

ABOUT THE AUTHORS



William A. Bailey, F.S.A. 1962, is research actuary for Kemper National Insurance Company. He majored in mathematics and graduated from Clark University in Worcester, Massachusetts, spent 17 years with the Massachusetts Mutual, a year with Bankers Life & Casualty, five years with Milliman & Robertson in Milwaukee, three years with PolySystems in Chicago, and the last 12 years with Kemper in Long Grove, Illinois. His primary vocational interest since 1969 has been the generalizing of numerical convolutions for application to various actuarial and statistical problems, and he created the "C"-language program COCONUT (COmand-and-CONvolUTE), which enables personal computer users to apply a handful of commands to perform convolution-like operations on from one- to five-dimensional empirical probability distributions. Bailey is a member of the American Academy of Actuaries and served on the Society's Examination Committee for Theory of Risk in 1985. He has published papers in the *Transactions*: "A Method for Pricing Return of Premiums under Disability Income" and "On Calculating Delta-ized Reserves—Actuarial Note," Volume XXVI (1974); in *ARCH*: "Six Bridges to ψ 's," 1993.1; in the *Scandinavian Actuarial Journal* and *Technometrics*; and in a book *Exploring the Limits of the Bootstrap* (Wiley & Sons, 1992).



Bradley P. Carlin, A.S.A. 1985, is an assistant professor of biostatistics in the School of Public Health at the University of Minnesota. He received a bachelor's degree in mathematics and actuarial science from the University of Nebraska—Lincoln in 1984, and master's and Ph.D. degrees in statistics from the University of Connecticut in 1986 and 1989, respectively. Prior to coming to Minnesota in 1991, he was a visiting assistant professor of statistics at Carnegie Mellon University in Pittsburgh. He is an active member of the Society's Education and Research Section, and his research focuses on development of Bayes and empirical Bayes techniques for the analysis of actuarial and biomedical science data. Besides graduation of tables, his application areas of interest include

health and economic time series, the progression of HIV infection, and the study of lung disease in middle-aged male smokers. Dr. Carlin has published papers in *ARCH*, *Applied Statistics*, *Canadian Journal of Statistics*, *Communications in Statistics*, *Insurance: Mathematics and Economics*, *Journal of the American Statistical Association*, *Journal of the Royal Statistical Society*, and *Statistics and Computing*.



Jacques F. Carriere, A.S.A. 1980, is assistant professor in the department of actuarial and management sciences at the University of Manitoba, where he teaches and conducts research in actuarial science. He received a bachelor's degree in commerce and a master's degree in statistics from the University of Manitoba. At the University of Wisconsin-Madison, he received a Ph.D. in business-statistics after conducting research into total quality management. His experience includes service with the Prudential Insurance Company of America and William M. Mercer Ltd. and in the department of statistics and actuarial science at the University of Iowa. Dr. Carriere is a Fellow of the Royal Statistical Society, and he served on the Research Paper Committee of the Society of Actuaries. He has published papers in several journals and is co-author, with Lai K. Chan, of "The Bounds of Bivariate Distributions That Limit the Value of Last-Survivor Annuities," which appeared in Volume XXXVIII (1986) of the *Transactions* and won the Triennial Prize.



Sarah L. M. Christiansen, F.S.A. 1991, is a senior actuarial associate at The Principal Financial Group. She received her bachelor's degree (honors) in mathematics from the University of California, Riverside, and master's degree and Ph.D., also in mathematics, from the University of New Mexico. Prior to joining The Principal in 1985, she taught mathematics at Drake University, Des Moines Area Community College, and Grandview College. She is currently serving as the Education and Research Section representative to the Society's Program Committee. She is a member of the Education and Research Section Council, the Course

V-480 Examination Committee, and the American Academy of Actuaries. Her publications include a discussion of "A Guide to Quantifying C-3 Risk" in the *Transactions*, Volume XLI (1989), and "The Malpractice Crisis" in *Health Section News*, April 1992.



