

CURRICULUM VITAE

LORIS MCGAVRAN

Work Ph: (303) 724-5701

EDUCATION

- 1988-1990 Fellowship - Clinical Genetics Training Program,
University of Colorado Health Sciences Center.
- 1983-1987 Ph.D. Biological Sciences, emphasis Immunology.
University of Denver, Denver, Colorado
- 1978-1981 B.S. Biological Sciences, cum laude.
Metropolitan State College, Denver, Colorado
- 1967-1969 University of California, Berkeley.
Area of Interest: Classics, Classical History

EMPLOYMENT HISTORY

- 1996-Present Associate Professor, Departments of Pathology, Pediatrics
University of Colorado Health Sciences Center, Denver, CO
- 1995-Present Director, Colorado Genetics Laboratory
University of Colorado Health Sciences Center, Denver, CO
- 1993-Present Graduate faculty Appointment, Genetic Counseling Program,
University of Colorado Health Sciences Center, Denver, CO
- 1987 - 1995 Director, Cytogenetics Laboratory, Department of Pathology
The Children's Hospital, Denver, Colorado
- 1987 – 1996 Assistant Professor, Departments of Pathology, Pediatrics (1989)
University of Colorado Health Sciences Center, Denver, CO
- 1986 - Fall Assistant Professor, Department of Biology
University of Colorado at Denver
Temporary appointment to teach General Cell Biology.

1980 - 3/1987 Supervisor, Cytogenetics Laboratory, Department of Pathology
The Children's Hospital, Denver, Colorado

1979 - 1980 Cytogenetic Research Technologist, Division of Surgical
Oncology
Denver General Hospital, Denver, Colorado

1975 - 1979 Supervisor, Radiation Cytogenetics Research Laboratory
University of Denver, Denver, Colorado

PROFESSIONAL AFFILIATIONS

American Society of Human Genetics
American College of Medical Genetics, Founding Fellow
Medical Staff, The Children's Hospital, Denver

COMMITTEES and OTHER ACTIVITIES

National:
Cytogenetics subcommittee, Children's Oncology Group, 19880-2008
International Standing Committee on Human Cytogenetic Nomenclature, 1994,
Representative observer for the American College of Medical Genetics
Inspector for the College of American Pathologists

Regional:
Mountain States Regional Genetic Services Network: Clinical services and
Cytogenetics
Genetics Advisory Committee, State of Colorado

Local:
Library Committee, The Children's Hospital

BOARD CERTIFICATION

Diplomate of the American Board of Medical Genetics, Clinical Cytogenetics
subspecialty, 1990

HONORS AND AWARDS

Graduate Dean's Scholarship, University of Denver State of Colorado Graduate
Fellowship, 1983 - 1986.

EDUCATIONAL ACTIVITIES

Invited lectures, seminars, and workshops

1980-1989

Presentations to Denver cytogenetics community at monthly meetings. Topics included double minutes and HSR, cytogenetics of Wilms' tumor and case reports.

Lectures to University of Denver classes for non-majors (1981-82): the utilization of cytogenetics in diagnosis of genetic disease.

CACMLE Workshop, Denver, CO (1982) cytogenetic techniques.

Fragile X Symposium, Denver, Colorado (1983): Cytogenetics Aspects of Fragile X Syndrome.

Hospital del Nino, Villahermosa, Mexico (1986): On-site training and lecture series on the clinical utility of cytogenetics for genetics and oncology.

National Fragile X Conference (1985) Denver, Colorado: Physicians' Roundtable: Clinical issues in diagnosis and management.

Seminars and lectures at Cedars Sinai Hospital, Los Angeles, Loma Linda University, Medical College of Wisconsin, Louisiana State University, University of Denver (1987-1989).

≈10 talks, representative topics: Immuno-organelle-mediated lymphocyte proliferation, Solid tumor cytogenetics, Utility of cytogenetics in a clinical setting, Immunocytogenetic detection of chrysene-DNA adducts.

