Scientist* 21(3): 28-35.
- Carnes, B.A.*, L. Holden, S.J. Olshansky and J.S. Siegel. 2006. Mortality partitions and their relevance to research on senescence. *Biogerontology* 7: 183-198.
- Heidenreich, W.F., *B.A. Carnes* and H.G. Paretzke. 2006. Lung cancer risk in mice: analysis of fractionation effects and neutron RBE with a biologically motivated model. *Radiation Research* 166: 794-801.
- Nakasato, Y and *B.A. Carnes*. 2006. Health promotion in older adults: Promoting successful aging in primary care settings. *Geriatrics* 61(4): 27-31.
- Carnes, B.A.*, Y Nakasato, and SJ Olshansky. 2005. Medawar revisited: Unresolved issues in research on aging. *Ageing Horizons* 3: 22-27.
- Carnes, B.A.* (et al.) Report of Scientific Committee 1-4. 2005. Extrapolation of Risks from Nonhuman Experimental Systems to Man. NCRP Report No. 150. National Council on Radiation Protection and Measurements.
- Olshansky, S.J., M. Grant, J. Brody and *B.A. Carnes*. 2005. Biodemographic perspectives for epidemiologists. *Emerging Themes in Epidemiology* 2: 10-15.
- Olshansky, S.J., *B.A. Carnes*, R. Hershov, D. Passaro, J. Layden, J. Brody, L. Hayflick, L., B. Butler, and D. Ludwig. 2005. Misdirection on the road to Shangri-La. *Science Aging Knowledge Environment (SAGE-KE)*22: (<http://sageke.sciencemag.org/cgi/content/full/2005/22/pe15>).
- Olshansky, S.J., D. Passaro, R. Hershov, J. Layden, *B.A. Carnes*, J. Brody, L. Hayflick, L., B. Butler, D. Allison, and D. Ludwig,. 2005. Will human life expectancy decline in the 21<sup>st</sup> century? *New England Journal of Medicine* 352: 1138-145.
- Warner, H., J. Anderson, S. Austad, E. Bergamini, D. Bredesen, R. Butler, *B.A. Carnes*, B.F.C. Clark, V. Critofalo, J. Faulkner, L. Guarente, D.E. Harrison, T. Kirkwood, G. Lithgow, G. Martin, E. Masoro, S. Melov, R.A. Miller, S.J. Olshansky, L. Partridge, O. Pereira-Smith, T. Perls, A. Richardson, J. Smith, T. von Zglinicki, E. Wang, J.Y. Wei, and T.F. Williams. 2005. Viewpoint: Science fact and the SENS agenda. *European Molecular Biology Organization (EMBO) Reports* 6(11): 1006-1008.
- Carnes, B.A.* and M.A. Bernard. 2004. Looking forward to a general theory on population aging: Invited review. *Journal of Gerontology: Medical Sciences* 59A(6): 599-600.
- Carnes, B.A.* 2004. Darwinian bodies in a Lamarkian world. *The Gerontologist* 44: 274-279.

- Olshansky, S.J., L. Hayflick and B.A. Carnes. 2004. No truth to the fountain of youth. *Scientific American (Special Edition)* 14(3): 98-102.
- Carnes, B.A., D. Grahn, and D. Hoel. 2003. Mortality of atomic bomb survivors predicted from laboratory animals. *Radiation Research* 160: 159-167.
- Carnes, B.A., S.J. Olshansky and D. Grahn. 2003. Biological evidence for limits to the duration of life. *Biogerontology* 4(1): 31-45.
- Groer, P. and B.A. Carnes. 2003. Bayesian estimation of dose thresholds. *Radiation Protection Dosimetry* 103(2): 111-115.
- Olshansky, S.J., L. Hayflick, L and B.A. Carnes. 2003. Anti-aging medicine: Fact, fallacy, or fraud? *Certified Senior Advisors Journal* 19:25-33.
- Olshansky, S. Jay, B.A. Carnes, and R. Butler. 2003. If humans were built to last. In: *New Look at Human Evolution. Scientific American (25 August, Special Edition)*.
- 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.
- Gavrilov L.A., Gavrilova N.S., Olshansky S.J., Carnes B.A. 2002. Genealogical data and biodemography of human longevity. *Social Biology* 49(1-2): 120-133.
- Olshansky, S.J., B.A. Carnes, and J. Brody. 2002. A biodemographic interpretation of lifespan. *Population and Development Review* 28(3): 501-513.
- Olshansky, S.J., L. Hayflick, L and B.A. Carnes. 2002. No truth to the Fountain of Youth. *Scientific American* 286(6): 78-81.
- 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.
- Carnes, B.A. and N. Gavrilova. 2001. Risk analysis: Divergent models and convergent interpretations. *Radiation Research* 156: 628-630.
- Carnes, B.A. and S.J. Olshansky. 2001. Heterogeneity and its biodemographic implications for longevity and mortality. *Journal of Experimental Gerontology* 36(3): 419-430.
- Olshansky, S.J., B.A. Carnes, and A. Désesquelles. 2001. Still in search of Methuselah: Prospects for human longevity in an aging world. *Science* 291: 1491-1492.
- Olshansky, S.J., B.A. Carnes, and R. Butler. If humans were built to last. 2001. *Scientific American* 28: 50-55.
- Olshansky, S.J., 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.
- 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.

