

CURRICULUM VITAE  
Carole Vogler, M.D.

**Current Position:**

Professor and Chair  
Department of Pathology  
Saint Louis University School of Medicine  
St. Louis, MO 63104  
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**Education:**

1969-1974	St. Louis College of Pharmacy St. Louis, Missouri B.S. Degree
1974-1978	University of Missouri-Columbia School of Medicine, Columbia, Missouri M.D. Degree

**Postgraduate Training:**

1978-1982	Anatomic and Clinical Pathology Residency University of Texas Health Science Center at Houston Department of Pathology and Laboratory Medicine Houston, Texas
1982-1984	Pediatric Pathology Fellowship Children's Hospital Medical Center, Department of Pathology Cincinnati, Ohio

**Academic Appointments:**

1984-1985	Research Scholar Children's Hospital Medical Center Department of Pathology Cincinnati, Ohio
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1985-1990	Assistant Professor Department of Pathology and Pediatrics Saint Louis University School of Medicine St. Louis, Missouri
1990-1995	Associate Professor Department of Pathology and Pediatrics Saint Louis University School of Medicine St. Louis, Missouri
1995-present	Professor Department of Pathology and Pediatrics Saint Louis University School of Medicine St. Louis, Missouri
2008-2009	Interim Chair Department of Pathology Saint Louis University School of Medicine St. Louis, Missouri
2009-present	Chair Department of Pathology Saint Louis University School of Medicine St. Louis, Missouri

**Medical License:** Missouri

**Certification:**

American Board of Pathology:  
Anatomic and Clinical Pathology Certification (1982)  
Pediatric Pathology Subspecialty Certification (1990)

### **Society Membership:**

United States - Canadian Academy of Pathology  
Society for Pediatric Pathology  
American Society of Clinical Pathology  
Pathology Program Directors Section of the Association of Pathology Chair (PRODS)  
Group for Research in Pathology Education (GRIPE)  
Pediatric Oncology Group  
College of American Pathologists

### **Editorial Board Membership:**

Perspectives in Pediatric Pathology  
Advances in Anatomic Pathology

### **Ad hoc reviewer:**

Proceedings of the National Academy of Science  
Pediatric Nephrology  
Expert Opinion on Biological Therapy  
Journal of Inherited and Metabolic Disease  
American Journal of Pathology  
Pediatric and Developmental Pathology

### **Clinical and Administrative Appointments (\*indicates Major Appointment):**

#### Department of Pathology, Saint Louis University School of Medicine

Member, Residency Training Committee, 1985-2010.

\* Director, Anatomic and Clinical Pathology Residency Training Program, 1986-May, 2010.

\* Chairman, Residency Training Committee, 1986-present.

Chairman, Search Committee, Director of Microbiology, 1989-1990.

Chairman, Search Committee, Director of Cytopathology, 1989-1990.

Member, Search Committee, Director of Laboratories, 1992-1993.

\* Vice Chairman, 1995-2002.

Member, Search Committee, Director of Cytopathology, 1997-1998.

Member, Department of Pathology Credentials Committee, 2005-2006, 2007-2008.

\* Interim Chair, Department of Pathology, February 2008- September 2009

Chair, Department of Pathology, September 2009-present

## Saint Louis University School of Medicine

Member, Institutional Residency Review Committee, 1987-1990.

Member, Graduate Medical Education Committee, 1992-1994, 2005-2006.

### Internal Review Subcommittees:

Member, Gastroenterology, Pulmonary, Cardiology Subspecialty Program reviews, 1998.

Member, Anesthesiology Residency Program review, 1999, 2004, 2005.

Member, Neurology Residency Program review, 2002.

Chair, Urology Residency Program review, 2004, 2006.

Chair, Orthopedic Residency Program review, 2004.

Member, Ophthalmology Residency Program review, 2006.

Member, Medicine-Pediatrics Residency Program review, 2008.

Member, Residency Program Assessment Scoring Project, 1996.

Member, Dean's Review Committee, Department of Internal Medicine, 1997-1998.

Faculty Leader, Freshman Medical Student Support Group, 1999-2000, 2002-present.

Member, Phase 2 Coordinating Committee, 1999-present.

Member, M.D. Program Self Study Committee on Basic Science Departments, 2000-2001.

Co-course director, Cell Biology Course, Phase 1 Curriculum, 2000-2001.

Member, Committee for Student Academic Appeals, 2001.

Member, Phase 1 Coordinating Committee, 2000-present.

Associate Course Director, Renal Module, Phase 2 Curriculum, 1998-present.

\* Course Director, Introduction to Pathology Course, Phase 1 Curriculum, 2002- present.

Member, Credentials Committee, 1998-2005.

Member, UMG Executive Committee Special Task Force for merger of Lafayette Grand Hospital and Saint Louis University, 1998 –1999.

Member, Search Committee for Chairperson, Department of Anatomy and Neurobiology, 2002 – 2003.

\* Member, Curriculum Management Committee, 2002-2007.

\* Member, Committee for Student Progress and Program Planning, 2002 - 2008.

\* Member, Search Committee for Chairperson, Department of Pathology, 2005.

Chair, Curriculum Management Committee Peer Review Subcommittee, Phase 1 Genetics Course, 2006.

Member, Search Committee for Chairperson, Department of Internal Medicine, 2006 - 2009.

