CURRICULUM VITAE

Richard K. Wilson, Ph.D.

Institute for Genomic Medicine
Nationwide Children's Hospital
700 Children's Drive
Columbus, Ohio 43205
Phone: (614) 355-6850 (Assistant)

E-mail: Richard.Wilson@NationwideChildrens.org

Born: March 23, 1959; Kent, Ohio
Other: Taekwondo, 5th (oh) dan Master; Hapkido, 1st (cho) dan; Shotokan karate, 1st (sho) dan

PROFESSIONAL EXPERIENCE

2016 -	Executive Director, Steve & Cindy Rasmussen Institute for Genomic Medicine Nationwide Children's Hospital, Columbus, Ohio
2017 -	Nationwide Foundation Endowed Chair in Genomic Medicine Nationwide Children's Hospital, Columbus, Ohio
2017- 22	Director, Genomics Shared Resource OSU Comprehensive Cancer Center-Nationwide Children's Hospital
2016 -	Professor, Department of Pediatrics The Ohio State University College of Medicine, Columbus, Ohio
2014 - 16	Alan A. and Edith L. Wolff Distinguished Professor of Medicine Washington University School of Medicine, St. Louis, Missouri
2002 - 16	Professor, Department of Genetics Professor, Department of Molecular Microbiology Washington University School of Medicine, St. Louis, Missouri
2002 - 16	Director, McDonnell Genome Institute Washington University School of Medicine, St. Louis, Missouri
2002 - 16	Research Member, Siteman Cancer Center Washington University School of Medicine, St. Louis, Missouri
2000 - 02	Associate Professor, Department of Molecular Microbiology Washington University School of Medicine, St. Louis, Missouri
1998 - 02	Associate Professor, Department of Genetics Washington University School of Medicine, St. Louis, Missouri
1998 - 00	Co-Founder, President, Acting CEO & Chairman Orion Genomics, LLC, St. Louis, Missouri
1993 - 02	Co-Director, Genome Sequencing Center Washington University School of Medicine, St. Louis, Missouri
1994 - 98	Research Associate Professor, Department of Genetics Washington University School of Medicine, St. Louis, Missouri

1990 - 94 Research Assistant Professor, Department of Genetics
Washington University School of Medicine, St. Louis, Missouri

1989 - 90 Senior Research Fellow, Division of Biology
California Institute of Technology, Pasadena, California

1986 - 89 Research Fellow, Division of Biology
California Institute of Technology, Pasadena, California
Mentor: Dr. Leroy Hood, M.D., Ph.D.
Areas of Research: Molecular basis of autoimmune disease; organization, structure and expression of mammalian T-cell receptor genes; development of methodologies and instrumentation for automated DNA sequencing.

1986 Postdoctoral Fellow, Department of Chemistry
University of Oklahoma, Norman, Oklahoma
Mentor: Dr. Bruce A. Roe, Ph.D.
Areas of Research: Characterization of eucaryote RNA processing enzymes; studies of unusual codon response of tumor cell transfer RNA.

EDUCATION

1981 - 86 Ph.D., Chemistry, University of Oklahoma, Norman, Oklahoma
Thesis title: "Cloning, Expression and Processing of Transfer RNA" Genes.
Thesis advisor: Dr. Bruce A. Roe, Ph.D.

