

KENNETH PAIGEN

Personal: Born - November 14, 1927, New York City
Married, 5 children

Education: A.B.(honors) Johns Hopkins University 1946 (major in Biology, Phi Beta Kappa)
Ph.D., California Institute of Technology 1950 (Major in Biochemistry, Minor in Chemistry, Sigma Xi)

Honors: Fellow, AAAS
LL.D (hon) Bowdoin College
2008 Fulbright Senior Specialists Award

Positions:

Fellowships

1946-48 Teaching Fellow, California Inst. of Technology
1948-50 U.S.P.H.S. Predoctoral Fellow, California Institute of Technology
1950-52 Carnegie Fellow, Dept. of Genetics, Carnegie Inst. of Washington, Cold Spring Harbor, Long Island, NY
1952-53 Research Associate in Medicine, Harvard Medical School; Research Associate, Peter Bent Brigham Hospital, Boston, MA
1953-55 U.S.P.H.S. Postdoctoral Fellow (Sponsor: Wendall Stanley), Virus Laboratory, UC-Berkeley

Roswell Park Memorial Institute, Buffalo, NY 14263

1955-58 Senior Cancer Research Scientist, Dept. of Experimental Biology
1958-62 Associate Cancer Research Scientist, Dept. of Experimental Biology
1962-66 Principal Cancer Research Scientist, Dept. of Experimental Biology
1966-72 Assoc. Chief Cancer Research Scientist, Dept. of Experimental Biology
1971-82 Professor and Chairman, Graduate Program in Cellular and Molecular Biology, Roswell Park Division, SUNY/AB
1972-82 Chair, Dept. of Molecular Biology

University of California, Berkeley, California 94720

1982-87 Professor and Chair, Dept. of Genetics; Chair, Graduate Group in Genetics
1987-89 Professor, Dept. of Genetics

The Jackson Laboratory, Bar Harbor, Maine 04609

1989-2002 Director and Senior Staff Scientist
2002- Executive Research Fellow and Professor

Visiting Lectureships:

1971 Visiting Professor, National Univ. of Mexico (Biochemical Genetics)
1976 Visiting Scholar, U. Michigan (Endocrinology)
1984 Lecturer, Eur. Mol. Biol. Org., Pavia, Italy (Molecular Genetics of Mammalian Development)
1985 Lecturer, Hebrew University, Jerusalem, Israel (Evolutionary Processes and Theory)

Societies:

Fellow, American Association for the Advancement of Science
American Association for Cancer Research
American Chemical Society
American Society for Biological Chemists
American Society for Microbiology
Biophysical Society
Genetics Society of America
International Mammalian Genome Society
Human Genome Organization (HUGO)

Major Service:

1963-69 Journal of Bacteriology Editorial Board
1964-71 Journal of Virology Editorial Board
1974-75 Genetics Advisory Board, National Center for Toxicological Research
1976-80 Genetics Study Section; N.I.H.
1983-86 Editorial Board, Annual Review of Genetics

1984-86 Board of Directors, Genetics Society of America
1977-85 Consultant - USA-Israel Binational Science Foundation
1978-85 Biochemical Genetics Editorial Board
1980-88 Developmental Genetics Editorial Board
1985-92 U.S. Member, International Advisory Committee for Mammalian Molecular Genetics
2002-06 Riken Mammalian Genetics International Advisory Board

