

THE PUBLICATIONS AND WRITINGS OF JACK KIEFER

Papers (Published)

1951

- [1] Almost subminimax and biased minimax procedures (with P. Frank). *Ann. Math. Statist.* **22** 465–468, 1951. [MR 13 (1952) 143, Zbl 43 (1952) 346].

1952

- [2] The inventory problem: I. Case of known distributions of demand (with A. Dvoretzky and J. Wolfowitz). *Econometrica* **20** 187–222, 1952. [MR 13 (1952) 856, Zbl 46 (1953) 376].
[3] The inventory problem: II. Case of unknown distributions of demand (with A. Dvoretzky and J. Wolfowitz). *Econometrica* **20** 450–466, 1952. [MR 14 (1953) 301, Zbl 48 (1953) 371].
[4] Stochastic estimation of the maximum of a regression function (with J. Wolfowitz). *Ann. Math. Statist.* **23** 462–466, 1952. [MR 14 (1953) 299, Zbl 49 (1954) 366].
[5] Sequential minimax estimation for the rectangular distribution with unknown range. *Ann. Math. Statist.* **23** 586–593, 1952. [MR 14 (1953) 487, Zbl 48 (1953) 121].
[6] On minimum variance estimators. *Ann. Math. Statist.* **23** 627–629, 1952. [MR 15 (1954) 241, Zbl 48 (1953) 120].

1953

- [7] On Wald's complete class theorems. *Ann. Math. Statist.* **24** 70–75, 1953. [MR 14 (1953) 998, Zbl 50 (1954) 140]. Correction of a proof, *Ann. Math. Statist.* **24** 680, 1953.
[8] Sequential minimax search for a maximum. *Proc. Amer. Math. Soc.* **4** 502–506, 1953. [MR 14 (1953) 1103, Zbl 50 (1954) 357].
[9] Sequential decision problems for processes with continuous time parameter. Testing hypotheses (with A. Dvoretzky and J. Wolfowitz). *Ann. Math. Statist.* **24** 254–264, 1953. [MR 14 (1953) 997, 1279, Zbl 50 (1954) 148]. Correction, *Ann. Math. Statist.* **30** 1265, 1959.
[10] Sequential decision problems for processes with continuous time parameter. Problems of estimation (with A. Dvoretzky and J. Wolfowitz). *Ann. Math. Statist.* **24** 403–415, 1953. [MR (1954) 242, Zbl 51 (1954) 366].
[11] On the optimal character of the (s, S) policy in inventory theory (with A. Dvoretzky and J. Wolfowitz). *Econometrica* **21** 586–596, 1953. [MR 15 (1954) 333, Zbl 53 (1956) 279].

1955

- [12] On the theory of queues with many servers (with J. Wolfowitz). *Trans. Amer. Math. Soc.* **78** 1–18, 1955. [MR 16 (1955) 601, Zbl 64 (1956) 133].
[13] On tests of normality and other tests of goodness of fit based on distance methods (with M. Kac and J. Wolfowitz). *Ann. Math. Statist.* **26** 189–211, 1955. [MR 17 (1956) 55, Zbl 66 (1956–1957) 123].

1956

- [14] On the characteristics of the general queueing process, with applications to random walk (with J. Wolfowitz). *Ann. Math. Statist.* **27** 147–161, 1956. [MR 17 (1956) 980, Zbl 70 (1957) 366].
[15] Asymptotic minimax character of the sample distribution function and of the classical multinomial estimator (with A. Dvoretzky and J. Wolfowitz). *Ann. Math. Statist.* **27** 642–669, 1956. [MR 18 (1957) 772, Zbl 73 (1959–60) 146].

Received December 1983.

- [16] Consistency of the maximum likelihood estimator in the presence of infinitely many incidental parameters (with J. Wolfowitz). *Ann. Math. Statist.* **27** 887–906, 1956. [MR 19 (1958) 189, Zbl 73 (1959–60) 147].
- [17] Sequential tests of hypotheses about the mean occurrence time of a continuous parameter Poisson process (with J. Wolfowitz). *Naval Res. Logist. Quart.* **3** 205–219, 1956. [MR 18 (1957) 833].