1990-Present

ASCP Teleconferences, Denver, CO (1991, 1994): Combined cytogenetic/morphologic approach to the classification of acute myelocytic leukemia. Clinical and laboratory collaborations in the treatment of pediatric leukemia.

Great Plains Cytogenetics Workshop, Omaha, NE (1992): X-inactivation in Fragile X heterozygotes.

International Fragile X Conference, Snowmass, CO (1992): Cytogenetic findings in patients referred for cytogenetic studies.

Eleanor Roosevelt Institute, Denver, CO, Genetics and Ethics Roundtable (1991): New techniques in the diagnosis of genetic disease, President's council (1994): Cytogenetic studies in a clinical setting.

Grand Rounds, University of Arizona School of Medicine (1993): Cytogenetics: A day in the life

AACR Molecular Biology in Clinical Oncology Workshop Aspen, CO, (1994, 1995): Practical Molecular Cytogenetics, co-instructor.

Pathology Grand Rounds, UCHSC, 1991, 1994.

Human Medical Genetics Program Seminar Series, 1996.

Invited presenter for Seminar on Flow Cytometry, Veteran's Administrations Hospital, 1996, 1997, 1998.

Community and inter-institution presentations, yearly, to Middle School (Cherry Creek District, High School (Clear Creek), U C Boulder, Eleanor Roosevelt Institute.

Bone Marrow Transplant nurses, Cancer cytogenetics, 2002 and 2003

Courses

Cell Biology, University of Colorado, Denver, undergraduate course: Course Director, prepared and gave all lectures, examinations, to 100 students. (Fall, 1986)

Graduate seminar, Chromosome Biology, University of Denver: Seminars covering chromosome structure and function, mechanisms of chromosome breakage, chromosome syndromes, Fragile X syndrome, chromosome instability, uniparental disomy and cancer cytogenetics.(1990)

University of Colorado Health Sciences Center:

Pathology, Medical students: 1 hour lecture on Cancer Cytogenetics (annually, 1991-2005)

Organ Pathology, Dental Students: 2 hour lecture on Genetic Diseases (annually, 1991-2006)

CHAPS students, 2 hour lecture on Genetic Diseases (1996-2006)

Human cytogenetics, BBGN 6636: Course director; prepare and give ≈22 lectures, examinations. Lectures include topics on chromosome structure and function, clinical syndromes, prenatal diagnosis, cancer cytogenetics. Supervision of the laboratory course. (Given annually: Spring, Fall, 1992, Fall 1993-2006)

BMGN 6637 Human clinical cytogenetics and molecular genetics: Course Co-Director with Dr. Spector: A two quarter lecture, laboratory and case-based individual tutorials. Fall and Winter quarters, 2003/2004

Mini-course for Pathology Residents: 4 hours of lecture on clinical cytogenetics (Given semi-annually, 1992-2002)

Residents and Fellows

Postgraduate Training

Direction and supervision of Clinical Genetics Fellows for eligibility for American Board of Medical Genetics (ABMG)
Six fellows trained, 1990-2006: Gavivann Veerakul, M.D., 1990-1992; Mary Haag, PhD., 1991-1993; Paul Wexler, M.D. 1991-1993, Joyce Murata-Collins, Ph.D., 1994-1996, Rebecca Berry, Ph.D, 1996-1998; Liming Bao, MD, Ph.D., 2000-2001 Atousa Maleki, PhD. 2002-2003; Katherine Geiersbach, M.D., 2005-2006 For Drs. Veerakul, Haag, Collins, Berry, Bao, Maleki and Geiersbach, training and daily supervision of clinical cases and research projects. For Dr. Wexler, formal review of clinical cases.