Publications

1. Paigen, K., and Kaufmann, B.N. Effects of X-irradiation on amount and composition of nucleic acids in mouse liver. *J. Cell. Compar. Physiol.*, **42**: 163 (1953).
2. Paigen, K. In symposium, "The Structure of Biochemistry of Mitochondria." *J. Histochem. Cytochem.*, **1**: 272 (1953).
3. Paigen, K. The occurrence of several biochemically distinct types of mitochondria in liver. *J. Biol. Chem.* **206**: 945 (1954).
4. Paigen, K. Hemoglobin as the red pigment of microsomes. *Biochem. Biophys. Acta* **19**: 297 (1956).
5. Paigen, K. Convenient starch electrophoresis apparatus. *Anal. Chem.* **28**: 284 (1956).
6. Cosentino, V., Paigen, K. and Steere, R.L. Electron microscopy of turnip yellow mosaic virus and the associated abnormal protein. *Virology* **2**: 139 (1956).
7. Pardee, A.B., Paigen, K., and Prestidge, L. A study of the ribonucleic acid of normal and chloromycetin-inhibited bacteria by zone electrophoresis. *Biochim. Biophys. Acta*, **23**: 162 (1957).
8. Paigen, K. The properties of particulate phosphoprotein phosphatase. *J. Biol. Chem.* **233**: 388 (1958).
9. Paigen, K., Griffiths, S.K. The intracellular location of phosphoprotein phosphatase activity. *J. Biol. Chem.* **234**: 299 (1959).
10. Weigle, J., Meselson, M., and Paigen, K. Modified density of transducing phage lambda. *Brookhaven Symp. Biol.* **12**: 125 (1959).
11. Weigle, J., Meselson, M., and Paigen, K. Density alterations associated with transducing ability in the bacteriophage lambda. *J. Mol. Biol.* **1**: 379 (1959).
12. Paigen, K. Genetic influence on enzyme localization. *J. Histochem. Cytochem.* **7**: 248 (1959).
13. Paigen, K. The influence of a single gene on the enzymatic structure of cytoplasmic particles. *Acta Unio. Int. Contra Cancrum* **16**: 1032 (1960).
14. Paigen, K., and Noell, W.K. Two linked genes showing a similar timing of expression in mice. *Nature* **190**: 148 (1961).
15. Wenner, C.E., and Paigen, K. The role of pyruvate in the oxidation of glucose and lactate. *Arch. Biochem. Biophys.* **93**: 646 (1961).
16. Paigen, K. The effect of mutation on the intracellular location of β -glucuronidase. *Exper. Cell Res.* **25**: 286-301 (1961).
17. Paigen, K. The genetic control of enzyme activity during differentiation. *Proc. Natl. Acad. Sci., U.S.A.* **47**: 1641-1649 (1961).
18. Paigen, K., and Wenner, C.E. The intracellular location of the glycolytic dehydrogenase in liver and hepatoma. *Arch. Biochem. Biophys.* **97**: 213 (1962).
19. Paigen, K. On the regulation of DNA transcription. *J. Theoret. Biol.*, **3**: 268 (1962).
20. Paigen, K. The prediction of growth inhibitory drug combinations showing enhanced differential toxicity and collateral sensitivity. *Cancer Res.* **22**: 1290 (1962).
21. Paigen, K. and Weinfeld, H. Cooperative infection by host-modified lambda phage. *Virology* **19**: 565 (1963).
22. Paigen, K. Changes in the inducibility of galactokinase and β -galactosidase during inhibition of growth in *Escherichia coli*. *Biochim. Biophys. Acta*, **77**: 318 (1963).