1957

- [18] Some properties of generalized sequential probability ratio tests (with L. Weiss). *Ann. Math. Statist.* **28** 57–74, 1957. [MR 19 (1958) 333, Zbl 79 (1959) 354].
- [19] Invariance, minimax sequential estimation, and continuous time processes. *Ann. Math. Statist.* **28** 573–601, 1957. [MR 19 (1958) 1097, Zbl 80 (1959) 130].
- [20] Optimum sequential search and approximation methods under minimum regularity assumptions. *J. Soc. Indust. Appl. Math.* **5** 105–136, 1957. [MR 19 (1958) 1097, Zbl 81 (1959) 385].

1958

- [21] On the deviations of the empiric distribution function of vector chance variables (with J. Wolfowitz). *Trans. Amer. Math Soc.* **87** 173–186, 1958. [MR 20 (1959) #5519, Zbl 88 (1961) 113].
- [22] On the nonrandomized optimality and randomized nonoptimality of symmetrical designs. *Ann. Math. Statist.* **29** 675–699, 1958. [MR 20 (1959) #4910, Zbl 92 (1962) 361]. Corrections (and comments), unpublished.

1959

- [23] Optimum designs in regression problems (with J. Wolfowitz). *Ann. Math. Statist.* **30** 271–294, 1959. [MR 21 (1960) #3079, Zbl 90 (1961) 114].
- [24] K -sample analogues of the Kolmogorov-Smirnov and Cramér-V. Mises tests. *Ann. Math. Statist.* **30** 420–447, 1959. [MR 21 (1960) #1668, Zbl 134 (1967) 367].
- [25] Asymptotic minimax character of the sample distribution function for vector chance variables (with J. Wolfowitz). *Ann. Math. Statist.* **30** 463–489, 1959. [MR 21 (1960) #6642, Zbl 93 (1962) 156].
- [26] Optimum experimental designs. *J. Roy. Statist. Soc. Ser. B* **21** 272–319, 1959. [MR 22 (1961), #4101, Zbl 108 (1964) 153].
- [27] A functional equation technique for obtaining Wiener process probabilities associated with theorems of Kolmogorov-Smirnov type. *Proc. Cambridge Philos. Soc.* **55** 328–332, 1959. [MR 22 (1961) #8557, Zbl 96 (1962) 334].

1960

- [28] Optimum experimental designs V, with applications to systematic and rotatable designs. *Proc. 4th Berkeley Symp. Math. Statist. Probab.* **1** 381–405, 1960. Univ. California Press, Berkeley. [MR 24 (1962) #A3765, Zbl 134 (1967) 366].
- [29] The equivalence of two extremum problems (with J. Wolfowitz). *Canad. J. Math.* **12** 363–366, 1960. [MR 22 (1961) #8616, Zbl 93 (1962) 156].

1961

- [30] Distribution free tests of independence based on the sample distribution function (with J. R. Blum and M. Rosenblatt). *Ann. Math. Statist.* **32** 485–498, 1961. [MR 23 (1962) #A2989, Zbl 139 (1968) 363].
- [31] Optimum designs in regression problems, II. *Ann. Math. Statist.* **32** 298–325, 1961. [MR 23 (1962) #A735, Zbl 99 (1963) 135].
- [32] On large deviations of the empiric d.f. of vector chance variables and a law of the iterated logarithm. *Pacific J. Math.* **11** 649–660, 1961. [MR 24 (1962) #A1732, Zbl 119 (1966) 349].

1962

- [33] Two more criteria equivalent to D -optimality of designs. *Ann. Math. Statist.* **33** 792–796, 1962. [MR 25 (1963) #701, Zbl 116 (1965) 113].
- [34] An extremum result. *Canad. J. Math* **14** 597–601, 1962. [MR 26 (1963) #1968, Zbl 134 (1967) 369].
- [35] Channels with arbitrarily varying channel probability functions (with J. Wolfowitz). *Inform. Control* **5** 44–54, 1962. [MR 24 (1962) #B2506, Zbl 107 (1964) 345].