Formal rotations for Residents and Fellows in Pediatrics, Provide supervision for:

Oncology fellows, 1-2/yr; 2 wk rotation usually
Pathology residents, 1/yr; 2 wk to 3 month rotation
Genetics fellows, 2/yr; usually 3 month rotation
Other basic science post-doctoral, 1/yr; 2 wk to 3 month rotation

Postdoctoral Research for Pediatrics Residents, Genetics Fellows

Direction and supervision for academic track resident 1992-1994: Jim Bennet, M.D., 2 yr research project
Research projects for Fellows, 1992, 1993, 1994-present

Lectures to pediatrics subspecialty fellows and faculty (Oncology, Genetics, Endocrinology) 5 per year on subjects related to their discipline

Graduate Students: Master's Program, Genetic counseling

Direct seminars and rounds, 20/yr

Orals committee member (\approx 18 students) and thesis advisor (1 student) in last three years

Training for Joint Laboratory in Shanghai, China, 2002-2003

Training of two post-doctoral individuals and two technologists for 6-12 mo in clinical cytogenetics

Visiting Scholar

Hye-Ryoung Yoon, MD/PhD Advanced training in cytogenetics and molecular cytogenetics, 2001-2003

Ongoing Lectures, Seminars

Pediatrics subspecialty fellows and faculty (Oncology, Genetics, Endocrinology) 5 per yr on subjects related to their discipline

Pathology Grand Rounds, 1991, 1994, 1999

Community and inter-institution presentations, yearly, to Middle School (Cherry Creek District), High School (Clear Creek), U C Boulder, Eleanor Roosevelt Institute

Other student training

Cancer internship program: 1-2 students per summer for last 5 yr

Kids Helping Kids: student research, teacher training, 2-3 students per summer for last 5 yr

Medical technologist rotations and lectures, 3/yr

High school lectures, 2-3/yr

University of Connecticut Cytogenetics Program internship: 4 students, 6 month rotation in

last 5 years

Visiting Scholars: Hye-Ryoung Yoon, MD, PhD, Seoul, Korea, 16 month project

RESEARCH ACTIVITIES

Current Funding:

Contract with Irvine Scientific, R & D, product development and quality control of company products. Ongoing, 1996-present. Direct Costs: \$72,000/yr

Past Funding:

Subcontract, Benzene Effects Study, Shanghai, China, Richard Irons, Ph.D., PI

2000-2003: Direct costs, \$≈150,000, 2001-2005

Contract with Eleanor Roosevelt Institute for Cancer Research, collaborative molecular cytogenetic research. Ongoing, 1997-2002. Direct Costs: ~\$30,000/yr

Children's Cancer Group President's Fund, 1999-2000 \$12,000

Cancer League of Colorado: Detection of leukemic cells in low-cell-count cerebrospinal fluid of pediatric acute lymphocytic leukemia patients using molecular cytogenetic technology. 1 July 95-30 June 96, Direct Costs, \$17,866

NIH Grant #MH 45916, Fragile X heterozygotes, Randi Hagerman, PI, 1 Aug 1990-31 July 1995. Co-investigator, direct costs of \$18,760/yr for the cytogenetics studies are allocated for 0.5 FTE technician and supplies.

Contract, BioSeparations, Inc, Tucson, AZ. FISH for fetal cells in maternal blood. 1 November 1994-31 January 1995. Total payment of \$16,000 for FTE, reagents and supplies.

BIBLIOGRAPHY

Journal Publications

1. Morgan RT, Woods LK, Moore GE, Quinn LA, McGavran L, Gordon SG. Human cell line (COLO 357) of metastatic pancreatic adenocarcinoma. *Int. J. Cancer*: 25, 591-598, 1980.
2. Morgan RT, Woods LK, Moore E, McGavran L, Quinn LA, Semple TU. A human gallbladder adenocarcinoma cell line. *In Vitro*: 17, 503-510, 1981.
3. Bowden RA, McGavran L, Hayward AR, Levin MJ. Use of bone marrow fibroblasts to prepare targets for an HLA restricted-cytotoxicity assay system. *J. Clin. Microbiol*: 20(4), 696-700, 1984.
4. Hagerman R, VanHousen K, Smith ACM, McGavran L. Consideration of connective tissue dysfunction in the fragile X syndrome. *Am. J. Med. Genet*: 17, 111-121, 1984.
5. Hagerman RF, Jackson AW, Levitas A, Braden M, McBogg P, Kemper M, McGavran L, Berry R, Matus I, Hagerman PJ. Oral folic acid versus placebo in the treatment of males with the Fragile X syndrome. *X-Linked Mental Retardation 2*, J M Opitz, Ed Alan R Liss, Inc., New York. March 1986.