- Carnes, B.A., S.J. Olshansky, and D. Grahn. 1998. An interspecies prediction of the risk of radiation-induced mortality. Radiation Research 149: 487-492.*
- Olshansky, S.J., B.A. Carnes, and D. Grahn. 1998. Confronting the boundaries of human longevity. American Scientist 86: 52-61.*
- Carnes, B.A., P.G. Groer, and T. Kotek. 1997. Dial workers: dose-response and modeling issues. Radiation Research 147: 707-714.*
- Carnes, B.A. and S.J. Olshansky. 1997. A biologically motivated partitioning of mortality. Experimental Gerontology 32(6): 615-631.*
- Olshansky, S.J. and B.A. Carnes. 1997. Ever since Gompertz. Demography 34(1): 1-15.*
- Olshansky, S.J., B.A. Carnes, R.G. Rogers, and L. Smith. 1997. Infectious diseases — new and ancient threats to world health. Population Bulletin 52(2): 1-47.*
- Carnes, B.A., S.J. Olshansky, and Douglas Grahn. 1996. Continuing the search for a law of mortality. Population and Development Review 22: 231-264.*
- Grdina, D.J., and B.A. Carnes. 1994. Chemoprevention by WR-2721. Libri Oncologi 23: 11-16.*
- Olshansky, S.J. and B.A. Carnes. 1994. Demographic perspectives on human longevity. Population and Development Review 20(1): 57-80.*
- Carnes, B.A., and T.E. Fritz. 1993. Continuous irradiation of beagles by gamma rays. Radiation Research 136: 103-110.*
- Carnes, B.A., and S.J. Olshansky. 1993. Evolutionary perspectives on human longevity. Population and Development Review 19(4): 793-806.*
- Olshansky, S.J., B.A. Carnes, C. Cassel. 1993. The aging of the human species. Scientific American, 268(4): 46-52.*
- Olshansky, S.J., B.A. Carnes, and C. Cassel. 1993. Letter: Fruit fly aging and mortality. Science 260: 1565-1566.*
- Seed, T., B.A. Carnes, D. Tolle, and T. Fritz. 1993. Blood responses under chronic low daily dose gamma irradiation: II. Differential preclinical responses of irradiated female dogs in progression to either aplastic anemia or to myeloproliferative disease. Leukemia Research 17: 411-420.*
- 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.*
- Grahn, D., L.S. Lombard, and B.A. Carnes. 1992. The comparative tumorigenic effects of fission neutrons and cobalt-60 gamma rays in the B6CF<sub>1</sub> mouse. Radiation Research 129: 19-36.*
- Grdina, D.J., B.A. Carnes, and B. Nagy. 1992. Protection by WR-2721 and WR-151327 against late effects of gamma rays and neutrons. Advances in Space Research 12 (2-3): 257-263.*

- 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.
- Carnes, B.A.*, and D. Grahn. 1991. Issues about neutron effects: the JANUS program. *Radiation Research* 128: S141-S146.
- Grdina, D.J., *B.A. Carnes*, D. Grahn, and C.P. Sigdestad. 1991. Protection against late effects of radiation by S-2-(3-aminopropylamino)-ethylphosphorothioic acid. *Cancer Research* 51: 4125-4130.
- Grdina, D.J., B.J. Wright, and *B.A. Carnes*. 1991. Protection by WR-151327 against late-effect damage from fission-spectrum neutrons. *Radiation Research* 128: S124-S127.
- Olshansky, S.J., 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.
- Carnes, B.A.* 1990. Survival analysis in long-term animal experiments. *Radiation Research* 124: 369-370.
- Olshansky, S.J., *B.A. Carnes*, and C. Cassel. 1990. In search of Methuselah: estimating the upper limits to human longevity. *Science* 250: 634-640.
- 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.
- Grdina, D.J., C.P. Sigdestad, and *B.A. Carnes*. 1989. Protection by WR1065 and WR151326 against fission-neutron-induced mutations at the HGPRT locus in V79 cells. *Radiation Research* 117: 500-510.
- Peak, M.J., J.G. Peak, *B.A. Carnes*, C.M. Chang Liu, and C.K. Hill. 1989. DNA damage and repair in rodent and human cells after exposure to JANUS fission spectrum neutrons: single-strand breaks as revealed by alkaline elution are refractors to repair. *International Journal of Radiation Biology* 55: 761-772.
- Seed, T.M., *B.A. Carnes*, D.V. Tolle, and T.E. Fritz. 1989. Blood responses under chronic low daily dose gamma irradiation. I. Differential preclinical responses of irradiated male dogs in progression to either aplastic anemia or myeloproliferative disease. *Leukemia Research* 13: 1069-1084.
- Bhattacharyya, M.H., B.D. Whelton, D.P. Peterson, *B.A. Carnes*, E.S. Moretti, J.M. Toomey, and L.L. Williams. 1988. Skeletal changes in multiparous mice fed a nutrient-sufficient diet containing cadmium. *Toxicology* 50: 193-204
- Bhattacharyya, M.H., B.D. Whelton, D.P. Peterson, *B.A. Carnes*, M.S. Guram, and E.S. Moretti. 1988. Kidney changes in multiparous mice fed a nutrient-sufficient diet containing cadmium. *Toxicology* 50: 205-215.
- Carnes, B.A.*, and N.A. Slade. 1988. The use of regression for detecting competition with multicollinear data. *Ecology* 69: 1266-1274.