1963

- [36] Minimax character of Hotelling's T^2 test in the simplest case (with N. Giri and C. Stein). *Ann. Math. Statist.* **34** 1524–1535, 1963. [MR 27 (1964) #6331, Zbl 202 (1971) 495].
- [37] Asymptotically optimum sequential inference and design (with J. Sacks). *Ann. Math. Statist.* **34** 705–750, 1963. [MR 27 (1964) #893, Zbl 255 (1973) 62063].

1964

- [38] Local and asymptotic minimax properties of multivariate tests (with N. Giri). *Ann. Math. Statist.* **35** 21–35, 1964. [MR 28 (1964) #2605, Zbl 133 (1967) 418].
- [39] Minimax character of the R^2 -test in the simplest case (with N. Giri). *Ann. Math. Statist.* **35** 1475–1490, 1964. [MR 29 (1965) #6579, Zbl 137 (1967) 368].
- [40] Optimum extrapolation and interpolation designs, I (with J. Wolfowitz). *Ann. Inst. Statist. Math* **16** 79–108, 1964. [MR 31 (1966) #2806, Zbl 137 (1967) 131].
- [41] Optimum extrapolation and interpolation designs, II (with J. Wolfowitz). *Ann. Inst. Statist. Math.* **16** 295–303, 1964. [MR 31 (1966) #2806, Zbl 137 (1967) 131].

1965

- [42] Admissible Bayes character of T^2 -, R^2 -, and other fully invariant tests for classical multivariate normal problems (with R. Schwartz). *Ann. Math. Statist.* **36** 747–770, 1965. Correction, *Ann. Math. Statist.* **43** 1742, 1972. [MR 30 (1965) #5430; 50 (1975) #11567, Zbl 137 (1967) 36; 249 (1973) 62058].
- [43] On a problem connected with the Vandermonde determinant (with J. Wolfowitz). *Proc. Amer. Math. Soc.* **16** 1092–1095, 1965. [MR 32 (1966) #115, Zbl 142 (1968) 269].
- [44] On a theorem of Hoel and Levine on extrapolation designs (with J. Wolfowitz). *Ann. Math. Statist.* **36** 1627–1655, 1965. [MR 32 (1966) #3230, Zbl 138 (1967) 140].

1966

- [45] Multivariate optimality results. *Multivariate Analysis. Proceedings of an International Symposium* 255–274, 1966. (ed. by P. R. Krishnaiah). Academic, New York. [MR 37 (1969) #2372, Zbl 218 (1972) 448].

1967

- [46] Optimum multivariate designs (with R. H. Farrell and A. Walbran). *Proc. Fifth Berkeley Sympos. Math. Statist. Probab.* **1** 113–138, 1967. [MR 35 (1968) #5099, Zbl 193 (1970) 171].
- [47] On Bahadur's representation of sample quantiles. *Ann. Math. Statist.* **38** 1323–1342, 1967. [MR 36 (1968) #933, Zbl 158 (1960) 370].

1968

- [48] Statistical inference (panel discussion with G. A. Barnard, L. M. LeCam, and L. J. Savage). *The Future of Statistics* (Proceedings of a Conference on the Future of Statistics held at the University of Wisconsin, Madison, Wisconsin, June 1967) 139–160, 1968. (ed. by D. G. Watts). Academic, New York.

1969

- [49] Statistical inference. *The Mathematical Sciences* 60–71, 1969. The M.I.T. Press, Cambridge. [Reprinted in *Math. Spectrum*. **3** 1–11, 1970–71].
- [50] On the deviations in the Skorokhod-Strassen approximation scheme. *Z. Wahrsch. verw. Gebiete.* **13** 321–332, 1969. [MR 41 (1971) #1117, Erratum 41, p. 1965, Zbl 176 (1969) 482].

1970

- [51] Old and new methods for studying order statistics and sample quantiles. *Nonparametric Techniques in Statistical Inference*, 349–357, 1970 (ed. by M. L. Puri). Cambridge University Press, London. [MR 44 (1972) #3442].
- [52] Deviations between the sample quantile process and the sample df. *Nonparametric Techniques in Statistical Inference* 299–319, 1970. (ed. by M. L. Puri). Cambridge University Press, London. [MR 43 (1972) #2808].
- [53] Optimum experimental designs. *Actes du Congrès International des Mathématiciens*, Nice 249–254, 1970. [MR 54 (1977) #8993, Zbl 237 (1972) 62050].
- [54] Iterated logarithm analogues for sample quantiles when $p_n \downarrow 0$. *Proc. Sixth Berkeley Symp. Math. Statist. Probab.* **1** 227–244, 1970. Univ. California Press, Berkeley. [MR 53 (1977) #6696, Zbl 264 (1974) 62815].