6. Smith ACM, McGavran L, Robinson J, Waldstein G, Macfarlane J, Zonona J, Reiss J, Lahr M, Allen L, Magen E. Interstitial deletion of 17 (p11.2 p11.2) in 9 pts. *Am. J. Genet*: 24, 393-414, 1986.
7. Heideman R, McGavran L, Waldstein G. Nephroblastomatosis and Wilm's Tumor: a shared cytogenetic finding. *Amer J. Pediatr. Hematol. Oncol*: 8, 321-324, 1986.
8. Berry R, Smith ACM, McGavran L, O'Hanlon K. Cytogenetic studies in patients with multiple anomalies with or without mental retardation. *Birth Defects original Article Series*: 23(6), 100-110, 1987.
9. Waldstein G, McGavran L. Studies of bone marrow cytogenetics of neonates: a four year experience. *Archives Pathol and Lab Med*: 111, 203-707, 1987.
10. Jericivic A, Wiese B, Smith L C, McGavran L, Carstens B, Castleman K, Winkler D. Eigenanalysis applied to digital images of human chromosomes. *SPIE*: 1063, 58-65, 1989.
11. Timmons CF, McGavran L, Unterkircher L, Beckwith JB, Wilson HL. Hyperdiploidy including trisomy 8 in cystic partially differentiated nephroblastoma. *Cancer Genet Cytogenet*: 41, 79-85, 1989.
12. Brandom WF, McGavran L, Bistline KW, AD Bloom. Sister chromatid exchanges and chromosome aberration frequencies in plutonium workers. *Int. J. Radiat. Biol*: 58(1), 195-207, 1990.
13. Poole SR, Smith ACM, Hays T, McGavran L, Auerbach AD. Monozygotic twin girls with congenital malformations resembling Fanconi anemia. *Am J Med Genet*: 42(6), 780-784, 1992.
14. Staley LW, Hull CE, Mazzocco MM, Thibodeau SN, Snow K, Wilson VL, Taylor A, McGavran L, Weiner D, Riddle J, et al and Hagerman RJ. Molecular-clinical correlations in children and adults with fragile X syndrome. *Am J. Dis Child*: 147(7), 723-726, 1993.
15. Silliman CC, Mierau GW, Strain JD, White Y, McNeely L, Wilson H, McGavran L, Cullen JW. Peripheral neuroepithelioma of the soft tissues: A retrospective analysis of fifteen pediatric patients. *Am J Pediatr Hematol Oncol*: 15(3), 299-305, 1993.
16. Porreco RP, Harshbarger B, McGavran L. Rapid cytogenetic assessment of fetal blood samples. *Obstet. Gynecol*: 82(2), 242-246, 1993
17. Prall JA, McGavran L, Greffe BS, Partington MD. Intracranial malignant germ cell tumor and the Klinefelter syndrome. *Pediatr Neurosurg*: 23, 219-224, 1995.