\* Chair, Medical School Credentials Committee, 2007-2009.

Member, Risk Management Committee, January 2008-present.

Member, Diversity in Faculty Leadership Task Force 2009.

Member, Deficit Management Subcommittee of UMG Executive Committee, 2010 - 2011.

Ex-Officio member, School of Medicine Graduate Programs Advisory Council (GPAC), 2010-present

Member, School of Medicine's Planning Advisory Committee, 2011-present

\*Member, Compensation Committee, University Medical Group, 2011-present

\*Member, Curriculum Oversight Committee (COC), July 1, 2011-June 30, 2014

### Cardinal Glennon Children's Hospital

Member, Tumor Board, 1985- present.

\* Director, Transfusion Service, 1985-2010.

\* Chairman, Blood Utilization Review Committee, 1986-1988.

Member, Blood Utilization Review Committee, 1989- 2010.

Associate Director, Fetal Loss Laboratory, 1991-present.

\* Acting Director, Department of Pathology, 1991-1992.

Director, Pediatric Pathology Residency, 1995-1996.

Member, Medical Errors Prevention Performance Improvement Team, 2001–2002.

Associate Director, Department of Pathology, 1998-present.

### University Hospital

\* Director of Laboratories, Department of Pathology, 1996-2002.

Member, Laboratory Utilization Committee, 1996-2002.

Member, Executive Billing Regulations Compliance Committee, 1996-1998.

Member, Operating Room Committee, 1997-2002.

Member, Cost Reduction Committee, 1997-1998.

Member, Quality Improvement Committee, 1997-1998.

\* Secretary-Treasurer, Medical Executive Committee, 2001-2002

Member, Medical Executive Committee, 1996-2002, 2008-present

### Medical Societies, Organizations

Member, Medical Advisory Committee, American Red Cross, St. Louis Bi-State Chapter, 1985-2010.

Member, Workshop Committee, Society for Pediatric Pathology, 1988-1990.

Member, Education Committee, Society for Pediatric Pathology, 1990-1993.

Member, Nominations Committee, Society for Pediatric Pathology, 1995-1998.

\* Member, Council, Society for Pediatric Pathology, 1998-2001.

\* Chairman, Finance Committee, Society of Pediatric Pathology, 2002-2005.

Member, Finance Committee, Society of Pediatric Pathology, 2002-2012.

\* Course Director, ASCP Resident Review Course, American Society of Clinical Pathology, 2007-present.

Member, CLiC (Cholestatic Liver Disease Consortium), June 2007-2010.

Member, Renal Pathology Society, 2010-present

## **Grants:**

### **Previous funding and grants:**

Morphological characterization of a Mouse Model of Beta-glucuronidase deficiency, Fleur de Lis Grant, Pediatric Research Institute, Cardinal Glennon Children's Hospital 1987-1988, \$2,000.

Characterization and Treatment of Murine MPS VII, National Institute of Health, Edward Birkenmeier, Principal Investigator, Sub-contract with Jackson Laboratory, 1989-1994, \$130,745.

Evaluation of Skeletal Muscle and Phrenic Nerve in Sudden Infant Death Syndrome, National SIDS Foundation, Mark Roe Addison Student Fellowship, 1988, \$2,000.

Morphometric Assessment of Skeletal Muscle and Phrenic Nerve in Infants Dying of Sudden Infant Death Syndrome, SIDS Resource Group, Inc., St. Louis, Missouri, 1989, \$2,000.

Development of Congenital Heart Malformation Museum, American Heart Association, Cardinal Glennon Children's Hospital, 1989, \$950.

Relationship between Feeding Methods and Gastroesophageal Reflux in Mechanically Ventilated Very Low Birth Weight Infants, Department of Pediatrics, Cardinal Glennon Children's Hospital, 1990, \$1,000.

Examination of the Middle and Inner Ear and Long Bone and Cartilage in a Murine Model of Mucopolysaccharidosis VII, Fleur-de-Lis Grant. Pediatric Research Institute, Cardinal Glennon Children's Hospital, 1991-1992, \$10,000.

DK41082 - Characterization and Treatment of Murine MPS VII, National Institute of Health, Edward Birkenmeier, Principal Investigator, Sub-contract with Jackson Laboratory, 1994-1999, \$166,876 (10% effort).

Morphological Evaluation of the Neuropathology in Murine MPS type VII, Fleur-de-Lis Grant, Pediatric Research Institute, Cardinal Glennon Children's Hospital, 1994-1995, \$3,000.

The Central Nervous System in Murine MPS VII: Morphology and Effect of Enzyme Replacement Therapy, Fleur-de-Lis Grant, Pediatric Research Institute, Cardinal Glennon Children's Hospital, 1995-1996, \$5,500.

DK49634 - Characterization of a New Metabolic Renal Disease, National Institute of Health, Edward Birkenmeier, Principal Investigator, Sub-contract with Jackson Laboratory, 1995-1998, \$46,481 (5% effort).

HD35671 - Functional Studies of MPS VII Mice after Enzyme Therapy, National Institute of Health, Mark Sands, Principal Investigator, Sub-contract with Washington University, 5/1/98-4/30/01, \$121,153 direct costs (17% effort).