1977 - 81 B.A., Microbiology, Miami University, Oxford, Ohio

HONORS AND PROFESSIONAL AFFILIATIONS

American Association for Cancer Research 2020 Team Science Award (2020)
Nationwide Foundation Endowed Chair in Genomic Medicine, Nationwide Children's Hospital (2017)
Alan A. and Edith L. Wolff Distinguished Professor of Medicine. Washington University (2014)
Member, American Society of Human Genetics (2014-present)
The George Engelmann Interdisciplinary Science Award, St. Louis (2012)
Fellow of the Academy of Science of St. Louis (2012)
Distinguished Achievement Award, Miami University, Oxford, Ohio (2011)
Distinguished Alumnus Award, University of Oklahoma, College of Arts & Sciences (2011)
Member, National Advisory Council for Human Genome Research (2010-13)
Co-Chair, The Cancer Genome Atlas (TCGA) Executive Committee (2009-11)
Fellow of the American Association for the Advancement of Science (2008)
Senior Leadership Committee, Siteman Cancer Center, Washington University (2008-16)
Member, American Association for Cancer Research (2008-present)
Chair, Scientific Advisory Board, The Ontario Institute for Cancer Research (2008-15)
Chair, NHGRI ENCODE Advisory Board (2007-08)
Member, International Cancer Genomics Consortium (2007-16)
Member, The Cancer Genome Atlas (NCI-NHGRI) Steering Committee (2006-16)
Kent City Schools Hall of Fame (Kent, Ohio), Career/Life Achievement (Inducted 2005)
Chair, Tumor Sequencing Project Management Committee (2005-10)
Chair, NHGRI Genome Research Review Committee (2005-09)
Co-Organizer, "Genome Sequencing & Biology", Cold Spring Harbor Laboratory (2005-07)
Board of Reviewing Editors, *Science* (AAAS) (2003-04)

Editorial Board, *Journal of Biotechnology* (Elsevier) (2000-05)
Co-founder & Organizer, "Advances in Genome Biology & Technology (AGBT)" (1999-present)
Keynote Speaker, "Genome Sequencing & Biology", Cold Spring Harbor, NY (1999)
DOE Joint Genome Institute Advisory Committee (1998-99, 2005)
Distinguished Lecturer, University of Oklahoma College of Medicine (1996)
Associate Editor, *Genomics* (Academic Press) (1996-2004)
German Human Genome Project Scientific Advisory Committee (1996-2000)
Editorial Board, *Genome Research* (CSHL Press) (1995-2004)
Co-founder, Instructor, "Advanced Genome Sequencing & Analysis", CSHL (1995-99)
Editorial Board, *BioTechniques* (Eaton Publishing) (1994-2004)
Co-Organizer, "Automation in DNA Mapping & Sequencing" (1994-98)
Editorial Board, *PCR Methods and Applications* (CSHL Press) (1993-95)
NIH-DRG Genome Study Section (1994-99)
Member, Human Genome Organization (1994-2005)
Markey Fellowship; Division of Biology, California Institute of Technology (1988-90)
Member, American Association for the Advancement of Science (1986-)
Graduate Research Excellence Award; Graduate College, Univ. of Oklahoma (1985)
Conoco Company Fellowship in Chemistry; Univ. of Oklahoma (1984-85)
Alumni Program for Excellence Research Fellowship; Univ. of Oklahoma (1983-84)
Dow Chemical Company Scholarship Award; Univ. of Oklahoma (1983-84)

PROFESSIONAL ACTIVITIES AND CONSULTATIONS

Applied Biosystems, Inc., Foster City, CA (1992-95)
Beckman Instruments Inc., Palo Alto, CA (1987-89)
BioRad Laboratories Inc., Hercules, CA (1988-92)
Foundation Medicine, Inc., Cambridge MA (Scientific Advisory Board, 2010-11)
The Genome Partnership (Non-profit), Boston, MA/St. Louis, MO (Board of Directors, 1999-present)
GenomeQuest, Inc., Westborough, MA (Scientific Advisory Board, 2010-13)
Gerson Lehrman Group, New York, NY (2006-present)
Guidepoint Global, New York, NY (2006-09)
Lynx Therapeutics, Inc., Hayward, CA (1994-95)
MEDACorp Network, Boston, MA (2007-09)
Millenium Pharmaceuticals, Inc., Cambridge, MA (1993-98)
Molecular Dynamics Inc., Sunnyvale, CA (1990-92; 1996-99)
Omic Medicine/Genomics 4 Cancer, St. Louis, MO (Founder/Principal; 2012-13)
Orion Genomics, LLC (Board of Directors, 1998-present; CEO and Chairman, 1998-2000)
Time Logic Inc. Moorpark, CA (1988-94)

PATENTS GRANTED/APPLIED FOR

"Method of and Apparatus for Transferring Micro Quantities of Liquid Samples to Discrete Locations." R.K. Wilson, E.R. Mardis, D.A. Panussis, Inventors. Filed by Washington University: March 15, 1996. USPTO number 5,849,598. Patent Issued December 4, 1998.