1971

- [55] The role of symmetry and approximation in exact design optimality. *Statistical Decision Theory and Related Topics. (Proc. Symp.)* 109–118, 1971. (ed. by S. S. Gupta and J. Yackel). Academic, New York. [MR 50 (1975) #3447, Zbl 274 (1974) 62050].

1972

- [56] Skorohod embedding of multivariate rv's, and the sample df. *Z. Wahrsch. verw. Gebiete.* **24** 1–35, 1972. [MR 49 (1975) # 6382, Zbl 267 (1974) 60034].

1973

- [57] Optimum designs for fitting biased multiresponse surfaces. *Multivariate Analysis-III. Proceedings of the Third International Symposium on Multivariate Analysis*, 287–297, 1973. (ed. by P. R. Krishnaiah). Academic, New York. [MR 51 (1976) #2188, Zbl 291 (1975) 62093].

1974

- [58] General equivalence theory for optimum designs (approximate theory). *Ann. Statist.* **2** 849–879, 1974. [MR 50 (1975) #8856, Zbl (1975) 62092].
- [59] Discussion on the paper: Planning experiments for discriminating between models, by A. C. Atkinson and D. R. Cox. *J. Roy. Statist. Soc. Ser. B.* **36** 345–346, 1974.

1975

- [60] Balanced block designs and generalized Youden designs, I. Construction (patchwork). *Ann. Statist.* **3** 109–118, 1975. [MR 51 (1976) #4578, Zbl 305 (1976) 62052].
- [61] Construction and optimality of generalized Youden designs. *A Survey of Statistical Design and Linear Models* 333–353, 1975. (ed. by J. N. Srivastava). North-Holland, Amsterdam. [MR 52 (1976) #15877, Zbl 313 (1975) 62057].
- [62] Review of the paper: Bayesian analysis of generic relations in Agaricales, by R. E. Machol and R. Singer. *Mycologia* **67** 203–205, 1975.
- [63] Optimal design: Variation in structure and performance under change of criterion. *Biometrika* **62** 277–288, 1975. [MR 52 (1976) #2064, Zbl 321 (1976) 62086].

1976

- [64] Optimal designs for large degree polynomial regression (with W. J. Studden). *Ann. Statist.* **4** 1113–1123, 1976. [MR 54 (1977) #11676, Zbl 357 (1978) 62051].

- [65] Asymptotically minimax estimation of concave and convex distribution functions (with J. Wolfowitz). *Z. Wahrsch. verw. Gebiete.* **34** 73–85, 1976. [MR 53 (1977) #1829, Zbl 354 (1978) 62035].
- [66] Large sample comparison of tests and empirical Bayes procedures (with D. S. Moore). *On the History of Statistics and Probability: Proc. of a Symp. on the American Mathematical Heritage* 347–365, 1976. (ed. by D. B. Owen). Dekker, New York.
- [67] Admissibility of conditional confidence procedures. *Ann. Statist.* **4** 836–865, 1976. [MR 55 (1978) #11454, Zbl 353 (1975) 62008].