DK53920 - Adeno-Associated Virus for Gene Transfer into Neonates, National Institute of Health, Mark Sands, Principal Investigator, Consultant to Washington University (0% effort).

DK57713 - Pathways Involved in Polycystic Kidney Disease, National Institute of Health, Poornima Upadhy, Principal Investigator, Sub-contract with Vanderbilt University, 3/1/01-2/28/05, 1 year total \$13,826 (5% effort).

DK27726 - Genetic Engineering of Cells from Anemic Animals, National Institute of Health, Jane Barker, Principal Investigator, Sub-contract with Jackson Laboratory, 8/20/99 – 6/30/04, \$153,775 direct costs. 1 year total \$46,402 (10% effort).

DK57586 - Novel Therapies for Lysosomal Storage Disease, National Institute of Health, Mark Sands, Principal Investigator, Sub-contract with Washington University, 3/01/01 - 12/31/04, 1 year total \$48,000 (12% effort).

HD44092 - Novel Neuronal Transport Mechanisms of Lysosomal Enzymes, National Institute of Health, Mark Sands, Principal Investigator, Sub-contract with Washington University, 7/01/02-6/30/06, 1 year total \$37,000 (10% effort).

DK49525 - In-utero Stem Cell Transfer for MPS VII Mice, National Institute of Health, Jane Barker, Principal Investigator, Sub-contract with Jackson Laboratory, 9/1/03 - 7/31/07, \$117,142 direct costs; 1 year total \$35,741 (10% effort).

DK41082 - Characterization and Treatment of Murine MPS VII, National Institute of Health, Brian Soper, Principal Investigator, Sub-contract with Jackson Laboratory, 1/1/2003-12/31/2006, 1 year total \$39,600 (11% effort).

NS043205 - Pathophysiology and Novel Therapies for Batten Disease, National Institute of Health, Mark Sands, Principal Investigator, Sub-contract with Washington University, 12/2/02-11/30/06, 1 year total \$38,000 (9% effort).

GM34182 - Receptor Mediated Transport of Lysosomal Enzymes, National Institute of Health, William S. Sly, Principal Investigator, 7/1/98-10/31/07, 1 year total \$22,500 (18% effort).

NS054219 – MPS VII CNS Gene Therapy Using Neuronal Stem Cells, National Institutes of Health, Dr. Yun, Principal Investigator, Sub-contract with Jackson Laboratory, 6/1/06-5/31/08, 1 year total \$22,500 (7% effort).

**Current funding:**

HD055461 - Novel Therapies for Globoid-Cell Leukodystrophy, Mark Sands, Principal Investigator, Sub-contract with Washington University, 4/12/07-3/31/12, 1 year total \$20,000

R01GM034182 Receptor-Mediated Transport of Lysosomal Enzymes, William Sly, Principal investigator, NIH/Saint Louis University, 4/1/10 – 3/31/14, \$11,573 current year

NS054242 - Intrathecal Enzyme Replacement Therapy for Mucopolysaccharidosis I, Patricia Dickson, National Institute of Health, Principal Investigator, Subcontract with Los Angeles Biomedical Institute at Harbor UCLA, 9/29/06 – 5/31/11, 1 year total \$10,000

## **Publications:**

1. Rosenberg, HS, **Vogler, C**, Close, LS, Warshaw, HE. Laryngeal fibromatosis in the neonate. *Archives of Otolaryngology*, 107:513-517, 1981
2. **Vogler, C**, Schmidt, WA, Edwards, CL. Primary ovarian non-gestational choriocarcinoma, report of a case in a young woman of child bearing age. *Diagnostic Gynecology and Obstetrics*, 3:331-336, 1981
3. Close, LG, Rosenberg, HS, **Vogler, C**, Warshaw, HE. Neonatal laryngeal fibromatosis. *Otolaryngology, Head and Neck Surgery*, 89:992-997, 1981
4. **Vogler, C**, Tucker, SB, Smith, JL. Kaposi's sarcoma limited to the facial skin. *Archives of Dermatology*, 120:398-400, 1984
5. **Vogler, C** and Bove, K. Morphology of skeletal muscle in children: An assessment of growth and differentiation. *Archives of Pathology*, 109:238-242, 1985
6. Breneman, DL, Lucky, AW, Ostrow, RS, **Vogler, C**, Jencki, LJ. Bowenoid papulosis of the genitalia associated with human papilloma-virus DNA Type 16 in an infant with atopic dermatitis. *Pediatric Dermatology*, 2:297-301, 1985
7. Esposito, PW, Crawford, AH, **Vogler, CA**. Solitary osteochondroma occurring on the transverse process of the lumbar spine. *Spine*, 10:398, 1985
8. **Vogler, C**, McAdams, AJ, McEnery, P. Glomerular membranopathy in adolescents with Type I diabetes. *Human Pathology*, 17:308-313, 1986
9. **Vogler, C**, Kohl, S, Rosenberg, HS. Cytomegalovirus infection and fetal death in one of twins. *Journal of Reproductive Medicine*, 31:207-210, 1986
10. Bove, K, Iannaccone, S, **Vogler, C**. Intramuscular hematopoiesis in hypotonic infants with Type I muscle fiber dysmaturations. *Archives of Pathology and Laboratory Medicine*, 110:207-211, 1986
11. Iannaccone, S., Bove, KE, **Vogler, CA**, Azzarelli, B, Muller, J. Muscle maturation delay in infantile myotonic dystrophy. *Archives of Pathology and Laboratory Medicine*, 110:405-411, 1986
12. Harris, RE, Hannon, D, **Vogler, C**, Hug, G. Bone marrow transplantation in Pompe's Disease: Type IIa glycogen storage disease. *Birth Defects*, 22:119-132, 1986
13. Croall, G, Bates, SR, Iannaccone, S, Bove, KE, **Vogler, C**. Paucifascicular congenital sensory neuropathy in identical twins. *American Journal of Diseases of Children*, 140:589-595, 1986