- Grahn, D., and *B.A. Carnes*. 1988. Genetic injury in hybrid male mice exposed to low doses of  $^{60}\text{Co}$ -rays or fission neutrons. III. Frequencies of abnormal sperm and reciprocal translocations measured during and following long-term weekly exposures. *Mutation Research* 198:285-294.
- Peraino, C., *B.A. Carnes*, F.J. Stevens, E.F. Staffeldt, J.J. Russell, A. Prapuolenis, and J.A. Blomquist. 1988. Comparative developmental and phenotypic properties of altered hepatocyte foci and hepatic tumors in rats. *Cancer Research* 48: 4171-1478.
- Whelton, B.D., M.H. Bhattacharyya, *B.A. Carnes*, E.S. Moretti, and D.P. Peterson. 1988. Female reproduction and pup survival and growth for mice fed a cadmium-containing purified diet through six consecutive rounds of gestation and lactation. *Journal of Toxicology and Environmental Health* 24: 321-343.
- Peak, M.J., J.G. Peak, and *B.A. Carnes*. 1987. Induction of direct and indirect single-strand breaks in human cell DNA by far- and near-ultraviolet radiations: action spectrum and mechanisms. *Photochemistry and Photobiology* 45: 381-387.
- Peraino, C., D.J. Grdina, E.F. Staffeldt, J.J. Russell, A. Prapuolenis, and *B.A. Carnes*. 1987. Effects of separate and combined treatments with gamma radiation and diethylnitrosamine in neonatal rats on the induction of altered hepatocyte foci and hepatic tumors. *Carcinogenesis* 8(4): 599-600.
- Peraino, C., D.A. Haugen, *B.A. Carnes*, C.A. Reilly, Jr., D.L. Springer, and D.D. Mahlum. 1987. Phenotypically selective promotion of diethylnitrosamine-initiated altered hepatocyte foci by dietary phenobarbital or a topically applied coal-derived organic mixture in male and female rats. *Cancer Letters* 37: 133-138.
- Russell, J.J., E.F. Staffeldt, B.J. Wright, A. Prapuolenis, *B.A. Carnes*, and C. Peraino. 1987. Effects of rat strain, diet composition, and phenobarbital on hepatic gamma-glutamyl transpeptidase histochemistry and on the induction of altered hepatocyte foci and hepatic tumors by diethylnitrosamine. *Cancer Research* 47: 1130-1134.
- Grahn, D., J.F. Thomson, *B.A. Carnes*, F.S. Williamson, and L.S. Lombard. 1986. Comparative biological effects of low dose, low dose-rate exposures to fission neutrons from the JANUS reactor or to  $^{60}\text{Co}$  gamma rays. *Nuclear Science Applications, Section B*, 2: 385-396.
- Peraino, C., *B.A. Carnes*, and F.J. Stevens. 1986. Evidence for growth heterogeneity among foci with different phenotypes in the population of altered hepatocyte foci induced by a single neonatal treatment with carcinogen. *Carcinogenesis* 7: 191-192.
- Peraino, C., D.J. Grdina, and *B.A. Carnes*. 1986. Synergistic induction of altered hepatocyte foci by combined gamma radiation and diethyl-nitrosamine administration to neonatal rats. *Carcinogenesis* 7: 445-448.
- Carnes, B.A.*, S.S. Dornfeld, and M.J. Peak. 1985. A quantitative comparison of a percentile rule with the twofold rule for assessing mutagenicity in the Ames assay. *Mutation Research* 147: 15-21.
- Grdina, D.J., C. Peraino, *B.A. Carnes*, and C.K. Hill. 1985. Protective effect of [S-2-(3-aminopropylamino)ethylphosphorothioic acid] against induction of altered hepatocyte foci in rats treated once with gamma irradiation within one day after birth. *Cancer Research* 45: 5379-5381.
- Hill, C.K., *B.A. Carnes*, A. Han, and M.M. Elkind. 1985. Neoplastic transformation is enhanced by

multiple low doses of fission-spectrum neutrons. *Radiation Research* 102: 404-410.