"Methods of Determining Risk of Adverse Outcomes in Acute Myeloid Leukemia." T.J. Ley, R.K. Wilson, E.R. Mardis, L. Ding, J.F. DiPersio, Inventors. Filed by Washington University: November 10, 2010. USPTO number 61/456,560. Abandoned.

1. Wong, J.F.H., Ma, D.-P., Wilson, R.K. and Roe, B.A. (1983). DNA sequence of the *Xenopus laevis* mitochondrial heavy and light strand replication origins and flanking tRNAs. *Nucl. Acids Res.* **11**, 4977-4995.

2. Xu, Y.-H., Ishii, S., Clark, A.J.L., Sullivan, M., Wilson, R.K., Ma, D.-P., Roe, B.A., Merlino, G.T. and Pastan, I. (1984). Human epidermal growth factor receptor cDNA is homologous to a variety of RNAs overproduced in A431 carcinoma cells. *Nature* **309**, 806-810.

3. Merlino, G.T., Ishii, S., Whang-Peng, J., Knutsen, T., Xu, Y.-H., Clark, A.J.L., Stratton, R.H., Wilson, R.K., Ma, D.-P., Roe, B.A., Hunts, J.H., Shimizu, N. and Pastan, I. (1985). Structure and localization of the genes encoding the aberrant and normal epidermal growth factor receptor RNAs from A431 human carcinoma cells. *Mol. Cell. Biol.* **5**, 1722-1734.

4. Merlino, G.T., Xu, Y., Richert, N., Clark, A.J.L., Stratton, R.H., Wilson, R.K., Ma, D.-P., Roe, B.A. and Pastan, I. (1985). Cloning and characterization of human epidermal growth factor receptor gene sequences in A431 carcinoma cells. In: *Cancer Cells, Vol. 3: Growth Factors and Transformation.* (Feramisco, J., Ozanne, B. and Stiles, C., eds.). Cold Spring Harbor Laboratory Press, New York, NY.

5. Roe, B.A., Ma, D.-P., Wilson, R.K. and Wong, J.F.H. (1985). The complete nucleotide sequence of the *Xenopus laevis* mitochondrial genome. *J. Biol. Chem.* **260**, 9759-9774.

6. Wilson, R.K., Brown, T. and Roe, B.A. (1986). Nucleotide sequence of *pheW*: A third gene for *E. coli* tRNAPhe. *Nucl. Acids Res.* **14**, 5937.

7. Wilson, R.K., Yuen, A.S., Clark, S., Spence, C., Arakelian, P. and Hood, L.E. (1988). Automation of dideoxynucleotide DNA sequencing reactions using a robotic workstation. *BioTechniques* **6**, 776-787.

8. Wilson, R.K., Lai, E., Concannon, P., Barth, R.K. and Hood, L.E. (1988). Structure, organization and polymorphism of murine and human T-cell receptor alpha and beta chain gene families. *Immunol. Rev.* **101**, 149-172.

9. Wilson, R.K. and Roe, B.A. (1989). The presence of the hypermodified nucleotide ms2i6A prevents codon misreading by *E. coli* phenylalanyl-transfer RNA. *Proc. Natl. Acad. Sci. USA* **86**, 409-413.

10. Lai, E., Wilson, R.K. and Hood, L. (1989). Physical maps of the mouse and human immunoglobulin-like loci. *Adv. Immunol.* **46**, 1-59.

11. Wilson, R.K., Kono, D.H., Zaller, D. and Hood, L. (1989). Rapid analysis of T-cell receptor gene structure and expression. In: *Current Communications in Molecular Biology: The Polymerase Chain Reaction*. (H.A. Erlich, R. Gibbs, H.H. Kazazian, eds.). Cold Spring Harbor Laboratory Press, New York, NY.