14. Sotelo-Avila, C, Gonzolez-Crussi, F, deMello, D, **Vogler, C**, Gooch, WM, Gale, G, Pena, R. Renal and extrarenal rhabdoid tumors in children: A clinicopathologic study of 14 patients. *Seminars in Diagnostic Pathology*, 3:151, 1986
15. **Vogler, C**, Rosenberg, HS, Williams, JC, Butler, I. Electron microscopy in the diagnosis of lysosomal storage diseases. *American Journal of Medical Genetics, Supplement*, 3:243-255, 1987
16. Iannaccone, ST, Bove, KE, **Vogler, CA**, Buchino, JT: Type I fiber size disproportion: Morphometric data from 37 children with myopathic, neuropathic and idiopathic hypotonia. *Pediatric Pathology*, 7:395-419, 1987
17. **Vogler, C**, McAdams, AJ, Homan, SM. Glomerular basement membrane and lamina densa in infants and children: An ultrastructural evaluation. *Pediatric Pathology*, 7:527-534, 1987
18. **Vogler, C**, Sotelo-Avila, C, Ramon-Garcia, G, Salinas-Madrigal, L. Nodular renal blastema and metanephric hamartomas in children with congenital urinary tract malformations. *Seminars in Diagnostic Pathology*, 5:122-131, 1988
19. **Vogler, C**, Sotelo-Avila, C, Lagunoff, D, Braun, P, Schreifels, JA, Weber, T. Aluminum-containing emboli in children treated with extra-corporeal membrane oxygenation. *New England Journal of Medicine*, 319:75-79, 1988
20. Daugherty, CC, **Vogler, C**, Buchino, JJ, Electron microscopy in the diagnosis of pediatric disease. *Pediatric Clinics of North America*, 36:199-226, 1989
21. Birkenmeier, EH, Davisson, MT, Beamer, WG, Gonschow, RE, **Vogler, CA**, et al. Murine mucopolysaccharidosis type VII: Characterization of a mouse with beta-glucuronidase deficiency. *Journal of Clinical Investigation*, 83:1258-1266, 1989
22. Strege, DW, Hanel, DD, **Vogler, C**, Schajowicz, F. Ewing's sarcoma in the phalanx of an infant. *Journal of Bone and Joint Surgery*, 71A:1262-1265, 1989
23. **Vogler, C**, Birkenmeier, EH, Sly, WS, Levy B, Pegors, C, Kyle, JW, Beamer, WG. A murine model of mucopolysaccharidosis VII: Gross and microscopic findings in beta-glucuronidase deficient mice. *American Journal of Pathology*, 136:207-217, 1990
24. Kyle, JW, Birkemeier, EH, Gwynn, B, **Vogler, C**, Hoppe, PC, Hoffman JW, Sly, WS. Correction of murine mucopolysaccharidosis VII by a human beta-glucuronidase transgene. *Proceedings of the National Academy of Science*, 87:3914-3918, 1990
25. Gnepp, DR, **Vogler, C**, Sotelo-Avila, C, Kielmovitch, IH: Focal mucinosis of the upper aerodigestive tract in children. *Human Pathology*, 21:856-858, 1990

26. Pinto, A, Sarnat, HB, **Vogler, C**, Trevenen, CL, Grant, LH, Acridine Orange - RNA histofluorescence of sarcomas and small round cell tumors of childhood, Archives of Pathology and Laboratory Medicine 114:585-588, 1990
27. Luisiri, A, **Vogler, C**, Steinhardt, G, Silberstein, MJ, Neonatal cystic testicular gonadoblastoma: Sonographic and pathologic findings, Journal of Ultrasound in Medicine, 10:59-61, 1991
28. Schwarz, KB, Larroya, S, **Vogler, C**, Sippel, JC, Homan, S, Cockiels, R, Schulze, I. Role of influenza B virus in hepatic steatosis and mitochondrial abnormalities in a mouse model of Reye's Syndrome. Hepatology, 13:96-103, 1991
29. Birkenmeier, EH, Barker, JE, **Vogler, CA**, Sly, WS, Gwynn, B, Kyle, JW, Levy, B, Pegors, C. Increased life span and correction of metabolic defects in murine MPS VII following syngeneic bone marrow transplantation. Blood, 78:3081-3092, 1991
30. Kane, RE, Kotogal, S, Bacon, BR, **Vogler, CA**. Valproate use associated with persistent hyperammonemia and mitochondrial injury in a child with Down's syndrome. Journal of Pediatric Gastroenterology and Nutrition 14:223-227, 1991
31. Kane, RE, Bunchman, TE, **Vogler, C**, Brems, JJ: Treatment of a B-cell lymphoproliferative disorder in a liver transplant patient with interferon alfa and gamma globulin. Clinical Transplantation 6:154-157, 1992
32. Wolfe, J, Sands, MS, Barker, JE, Rowe, LB, Gwynn, B, **Vogler, C**, Birkenmeier, E: Reversal of pathology in murine mucopolysaccharidosis Type VII by somatic cell gene transfer, Nature, 360: 749-753, 1992
33. Weber, TR, Westfall, SH, Sotelo, C, **Vogler, CA**, Tracy, T: A clinical-pathological study of nonsurvivors of newborn ECMO, Journal of Pediatric Surgery, 28: 135-137, 1993
34. Sands, MS, Barker, JE, **Vogler, C**, Levy, B, Gwynn, B, Galvin, N, Sly, WS, Birkenmeier, E: Treatment of murine mucopolysaccharidosis type VII by syngeneic bone marrow transplantation in neonates, Laboratory Investigation, 68: 676-686, 1993
35. **Vogler, C**, Sands, M, Higgins, A, Levy, B, Grubb, J, Birkenmeier, EH, Sly, WS: Enzyme replacement with recombinant beta-glucuronidase in the newborn mucopolysaccharidosis type VII mouse, Pediatric Research, 34:837-840, 1993
36. **Vogler, C**, Levy, B, Kyle, JW, Sly, WS, Williamson, J, Whyte, MP: Mucopolysaccharidosis VII: Postmortem biochemical and pathological findings in a young adult with beta-glucuronidase deficiency, Modern Pathology, 7:132-137, 1994