Miller, R.M., B.A. Carnes, and T.B. Moorman. 1985. Factors influencing survival of vesicular-arbuscular mycorrhiza propagules during topsoil storage. *Journal of Applied Ecology* 22: 259-266.

Grahn, D., B.A. Carnes, and B.H. Farrington. 1985. Genetic injury in hybrid male mice exposed to low doses of <sup>60</sup>Co gamma rays or fission neutrons. II. Dominant lethal mutation response to long term weekly exposures. *Mutation Research* 162: 81-89.

Grahn, D., B.A. Carnes, B.H. Farrington, and C.H. Lee. 1984. Genetic injury in hybrid mice exposed to low doses of <sup>60</sup>Co gamma rays or fission neutrons. I. Response to single doses. *Mutation Research* 129: 215-229.

Peraino, C., E.F. Staffeldt, B.A. Carnes, V.A. Ludeman, J.A. Blomquist, and S.D. Vesselinovich. 1984. Characterization of histochemically detectable altered hepatocyte foci and their relationship to hepatic tumorigenesis in rats treated once with diethylnitrosamine or benzo(a)pyrene within one day after birth. *Cancer Research* 44: 3340-3347.

Kincaid, W.B., G.N. Cameron, and B.A. Carnes. 1983. Patterns of habitat utilization in sympatric rodents on the Texas coastal prairie. *Ecology* 64(6): 1471-1480.

Rahman, Y.E., E.A. Cerny, E.H. Lav, and B.A. Carnes. 1983. Enhanced iron removal from liver parenchymal cells in experimental iron overload. Liposome encapsulation of HBED and phenobarbital administration. *Blood* 62: 209-213.

Carnes, B.A., and N. A. Slade. 1982. Some comments on niche analysis in canonical space. *Ecology* 63(4): 888-893.

Cameron, G.N., W.B. Kincaid, and B.A. Carnes. 1975. Experimental species removal: temporal activity patterns of *Sigmodon hispidus* and *Reithrodontomys fulvescens*. *Journal of Mammalogy* 60(1): 195-197.

#### **Book Chapters, Bulletins, Other (published):**

Olshansky, S.J. and B.A. Carnes. 2008. A journey through the interdisciplinary landscape of biodemography. In: *Interdisciplinary Research: Case Studies from Health and Social Science* (editors: Kessel, Rosenfield and Anderson). Oxford: University Press.

Nakasato, Y and B.A. Carnes. 2007. Musculoskeletal aging: Inflammation. *Encyclopedia of Health and Aging* (K.S. Markides, ed.), p. 395-397. Los Angeles: Sage Publications.

Nakasato, Y and B.A. Carnes. 2007. Musculoskeletal aging: Osteoarthritis. *Encyclopedia of Health and Aging* (K.S. Markides, ed.), p. 397-399. Los Angeles: Sage Publications.

Olshansky, S.J. and B.A. Carnes. 2005. Biological constraints on human life extension. In: *Aging Intervention and Therapies*, pp. 397-411, World Scientific, London.

Olshansky, S.J. and B.A. Carnes. 2004. In Search of the Holy Grail of Senescence. In: *The Fountain of Youth: Scientific, Religious, and Ethical Perspectives on a Biomedical Goal*, edited by Stephen Post and Bob Binstock, pp. 133-159, Oxford University Press.