18. Roulston D, Anastasi J, Rudinsky R, Nucifora G, Zeleznik-Le N, Rowley JD, McGavran L, Tsuchida M, Hayashi Y. Therapy-related acute leukemia associated with t(11q23) after primary acute myeloid leukemia with t(8;21): a report of two cases [letter]. *Blood*: 89(9), 3613-3614, 1995.
19. Thomas JA, Manchester DK, Prescott KE, Milner R, McGavran L, Cohen MM. Hunter-McAlpine craniosynostosis phenotype associated with skeletal anomalies and interstitial deletion of chromosome 17q. *Am J Med Genet*: 62(4), 372-375, 1996.
20. Wachtel SS, Sammons D, Manley M, Wachtel G, Twitty G, Utermohlen J, Phillips OP, Shulman LP, Taron DF, Muller UR, Koeppen P, Ruffalo TM, Addis K, Porreco R, Murata-Collins J, Parker ND, McGavran L. Fetal cells in maternal blood: recovery by charge flow separation. *Hum Genet*: 98(2), 162-166, 1996.
21. Hunger SP, Sun T, Boswell AF, McGavran L. Hyperdiploidy and E2A-PBX1 fusion in an adult with t(1;19)+ acute lymphoblastic leukemia: case report and review of the literature. *Genes Chromosomes Cancer*: 20(4), 392-398, 1997.
22. Paskulin GA, Philips G, Morgan R, Sandberg A, Richkind K, Borovik C, McGavran L, Rabinovich N, Dietz-Band J, Erickson P, Drabkin H, Varella-Garcia M. Pre-clinical evaluation of probes to detect t(8;21) AML minimal residual disease by fluorescence in situ hybridization. *Genes Chromosomes Cancer*: 21(2), 144-151, 1998.
23. Silliman CC, McGavran L, Wei Q, Miller LA, Li S, Hunger SP. Alternative splicing in wild-type AF10 and CALM cDNAs and in AF10-CALM and CALM-AF10 fusion cDNAs produced by the t(10;11)(p13-14;q14-q21) suggests a potential role for truncated AF10 polypeptides. *Leukemia*: 12, 1404-1410, 1998.
24. Hunger SP, McGavran L, Meltesen L, Parker NB, Kassenbrock CK, Bitter MA. Oncogenesis in utero: fetal death due to acute myelogenous leukemia with an MLL translocation. *Br J Hematol*: 103, 539-542, 1998.
25. Maloney KW, McGavran L, Odom LF, Hunger SP. Different patterns of homozygous p16INK4A and p15INK4B deletions in childhood acute lymphoblastic leukemias containing distinct E2A translocations. *Leukemia*: 12, 1417-1421, 1998.
26. Maloney KW, McGavran L, Odom LF, Hunger SP. Acquisition of p16(INK4A) and p15(INK4B) gene abnormalities between initial diagnosis and relapse in children with acute lymphoblastic leukemia. *Blood*: 9, 2380-2385, 1999.
27. Maloney K, McGavran L, Murphy J, Odom L, Stork L, Wei Q, Hunger S. TEL-AML1 fusion identifies a subset of children with standard risk acute lymphoblastic leukemia who have an excellent prognosis when treated with therapy that includes a single delayed intensification. *Leukemia*: 13, 1708-1712, 1999.