37. Shehadi, S, Donovan, MM, Steigman, C, **Vogler, C**, Vogler, G: Implantation and expansion of split thickness skin grafts: A new source of prefabricated pedicle flaps and grafts, *Plastic and Reconstructive Surgery*, 93:1449-1458, 1994
38. Berry, CL, **Vogler, C**, Galvin, NJ, Birkenmeier, EH, Sly, WS: Morphological alterations in the ear in murine mucopolysaccharidosis type VII, *Laboratory Investigation*, 71:438-445, 1994
39. Sands MS, **Vogler C**, Kyle JW, Grubb JH, Levy B, Galvin N, Sly WS, Birkenmeier E: Enzyme replacement therapy for murine mucopolysaccharidosis type VII. *Journal of Clinical Investigation*, 93:2324-2331, 1994
40. Sands MS, Erway LC, **Vogler C**, Sly WS, Birkenmeier EH: Syngeneic bone marrow transplantation reduces the hearing loss associated with murine mucopolysaccharidosis Type VII. *Blood*, 85:2033-2040, 1995
41. Penneys N, Seigfried E, Nahass G, **Vogler C**: Expression of proliferating cell nuclear antigen in Spitz nevus. *J Am Acad Dermatol*, 32:964-967, 1995
42. **Vogler, C**, Wood E, Lane P, Ellis E, Cole B, Thorpe C: Microangiopathic glomerulopathy in children with sickle cell anemia, *Pediatric Pathology*, 16:275-284, 1996
43. **Vogler C**, Sands M, Levy B, Galvin N, Birkenmeier E, Sly WS: Enzyme replacement with recombinant beta-glucuronidase in murine mucopolysaccharidosis - Impact of therapy during the first six weeks of life on subsequent lysosomal storage, growth and survival. *Pediatric Research*, 39: 1050-1054, 1996
44. Levy B, Galvin N, **Vogler C**, Birkenmeier EH, Sly WS, Neuropathology of murine mucopolysaccharidosis Type VII. *Acta Neuropathologica*, 92:562-568, 1996
45. Tracy TF, Dillon P, Fox ES, Minnick K, **Vogler C**, The inflammatory response in pediatric biliary disease: macrophage phenotype and distribution. *Journal of Pediatric Surgery* 31:121-126, 1996
46. Osashi T, Watabe K, Uehara K, Sly WS, **Vogler C**, Eto Y, Adenoviral-mediated gene transfer and expression of human beta-glucuronidase gene in the liver, spleen and central nervous system in MPS VII mice, *Proceedings of the National Academy of Science*, 94:1287-1292, 1997
47. Presti ME, Neuschwander-Tetri BA, **Vogler CA**, Janney CG, Roche JK, Sclerosing cholangitis, inflammatory bowel disease and glomerulonephritis: A case report of a rare triad. *Digestive Diseases and Sciences*, 42(4), 813-816, 1997 (April)