- Olshansky, S.J. and B.A. Carnes. 2003. A journey through the interdisciplinary landscape of biodemography. In: *Expanding the Boundaries of Health and Social Science: Case Studies in Interdisciplinary Innovation*, pp. 286-308, Oxford University Press, Oxford.
- Carnes, B.A. and S.J. Olshansky. 2001. Interspecies patterns of age-related mortality. In: *ILSI Monograph on the Pathobiology of the Aging Dog*, Iowa State University Press.
- Olshansky, S.J. and B.A. Carnes. 2001. Biological implications of the demography of aging. In *Modern Topics in the Biology of Aging* (Vincent J. Cristofalo and Richard C. Adelman, Co-Editors), Volume 21, *Annual Review of Gerontology and Geriatrics*, Volume 21. Springer Publishing Company, Inc., New York.
- Olshansky, S.J. and B.A. Carnes. 1996. Prospects for extended survival: a critical review of the biological evidence. In: *Health and Mortality Among Elderly Populations*, G. Caselli and A. Lopez (Eds.) (Chapter 3, pp. 39-58), Clarendon Press: Oxford.
- Grahn, D., B.J. Wright, B.A. Carnes, F.S. Williamson, C. Fox. 1995. *Studies of Acute and Chronic Radiation Injury at the Biological and Medical Research Division, Argonne National Laboratory, 1970-1992: The Janus Program: Survival and Pathology Data*. Chicago: ANL-95/3.
- Groer, P.G., and B.A. Carnes. 1994. Bayesian estimation of incidence change-points in low dose experimental and epidemiologic studies. In: *Biological Effects of Low Level Exposures to Chemicals*, Vol. II, Chapter 13, pp. 202-204, Lewis Publishers, London.
- Grahn, D., J.F. Thomson, and B.A. Carnes. 1990. Relative biological effectiveness (RBE) of fission neutrons and gamma rays at occupational exposure levels. Vol. III. *Studies on the Gross and Microscopic Pathology Observed at Death of Mice Exposed to 60 Equal Once-Weekly Doses of Fission Neutrons and Gamma Rays*. NUREG/CR-4704, Vol. 3 (ANL-86-33 Vol. 3).
- Fry, R.J.M., and B.A. Carnes. 1989. Age, sex, and other factors in radiation carcinogenesis. *Proceedings of the 14th L. H. Gray Conference*, pp. 195-206, Oxford, England.
- Grahn, D., and B.A. Carnes. 1986. Relative biological effectiveness (RBE) of fission neutrons and gamma rays to occupational exposure levels. Vol I. *Studies on the Genetic Effects in Mice of 60 Equal Once-Weekly Exposures to Fission Neutrons and Gamma Rays*. NUREG/CR-4704, Vol. 1 (ANL-86-33 Vol. 1).
- Seed, T.M., T.E. Fritz, D.V. Tolle, C.M. Poole, L.S. Lombard, D.E. Doyle, L.V. Kaspar, S.M. Cullen, and B.A. Carnes. 1984. Survival patterns and hemopathological responses of dogs under continuous gamma irradiation. In: *Response of Different Species to Total Body Irradiation*, pp. 137-159. J.J. Broerse and T.J. MacVittie, eds., Martinus Nijhoff Publishers, Boston, MA.
- Peraino, C., E.F. Staffeldt, B.A. Carnes, and V.A. Ludeman. 1984. Relationship of histochemically detectable altered hepatocyte foci to hepatic tumorigenesis. *Proceedings of a Symposium organized by the Hungarian Cancer Society and the IARC, Budapest, Hungary, May 16-18, 1983, Models, Mechanisms and Etiology of Tumour Promotion*, pp. 37-55. M. Borzsonyi, N.E. Day, K. Lapis, and H. Yamasaki, eds., University Press, New York, NY.
- Carnes, B.A., and M.E. Ginevan. 1983. Estimation of the ridge constant: an approach based on the condition index. *American Statistical Association Abstracts*, pg. 69.

Ginevan, M.E., and B.A. Carnes. 1983. A pictorial approach to some concepts in multiple regression analysis. American Statistical Association Abstracts, pg. 81.

Carnes, B.A., M.E. Ginevan, and J.J. Collins. 1981. Multivariate methods for assessing disease/environment association: conceptual versus geographic regions. Environmetrics Summaries: 212-213.

Ginevan, M.E., and B.A. Carnes. 1981. Approaches to problems of collinearity and dimensionality in studies of disease-environment association. DOE (Department of Energy) Statistical Symposium: 119-124.

Carnes, B.A. 1980. Habitat selection in a prairie rodent community. Ph.D. Dissertation. University of Kansas.

Collins, J.J., B.A. Carnes, and M.E. Ginevan. 1980. Methods of assessing regional versus national patterns in county level health-environmental data. Integrated County-Level User's Workshop. Reston, Virginia.

Carnes, B.A. 1975. Effects of interspecific interaction on habitat utilization of *Sigmodon hispidus* and *Reithrodontomys fulvescens*. Master's Thesis. University of Houston.