23. Paigen, K. The genetic control of enzyme realization during differentiation. Proc. II Int. Cong. Congenital Malformations pp. 181-190 (1964).
24. Weinfeld, H., and Paigen, K. Evidence for a new intermediate state of the viral chromosome during cooperative infection by host-modified lambda phage. *Virology* 24: 71 (1964).
25. Paigen, K. and Ganschow, R. Genetic factors in enzyme realization. *Brookhaven Symp. Biol.* 18: 99-115 (1965).
26. Paigen, K. Phenomenon of transient repression in *Escherichia coli*. *J. Bact.*, 91: 1201 (1966).
27. Weinfeld, H., and Paigen, K. Host-controlled modification of the transducing activities of the lambda phage. *Virology* 28: 363 (1966).
28. Williams, B., and Paigen, K. A group of compounds exhibiting paradoxical activity in the regulation of the *lac* operon. *Biochem. Biophys. Res. Comm.*, 24: 143 (1966).
29. Paigen, K. Role of the galactose pathway in the regulation of β -galactosidase. *J. Bact.*, 92: 1394 (1966).
30. Eskridge, R.W., Weinfeld, H. and Paigen, K. Susceptibility of different coliphage genomes to host-controlled variation. *J. Bact.* 93: 835 (1967).
31. Paigen, K., Williams, B., and McGinnis, J. Catabolite repression is not due to end-product repression in the *gal* operon. *J. Bact.*, 94: 493 (1967).
32. Ganschow, R., and Paigen, K. Separate genes determining the structure and intracellular location of hepatic glucuronidase. *Proc. Natl. Acad. Sci., U.S.A.*, 58: 938 (1967).
33. Ganschow, R., and Paigen, K. Glucuronidase phenotypes of inbred mouse strains. *Genetics* 59: 335 (1968).
34. Grasso, R., and Paigen, K. The effect of amino acids on host-controlled restriction of lambda phage. *Virology* 36: 1 (1968).
35. Grasso, R., and Paigen, K. Loss of host-controlled restriction of lambda phage in *Escherichia coli* following methionine deprivation. *J. Virology* 2: 1368 (1968).
36. Williams, B. and Paigen, K. Paradoxical effect of weak inducers on the *lac* operon of *Escherichia coli*. *J. Bact.* 96: 1774 (1968).
37. Williams, B. and Paigen, K. The relationships between the regulation of the lactose and galactose operons of *E. coli*. *J. Bact.*, 97: 769 (1969).
38. Grasso, R., and Paigen, K. Loss of host-controlled restriction and modification of phage lambda in *Escherichia coli* previously infected with UV-irradiated coli-phage T-3. *Virology* 38: 191 (1969).
39. Paigen, K. and Williams, B. Catabolite repression (a review) In: *Advances in Microbial Physiology* 4: (A.J. Rose, ed.), (1970), p. 251-298.
40. McGinnis, J.F. and Paigen, K. Catabolite inhibition: a general phenomenon in the control of carbohydrate utilization. *J. Bact.* 100: 902 (1969).
41. Paigen, K. Closing Remarks. 1969 Symposium on mammalian biochemical genetics. *Biochem. Genetics* 4: 237 (1970).
42. Paigen, K. The genetics of enzyme realization (a review). In: *Enzyme Synthesis and Degradation in Mammalian Systems*. (M. Rechcigl, ed.), Karger, Basel, (1971), p 1-6.
43. Tomino, S. and Paigen, K. Isolation of β -thio-galactoside binding proteins of *Escherichia coli* by specific absorbents. In: *The Lactose Operon*. (J.R. Beckwith and D. Zipser, eds.), Cold Spring Harbor Monograph, p. 233 (1970).
44. Paigen, K. and Felton, J. Genetic factors affecting enzyme activity. In: *Drugs and Cell Regulation: Organizational and Pharmacological Aspects on the Molecular Level*. (E. Mihich, ed.), (1971), p. 185-196.
45. Watson, G. and Paigen, K. Isolation and characterization of an *Escherichia coli* bacteriophage requiring cell wall galactose. *J. Virology* 8: 669 (1971).
46. Watson, G. and Paigen, K. Intercellular transfer of phage receptor site lipopolysaccharide. *Nature New Biology* 239: 120 (1972).

47. Meisler, M. and Paigen, K. Coordinated development of β -glucuronidase and β -galactosidase in mouse organs. *Science* 177: 894-896 (1972).
48. Olsen, I. and Paigen, K. Polytransductant formation in *Escherichia coli* lysogens. *J. Gen. Microbiol.* 73: 113-126 (1972).
49. McGinnis, J.F. and Paigen, K. Site of catabolite inhibition of carbohydrate metabolism. *J. Bact.* 114 : 885-887 (1973).
50. Swank, R.T., and Paigen, K. Biochemical and genetic evidence for a macromolecular β -glucuronidase complex in microsomal membranes. *J. Mol. Biol.* 77: 371-389 (1973).
51. Paigen, K. Molecular genetics of β -glucuronidase. In: *Perspectives in Cancer Research and Treatment.* (G.P. Murphy, et al., eds.), (1973) p. 343-353.
52. Swank, R.T., Paigen, K., and Ganschow, R. Genetic control of Glucuronidase induction in mice. *J. Mol. Biol.* 81: 225-243 (1973).
53. Felton, J.T., Meisler, M. and Paigen, K. A locus determining β -galactosidase activity in the mouse. *J. Biol. Chem.* 249: 3267-3272 (1974).
54. Wudl, L. and Paigen, K. Enzyme measurements on single cells. *Science* 184: 992-994 (1974).
55. Tomino, S. and Paigen, K. Egasyn, a protein complexed with microsomal β -glucuronidase. *J. Biol. Chem.* 250: 1146-1149 (1975).
56. Tomino, S. and Paigen, K., Tulsiani, D.R.P., and Touster, O. Purification and chemical properties of mouse liver lysosomal (L) β -glucuronidase. *J. Biol. Chem.* 250: 8503-8509 (1975).
57. Paigen, K., Swank, R.T., Tomino, S., and Ganschow, R.E. The molecular genetics of mammalian glucuronidase. *J. Cell Physiol.* 85: 379-392 (1975).
58. Swank, R.T., Tomino, S., and Paigen, K. Mechanisms of enzyme subcellular localization. *Isozymes III: Developmental Biology.* (C.L. Markert, ed.), Academic Press (1975) p. 523-541.
59. Lusic, A.J. and Paigen, K. Genetic determination of the α -galactosidase developmental program in mice. *Cell* 6: 371-378 (1975).
60. Paigen, K., Meisler, M., Felton, J. and Chapman, V. Genetic determination of the β -galactosidase developmental program in mouse liver. *Cell* 9: 533-539, (1976).
61. Lusic, A.J., and Paigen, K. Properties of mouse α -galactosidase. *Biochim. Biophys. Acta* 437: 487-497 (1976).
62. Lusic, A.J., and Tomino, S., Paigen, K. Isolation, characterization and radioimmunoassay of murine Egasyn, a protein stabilizing glucuronidase membrane binding. *J. Biol. Chem.* 251: 7753-7760, (1976).
63. Lusic, A.J. and Paigen, K. Relationships between levels of membrane bound glucuronidase and the associated protein egasyn in mouse tissues. *J. Cell Biol.* 73: 728-735, (1977).
64. Breen, G., Lusic, A.J. and Paigen, K. Linkage of genetic determinants for mouse β -galactosidase electrophoresis and activity. *Genetics* 85: 73-84 (1977).
65. Paigen, B., Minowada, J., Gurtoo, H.L., Paigen, K., Parker, N.B., Ward, E., Hayner, N.T., Bross, I.D.J., Boch, F., Vincent, R. Distribution of aryl hydrocarbon hydroxylase inducibility in human lymphocytes. *Cancer Research* 37: 1829-1839 (1977).
66. Lusic, A.J., Tomino, S. and Paigen, K. Inheritance in mice of the membrane anchor protein Egasyn: The *Eg* locus determines egasyn levels. *Biochem. Genet.* 15: 115-122 (1977).
67. Lusic, A., Breen, G.A.M., and Paigen, K. Non-genetic heterogeneity of mouse β -galactosidase. *J. Biol. Chem.* 252: 4613-4618 (1977).
68. Paigen, K. Temporal genes and developmental programs, Plenary Lecture on Developmental Genetics: V International Congress of Human Genetics, Mexico city. *Excerpta Medica*, 411: 33-42 (1977).
69. Labarca, C. and Paigen, K. mRNA directed synthesis of catalytically active mouse β -glucuronidase in *Xenopus* oocytes. *Proc. Natl. Acad. Science.* 74: 4462-4465 (1977).