48. Sands MS, **Vogler C**, Torrey A, Levy B, Gwynn B, Grubb J, Sly WS, Birkenmeier Edward H, Murine mucopolysaccharidosis type VII: long term therapeutic effects of enzyme replacement and enzyme replacement followed by bone marrow transplant. *Journal of Clinical Investigation*, 99(7): 1596-1605, 1997 (April)
49. Sands MS, Wolfe JH, Birkenmeier EH, Barker JE, **Vogler C**, Sly WS, Okuyama T, Freeman B, Nicholes A, Muzyczka N, Chang PL, Axelrod HR: Gene therapy for murine mucopolysaccharidosis Type VII. *Neuromuscular Disorders* 7(5):352-360, 1997 (July)
50. Cuturic M, Hayat, GR, **Vogler CA**, Velasques, A, Toxoplasmic polymyositis revisited: A case report and review of the literature. *Neuromuscular Disorders*, 7(6-7):390-396, 1997 (September)
51. O'Connor LH, Erway LC, **Vogler CA**, Sly WS, Nicholes A, Grubb J., Holmberg SW, Levy B, Sands MS, Enzyme replacement therapy for murine mucopolysaccharidosis type VII leads to improvements in behavior and auditory function. *Journal of Clinical Investigation*, 101:1394-1400, 1998 (April)
52. **Vogler C**, Sands MS, Galvin N, Levy B, Thorpe C, Barker J, Sly WS, Murine mucopolysaccharidosis type VII - The impact of therapies on the clinical course and pathology in a murine model of lysosomal storage disease. *Journal of Inherited Metabolic Disease*, 21: 575-586, 1998 (July)
53. Daly T, Okuyama T, **Vogler C**, Haskins M, Muzyczka N, Sands MS, Neonatal intramuscular injection with recombinant adeno-associated virus results in prolonged beta-glucuronidase expression in situ and correction of liver and spleen pathology in mucopolysaccharidosis Type VII mice. *Human Gene Therapy*, 10:85-94, 1999 (January)
54. Gottesman G, Hoffmann J, **Vogler C**, Chen S, Hypertrophic cardiomyopathy in a newborn infant, A Clinicopathologic correlation. *Journal of Pediatrics*, 134:114-118, 1999 (January)
55. Soper BW, Pung AW, **Vogler CA**, Grubb JH, Sly WS, Barker JE, Enzyme replacement therapy restores reproductive performance in mucopolysaccharidosis type VII mice but does not prevent perinatal losses. *Pediatric Research*, 45:180-186, 1999 (February)
56. Daly TM, **Vogler,C**, Levy B, Haskins ME, Sands, MS, Neonatal gene transfer leads to widespread correction of pathology in a murine model of lysosomal storage disease. *Proceedings of the National Academy of Science*, 96: 2296-2300, 1999 (March)
57. **Vogler C**, Eliason S, Wood EG, IgA nephropathy in children - The glomerular membranopathy in children with IgA Nephropathy and Henoch Schonlein Purpura. *Pediatric and Developmental Pathology*, 2:227-235, 1999 (April)

58. **Vogler C**, Levy B, Thorpe C, Galvin NJ, Sands MS, Barker JE, Baty J, Birkenmeier EH, Sly WS, Enzyme replacement in murine mucopolysaccharidosis type VII - Neuronal and glial response to  $\beta$ -glucuronidase requires early initiation of enzyme replacement therapy. *Pediatric Research*, 45, 838-844, 1999 (June)
59. Freeman BJ, Roberts N, **Vogler CA**, Nicholes A, Hofling AA, Sands MS, Behavior and Therapeutic efficacy of  $\beta$ -glucuronidase positive macrophages in a murine model of mucopolysaccharidosis Type VII. *Blood*, 94:2142-2150, 1999 (September)
60. Soper BW, Duffy TM, Toothaker SR, **Vogler CA**, Barker JE, A genetically myeloablated MPS VII model detects the expansion and curative properties of as few as 100 enriched murine stem cells. *Experimental Hematology*, 27:1691-1704, 1999 (November)
61. **Vogler, C**, Homan, S, Pung A, Thorpe C, Birkenmeier E, Barker J, Upadhyia P, Clinical and pathologic findings in two new allelic murine models of autosomal recessive polycystic kidney disease. *Journal of the American Society of Nephrology*, 10: 2534- 2539, 1999 (December)
62. **Vogler, C**, Petterchak, J, Thorpe C, Sotelo-Avila C, Placental Pathology for the Surgical Pathologist. *Advances in Anatomic Pathology*, 7:214-229, 2000 (July)
63. Ohlemiller K, **Vogler C**, Roberts M, Sands MS, Retinal function is improved in a murine model of a lysosomal storage disease following bone marrow transplantation. *Experimental Eye Research*, 71:469-481, 2000 (November)
64. Ramm GA, Carr SC, Bridle KR, Li L, Britton RS, Crawford DH, **Vogler CA**, Bacon BR, Tracy TF, Morphology of liver repair following cholestatic liver injury: resolution of ductal hyperplasia matrix deposition and regression of myofibroblasts. *Liver* 20:387-396, 2000 (October)
65. Sly WS, **Vogler C**, Grubb JH, Zhou M, Jiang J, Zhou XY, Tomatsu S, Bi Y, Snella E, Active site mutant transgene confers tolerance to human beta-glucuronidase without affecting the phenotype of MPS VII mice. *Proceedings of the National Academy of Science USA*, 98:2205-2210, 2001 (February)
66. **Vogler C**, Levy B, Galvin N, Sands M, Birkenmeier E H, Sly W S., Barker J, Novel model of murine mucopolysaccharidosis type VII due to an intracisternal A particle element transposition into the  $\beta$ -glucuronidase gene: Clinical and pathologic findings. *Pediatric Research*, 47: 342-351, 2001 (March)
67. Soper, BW, Lessard MD, **Vogler CA**, Levy B, Beamer W, Sly WS, Barker JE, Non-ablative neonatal marrow transplantation attenuates functional and physical defects of beta-glucuronidase deficiency. *Blood*, 97: 1498-1504, 2001 (March)