## IX. TEACHING:

<b>Symposia &amp; Colloquia: Invited Speaker</b>			
<b>Date</b>	<b>Organization</b>	<b>Location</b>	<b>Topic</b>
11/19/2007	Gerontological Association of America	San Francisco, CA	Longevity = Aging?
10/26/2007	American Society of Human Genetics	San Diego, CA	Aging in Neurofibromatosis 1 (NF1): Survival and Comorbidity
07/13/2007	NASA	Rohnert, CA	Extrapolating Mortality Risks from Animals to Humans
05/14/2007	Annual Clergy Conference	Edmond, OK	Key Note Speaker: Sex, Aging and Death
03/07/2007	NASA	Dallas, TX	From There to Here: Mouse to Man
11/18/2006	Gerontological Association of America	Dallas, TX	Aging as Disease
10/13/2006	International Longevity Conference	Melbourne, Aust.	Of Mice & Men: Lessons on Aging (AFAR: Dorothy Dillon Eweson Lecture)
05/02/2006	Oklahoma State Conference on Aging	Midwest City, OK	Aging: Implications for Individuals and Populations
02/12/2005	Oklahoma State Conf. of Medical Assistants	OKC, OK	Race Cars, Warranty Periods and Aging
11/20/2005	Gerontological Association of America	Orlando, FL	Do Genes Govern the Aging Process?
03/19/2005	International Longevity Conference	Brisbane, Aust.	Human by Design: Lessons Learned from Atom Bombs & the Origins of Life
02/25/2005	Ass. for Gerontology in Higher Education	OKC, OK	Unsuccessful Aging: To Blame or Not to Blame?
02/25/2005	Ass. for Gerontology in Higher Education	OKC, OK	Round Table Discussion (3 of us) on life as a PhD in an MD environment

11/20/2004	Gerontological Association of America	Washington, DC	Negligible Senescence: A Matter of Perspective
06/24/2004	15 <sup>th</sup> Annual Summer Geriatrics Institute	Norman, OK	Biological Warranty Periods and Their Implications for Health and Longevity
05/07/2004	Geriatric Medicine Update VII	OKC, OK	Consequences of Bodies Not Designed for Extended Operation
03/19/2004	Pacific Health Research Institute	Honolulu, Hawaii	Darwinian Bodies in a Lamarckian World
03/06/2004	International Longevity Conference	Sydney, Aust.	Darwinian Bodies in a Lamarckian World
01/26/2004	NASA	Houston, TX	Risk Assessment Models and Data Utilization
11/24/2003	Gerontological Association of America	San Diego, CA	Isn't It About Time to Do Research on Aging?
11/07/2003	Swiss Re Insurance Conf of Medical Directors	Fort Wayne, IN	Duration of Life: Warranty Periods and Extension of Life (two lectures)
04/03/2003	University of Kansas Medical School	Kansas City, KS	Duration of Life: Warranty Periods and Anti-aging Medicine
04/03/2003	University of Kansas	Lawrence, KS	Duration of Life: Warranty Periods and Anti-aging Medicine
03/10/2003	U. of IL at Chicago: Public Health	Chicago, IL	Biological Warranty Periods: When Do They Expire?
11/25/2002	Gerontological Association of America	Boston, MA	Duration of Life: Is There a Warranty Biological Period?
11/12/2002	Achievements Hall of Fame	Duncan, OK	The Coming Home of the Brother and Son Again (induction speech)
11/17/2001	Gerontological Ass. of America	Chicago, IL	If Humans Were Built to Last
10/24/2001	Fermi Natl Laboratory	Batavia, IL	In Search of Methuselah: Estimating the Upper Limits to Human Longevity
10/17/2001	U. Wisconsin Parkside	Parkside, WI	The Quest for Immortality
10/11/2001	U. IL at Chicago: Public Health	Chicago, IL	The Quest for Immortality
07/27/2001	U. IL. at Chicago: Epi and Biostat Dept	Chicago, IL	A Biodemographic Look at Mortality
06/28/2001	Dept. of Energy	Washington, DC	Radiation Effects at Doses Below Those Causing Increased Mortality
05/17/2001	62nd Annual Theodor Lang May Day Clinic	Rockford, IL	The Quest for Immortality: Humans and the Aging Process
01/18/2001	Bioastronautics Investigators Workshop	Galveston, TX	Interspecies Extrapolation of Radiation Induced Risk
11/10/2000	NASA Workshop	Clearlake, TX	Radiation Risk Analysis: Model Issues and Interspecies Extrapolation

<b>Grand Rounds Presentations</b>			
<b>Date</b>	<b>Department</b>	<b>Location</b>	<b>Topic</b>
03/19/2008	OK GEC	Ouhsc	A Biodemographic Perspective on Aging

05/09/2007	Geriatric Medicine	OUHSC	Obesity as an Obstacle to Future Gains in Life Expectancy
11/09/2006	Endocrinology	OUHSC	Obesity as an Obstacle to Future Gains in Life Expectancy
09/08/2006	Cardiology	OUHSC	An Interspecies Examination of Aging
04/21/2004	Internal Medicine	OUHSC	Warranty Periods for the Duration of Life
04/13/2004	Clergy	OKC VA	Warranty Periods for the Duration of Life
04/30/2003	Internal Medicine	U. of Arkansas Medical School	Duration of Life: Is There a Biological Warranty Period?