70. Paigen, B., Gurtoo, H.L. Minowada J., Houten, L., Vincent, R., Paigen, K., Parker, N.B., Ward, E. and Hayner, N.T. Questionable relationship of aryl hydrocarbon hydroxylase to lung cancer risk. *New Eng. J. Med.* 297: 346-350. (1977).
71. Paigen, B., Gurtoo, H.L. Minowada, J., Paigen, K. Aryl hydrocarbon hydroxylase in cultured human lymphocytes. In: *Microsomes and Drug Oxidations*. (V. Ullrich, V. Roots, A. Hildebrandt, R.W. Estabrook and A.J. Cooney, eds.), Pergamon Press, London, (1977) p. 418-425.
72. Lusic, A. and Paigen, K. Mechanisms involved in the intracellular localization of mouse glucuronidase. In: *Isozymes: Current Topics in Biological and Medical Research*, Alan R. Liss, Inc., New York, 63-106 (1977).
73. Paigen, K. and Peterson, J. Coordinacy of lysomal enzyme excretion in human urine. *J. Clin. Investigation* 61: 751-762 (1978).
74. Paigen, B., Gurtoo, H.L., Minowada, J., Ward, E., Houten, L., Paigen, K. Reilly, A., and Vincent, R. Genetics of aryl hydrocarbon hydroxylase in the human population and its relationship to lung cancer. In: *Polycyclic Hydrocarbons and Cancer: Chemistry, Molecular Biology, and Environment*, Vol. 2, (H.V. Gelboin and P.O.P. Ts'o, eds.) Academic Press, NY (1978), p. 391-405.
75. Swank, R.T., Paigen, K., Davey, R., Chapman, V., Labarca, C., Watson, G., Ganschow, R., Brandt, E.J. and Novak, E.K. Genetic regulation of mammalian β -glucuronidase. *Recent Prog. Horm. Res.* 34: 401-436 (1978).
76. Szoka, P. and Paigen, K. Regulation of mouse major urinary protein production by the *Mup-A* gene. *Genetics* 90: 597-612 (1978).
77. Watson, G. and Paigen, K. Segregation of genetic determinants for murine Glucuronidase synthesis and loss in CXB recombinant-inbred strains. *Genetics* 16: 897-903 (1978).
78. Paigen, K. Genetic control of enzyme activity. In: *Origins of Inbred Mice* (H.C. Morse III, ed.) Academic Press, New York (1978) p. 225-278.
79. Berger, F.G., Paigen, K. and Meisler, M.H. Regulation of the rate of β -galactosidase synthesis by the *Bgs* and *Bgt* loci in the mouse. *J. Biol. Chem.* 253: 7336-7345 (1978).
80. Lusic, A.J. and Paigen, K. The large scale isolation of mouse β -glucuronidase and comparison of allozymes. *J. Biol. Chem.* 253: 7336-7345 (1978).
81. Paigen, K., Labarca, C. and Watson, G. A regulatory locus for mouse β -glucuronidase induction, *Gur*, controls messenger RNA activity. *Science* 203: 554-556 (1979)
82. Chapman, V.M., Paigen, K., Siracusa, L. and Womack, J. Biochemical variation in the mouse. In: *FASEB Biological Handbook III. Inbred and genetically defined strains of laboratory animals. Part I: Mouse and Rat*. (P. Altman and D. Katz, eds.). FASEB, Bethesda, MD (1979) p. 77-95.
83. Paigen, K. Genetic factors in developmental regulation. In: *Physiological Genetics*, (J. Scandalios, ed.) Academic Press, p. 1-61 (1979).
84. Berger, F.G. and Paigen, K. Cis-active control of mouse β -galactosidase biosynthesis by a systemic regulatory locus. *Nature* 282: 314-316 (1979).
85. Paigen, K. Acid hydrolases as models of genetic control. In: *Ann. Rev. Genet.* 13: 417-466 (1979).
86. Berger, F.G., Breen, G.A.M., and Paigen, K. Genetic determination of the developmental program for mouse liver β -galactosidase: Involvement of sites proximate to and distant from the structural gene. *Genetics* 92: 1187-1203 (1979).
87. Szoka, P.R. and Paigen, K. Genetic regulation of Mup production in recombinant inbred mice. *Genetics* 93: 173-181 (1979).
88. Labarca, C. and Paigen, K. A simple, rapid and sensitive DNA assay procedure. *Analyt. Biochem.* 102: 344-352 (1980).
89. Lusic, A.J., Chapman, V.M., Herbstman, C. and Paigen, K. Quantitation of *cis versus trans* regulation of mouse β -glucuronidase. *J. Biol. Chem.* 255: 8959-8962 (1980).
90. Paigen, K. Temporal genes and other development regulators in mammals. In: *The Molecular Genetics of Development*. (W. Loomis and T. Leighton, eds.) Academic Press, NY, p. 419-470 (1980).
91. Paigen, K. Genetic regulation of lysosomal enzymes. In: *Lysosomes and Lysosomal Storage Diseases*. (J.W. Callahan, J.A. Lowden, eds.) Raven Press, NY, p. 1-15 (1981).