1977

- [68] Asymptotically minimax estimation of concave and convex distribution functions. II (with J. Wolfowitz). *Statistical Decision Theory and Related Topics, II* 193–211, 1977. (ed. by S. S. Gupta and D. S. Moore). Academic, New York. [MR 56 (1978) #1572, Zbl 418 (1980) 62031].
- [69] Conditional confidence statements and confidence estimators. *J. Amer. Statist. Assoc.* **72** 789–827, 1977. [MR 58 (1979) #24638, Zbl 375 (1978) 62023].
- [70] The ideas of conditional confidence in the simplest setting (with C. Brownie). *Comm. Statist.—Theor. Methods* **A6(8)** 691–751, 1977. [MR 56 (1978) #3993, Zbl 392 (1979) 62002].
- [71] Conditional confidence and estimated confidence in multidecision problems (with applications to selection and ranking). *Multivariate Analysis—IV. Proceedings of the Fourth International Symposium on Multivariate Analysis* 143–158, 1977. (ed. by P. R. Krishnaiah). North-Holland, Amsterdam. [MR 58 (1979) #18810, Zbl 381 (1979) 62009].
- [72] Comparison of rotatable designs for regression on balls, I (Quadratic) (with Z. Galil). *J. Statist. Plann. Inference* **1** 27–40, 1977. [MR 58 (1979) #24769, Zbl 394 (1979) 62058].
- [73] The foundations of statistics—are there any? *Synthese* **36** 161–176, 1977. [MR 58 (1979) #31488, Zbl 375 (1978) 60005].
- [74] Comparison of design for quadratic regression on cubes (with Z. Galil). *J. Statist. Plann. Inference* **1** 121–132, 1977. [MR 58 (1979) #24770, Zbl 381 (1979) 62062].
- [75] Comparison of simplex designs for quadratic mixture models (with Z. Galil). *Technometrics* **19** 445–453, 1977. [MR 57 (1978) #17972, Zbl 372 (1978) 62058].
- [76] Comparison of Box-Draper and D -optimum designs for experiments with mixtures (with Z. Galil). *Technometrics* **19** 441–444, 1977. [MR 58 (1979) #3233, Zbl 369–389 (1978) 62087].

1978

- [77] Asymptotic approach to families of design problems. *Comm. Statist. A—Theory Methods* **7** 1347–1362, 1978. [MR 82g (1982) 62106, Zbl 389 (1979) 62058].
- [78] A Diophantine problem in optimum design theory. *Utilitas Math.* **14** 81–98, 1978. [MR 80b (1980) 62091, Zbl 391 (1979) 62055].
- [79] Comment on paper: Pseudorandom number assignment in statistically designed simulation and distribution sampling experiments, by L. W. Schruben and B. H. Margolin. *J. Amer. Statist. Assoc.* **73** 523–524, 1978.
- [80] Sequential statistical methods. *Studies in Probability Theory* 1–23, 1978. (ed. by M. Rosenblatt). *Studies in Math.* **18** Math Assoc. Amer., Washington, D.C. [MR 80m (1980) 62077, Zbl 412 (1978) 62056].

1979

- [81] Extrapolation designs and Φ_p -optimum designs for cubic regression on the q -ball (with Z. Galil). *J. Statist. Plann. Inference* **3** 27–38, 1979. [MR 81a (1981) 62074, Zbl 412 (1979) 62055].
- [82] Comments on taxonomy, independence, and mathematical models (with reference to a methodology of Machol and Singer). *Mycologia* **71** 343–378, 1979.

1980

- [83] Optimal design theory in relation to combinatorial design. *Ann. Discrete Math.* **6** 225–241, 1980. [MR 82a (1982) 62107, Zbl 463 (1982) 62066].

- [84] Designs for extrapolation where bias is present. *Multivariate Analysis—V. Proc. Fifth International Symp.* 79–93, 1980. (ed. by P. R. Krishnaiah). North-Holland, Amsterdam. [MR 81i (1981) 62130, Zbl 458 (1982) 62063].
- [85] *D*-optimum weighing designs (with Z. Galil). *Ann. Statist.* **8** 1293–1306, 1980. [MR 82g (1982) 62104, Zbl 466 (1982) 62066].
- [86] Time- and space-saving computer methods, related to Mitchell's DETMAX, for finding *D*-optimum designs (with Z. Galil). *Technometrics* **22** 301–313, 1980. [MR 81j (1981) 62147, Zbl 459 (1982) 62060].
- [87] Optimum weighing designs (with Z. Galil). *Recent Developments in Statistical Inference and Data Analysis. Proceedings of the International Conference in Statistics in Tokyo* 183–189, 1980. (ed. by K. Matusita). North-Holland, Amsterdam. [MR 82a (1982) 62108, Zbl 462 (1982) 62059].