Charles S. Fuhrer, F.S.A. 1977, has been pricing actuary of the employee benefits division at Washington National Insurance Co. since 1990. Previously he was group actuary at Health Care Service Corporation (Blue Cross/Blue Shield of Illinois) and at Benefit Trust Life Insurance Co. He received a bachelor's degree in mathematics from the University of Chicago. He is currently vice-chairperson of the Course 151 Examination Committee, co-editor of *ARCH*, and a member of the Education and Research Section Council and of the American Academy of Actuaries. He has served as chairperson of the Society's Committee on Research on Theory and Applications and as a member of the Research Policy Committee and is currently serving on the Committees on Member Communications and on Health Benefits System Research, and is a vice-chairperson of the Committee on Papers. His presentations include nine at Society meetings during the last five years and six at the Annual Actuarial Research Conference; he was co-host of the latter's 1991 meeting. His paper "Some Applications of Credibility Theory to Group Insurance" appeared in Volume XL (1988) of the *Transactions*, and "A Method for the Calculation of Aggregate Stop Loss Premiums," published in *ARCH* (1988.3), received the 1988 AERF Practitioners Award. The paper in this volume, "Modeling Flexible Benefit Selection," co-authored with Arnold F. Shapiro, was awarded a Health Section Research Papers Prize in 1991.



Stephen B. Gwin, F.S.A. 1979, is second vice-president and actuary of product development at Capital Holding Corporation. He received a bachelor's degree in business administration, with high distinction, and a master's degree in actuarial science, with distinction, from the University of Michigan. He began his actuarial career with American United Life. He also worked for National Life & Accident and for Blue Cross and Blue Shield of Kentucky before joining Capital Holding in

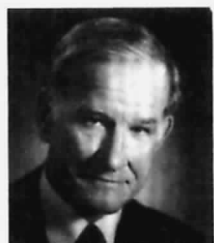
1984. Gwin is a member of the American Academy of Actuaries. He was a panelist at the National Conference on Home Equity Conversion.



Bertram M. Kestenbaum, A.S.A. 1985, is an actuary in the Office of the Actuary of the Social Security Administration. He graduated summa cum laude from Brooklyn College with a bachelor's degree in mathematics and received a master's degree in biostatistics from the Johns Hopkins University School of Hygiene and Public Health. His papers have appeared in the *Journal of the American Statistical Association*, *Demography*, and other journals. He serves on the Society's Course 161 (demography) Examination Committee.



Kenneth A. LaSorella, F.S.A. 1981, is senior manager of financial services consulting-actuarial life/health at KPMG Peat Marwick. Prior to this, he was with Sun Life of Canada and with Teledyne Inc. He has extensive experience in financial actuarial modeling for the purpose of asset liability matching, pricing, purchase GAAP, and quantification of the AIDS risk. He has been a speaker on numerous occasions on the financial risks of AIDS. Mr. LaSorella is a Fellow of the Life Office Management Institute and a member of the American Academy of Actuaries. He has served on LOMA's curriculum committee for more than five years and was selected chairperson of the Mathematics of Insurance Subcommittee, which developed a new textbook. In addition, he served as regional instructor for LOMA's Mathematics of Insurance Examination for more than seven years.



John C. Maynard, F.S.A. 1949 and F.C.I.A., served as a radar officer in the Royal Canadian Navy from 1940 to 1945. In 1945, he joined Canada Life Assurance Co., retiring in 1981 as senior vice-president and chief actuary. He is a member of the American Academy of Actuaries. He has served the Society as Historian, Vice-President, and a member of the Examination and Education Committee and the Committee on Valuation and Related Matters and is currently a member of

the Committee on Memorials. Maynard was President of the Canadian Institute of Actuaries (1972-73) and chairperson of the Pension Commission of Ontario (1982-86). Since 1981, he has spent his time in consulting, community service, travelling, and family activities.



Robert J. Myers, F.S.A. 1940, served in various actuarial positions with the U.S. Social Security Administration from 1934 until 1970, including chief actuary (1947-70). Since then he has been a member of the National Commission on Society Security (1978-81), Deputy Commissioner of Social Security (1981-82), executive director of the National Commission on Social Security Reform (1982-83), chairman of the

Railroad Unemployment Compensation Committee (1983-85), and chairman of the Commission on Railroad Retirement Reform (1988-90). He has also been an actuarial consultant to various Congressional committees and the Federal Judiciary and a member of missions of technical assistance in connection with Social Security or pension programs in many foreign countries. He was President of the Society of Actuaries and President of the American Academy of Actuaries in 1971-72. He is a Fellow of the Casualty Actuarial Society, the Conference of Consulting Actuaries, the American Statistical Association, the American Association for the Advancement of Science, and the Royal Statistical Society. His numerous awards include the Triennial Prize from the Actuarial Society of America and the Distinguished Service Award from the U.S. Department of Health, Education, and Welfare. Mr. Myers is the author of several books, including *Social Insurance and Allied Government Programs* (Richard D. Irwin, Inc., 1965), *Medicare* (Irwin, 1970), *Social Security* (University of Pennsylvania Press, 4th ed., 1993); *Within the System: My Half-Century in Social Security* (ACTEX Publications, 1993); and *Indexation of Pension and Other Benefits* (Irwin, 1978). He has published 855 papers in technical and scientific journals, of which 33 have appeared in the *Transactions*, the *Transactions of the Actuarial Society of America*, and the *Record of the American Institute of Actuaries*; about 500 discussions, book reviews, and letters to the editor; and 149 testimonies before Congressional committees and advisory groups.