92. Watson, G., Davey, R.A. Labarca, C. and Paigen, K. Genetic determination of kinetic parameters in β -glucuronidase induction by androgen. *J. Biol. Chem.* 256: 3005-3011 (1981).
93. Paigen, K. and Peterson, J. The developmental appearance of androgen receptor protein and androgen inducibility of the *Gus* gene complex in mouse kidney. *Develop. Genet.* 2: 269-278 (1981).
94. Paigen, K., Pacholec, F., and Levy, H. A new method of screening for inherited disorders of galactose metabolism. *J. Lab. Clin. Med.* 99: 895-907 (1982).
95. Pfister, K., Paigen, K., Watson, G. and Chapman, V. Expression of β -glucuronidase haplotypes in prototype and congenic mouse strains. *Biochem. Genet.* 20: 519-536 (1982).
96. Paigen, K. and Jakubowski, A. Progressive induction of β -glucuronidase in individual kidney epithelial cells. *Biochem. Genet.* 20: 875-881 (1982).
97. Doane, W.W., Treat-Clemons, L.C., Buchberg, A.M., Paigen, K., Gemmill, R.M., Levy, J.N. and Hawley, S.A. Genetic mechanism for tissue specific control of alpha amylase expression in *Drosophila melanogaster*. In: *Isozymes: Current Topics in Biological and Medical Research*. (M.C. Ratazzi, J.G. Scandalios, and G.S. Whitt, eds.) Alan R. Liss, Inc., NY, (1983).
98. Lusic, A.J., Chapman, V.M., Wangenstein, R.W. and Paigen, K. A trans acting temporal locus within the β -glucuronidase gene complex. *Proc. Natl. Acad. Sci., U.S.A.* 80: 4398-4402 (1983).
99. Pfister, K., Watson, G., Chapman, V. and Paigen, K. Kinetics of β -glucuronidase induction by androgen: Genetic variation in the first order rate constant. *J. Biol. Chem.* 259: 5816-5820 (1984).
100. Paigen, K., Peterson, J. and Ward, E. A genetic component in the determination of human lysosomal enzyme excretion. *Biochem Genet.* 22: 517-527 (1984).
101. Paigen, K., Peterson, J. and Paigen, B. The role of urinary β -glucuronidase in human bladder cancer. *Cancer Research* 44: 3620-3623 (1984).
102. Paigen, K., Jakubowski, A.F. Cell specificity in the developmental regulation of acid hydrolases by temporal genes. *Develop. Genet.* 5: 83-91 (1985).
103. Watson, G., Felder, M., Rabinow, L., Moore, K., Labarca, C., Tietze, C., VanderMolen, G., Bracey, L., Brabant, M., Cai, J., and Paigen, K. Properties of rat and mouse β -glucuronidase mRNA and cDNA, including evidence for sequence polymorphism and genetic regulation of mRNA levels. *Gene* 36: 15-25 (1985).
104. Bullock, L., Watson, G., and Paigen, K. Weak androgen reduces the rate constant of β -glucuronidase induction. *Mol. Cell Endocrinol.* 41: 179-185 (1985).
105. Pfister, K., Chapman, V., Watson, G. and Paigen, K. Genetic variation for enzyme structure and systemic regulation in two new haplotypes of the β -glucuronidase gene of *Mus musculus castaneus*. *J. Biol. Chem.* 260: 11588-11594 (1985).
106. Paigen, K. Gene regulation and its role in evolutionary processes. In: *Evolutionary Theory and Processes*. (S. Karlin, E. Nevo, eds.) Academic Press, Orlando, p. 3-37 (1986).
107. Watson, G., Paigen, K. Genetic variations in the kinetic constants that describe β -glucuronidase mRNA induction in androgen treated mice. *Mol. Cell. Biol.* 7: 1085-1090 (1987).
108. Bracey, L.T., and Paigen, K. Changes in translational yield regulate tissue specific expression of β -glucuronidase. *Proc. Natl. Acad. Sci. USA* 84:9020-9024 (1987).
109. Almagor, H., and Paigen, K. Chemical kinetics of induced gene expression: Activation of transcription by noncooperative binding of multiple regulatory molecules. *Biochemistry* 27: 2094-2102 (1988).
110. Watson, G., and Paigen, K. mRNA synthesis rates for androgen inducible sequences in mouse kidney. *Mol. Cell. Biol.* 8: 2117-2124 (1988).
111. Moore, K., Paigen, K. Genome organization and polymorphism of the murine β -glucuronidase region. *Genomics* 2: 25-31 (1988).
112. Schott, D.R., East, P.D., and Paigen, K. Characterization of the *Adh^{SL}* regulatory mutation in *Drosophila melanogaster*. *Genetics* 119: 631-637 (1988)