1981

- [88] Optimum balanced block and Latin square designs for correlated observations (with H. P. Wynn). *Ann. Statist.* **9** 737–757, 1981. [MR82h (1982) 62122].
- [89] The interplay of optimality and combinatorics in experimental design. *Canad. J. Statist.* **9** 1–10, 1981. [MR 82m (1982) 62167].
- [90] Relationships of optimality for individual factors of a design (with J. Eccleston). *J. Statist. Plann. Inference* **5** 213–219, 1981. [MR 83c (1983) 62115, Zbl 481 (1982) 62059].
- [91] Optimum rates for non-parametric density and regression estimates, under order restrictions. *Statistics and Probability, Essays in Honor of C. R. Rao* 419–428, 1981. (ed. by G. Kallianpur, P. R. Krishnaiah, J. K. Ghosh). North-Holland, Amsterdam.
- [92] On the characterization of *D*-optimum weighing designs for $n \equiv 3 \pmod{4}$ (with Z. Galil). *Statistical Decision Theory and Related Topics III* 1–35, 1981. (ed. by S. S. Gupta and J. O. Berger). Academic, New York.
- [93] Eight lectures on mathematical statistics. (Chinese). *Advances in Mathematics (Beijing)* (Shuxue Jin Zhan) **10** 94–130, 1981.

1982

- [94] Conditional inference. *Encyclopedia of Statistical Sciences* **2** 103–109, 1982. (ed. by S. Kotz, N. L. Johnson, and C. B. Read). Wiley-Interscience, New York.
- [95] Construction methods for *D*-optimum weighing designs when $n \equiv 3 \pmod{4}$, (with Z. Galil). *Ann. Statist.* **10** 502–510, 1982. [MR 83i (1983) 62139].

1983

- [96] Autocorrelation-robust design of experiments (with H. P. Wynn). *Scientific Inference, Data Analysis, and Robustness* 279–299, 1983. (ed. by T. Leonard and C.-F. Wu). Academic, New York.
- [97] Comparison of designs equivalent under one or two criteria (with Z. Galil). *J. Statist. Plann. Inference* **8** 103–116, 1983.

1984

- [98] Optimum and minimax exact treatment designs for one-dimensional autoregressive error processes (with H. P. Wynn). *Ann. Statist.* **12** 431–450, (1984).

Book Reviews

- [99] *Advanced Theory of Statistics*. M. G. Kendall and A. Stuart. *Ann. Math. Statist.* **35** 1371–1380, 1964.
- [100] *The Savory Wild Mushroom*. M. McKenney. (Second edition, revised and enlarged by D. E. Stuntz). *Quarterly Review Biology* **47** 342–343, 1972.
- [101] *A Field Guide to Western Mushrooms*. A. H. Smith. *Quarterly Review Biology* **52** 91, 1977.

Books, Edited Volumes, Lecture Notes

- [102] *Sequential Identification and Ranking Procedures, With Special Reference to Koopman-Darmois Populations* (with R. E. Bechhofer and M. Sobel). *Statistical Research Monographs* **3** 1968. The University of Chicago Press. [MR 39 (1970) #6445, Zbl 208 (1971) 446].
- [103] *Jacob Wolfowitz, Selected Papers*, 1980. (ed. by J. Kiefer, with the assistance of U. Augustin and L. Weiss). Springer, New York. [MR 83d (1983) 01080, Zbl 447 (1981) 62001].
- [104] *Lectures on Design Theory*, 1974. Mimeograph Series #397, Department of Statistics, Purdue University.
- [105] Contributions to the theory of games and statistical decision functions. Doctoral dissertation, 1952. Columbia University.
- [106] Notes on decision theory, 1953. (Notes recorded by J. Sacks at Cornell University).
- [107] Lecture notes on statistical inference, 1973. To be published by Springer, Berlin, 1984.

Papers (Unpublished)

- [108] Note on asymptotic efficiency of M.L. estimators in nonparametric problems (with J. Wolfowitz), (circa 1960).
- [109] Mathematics 371 Final Examination 1972. (Cornell University).
- [110] *D*-optimality of the GYD for $v \geq 6$, 1974.
- [111] Optimality criteria for designs, 1975.