12. Wilson, R.K., Chen, C. and Hood, L. (1990). Optimization of asymmetric polymerase chain reaction for rapid DNA sequence analysis. *BioTechniques* **8**, 184-189.

13. Wilson, R.K., Chen, C., Avdalovic, N.A., Burns, J. and Hood, L. (1990). Development of an automated procedure for fluorescent DNA sequencing. *Genomics* **6**, 626-634.

14. Koop, B.F., Wilson, R.K., Chen, C., Halloran, N., Sciammis, R. and Hood, L. (1990). Sequencing reactions in microtiter plates. *BioTechniques* **9**, 32-37.

15. Wilson, R.K., Lai, E., Kim, L.D.-H. and Hood, L. (1990). Sequence and expression of a novel human T-cell receptor beta-chain variable gene segment subfamily. *Immunogenetics* **32**, 406-412.

16. Schriefer, L., Gebauer, B.K., Qiu, L.Q.Q., Waterston, R.H. and Wilson, R.K. (1990). Low pressure DNA shearing: A method for random DNA sequence analysis. *Nucl. Acids Res.* **18**, 7455-7456.

17. Wilson, R.K. (1991). Rapid DNA sequence analysis using fluorescent labels. In: *Methods in Molecular Biology, Vol. 9: Protocols in Human Molecular Genetics.* (C. Mathew, ed.). The Humana Press, Inc., Clifton, NJ.

18. Wilson, R.K. and Hood, L. (1991). High throughput fluorescent DNA sequence analysis: Methods and automation. *Methods: A Companion to Methods in Enzymology* **3**, 48-54.

19. Sulston, J., Du, Z., Thomas, K., Wilson, R., Hillier, L., Staden, R., Halloran, N., Green, P., Thierry-Mieg, J., Qiu, L., Dear, S., Coulson, A., Craxton, M., Durbin, R., Berks, M., Metzstein, M., Hawkins, T., Ainscough, R. and Waterston, R. (1992). The *C. elegans* genome sequencing project: A beginning. *Nature* **356**, 37-41.

20. Waterston, R., Martin, C., Craxton, M., Huynh, C., Coulson, A., Hillier, L., Durbin, R., Green, P., Shownkeen, R., Halloran, N., Hawkins, T., Wilson, R., Berks, M., Du, Z., Thomas, K., Thierry-Mieg, J. and Sulston, J. (1992). A survey of expressed genes in *Caenorhabditis elegans*. *Nature Genetics* **1**, 114-123.

21. Lee, L., Connell, K., Woo, S., Cheng, R., McArdle, B.F., Fuller, C.W., Halloran, N.D. and Wilson, R.K. (1992). DNA sequencing with dye-labeled terminators and T7 DNA polymerase: Effect of dyes and dNTPs on incorporation of dye-terminators, and probability analysis of termination fragments. *Nucl. Acids Res.* **20**, 2471-2483.

22. Wilson, R.K., Koop, B.F., Chen, C., Halloran, N., Sciammis, R. and Hood, L. (1992). Nucleotide sequence analysis of 95 kbp near the 3' end of the murine T-cell receptor alpha/delta chain locus: Strategy and methodology. *Genomics* **13**, 1198-1208.

23. Koop, B.F., Wilson, R.K., Wang, K., Vernooij, B., Zaller, D.M., Kuo, C., Seto, D., Toda, M. and Hood, L. (1992). Organization, structure and function of 95 kbp of DNA spanning the murine T-cell receptor Calpha/Cdelta region. *Genomics* **13**, 1209-1230.

24. Hawkins, T.L., Du, Z., Halloran, N.D. and Wilson, R.K. (1992). Automated fluorescence chemistries for primer-directed sequencing. *Electrophoresis* **13**, 552-559.

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26. Halloran, N., Du, Z. and Wilson, R.K. (1992). Sequencing reactions for the Applied Biosystems 373A automated DNA sequencer. In: *Methods in Molecular Biology, Vol. 10: DNA sequencing: Laboratory Protocols.* (H.G. Griffin and A.M. Griffin, eds.). The Humana Press, Inc., Clifton, NJ.