### **Local Lectures:**

Lecture: Biology of Aging, 12/year, Geriatrics Dept. (2004-Present)  
Lecture: University of Central Oklahoma (29 January 2008)  
Lecture: College of Pharmacy, OUHSC (23 January 2008)  
Lecture: College of Public Health, OUHSC (17 September 2007)  
Lecture: Geriatric Prematriculation Program, OUHSC (30 July 2007)  
Lecture: University of Central Oklahoma (29 January 2007)  
Lecture: College of Public Health, OUHSC (12 September 2006)  
Lecture: Geriatric Prematriculation Program, OUHSC (8 August 2006)  
Lecture: College of Pharmacy, OUHSC (25 January 2006)  
Lecture: University of Central Oklahoma (17 January 2006)  
Lecture: School of Public Health, OUHSC (1 November 2005)  
Lecture: Geriatric Prematriculation Program, OUHSC (3 August 2005)  
Lecture: Geriatric Prematriculation Program, OUHSC (3 August 2004)  
Journal Club (fellows): Geriatrics Department (26 May 2004)  
Lecture: Geriatrics Department, OUHSC (21 April 2004)  
Lecture: Interdisciplinary Geriatrics Interest Group, OUHSC (14 April 2004)  
Lecture: Psychology Department, OU (5 December 2003)

### **X. PROFESSIONAL SERVICE:**

<b>External Service on Advisory Boards, Journals and Society Committees</b>		
<b>Date</b>	<b>Organization</b>	<b>Purpose</b>
2008	NIH Review Panel	Review grants for Health of the Population
2007	Irish Health Review Board	Review center grants for the Irish government
2005-Present	Journal of Biogerontology	Associate Editor
2004	NASA	Advisory panel to help NASA develop a call for proposals on solid tissue tumors
2003-Present	International Research Centre for Healthy Ageing & Longevity	Plan annual conference, advise on the scientific development of the organization
2003-Present	Gerontological Society of America Special Interest Group	Annual discussion of the societal implications of anti-aging
2003-2006	Gerontological Society of America Special Interest Group	Develop a dictionary of definitions for confusing terminology in the field of aging
2001-2003	Spring Verlag Publishing Co.	Develop a Series of Classics in Longevity and Aging

1994-2005	National Council on Radiation Protection & Measurement	Develop a report NCRP on the extrapolation of radiation-induced mortality risks from animals to humans
1985-Present	Scientific Journals	Provide peer reviews of submitted manuscripts

<b>Internal Service on Committees, Education and Mentorship</b>		
<b>Date</b>	<b>Organization</b>	<b>Purpose</b>
2006	OUHSC: Clinical and Translational Sciences Award	Committee to organize biostatistical issues related to the CTSA
2006	OUHSC: Oklahoma University Cancer Institute	Population science task force organized to identify capacity priorities for OUCI
2005	OUHSC: Geriatric Medicine	Contributed mentorship to Dirk Engles for his Summer Geriatric Research Experience
2004-Present	OUHSC: Geriatric Medicine	Oversee Key Topics lectures in the Reynolds Department of Geriatric Medicine
2004-2005	OUHSC: Geriatric Medicine	Committee to identify research goals for the Reynolds Department of Geriatric Medicine
2003-Present	OUHSC: Geriatric Medicine	Provide mentorship in research to junior clinical faculty in the Reynolds Department of Geriatric Medicine

<b>Service: Educating the General Public About Aging &amp; Health</b>		
<b>Date</b>	<b>Organization</b>	<b>Purpose</b>
07/16/2007	Channel 4 with Meg Alexander	Turning Back the Hands of Time
05/14/2007	Annual Clergy Conference	Key Note Speaker: Sex, Aging and Death
March 2007	The Scientist	Podcast on our feature article entitled <i>What If Humans Were Designed to Last?</i>
Oct 2006	Melbourne: Australian film maker	Interview about aging and longevity
04/18/2006	OUHSC: Neurosciences	Speak to a retirement community (Fountains at Canterbury) about aging
10/25/2005	ABC News with Timothy Johnson	Television interview about healthy aging
10/06/2005	Channel 9 with Amy Lester	Television interview on anti-aging clinics in Oklahoma City
Fall 2005	OU Medicine, p. 10-11	Why Do We Die When We Do?
March 2005	Discovery Health Channel: United States	2 hour feature documentary on our research entitled <i>The Story of Us</i>
March 2005	Channels 5 and 9 (Oklahoma)	Interview about obesity based on our New England Journal of Medicine paper
09/07/2004	Channel 5 (Oklahoma)	Interview on anti-aging quackery
08/25/2004	Channel 9 (Oklahoma)	Interview on anti-aging quackery
03/06/2004	BBC	Interview of healthy aging
March 2004	Smithsonian Magazine	Article about our views on aging and longevity
Feb 2004	Erika Niedowski: Baltimore Sun	Radio interview on aging and health