68. Frisella AW, O'Connor LH, **Vogler CA**, Roberts M, Walkley, S, Levy B, Daly, TM, Sands MS, Intracranial injection of recombinant adeno-associated virus improves cognitive function in a murine model of mucopolysaccharidosis Type VII. *Molecular Therapy*, 3:351-358, 2001 (March)
69. Daly TM, Ohlemiller K, Roberts MS, **Vogler CA**, Sands MS, Prevention of clinical disease in MPS VII mice following systemic adeno-associated virus-mediated neonatal gene transfer. *Gene Therapy*, 8:1291-1298, 2001 (August).
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  58. Bekker JB, **Vogler CA**, Wood WG, Brink DS, Belsha CW, C1q nephropathy, a clinical and pathologic spectrum. Society for Pediatric Research, Honolulu, Hawaii, June 2008.
  59. Le S, Wllinwood NM, Dierenfeld A, Jens J, Snella E, Vogler C, Passage M, Dickson P, Enzyme replacement therapy given from birth may prevent brain GAG accumulation in MPS I dogs, June 2009

## **Advisor for Graduate Students and Medical Students**

Katie Pegors (Berry), Ph.D. Pathology 1988-1995

Bill Zeh, MS 1991-1992

Angela Bachmann, MS 2000-2002

Chelsea Shepard, MS 2001-2003

Darius Aberjeran, MS 2002-2004

Hilary Strawn, MS 2004-2005

Emily Ann Perman, MS 2004-2005

Ankur Sangoi, MS 2004-2005

Melissa Wood, MS 2004-2005

Allison Howard, MS 2005-2006

Bryan Shaw, MS 2005-2006

Steve Salvatore, MS 2006-2007

Karen Bowker, MS 2006-2007

Keith Lai, MS 2006-2007

Scott Lauer, MS 2006-2007

Richard Cantley, MS 2007-2008

James Mathews MS 2008-2009

Sarah Thompson MS 2008-2009

Erica Fan MS 2008-2009

## **Medical Student Teaching**

### **Phase I**

Course Director, Introduction to Pathology 2002-present

12 Lectures and 7 Labs

Coordinate Working with Pathologist and Robbins Interactive Case Study Companion review, prepare syllabus, examination, and schedule, and attend all lectures and labs.

### **Phase 2**

Pediatric Pathology – A Clinicopathologic Approach, PA-101 Elective

2002: 12 MS1 and MS2 students

2003: 3 MS2 students

2004: 4 MS2 students

2005: 2 MS2 students

2006: 1 MS2 student

2007: 1 MS2 student

2008: 1 MS2 student

2009: 1 MS2 student

Renal Module, Co-course director, 2001-present

7 Lectures and 3 Labs

GI Module, 2001-present

2 Lectures and 1 Lab

Cardiovascular Module, 2001-present

2 Lectures and 1 Lab

Skin, Connective Tissue, Bone and Joint Module, 2001-present

2 Lectures and 1 Lab

Endocrine Module

1 Lecture

**Resident Education**

Approximately 6 lectures and case conferences/year on topics in pediatric pathology

**Awards**

Excellence in Teaching Award for Osler Pathology and Gynecology Review Courses, 1999-2000

Faculty Excellence Award, Student Government Association, Saint Louis University, April 2003

Golden Apple, Saint Louis University School of Medicine, 2006, 2007, 2008

Saint Louis University School of Medicine Distinguished Teacher Award, Basic Science Presentation Skills, 2007

Saint Louis University School of Medicine Distinguished Teacher Award, Basic Science Small Group Facilitation, 2008

**Invited Lectures:**

Aluminum Spallation in Infants and Children Treated with Extracorporeal Membrane Oxygenation. Electron Microscopy Society of the Ohio River Valley, Cincinnati, Ohio, 1987

Pathology of Extracorporeal Membrane Oxygenator. Department of Pathology, University of Texas Health Science Center at Houston, Houston, Texas, 1988

A Murine Model of Mucopolysaccharidosis VII. Department of Pediatrics, University of Louisville, Louisville, Kentucky, 1989

Pathology of Extracorporeal Membrane Oxygenator. Department of Pathology, University of Louisville, Louisville, Kentucky, 1989

Electron Microscopy in the Diagnosis of Lysosomal Storage Disease. Electron Microscopy Society of America Annual Meeting, Galveston, Texas, 1989

College of American Pathologists Performance Improvement Program (PIP) Seminar. 1992 and 1993

Of Mice and Men - MPS VII, an Animal Model of Sly's Disease. 22nd Annual American Association of Pathologists Assistants Meeting, Saint Louis, Missouri, September 1996

Congenital Heart Workshop. 22nd Annual Meeting, American Association of Pathologists Assistants Meeting, Saint Louis, Missouri, September 1996

Murine Model of Mucopolysaccharidosis VII. 35<sup>th</sup> Annual Symposium of the Society for the Study of Inborn Errors of Metabolism, Gotberg, Sweden, September 1997

Placental Pathology. Osler Review Course, Obstetrics and Gynecology, St. Louis, Missouri, May 1998

Gynecologic and Placental Pathology (4 lectures, question and answer sessions). Osler Obstetrics and Gynecology Review Course, St. Louis, Missouri, June, 1998, April 1999

Therapeutic strategies in Mucopolysaccharidosis. Children's Hospital Oakland Research Institute (CHORI) research seminar, Oakland, California, September 1998