113. Bracey, L.T., Paigen, K. Androgen induction of β -glucuronidase translational yield in submaxillary gland of B6.N mice. *Molecular Endocrinology* 2:701-705 (1988).
114. Paigen, K. Experimental approaches to the study of regulatory evolution. *Am. Naturalist* 134, pp. 440-458. (1989).
115. Paigen, K. Mammalian β -Glucuronidase: Genetics, molecular biology, and cell biology. In *Progress in Nucleic Acid Research and Molecular Biology*, Vol. 37, 155-205 (1989).
116. Bracey, L.T., Paigen, K. The *N* haplotype of the murine β -glucuronidase gene is altered in both its systemic regulation and its response to androgen induction. *Biochemical Genetics* 27:1-15 (1989).
117. Watson, G., Paigen, K. Progressive induction of mRNA synthesis for androgen-responsive genes in mouse kidney. *Mol. Gen. Endocrinol.* 68:67-74 (1990).
118. Birchler JA, Hiebert JC, Paigen K. Analysis of autosomal dosage compensation involving the alcohol dehydrogenase locus in *Drosophila melanogaster*. *Genetics* 124: 679-686 (1990).
119. Voliva CF, Paigen K. Isolation of the mouse cytochrome P450J (CYP2E1) cDNA and its reciprocal testosterone regulation in kidney and liver. *Journal Mol Endocrinol* 7:155-166 (1991).
120. Bush, R. and Paigen, K. Evolution of β -glucuronidase regulation in the genus *Mus*. *Evolution* 46:1-15 (1992).
121. Jaussi R, Watson G, Paigen K. Modulation of androgen-responsive gene expression by estrogen. *Mol Cell Endocrinol* 86:187-192 (1992).
122. Watson G, Jaussi R, Tabron D, Paigen K. The *Gus-e* locus regulates estrogen repression of androgen-induced beta-glucuronidase expression in mouse kidney. *Biochem Genet* 31:155-166 (1993).
123. Harrison DE, Roderick TH, Paigen K. Allele capture by selection for flanking markers: a new method for analyzing multigenic traits *Growth Dev Aging* 59:73-76 (1995).
124. Paigen K. A miracle enough: the power of mice. *Nat Med* 1:215-220 (1995).
125. Paigen K, Eppig JT. A mouse phenome project. *Mamm Genome* 11:715-717 (2000).
126. Broman KW, Rowe LB, Churchill GA, Paigen K. Crossover interference in the mouse. *Genetics* 160:1123-1131 (2002).
127. Paigen K. Understanding the human condition: experimental strategies in mammalian genetics. *Ilar J* 43: 123-135 (2002).
128. Paigen K. One hundred years of mouse genetics. An intellectual history. I. The classical period (1902-1980). *Genetics* 163:1-7 (2003).
129. Paigen K. One hundred years of mouse genetics. An intellectual history. II. The molecular revolution (1981-2002). *Genetics* 163:1227-1235 (2003)
130. Kelmenson PM, Petkov P, Wang X, Higgins DC, Paigen BJ, and Paigen K. A torrid zone on mouse chromosome 1 containing a cluster of recombinational hotspots. *Genetics* 169:833-841 (2005).
131. Petkov P, Graber JH, Churchill GA, DiPetrillo K, King BL, Paigen K. Evidence of a large scale functional organization of mammalian chromosomes. *PLoS Genet* 1(3):317-322 (2005).
132. Graber JH, Churchill GA, DiPetrillo KJ, King BL, Petkov PM, Paigen K. Patterns and mechanisms of genome organization in the mouse. *J Exp Zool* 305A:683-688 (2006).
133. Petkov PM, Graber JH, Churchill GA, DiPetrillo K, King BL, Paigen K. Evidence of a large-scale functional organization of mammalian chromosomes. *PLoS Biol* 5(5):e127 (2007).
134. Petkov PM, Broman KW, Szatkiewicz JP, Paigen K. Crossover interference underlies sex differences in recombination rates. *Trends Genet* 23(11):539-542 (2007).
135. Petkov PM, Graber JH, Churchill GA, DiPetrillo K, King BL, Paigen K. Evidence of a large-scale functional organization of mammalian chromosomes. *PLoS Biol* 5(5):e127 (2007). PMC1868061
136. Ng SH, Parvanov E, Petkov PM, Paigen K. A quantitative assay for crossover and noncrossover molecular events at individual recombination hotspots in both male and female gametes. *Genomics* 92:204-209 (2008). PMC2610674