28. Mierau GW, Tyson RW, McGavran L, Parker NB, Partington MD. Astroblastoma: Ultrastructural observations on a case of high-grade type. *Ultrastruc Pathol*: 23, 325-332. 1999.
29. Kadan-Lottick NS, Stork L, Ruyle SZ, Koyle M, Hunger SP, McGavran L. Cytogenetic abnormalities in a case of botryoid rhabdomyosarcoma. *Med Pediatr Oncol*: 34(4), 293-5, 2000. No abstract available.
30. Bilir BM, Guinette D, Karrer F, Kumpe DA, Krysl J, Stephens J, McGavran L, Ostrowska A, Durham J. Hepatocyte transplantation in acute liver failure. *Liver Transpl*: 6(1), 32-40, 2000.
31. Boomer T, Varella-Garcia M, McGavran L, Meltesen L, Olsen AS, Hunger SP. Detection of E2A translocations in leukemias via fluorescence in situ hybridization. *Leukemia*: 15(1), 95-102, 2001.
33. Gore L, Ess J, Bitter MA, McGavran L, Meltesen L, Wei Q, Hunger SP. Protean clinical manifestations in children with leukemias containing MLL-AF10 fusion. *Leukemia*: 14(12), 2070-2075, 2000.
34. Gump J, McGavran L, Wei Q, Hunger SP. Analysis of TP53 mutations in relapsed childhood acute lymphoblastic leukemia. *J Pediatr Hematol Oncol*: 23(7), 416-419, 2001.
35. Wyatt-Ashmead J, Kleinschmidt-DeMasters B, Mierau GW, Malkin D, Orsini E, McGavran L, Foreman NK. Choroid plexus carcinomas and rhabdoid tumors: phenotypic and genotypic overlap. *Pediatr Dev Pathol*: 4(6), 545-549, 2001.
36. Wyatt-Ashmead J, Kleinschmidt-DeMasters BK, Hill DA, Mierau GW, McGavran L, Thompson SJ, Foreman NK. Rhabdoid glioblastoma. *Clin Neuropathol*: 20(6), 248-255, 2001.
37. Varella-Garcia M, Hogan CJ, Odom LF, Murata-Collins JL, Ai H, Chen L, Richkind K, Paskulin G, Andreeff M, Brizard A, McGavran L, Gemmill RM, Berger R, Drabkin HA. Minimal residual disease (MRD) in remission t(8;21) AML and in vivo differentiation detected by FISH and CD34+ cell sorting. *Leukemia*: 15(9), 1408-1414, 2001.
38. Meech SJ, McGavran L, Odom LF, Liang X, Meltesen L, Gump J, Wei Q, Carlsen S, Hunger SP. Unusual childhood extramedullary hematologic malignancy with natural killer cell properties that contains tropomyosin 4--anaplastic lymphoma kinase gene fusion. *Blood*: 98(4), 1209-1216, 2001.
39. Wyatt-Ashmead J, Bao L, Eilert RE, Gibbs P, Glancy G, McGavran L. Primary aneurysmal bone cysts: 16q22 and/or 17p13 chromosome abnormalities. *Pediatr Dev Pathol*: 14(4), 418-419, 2001.

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41. Tsai CH, Graw SL, McGavran L. 8p duplication reconsidered: is it a true euchromatic variant with no clinical manifestation? *J Med Genet*: 10, 769-774, 2002.
42. Lear-Kaul KC, Yoon HR, Kleinschmidt-DeMasters BK, McGavran L, Singh M. Her-2/neu status in breast cancer metastases to the central nervous system. *Arch Pathol Lab Med*: 127(11), 1451-1457, 2003.
43. Casillas JN, Woods WG, Hunger SP, McGavran L, Alonzo TA, Feig SA. Prognostic implications of t(10;11) translocations in childhood acute myelogenous leukemia: a report from the Children's Cancer Group. *J Pediatr Hematol Oncol*: 25(8), 594-600, 2003.
44. Silliman CC, Tyson RW, Wei Q, Karrer FG, Davies SM, Blake M, McGarvan L. Acute Philadelphia chromosome-positive leukemia in an adolescent boy after liver transplantation. *J Pediatr Hematol Oncol*: 25(7), 565-568, 2003.
45. Thomas JA, Johnson J, Peterson Kraai TL, Wilson R, Tartaglia N, LeRoux J, Beischel L, McGavran L, Hagerman RJ. Genetic and clinical characterization of patients with an interstitial duplication 15q11-q13, emphasizing behavioral phenotype and response to treatment. *Am J Med Genet*: 119A(2), 111-120, 2003.
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47. Fortna A, Kim Y, MacLaren E, Marshall K, Hahn G, Meltesen L, Brenton M, Hink R, Burgers S, Hernandez-Boussard T, Karimpour-Fard A, Glueck D, McGavran L, Berry R, Pollack J, Sikela J. Lineage-specific gene duplication and loss in human and great ape evolution. *PLoS Biol*: 2(7), E207, 2004. [Epub]
48. Lanting L, McGavran L, Lovell M A, Wei Q, Jamieson B A, Williams S A, Dirks Norma N, Danielson M. Susan, Dubie Lara M, and Liang Xiayuan. Nonpositive Terminal Deoxynucleotidyl Transferase in Pediatric Precursor B-Lymphoblastic Leukemia. *Am J Clin Pathol*: 121, 810-815, 2004.
49. Liang X, Meech SJ, Odom LF, Bitter MA, Ryder JW, Hunger SP, Lovell MA, Meltesen L, Wei Q, Williams SA, Hutchinson RN, McGavran L. Assessment of t(2;5)(p23;q35) translocation and variants in pediatric ALK+ anaplastic large cell lymphoma. *Am J Clin Pathol*: 121(4), 496-506, 2004.