MPS VII - a Clinical Correlation. Children's Hospital Oakland, Pediatric Grand Rounds, Oakland, California, September 1998

Pre-Clinical Trials - Animal studies and Disease Pathology. Clinical Epidemiology Course, (EPIC-603-01), Saint Louis University, School of Public Health, St. Louis, Missouri, November 1998

Administration of Blood and Blood Products: Issues and Answers. Cardinal Glennon Nursing Grand Rounds, Cardinal Glennon Children's Hospital, St. Louis, Missouri, January 1999

Gynecologic and Placental Pathology (3 lectures, question and answer sessions). Osler Review Course, Obstetrics and Gynecology, Chicago, Illinois, June 1999

Renal Pathology and Pediatric Pathology (3 lectures, question and answer session). Osler Review Course, Pathology, Chicago, Illinois, September 1999

Gynecologic and Placental Pathology (3 lectures, question and answer session). Osler Review Course, Obstetrics and Gynecology, Atlanta, Georgia, October 1999

Gynecologic and Placental Pathology (3 lectures, question and answer session). Osler Review Course, Obstetrics and Gynecology, Chicago, Illinois, November 1999

Gynecologic and Placental Pathology (3 lectures, question and answer session). Osler Review Course, Obstetrics and Gynecology, St. Louis, Missouri, April 2000

Renal Pathology and Pediatric Pathology (3 lectures, question and answer session). Osler Review Course, Pathology, Tampa, Florida, May 2000

Saint Louis University Medical Student Board Review Course, Renal Pathology. Saint Louis University School of Medicine, St. Louis, Missouri, May 2000

Birth Defects. Saint Louis University Minority Student High School Summer Enrichment Program, Saint Louis University School of Medicine, St. Louis, Missouri, June, 1998, 1999, 2000, 2001, 2002

MPS VII – Therapeutic Strategies for Lysosomal Storage Disease. Department of Pathology, Children’s Hospital Medical Center, Seattle, Washington August 2000

Congenital Heart Disease Workshop. Society for Pediatric Pathology, Spring Meeting, Atlanta Georgia, March 2001

Congenital Heart Disease Workshop. Society for Pediatric Pathology, Spring Meeting, Chicago, Illinois, March 2002

Utility of Animal Models for the Study of Human Disease. BioIron in Thalassemia and Sickle Cell Disease Workshop, CHORI, Bodega Bay, California, May 2002

Murine MPS VII – What We’ve Learned. International MPS Society Meeting, Paris, France, June 2002

Murine MPS VII – Sly Therapies for Lysosomal Storage Disease. Basic Science Clinical Correlations Course (BSCC), Saint Louis University School of Medicine, St. Louis, Missouri, July, 2002

Congenital Heart Disease Workshop. Society for Pediatric Pathology, Spring Meeting, Washington, DC, March 2003

Pediatric Pathology. ASCP Resident Review Course, American Society of Clinical Pathology, Chicago, Illinois, April 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011

Case Presentation. Pediatric Pathology Specialty Conference, United States and Canadian Academy of Pathology Annual Meeting, San Antonio, Texas, February 2005

Clinicopathologic Correlation, Pediatric Grand Rounds. Department of Pediatrics, Saint Louis University School of Medicine, Cardinal Glennon Children’s Hospital, St. Louis, Missouri, January 2006

Renal Pathology in Pediatric Transplant Patients. American Society for Pediatric Nephrology Annual Meeting, San Francisco, California, April 2006

Murine MPS VII – Sly Therapies for Lysosomal Storage Disease. Basic Science Clinical Correlations Course (BSCC), Saint Louis University School of Medicine, Saint Louis, Missouri, November 2006

Placental Pathology for the Obstetrician. Department of Obstetrics and Gynecology Grand Rounds, Saint Louis University School of Medicine, SSM St. Mary's Hospital, St. Louis, Missouri, May 2007

Clinicopathologic Correlation. Pediatric Grand Rounds, Department of Pediatrics, Saint Louis University School of Medicine, Cardinal Glennon Children's Hospital, St. Louis, Missouri, November 2007

Murine MPS VII – Making a diagnosis, finding a treatment. Society of Ultrastructural Pathology, Companion Society Meeting, United States Canadian Academy of Pathology Annual Meeting, Denver, Colorado, March 2008

Murine MPS VII – Sly Therapies for Lysosomal Storage Disease. Saint Louis University School of Medicine, April, 2009

Clinicopathologic Correlation. Collagenous Gastritis, Pediatric Grand Rounds, Department of Pediatrics, Saint Louis University School of Medicine, Cardinal Glennon Children's Hospital, St. Louis, Missouri, May, 2009

Clinicopathologic Correlation. Neuronal Ceroid Lipofuscinosis, Pediatric Grand Rounds, Department of Pediatrics, Saint Louis University School of Medicine, Cardinal Glennon Children's Hospital, St. Louis, Missouri, January, 2010

Placental Pathology – From Cotyledons to Case Dismissed, Missouri Society of Pathologists Annual Meeting, Missouri State Medical Association Annual Convention, St. Louis, Missouri, March 2010

State of the Pathology Department, Department of Pathology, Saint Louis University School of Medicine, Topics in Pathology lecture series, November, 2011

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