William A. Phillips, F.S.A. 1977, is vice-president and actuary of product development at Capital Holding Corporation. He has a bachelor's degree in chemistry and physics from Haverford College and a master's degree in geochemistry from the California Institute of Technology. He began his actuarial career at Transamerica Occidental Life in 1973 and joined Capital Holding in 1977. He has served on Society of Actuaries and American Academy of Actuaries committees, as a panelist at Society and industry meetings, and as a speaker on home equity conversion mortgages.



Peter W. Plumley, F.S.A. 1958, is a consulting actuary whose current interests include expansion of mortality and morbidity research and actuarial aspects of the AIDS epidemic. He was executive director of the Society in 1975-79 and served on the Board of Governors in 1981-84. He has served on various Society committees, including New Recording Means and Computing Devices, Education and Examination, Advisory on Education and Examination, Alternate Route, Educational Facilities, Public Relations, Research Policy, Life Insurance Company Valuation Principles, Task Force on Expansion of Mortality and Morbidity Research, and Task Force to Review and Revitalize Society of Actuaries Research. Plumley is a member of the American Academy of Actuaries. Papers published in the *Transactions* include "The Education of the Actuary in the Future," with Anna Maria Rappaport, Volume XXVII (1975); "Certain Inequities in the Life Insurance Company Income Tax Act of 1959," Volume XXVIII (1976); "The Impact of Social and Economic Changes on Financial Security Systems" with Anna Maria Rappaport, Volume XXX (1978); "Federal Income Taxation of Life Insurance Companies in the 1980s," Volume XXXIII (1981); and "Modeling the AIDS Epidemic by Analysis of Sexual and Intravenous Drug Behavior," Volume XLI (1989).



Colin M. Ramsay, A.S.A. 1984, is an associate professor of actuarial science at the University of Nebraska—Lincoln. He obtained his B.Sc. degree in actuarial science from the City University, London, England, in 1979 and his M.Math and Ph.D. degrees in statistics from the University of Waterloo, Ontario, Canada, in 1980 and 1984, respectively. His research interests include ruin theory, the impact of AIDS on insurance, and the adequacy of pension funding levels. He is a member of the American Academy of Actuaries. Dr. Ramsay's papers have appeared in the *Journal of Risk and Insurance*, *Journal of the Institute of Actuaries*, *ASTIN Bulletin*, *Insurance: Mathematics and Economics*, and *Scandinavian Actuarial Journal*. His papers in the *Transactions* are "AIDS and the Calculation of Life Insurance Functions" (Volume XLI, 1989), "The Impact of Mortality on Panjer's Model of AIDS Survival" (Volume XLII, 1990), "Minimum Variance Moving-Weighted-Average Graduation" (Volume XLIII, 1991), "Loading Gross Premiums for Risk without Using Utility Theory (Volume XLV, 1993), and "Percentile Pension lost Methods: A New Approach to Pension Valuations" (Volume XLV, 1993).



Robert R. Reitano, F.S.A. 1980, received a B.A. and an M.A. in mathematics from the University of Massachusetts and a Ph.D., also in mathematics, from the Massachusetts Institute of Technology. He is manager and director of research at John Hancock Mutual Life Insurance Company. He has been an assistant professor at the University of Massachusetts, an instructor for the Actuaries Club of Boston, and a visiting scholar at M.I.T. For the Society, he has been an instructor of a risk theory seminar, moderator of a panel discussion on Funding for Investment Risk at the 1990 Annual Meeting, and a panelist on a teaching session, "Interest Rate Convexity," at a 1991 Spring Meeting. He is serving on the Finance Track Education Objectives Committee and is a member of the Committee on Papers and the Investment Section Council. He has also presented several seminars on Multivariate Duration Analysis and on Multivariate Immunization Theory with additional programs

scheduled for the Society. He has participated in Investment Spring Training for Life and Annuity Actuaries. Dr. Reitano is a member of the American Academy of Actuaries, the International Actuarial Association, the Mathematical Association of America, and Sigma Xi. He has published papers in *ARCH*, *The Journal of Portfolio Management*, and the *Transactions*: "Mortality Cost Valuation of Underwriting Requirements" (Volume XXXIV, 1982), "A Statistical Analysis of Banded Data with Applications" (Volume XLII, 1990), "Multivariate Duration Analysis" and "Multivariate Immunization Theory" (Volume XLIII, 1991), and "Multivariate Stochastic Immunization Theory" (Volume XLV, 1993). The paper "Multivariate Duration Analysis" was awarded the Annual Prize in 1992.