137. Paigen K, Szatkiewicz JP, Sawyer K, Leahy N, Parvanov ED, Ng S, Graber JH, Broman KW, Petkov PM. The recombinational anatomy of a mouse chromosome. *PLoS Genet* 4(7):e1000119 (2008). PMC2440539
138. Parvanov ED, Ng SHS, Petkov PM, Paigen K. Trans-regulation of mouse meiotic recombination hotspots by *Rcr1*. *PLoS Biol* 7:e1000036 (2009). PMC2642880
139. Harrill AH, Watkins PB, Su S, Ross PK, Harbourt DE, Stylianou IM, Boorman GA, Russo MW, Sackler RS, Harris SC, Smith PC, Tennant R, Bogue M, Paigen K, Harris C, Contractor T, Wiltshire T, Rusyn I, Threadgill DW. Mouse population-guided resequencing reveals that variants in *CD44* contribute to acetaminophen-induced liver injury in humans. *Genome Res*, 19(9):1507-1515 (2009). PMC2752130
140. Ng, S.H., Maas, S.A., Petkov, P.M., Mills, K.D., and Paigen, K. "Co-Localization of Somatic and Meiotic Double Strand Breaks near the *Myc* Oncogene on Mouse Chromosome 15". *Genes Chromosomes and Cancer*, 48(10):925-930 (2009). PMC2821716
141. Ng SH, Madeira R, Parvanov ED, Petros LM, Petkov PM, Paigen K. Parental origin of chromosomes influences crossover activity within the *Kcnq1* transcriptionally imprinted domain of *Mus musculus*. *BMC Molec Biol* 10:43 (2009). PMC2689222
142. Parvanov ED, Ng SHS, Petkov PM, Paigen K. Trans-regulation of mouse meiotic recombination hotspots by *Rcr1*. *PLoS Biol* 7:e1000036 (2009). PMC2642880
143. Paigen K, Petkov P. Mammalian recombination hotspots: properties, control and evolution. *Nat Genet Rev* 11:221-233 (2010). Review
144. Parvanov ED, Petkov PM, Paigen K. *Prdm9* controls activation of mammalian recombination hotspots. *Science* 327(5967):835 (2010). PMC2821451
145. Paigen K, Petkov P. 2012. Meiotic DSBs and the control of mammalian recombination. *Cell Res* 22(12):1624-1626. PMID: PMC3515751
146. Walker M, King B, Paigen K. 2012. Clusters of ancestrally related genes that show paralogy in whole or in part are a major feature of the genomes of humans and other species. *PLoS ONE* 7(4):e35274. PMID: PMC3338513
147. Billings T, Parvanov ED, Baker CL, Walker M, Paigen K, Petkov PM. 2013. DNA binding specificities of the long zinc finger recombination protein PRDM9. *Genome Biol* 14(4):R35. PMID: PMC4053984
148. Baker CL, Kajita S, Walker M, Petkov PM, Paigen K. 2014. PRDM9 binding organizes hotspot nucleosomes and limits Holliday junction migration. *Genome Res* 24(5):724-732. PMID: PMC4009602