Winter 2003	Geriatric Medicine Focus 4(4): 1	Seeking Bridges Between Basic and Applied Research on Aging
Nov 2003	Chris Cardell: Planet Earth Radio	Interview of healthy aging
Summer 2003	National Public Radio	Participated in the award winning documentary <i>Secrets of the Sequence</i>
2002	Book Fair	Give a talk about our book on aging
2002	Jewish Community Center (Lakeside, IL)	Talk about aging to an education group for the elderly (13 January 2002)
2002	Discovery Health Channel: Canada	Documentary entitled <i>Perfect Man, Perfect Woman</i> based on our Scientific American paper
2002	Swiss Re: <i>Reinsurance Reporter</i>	Feature article on aging and longevity
05/31/2002	National Public Radio (Salt Lake City)	Interview about aging and health
April 2002	Chicago Tribune Magazine	Feature article about our research
02/19/2002	Web MD	Web interview about aging and health
2001	Jewish Community Center (Buffalo Grove, IL)	Talk about aging to an education group for the elderly (4 June 2001)
Summer 2001	National Scottish Radio, also the BBC	Interview about our Scientific American paper entitled <i>If Humans Were Built to Last</i>
Summer 2001	Michio Kaku Show (NYC)	Web radio interview on our book (i.e., aging and health)
Summer 2001	David Newman: ABC radio, Detroit	Interview about aging and health
03/14/2001	Ken Hamlin Show: American View Radio Network, Denver	Interview about aging and health
03/12/2001	David Inge: National Public Radio, Univ of Illinois	Interview about aging and health
Spring 2001	Wisdom TV	Hour interview with Corrine Edwards about our book
Spring 2001	Fox News: Chicago	Interviewed about human longevity
25 May 2001	National Public Radio with David Hockenberry	Two hour interview for the award winning documentary entitled <i>The DNA Files</i>
02/27/2001	NBC Evening News with Tom Brokaw	Interview about our book
02/20/2001	Reed Pence: Radio Health Journal	Interview about aging and health
February 2001	Gretchen Helfrich: Odyssey – National Public Radio	Interview about aging and health
January 2001	The Milt Rosenberg Program	2 hour live discussion of our book heard across the U.S. and the Pacific Rim
January 2001	W.W. Norton & Co.	<i>The Quest for Immortality: Science at the Frontiers of Aging</i> . A book that we wrote expressly for the general public
Aug 2000	Chicago Magazine	Feature article about aging and health
March 1999	SELF Magazine	Feature article about aging and health

## **Other Forms of Interaction with the Public**

### **Film:**

- Flight from Death: The Quest for Immortality by Patrick Chen (2002)

### **Newspaper:**

- Dallas Morning News (Aug 2002)
- Life Times (July 2002)
- Tampa Bay Tribune (July 2002)
- Chicago Tribune, feature article, (Michele Weldon, Health Reporter; May 2001)
- LifeTimes, feature articles, (Margaret Schmidt, HMO Illinois; March & May 2001)
- New York Times (Jane E. Brody, appeared nationally, 4 April 2001)
- San Francisco Chronicle (Keay Davidson, Feb 2001)
- La Tercera (Ricardo Acevedo, Chile, 2001)
- Chicago Sun Times, feature (16 October 2000)
- Naperville Sun, 13 June 1993

### **Internet:**

- Marketwatch.com (Brian January; December 2003)
- Praxis Post MD (10 April 2001, Washington Post review of book)
- Vallestary.com (Bob Condor, Chicago Tribune, 24 Feb 2001)
- Web MD (Jeanie Davis, 4 Oct 2000)
- Barnes & Noble (Laura Wood - discussion of book)
- Newsday.com (David Kohn)
- Body1.com
- ABC News.com

## **XII. MEMBERSHIPS:**

American Association for the Advancement of Science  
Gerontological Society of America  
Sigma Xi

## **HONORS:**

2005	Finalist (Distinguished Alumni - University of Kansas)
2002	Inducted into Achievements Hall of Fame for Duncan, Oklahoma
1997	Laboratory Director's Performance Bonus
1993	Argonne Exceptional Performance Award
1992	Argonne Exceptional Performance Award
1986	Argonne Pacesetter Award
1985	First Recipient: Argonne Pacesetter Award
1984	Sigma Xi (Promoted to full membership)
1979	Outstanding Teaching Assistant Award (Kansas University)
1979	Sigma Xi Society (Science)
1979	Phi Sigma Society (Biology)
1974	Foundation for Environmental Education Grant

1973  
1968

Graduated Cum Laude  
Athletic Scholarship (Wrestling)