50. Tsai AC, Gibby T, Beischel L, McGavran L, Johnson JP. A child with Angelman syndrome and trisomy 13 findings due to associated paternal UPD 15 and segmental UPD 13. *Am J Med Genet A*: 126(2), 208-212, 2004.

51. Liu L, McGavran L, Lovell MA, Wei Q, Jamieson BA, Williams SA, Dirks NN, Danielson MS, Dubie LM, Liang X. Nonpositive terminal deoxynucleotidyl transferase in pediatric precursor B-lymphoblastic leukemia. *Am J Clin Pathol*: 121(6), 810-815, 2004.

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53. Kleinschmidt-DeMasters BK, Meltesen L, McGavran L, Lillehei KO. Characterization of glioblastomas in young adults. *J Brain Pathol*: 16(4), 273-286, 2006.

54. Popesco MC, Maclaren EJ, Hopkins J, Dumas L, Cox M, Meltesen L, McGavran L, Wyckoff GJ, Sikela JM. Human lineage-specific amplification, selection, and neuronal expression of DUF1220 domains. *J Science*: 313(5791), 1304-1307, 2006.

55. Chung CH, Ely K, McGavran L, Varella-Garcia M, Parker J, Parker N, Jarrett C, Carter J, Murphy B A, Netterville J, Burkey BB, Sinard R, Cmelak A, Levy S, Yarbrough WG, Slebos RJ, Hirsch FR. Increased epidermal growth factor receptor gene copy number is associated with poor prognosis in head and neck squamous cell carcinomas. *J Clin Oncol*: 24(25), 4170-4176, 2006.

56. Keating AK, Salzberg DB, Sather S, Liang X, Nickoloff S, Anwar A, Deryckere D, Hill K, Joung D, Sawczyn KK, Park J, Curran-Everett D, McGavran L, Meltesen L, Gore L, Johnson GL, Graham DK. Lymphoblastic leukemia/lymphoma in mice overexpressing the Mer (MerTK) receptor tyrosine kinase. *J Oncogene*: 25(45), 6092-6100, 2006.

57. Gheorghe G, Albano EA, Porter CC, McGavran L, Wei Q, Meltesen L, Danielson SM, Liang X. Posttransplant Hodgkin lymphoma preceded by polymorphic posttransplant lymphoproliferative disorder: preport of a pediatric case and review of the literature. *J Pediatr Hematol Oncol*: 29(2), 112-116, 2007.

58. Heerema NA, Raimondi SC, Anderson JR, Biegel J, Camitta BM, Cooley LD, Gaynon PS, Hirsch B, Magenis RE, McGavran L, Patil S, Pettenati MJ, Pullen J, Rao K, Roulston D, Schneider NR, Shuster JJ, Sanger W, Sutcliffe MJ, van Tuinen P, Watson MS, Carroll AJ. Specific extra chromosomes occur in a modal number dependent pattern in pediatric acute lymphoblastic leukemia. *Genes Chromosomes Cancer*: Apr 12, 2007.