Conferences and Seminars (from 2003 to present)

2003

- Roswell Park Cancer Institute, Cellular and Molecular Biology Department, Verne Chapman Memorial Letucure, Buffalo, NY, July 2003.
- 17th International Mouse Genome Conference, Verne Chapman Memorial Lecture, Braunschweig, Germany, November 2003.

2004

- NIEHS, Research Triangle Park, NC, October 2004
- 18th International Mouse Genome Conference, Seattle, WA, October 2004.
- NIBRI, QTL studies of drug tox in mice, Boston, MA, December 2004.
- UNC-Chapel Hill, NC, Toxicogenomics Research Consortium Meeting, Chapel Hill, NC, December 2004.

2005

- FDA, Washington, DC, January 2005.
- 3rd International "RNAi-2005-Boston" Meeting on "Chemical Biology to Bio-Drug & Therapeutic Development", Bosotn, MA, May 2005.
- PharmaDiscovery Conference, In Vivo Models in Drug Development, Washington, DC, May 2005.
- 4th International Meeitng of the Complex Trait Consortium, Groningen, The Netherlands, June 2005.
- NIEHS, Environmental Genomics Workshop, Research Triangle Park, NC, June 2005.
- 19th International Mouse Genome Conference, Strasbourg, France, November 2005.
- Homage to Jean-Louis Guenet, Paris, France, November 2005.

2006

RIKEN-BioResource Center Advisory Council, Ibaraki, Japan, April 2006.

NIEHS, National Toxicology Program, Host Susceptibility Meeting, Research Triangle Park, NC, July 2006.

Ingenuity, Boston, MA, July 2006.

20th International Mouse Genome Conference, Charleston, SC, November 2006.

2007

Joslin Diabetes Center, Boston, MA, January 2007.

Ontario Genomics Institute, Analyzing the large scale functional organization of mammalian chromosomes, Toronto, Canada, November 2007.

Institut Clinique de la Souris, Scientific Advisory Board, Strasbourg, France, December 2006.

Nori's Reception, Naples, FL, February 2007.

Harvard Medical School Conference Center, One Hundred Years of Mouse Genetics, A Celebration of C.C. Little Experimental Legacy, Boston, MA, June 2007.

2008

7th Annual Meeting of the Complex Trait Consortium, Montreal, May 2008

International Mammalian Genome Conference, Prague, November 2008

Institut Pasteur, Infectious Disease: 21st century, Paris, November 2008

2009

Tufts University, Boston, MA, February 2009

Mouse Evolutionary Genetics Meeting, Chapel Hill, NC, June 2009

Colloquium on the Biology of Aging, Woods Hole, MA, August 2009

Board Meeting of The Jackson Laboratory, New York, November 2009

2010

Gordon Conference, New London, NH, June 2010

Colloquium on the Biology of Aging, Woods Hole, MA, August 2010

2011

Mouse Genetics 2011, Washington, DC, June 2011

2012

International Mammalian Genome Conference, Tampa, FL, October 2012

Recombination Biology Conference, London, UK, November 2012 (By Invitation)