Edward L. Robbins, F.S.A. 1971, is principal, financial services consulting—actuarial life/health at KPMG Peat Marwick. His areas of expertise are life insurance actuarial studies, company taxation, and financial reporting. He has chaired numerous panel discussions and workshops on these topics at professional actuarial meetings. Mr. Robbins joined KPMG Peat Marwick in Chicago in 1984; his previous experience includes more than 10 years with Pan-American Life Insurance Company as the chief actuary for Latin American operations. He received a B.S. degree from Cornell University. He is a member of the American Academy of Actuaries, past member of the Society's Education and Examination Committee, a past president of the Chicago Actuarial Association, and a current member of the Society's Program and Continuing Education Committees. He has published papers in *Best's Review* and *Contingencies* and is the author of "Actuarial Review of Reserves and Other Annual Statement Liabilities," a Society Study Note.



Bruce D. Schobel, F.S.A. 1976, is corporate vice-president and actuary at New York Life Insurance Co., which he joined in 1990. Before that, he was a principal with William M. Mercer, Inc. From 1979 to 1988, he was with the U.S. Social Security Administration in various actuarial and policy-development positions, including staff actuary to the National Commission on Social Security Reform. His first actuarial position was with the Prudential Insurance Co. Schobel earned a B.S.

in mathematics from the Massachusetts Institute of Technology in 1974. He is a member of the American Academy of Actuaries, a Fellow of the Conference of Consulting Actuaries, a Chartered Life Underwriter, and a Certified Employee Benefit Specialist. Papers published in *Transactions* include "A Money's-Worth Analysis of Social Security Retirement Benefits" (Volume XXXV, 1983) and "Early-Retirement Reduction and Delayed-Retirement Increase Factors under U.S. Social Security Law" (Volume XLII, 1990), both co-authored with Robert J. Myers. His paper "Social Security Considerations in Transfers to and from the United States," published in *Benefits & Compensation International*, April 1989, became a Society Study Note in 1991. He has also published articles in *The Wall Street Journal*, *Journal of Taxation*, *Policy Review*, *The Actuary*, and *Contingencies*.



Arnold F. Shapiro, F.S.A. 1976, is professor of actuarial science and insurance, Robert G. Schwartz University Endowed Fellow in Business Administration, and director of the Risk Management Research Center at The Pennsylvania State University. He received his Ph.D. in applied business and economics from the University of Pennsylvania (Wharton) in 1975. He is a co-editor of *ARCH* and associate editor of

Insurance: Mathematics and Economics. Dr. Shapiro's articles have appeared in *Insurance: Mathematics and Economics*, *Journal of Risk and Insurance*, *The Millbank Quarterly*, and *Journal of Econometrics*. His paper in this volume, "Modeling Flexible Benefit Selection," co-authored with Charles S. Fuhrer, was awarded a Health Section Research Papers Prize in 1991.



James A. Tilley, F.S.A. 1977, is head of fixed income research at Morgan Stanley. Prior to joining Morgan Stanley in 1983, he was employed at The Equitable Life Assurance Society from 1981-83, at John Hancock Mutual Life Insurance Company from 1978-1981, and at Sun Life of Canada from 1975-78. He did his undergraduate work at McGill University and earned his B.Sc., first class honours, in physics, in 1971, and did his graduate work in theoretical solid state physics

at Harvard University and earned his Ph.D. in 1975. Dr. Tilley has served on various Society committees and task forces, including an examination committee, the Research Policy and Research Management Committees, the Committee on Planning, the C-3 Risk Task Force, and the Actuary of the Future Task Force. From 1983–86 he was on the Society’s Board of Governors; in 1991 he was elected as the U.S. representative to the AFIR Council of the International Actuarial Association; and he serves on the editorial board of the *ASTIN Bulletin*. He has conducted research and published in the areas of interest rate models and asset/liability management and regularly speaks on these subjects at universities, professional association meetings, and industry conferences. His papers in the *Transactions* include “The Pricing of Nonparticipating Single Premium Immediate Annuities” (Volume XXXI, 1979), which was awarded the Triennial Prize for 1976–79, and “The Matching of Assets and Liabilities” (Volume XXXII, 1980).