27. Wilson, R.K. (1992). An Update To: Optimization of asymmetric polymerase chain reaction for rapid DNA sequence analysis. In: *The PCR Technique: DNA Sequencing.* (U. Gyllensten and J. Ellingboe, eds.). Eaton Press, Natick, MA.

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29. Du, Z., Hood, L. and Wilson, R.K. (1993). Automated fluorescent DNA sequence analysis of PCR products. *Methods in Enzymology* **218**, 104-121.

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33. Waterston, R., Ainscough, R., Anderson, K., Baynes, C., Berks, M., Blair, D., Bonfield, J., Burton, J., Connell, M., Copsey, T., Cooper, J., Coulson, A., Craxton, M., Dear, S., Du, Z., Durbin, R., Favello, A., Fulton, L., Gardner, A., Green, P., Hawkins, T., Hillier, L., Jier, M., Johnston, L., Jones, M., Kershaw, J., Kirsten, J., Laister, N., Latreille, P., Lightning, J., Lloyd, C., McMurray, A., Mortimore, B., O'Callaghan, M., Parsons, J., Percy, C., Rifken, L., Roopra, A., Saunders, D., Shownkeen, R., Smaldon, N., Smith, A., Sonnhammer, E., Staden, R., Sulston, J., Thierry-Mieg, J., Thomas, K., Vaudin, M., Vaughan, K., Watson, A., Weinstock, L., Wilkinson-Sproat, J., Wohldman, P. and Wilson, R. (1994). The genome of the nematode *Caenorhabditis elegans*. In: *Cold Spring Harbor Symp. Quant. Biol.*. Cold Spring Harbor Laboratory Press, New York, NY.

34. Vaudin, M., Roopra, A., Hillier, L., Brinkman, R., Sulston, J., Wilson, R. and Waterston, R. (1995). The construction and analysis of M13 libraries prepared from YAC DNA. *Nucl. Acids Res.* **23**, 670-674.

35. Mardis, E., Panussis, D., Weinstock, L. and Wilson, R. (1995). A resistance heating device reduces gel mobility compressions in automated fluorescent sequencing. *BioTechniques* **18**, 622-624.

36. Lye, R.J., Wilson, R.K. and Waterston, R.H. (1995). Genomic structure of a cytoplasmic dynein heavy chain gene from the nematode *Caenorhabditis elegans*. *Cell Mot. Cytoskel.* **32**, 26-36.

37. Steffens, D., Jang, G., Sutter, S., Brumbaugh, J., Middendorf, L., Muhlegger, K., Mardis, E., Weinstock, L. and Wilson, R.K. (1995). An infrared fluorescent dATP for labeling DNA. *Genome Research* **5**, 393-399.

38. Fulton, L., Hillier, L. and Wilson, R.K. (1995). "Large scale cDNA Sequencing Methods." In: *Methods in Cell Biology, Volume **48***. (H. Epstein and D. Shakes, eds.). Academic Press, San Diego.

39. Favello, A., Hillier, L. and Wilson, R.K. (1995). "Genomic Sequencing Methods." In: *Methods in Cell Biology, Volume **48**.* (H. Epstein and D. Shakes, eds.). Academic Press, San Diego.

40. Panussis, D.A., Stuebe, E.T., Weinstock, L.A., Wilson, R.K. and Mardis, E.R. (1996). Automated plaque picking and arraying on a robotic system equipped with a CCD camera and a sampling device using intramedic tubing. *Laboratory Robotics & Automation* **8**, 195-203.

41. Hillier, L., Lennon, G., Becker, M., Bonaldo, F., Chiapelli, B., Chissoe, S., Dietrich, N., Dubuque, T., Favello, T., Gish, W., Hawkins, M., Hultman, M., Kucaba, Lacy, M., Le, M., Le, N., Mardis, E., Moore, B., Morris, M., Prange, C., Rifkin, L., Rohlfing, T., Schellenberg, K., Soares, M., Tan, F., Trevaskis, E., Underwood, K., Wohldman, P., Waterston, R., Wilson, R. and Marra, M. (1996). Generation and analysis of 280,000 human expressed sequence tags. *Genome Res.* **6**, 807-828.