59. Zhong CH, Prima V, Liang X, McGavran L, Meltesen L, Wei Q, Boomer T, Varella-Garcia M, Gump J, Hunger SP. E2A-ZNE384 and NOL1-E2A fusion created by a cryptic t(12;19)(p13.3) in leukemia. *Leukemia* 22(4), 723-9, 2008.
60. Myers JB, Dall'Era J, Odom LF, McGavran L, Lovell MA, Furness P 3rd. Teratoid Wilms' tumor, an important variant of nephroblastoma. *J Pediatr Urol.* Aug;3(4):282-6, 2007
61. Porter CC, Liang X, Gralla J, McGavran L, Albano EA. BCL6 expression correlates with monomorphic histology in children with posttransplantation lymphoproliferative disease. *J Pediatr Hematol Oncol.* Sep;30(9):684-8., 2008
62. Taylor MR, Jirikowic J, Wells C, Springer M, McGavran L, Lunt B, Swisshelm K. High prevalence of array comparative genomic hybridization abnormalities in adults with unexplained intellectual disability. *Genet Med.* 2010 Jan;12(1):32-8.

Publications, Books, and Reviews

1. McGavran L, Maxwell F. Cytogenetic aspects of the fragile X syndrome: Diagnosis, Biochemistry and Intervention. Hagerman RJ and McBogg PM Eds. Spectra Publishing, Inc., Dillon, Colorado, 1983.
2. Favara BE, Mierau GW, McCarthy RC, Waldstein G, McGavran L. The leukemias of childhood. *Perspect. in Pediatr. Pathol.* 9:75-132, 1987.

Abstracts and Presentations

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2. McGavran L, Hagerman R, McCalmon R, Waldstein G. A complex karyotype in a child with mild learning disabilities. *American Society of Human Genetics, 33rd Annual Meeting, 1982.*
3. Smith ACM, McGavran L, Waldstein G, Robinson J. Deletion of the 17 short arm in two patients with facial clefts and congenital heart disease. *American Society of Human Genetics, 33rd Annual Meeting, 1982.*

4. McGavran L, Heideman R, Berry J, Waldstein G. Deletion 11p in a nephroblastomatosis nodule from a patient with Wilms' Tumor. American Society of Human Genetics, 34th Annual Meeting, 1983.
5. Robinson J, Bayless L, McGavran L, Robinson A. Familial inversion or inversion/insertion Y in three unrelated families. American Cytogenetic Technologists Annual Meeting, 1983.
6. Hagerman R, McBogg P, Levitas A, McGavran L, Smith A, Berry R, Branden M, Vanhouser K, Newal K, Matus I. Folic acid treatment of the fragile X syndrome. American Society of Human Genetics Conference, 1984.
7. Berry R, Hagerman R, Robinson J, Brandom I, McGavran L. De novo inverted duplication of chromosome 16 (q13.3-q22.3). Birth Defects Conference, 1984.
8. Mariner R, Jackson III AW, Hagerman R, Levitas A, McBogg P, Smith ACM, Berry R, McGavran L, Braden M. Chromosomal abnormalities in mentally retarded, autistic individuals. Birth Defects Conference, 1984.
9. Jackson III AW, Hagerman RF, Campbell J, Stillman B, Berry R, McBogg P, McGavran L, Smith ACM. Institutional prevalence and predictors of the fragile X syndrome. Birth Defects Conference, 1984.
10. Smith ACM, Berry R, Tamaren J, Hagerman RJ, Sargent R, Bublitz D, McGavran L. Deletion 5q11 in a female with Duane's Syndrome and other anomalies. Birth Defects Conference, 1984.
11. McGavran L, Waldstein G, Beckwith JB, Collins J, Gilfillan S. Some consistent cytogenetic findings in Wilms' tumor cells. Am. J. Hum. Genet: 37(4)(suppl), A32, 1985.
12. Berry R, Salbenblatt J, Smith ACM, McGavran L. Derived Y chromosome in males with developmental delay. Am. J. Hum. Genet: 37,(4)(suppl), A86, 1985.
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