42. Du, Z. and Wilson, R.K. (1996). "Using the Automated DNA Sequencer." In *Methods in Molecular Biology: DNA sequencing.* (A. Harwood, ed.). The Humana Press, Inc., Clifton, NJ.

43. Jacq, C., et al. (1997). The nucleotide sequence of *Saccharomyces cerevisiae* chromosome IV. *Nature* **387**, 75-77.

44. Johnston, M., et al. (1997). The nucleotide sequence of *Saccharomyces cerevisiae* chromosome XII. *Nature* **387**, 87-89.

45. Bussey, H., et al. (1997). The nucleotide sequence of *Saccharomyces cerevisiae* chromosome XVI. *Nature* **387**, 103-105.

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51. Marra, M., Kucaba, T., Dietrich, N., Green, E., Brownstein, B., Wilson, R., McDonald, K., Hillier, L., McPherson, J. and Waterston, R. (1997). Agarose gel-based high throughput fingerprint analysis of large insert clones: Contig construction and selection of clones for large scale DNA sequencing. *Genome Res.* **7**, 1072-1084.

52. Panussis, D., Cook, M., Rifkin, L., Snider, J., Strong, J., Wilson, R. and Mardis, E. (1998). A pneumatic device for rapid loading of DNA sequencing gels. *Genome Res.* **8**, 543-548.

53. Varon, R., Vissinga, C., Platzer, M., Cerosaletti, K., Chrzanowska, K., Saar, K., Beckmann, G., Seemanova, E., Cooper, P., Nowak, N., Stumm, M., Weemaes, C., Gatti, R., Wilson, R., Digweed, M., Rosenthal, A., Sperling, K., Concannon, P., and Reis, A. (1998). Nibrin, a novel DNA double-strand break repair protein, is mutated in Nijmegen Breakage Syndrome. *Cell* **93**, 467-476.

54. McClelland, M. and Wilson, R. (1998). Sample sequencing of the *Salmonella typhi* genome: Comparison to the *E. coli* K12 genome. *Inf. & Immun*. **66**, 4305-4312.

55. The Sanger Centre and the Washington University Genome Sequencing Center. (1998). Towards a complete human genome sequence. *Genome Res.* **8**, 1097-1108.

56. The *C. elegans* Genome Consortium. (1998). The genome sequence of the nematode *Caenorhabditis elegans*: A platform for investigating biology. *Science* **282**, 2012-2018.

57. Wilson, R.K. (1999). How the Worm was Won. *Trends Genet.* **15**, 51-58.

58. Marra, M., Hillier, L., Kucaba, T., Allen, M., Barstead, R., Beck, C., Blistain, A., Bowers, Y., Bowles, L., Cardenas, M., Chamberlain, A., Chappell, J., Clifton, S., Favello, A., Geisel, S., Gibbons, M., Harvey, N., Jackson, Y., Kohn, S., Lennon, G., Martin, J., McCann, R., Morales, R., Pape, D., Person, B., Prange, C., Ritter, E., Soares, M.B., Schurk, R., Shin, T., Steptoe, M., Swaller, T., Theising, B., Underwood, K., Wylie, T., Yount, T., Wilson, R. and Waterston, R. (1999). An encyclopedia of mouse genes. *Nature Genetics* **21**, 191-194.

59. Marra, M., Kucaba, T., Sekhon, M., Shelby, P., Fedele, M., Schein, J., Mudd, N., Grover, H., Chinwalla, A., McDonald, K., Martienssen, R., McCombie, W., McPherson, J., Waterston, R. and Wilson, R. (1999). A map for sequence analysis of the *Arabidopsis thaliana* genome. *Nature Genetics* **22**, 265-270.

60. Dunham, I., et al. (1999). The DNA sequence of Human chromosome 22. *Nature* **402**, 489-495.

61. Mayer, K., et al. (1999). Sequence of *Arabidopsis thaliana* chromosome IV. *Nature* **402**, 769-777.

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